Article

The dual-pathway model of collective action: Impacts of types of collective action and social identity

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Abstract

In three experiments, we manipulated procedural fairness (Experiment 1) and group-based anger and group efficacy (Experiments 2 and 3) to investigate the independent pathways of anger and efficacy for collective action in China. In Experiment 3 we also examined pathways to "soft" (low-cost) and "hard" (high-cost) collective action. Our results supported the dual-pathway model of collective action: group-based anger and perceived group efficacy independently predicted collective action intentions to protest against increased school fees and unhygienic cafeteria conditions for Chinese university students. Group-based anger predicted soft collective action intentions; both anger and efficacy predicted hard collective action intentions. Identification with the disadvantaged group was found to moderate the problem-focused coping pathway for hard collective action intentions. For high but not low identifiers, manipulated group efficacy predicted hard collective action intentions. We discuss our findings with specific reference to collective action research in China.

The psychological antecedents of collective action, where individuals act on behalf of their group to challenge disadvantage or injustice (Wright, Taylor, & Moghaddam, 1990), have been the target of focused research for decades (van Zomeren & Iyer, 2009). Van Zomeren, Spears, Fischer, and Leach (2004) proposed a model to explain why individuals take collective action as an extension of an individual coping strategy approach (Lazarus, 1991) to the collective level. This dual-pathway model of coping with collective disadvantage leads to the prediction that group members' emotional experiences of a collective problem and their perception of the group efficacy to create social change are two independent pathways that can mobilize individuals to take collective action. This model and its extensions (which includes social identity as a

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third key pathway to action), has been used extensively in empirical research on collective action (for a review, see van Zomeren, Spears, & Leach, 2008).

Despite its extensive use, there remain some unanswered questions about the underlying structure of this model especially with respect to the empirical distinctiveness of the anger and efficacy pathways and the model's applicability in predicting different types of collective action. First, though group-based anger and perceived group efficacy are conceptualized as independent pathways to action (e.g., Stürmer & Simon, 2009; van Zomeren, Spears, et al., 2008), in previous studies these pathways have primarily been examined in correlational designs (van Zomeren et al., 2004; van Zomeren, Spears, et al., 2008), or they have been examined by manipulating only group-based anger (e.g., Stürmer & Simon, 2009) or group efficacy (van Zomeren, Leach, & Spears, 2010). To our knowledge, no empirical work to date has simultaneously manipulated anger and efficacy or considered the potential interaction between the two variables to determine if these two variables do indeed independently and causally mobilize individuals to action. In this paper, we extend existing work by directly manipulating group-based anger and efficacy to test their independent causality. Second, we argue that collective action itself is not monolithic: it may differ in the extent to which it is acceptable to the wider audience (e.g., normative and nonnormative action; Tausch et al., 2011) and in the hostility expressed towards the opposition group (e.g., hostile vs. benevolent action; Zaal, Laar, Ståhl, Ellemers, & Derks, 2011). In the present research, we therefore investigate the predictive validity of the dual-pathway model in predicting "soft" (low-cost) versus "hard" (high-cost) types of collective action intentions (Brunsting & Postmes, 2002). Finally, we recognize the central role that social identity plays in more recent empirical (van Zomeren, Spears, et al., 2008) and theoretical (van Zomeren, Leach, & Spears, 2012) extensions of the dual-pathway model (Ellemers, Spears, & Doosje, 1999; Simon & Klandermans, 2001). That is why we seek here to examine its potential

role as a moderator of the independent anger and efficacy pathways to action.

The Dual-Pathway Model of Collective Action

The social psychological mechanisms underpinning of collective action have been studied from many theoretical perspectives (for a review, see van Zomeren, Postmes, & Spears, 2008). Of these, relative deprivation theory (RDT; Smith, Pettigrew, Pippin, & Bialosiewicz, 2012; Walker & Smith, 2002), resource mobilization theory (RMT; McCarthy & Zald, 1977), and social identity theory (SIT; Tajfel & Turner, 1979; van Zomeren, Leach, et al., 2012) have been among the most influential. The dual-pathway model of collective action (van Zomeren, Leach, et al., 2012; van Zomeren et al., 2004; van Zomeren, Spears, et al., 2008) integrates these distinct theories to create a comprehensive predictive framework for predicting when individuals will take collective action. The key innovation of the model lies in conceptualizing collective action as an approach form of coping with group disadvantage (Tausch et al., 2011; van Zomeren, Leach, et al., 2012) by extending Lazarus's (1991) appraisal theory of individual coping to collective perceptions and actions. Thus the model proposes two distinct pathways on the basis of Lazarus's theory (1991): emotion-focused approach coping and problem-focused approach coping.

Emotion-Focused Approach Coping

This pathway focuses on how taking collective action can regulate group-based anger resulting from unfair collective disadvantage. It integrates both relative deprivation theory and social identity theory. The relative deprivation model includes a cognitive and an affective component and it has been consistently found that the latter is the better predictor of collective action intentions (Dubé-Simard & Guimond, 1986; van Zomeren, Postmes, et al., 2008). This suggests that perceiving collective disadvantage is not enough to trigger action (i.e., cognitive components), one must also feel

discontent or anger following unfavorable comparisons (i.e., affective component). Further to the experience of unjust disadvantage, social identity theory predicts that individuals are more likely to take action when they perceive the disadvantage as collective disadvantage (Kawakami & Dion, 1995) and as unfair or undeserving disadvantage (Walker & Smith, 2002). According to the dual-pathway model, individuals first appraise whether their disadvantage is group-level, then appraise whether the group disadvantage is fair, legitimate, and just. If the disadvantage is appraised as unfair, illegitimate, or unjust, individuals experience group-based anger—an approach- and action-oriented emotion (e.g., Mummendey, Kessler, Klink, & Mielke, 1999; Walker & Smith, 2002). According to intergroup emotion theory (IET; Mackie, Devos, & Smith, 2000), experiencing anger as a group member is important. When individuals categorize themselves as members of a group, negative group-related events will arouse group-based emotions, which are effective predictors of action intentions. Thus, the appraisal that the collective disadvantage is unfair or unjust will arouse group-based anger and motivate individuals to take collective action.

Problem-Focused Approach Coping

This pathway focuses on how taking collective action can solve a problem or change an individual's social reality for the better, and is informed by resource mobilization theory (e.g., Klandermans, 1997), which predicts that individuals are more likely to take collective action when they believe they have access to enough resources to be confident that the action will be successful. At a collective level, when a group member perceives that their group has sufficient resources to take effective collective action, they are more willing to participate in collective action (Hornsey et al., 2006; Mummendey et al., 1999; van Zomeren, Postmes, et al., 2008). This problem-focused pathway emphasizes appraisals of a group's efficacy to solve the collective problem in determining whether to take action (Mummendey et al., 1999; van Zomeren et al., 2004), irrespective of whether

the group feels that they have been treated unjustly or unfairly.

The dual-pathway model is well supported by numerous experimental and field studies (e.g., Tausch et al., 2011; van Zomeren et al., 2004; van Zomeren, Spears, et al., 2008; van Zomeren, Spears, & Leach, 2010). However, no empirical studies have yet manipulated both group-based anger and group efficacy to confirm their independent causal pathways to action. In three studies, van Zomeren et al. (2004) manipulated antecedents of group-based anger and group efficacy (e.g., procedural fairness, social support). Their results showed that measured anger mediated the relationship between both procedural unfairness (and, separately social opinion support) and collective action intentions, and that measured efficacy played a mediating role between social action support and collective action intentions. More recent work has begun to manipulate the core variables directly to examine their causal effects on collective action. For example, van Zomeren, Spears, et al. (2010) manipulated perceived group efficacy by having an expert state that collective action would or would not achieve the group's goals. When individuals perceived high group efficacy, they were more willing to take part in collective action. Livingstone, Spears, Manstead, Bruder, and Shepherd (2011) manipulated other group members' emotional reactions to collective disadvantage and showed that when an individual's anger in response to a group-relevant event was shared with other group members, participants were more willing to take collective action. To our knowledge, only one study has simultaneously manipulated both emotion and efficacy independently in the context of taking action against climate change (van Zomeren, Spears, et al., 2010). However, the emotion manipulated was fear, not anger. Our studies are the first to manipulate group-based anger and group efficacy independently and simultaneously, and the first to examine the interactive effect. Such a test of the dual-pathway model can provide the most direct evidence that emotion- and problem-focused paths are truly independent of each other as a method of coping

with collective problems. As an additional contribution of the present research, we seek to apply the dual-pathway model in a novel Chinese context. Initially developed and tested mostly in Western contexts (e.g., among Dutch, German, British, and American samples), a successful test of the model in a different political and cultural context would provide greater confidence in its internal structure as this will help to broaden the model's applicability.

Pathways to "Hard" and "Soft" Collective Action

Many studies have focused on the psychological processes underpinning collective action (e.g., van Zomeren, Spears, et al., 2008). However, less attention has been paid to the characteristics of collective action itself. In most studies, collective action is presumed to be normative, that is, conforming to social norms of acceptable behavior (e.g., signing a petition, taking part in a peaceful demonstration; van Zomeren, Spears, et al., 2008). Some work has specifically examined how nonnormative action has different antecedents (e.g., contempt; Tausch et al., 2011) and consequences (e.g., increased politicized identification; Becker, Tausch, Spears, & Christ, 2011) compared to normative action. Yet, for individuals within a group, actions that are considered normative may vary widely in expected costliness or difficulty. Both voting and participating in a peaceful demonstration are normative, yet they differ substantively in terms of time, effort, and costs of failure. In the present research, and adopting Brunsting and Postmes's (2002) classification, we use the dual-pathway model to investigate both "hard" (difficult, costly) and "soft" (simple, uncostly) types of collective action. We expect that individuals will show greater intentions to take soft collective action—which is less effortful and has fewer costs of failure—compared to hard collective action. Furthermore, we expect that hard and soft collective action intentions may be differentially predicted by emotion-focused and problem-focused coping pathways. If soft action is less effortful and has fewer costs,

individuals may be less motivated by perceived group efficacy (problem-focused coping) and more motivated by group-based anger (emotion-focused coping). In contrast, hard action requires instrumental support and sufficient resources to be confident of success, as well as having higher costs associated with failure. Thus for hard collective action, individuals are likely to be motivated by both group-based anger and perceived group efficacy.

Social Identity as a Moderator

Social identity theory (Tajfel, 1978; Tajfel & Turner, 1979) has been applied extensively to advance our understanding of group processes and intergroup behavior (Chen, Arzu, & Triandis, 2007). According to Tajfel (1978), social identity represents "that part of an individual's self-concept which derives from his/her knowledge of his/her membership of a social group (or groups) together with the value and emotional significance attached to that membership" (p. 63). Social identity theory predictions (and in particular those aspects of the theory that relate to predicting social change) have been successfully integrated into frameworks of collective action (van Zomeren, Postmes, et al., 2008). For example, SIT states that individuals may engage in different types of identity management strategies when their group experiences disadvantage (Kessler & Mummendey, 2002; Mummendey et al., 1999), and it is predicted that the strategy that group members choose is influenced by the relevance of the group identity to that individual. When individuals see their group identity as highly relevant they are more likely to think of the disadvantage in collective terms, and thus be more likely to take action to benefit their group as a whole. In contrast, individuals who see the group identity as less relevant may instead try to improve their own personal status (e.g., moving from a disadvantaged to an advantaged group). Van Zomeren, Spears, et al. (2008) argued that high group relevance enhances the effect of group-based anger on collective action (i.e., emotion-focused coping pathway) but moderates the

effect of group efficacy on collective action (i.e., the problem-focused coping pathway). In a field study and laboratory experiment, the authors showed that group efficacy was a stronger predictor of collective action when participants' were weakly identified with the group (Study 1) or when their individual, rather than their group identity was made salient (Study 2). However, it is important to note that the context of disadvantage in these studies was obviously collective (i.e., increased university fees) and that this disadvantage could not be managed or solved by resorting to individual strategies. In the present research we investigate the potential moderating role of social identity in a novel population (Chinese students) and in a novel context (the safety of university cafeteria food).

Collective Action in China

The past three decades have brought many changes to China and the country has undergone many social and economic reforms. For example, China has opened up to the outside world and has transitioned from a planned economy to a market economy. These changes have been associated with great increases in income and living standards. Despite these advances, the gap between the rich and the poor has widened over the last decades and there is growing public dissatisfaction (Zhang, Wang, & Zhou, 2012). For example, from 1993 to 2003, there has been a sharp rise in the number of collective action events in China, rising on average 17% annually. In addition, the scale of collective action events has expanded, with the number of participants at each event growing by 12% annually (Ru, Lu, & Li, 2004; see also Ru, Lu, Li, Chen, & Li, 2010).

However, it is also clear that implementing social change (in particular changes to the macrosocial and economic environment) takes time and it has been estimated that, even if the government is responsive to all collective action demands, it is likely that frequent collective action by citizens will continue until at least 2020 (Wang, 2006). It is therefore not surprising that the focus of the Chinese government and scholars has shifted

from considering the legitimacy of some of the reasons why people engage in collective action to the question of what motivates people to engage in collective action and how the crowds of people that engage in collective action are being mobilized. Unfortunately, however, most existing research into collective action in China is not theoretically or empirically grounded (Zhang et al., 2012) and this makes it difficult to answer these questions. In an attempt to provide theoretical and empirical rigor, we decided to consider the dual-pathway model of collective action: this model provides a robust and well-supported framework to explore the social psychological antecedents of collective action. A successful test of this model would also provide an empirical foundation for further investigation of relative deprivation theory, resource mobilization theory, and social identity theory in the unique Chinese context.

The Present Research

In Experiment 1, we manipulated procedural fairness (van Zomeren et al., 2004) and tested the dual-pathway model of collective action in a novel context. In Experiment 2, we directly manipulated group-based anger and group efficacy to confirm their independent causal pathways in predicting collective action. We also tested their possible interaction. In Experiment 3, we extended the dual-pathway model by examining hard and soft collective action intentions, and we also further investigated the moderating role of group identification in predicting different types of collective action intentions.

Experiment 1

In Experiment 1, we manipulated procedural fairness in a manner adapted from van Zomeren et al. (2004) to examine its impact on participants' feelings of group-based anger, their perceptions of group efficacy, and their collective action intentions. We tested two hypotheses. First, we predicted that measured group-based anger and perceived group efficacy would independently predict collective action intentions. Second, we

predicted that less procedural fairness (i.e., increased procedural *un*fairness) in student tuition increases would indirectly and positively predict collective action intentions via group-based anger but not perceived group efficacy.

The context for this experiment was that of tuition fee increases for Chinese students enrolled in a postgraduate diploma course. In China, the government provides no subsidies to students and the costs of education (i.e., tuition fees) are entirely covered by them. Over the last couple of years, there has been increased and widespread concern about the affordability of these courses because many institutions that offer diploma courses have been increasing the cost of tuition. We considered this to be an ideal context to examine our hypotheses as our participants (Chinese students enrolled in a postgraduate diploma course) were likely to be highly engaged and personally affected by the tuition fee increase.

Method

Participants, design, and procedure. Sixty-six students (17 males and 49 females, $M_{age} = 29.66$, $SD_{age} = 5.22$) enrolled in a postgraduate diploma course at a large university in China participated in the experiment.

Participants were randomly assigned to the procedural fairness condition or the unfairness condition. After being seated, an experimenter disguised as a school assistant asked participants to read fictional information about their school increasing tuition fees for their postgraduate diploma course. In the procedural fairness condition, participants read that "a hearing *will be* arranged before the fee increase is implemented." In the unfairness condition, participants read that "there *won't* be a hearing and the fee increase will take effect from this semester."

After this, all participants were asked to fill in the questionnaires. After finishing the questionnaires, participants were told that the information was fictional and they were fully debriefed.

Measures. The questionnaire was translated and back-translated by two people fluent in both Chinese and English. Any discrepancy in the translation was discussed and agreement was reached between the two translators.[1] Participants completed all measures using a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Items were averaged to yield the indexes of the following measures.

Manipulation check. To assess the effectiveness of the procedural fairness manipulation, one item was included. Participants were asked to indicate their agreement with the item "I think the way we have been treated by the school is fair."

Group-based anger. Four items ($\alpha = .91$) were adapted from Mackie et al. (2000): "The decision to raise the tuition fee makes me [angry/unhappy/annoyed/furious]."

Group efficacy. To measure this construct, four items ($\alpha = .91$) were adapted from van Zomeren, Leach, et al. (2010): "I think together we are able to change this situation"; "I think together we are able to stop this proposal"; "I think that students can successfully protect their interest"; and "I think that students can really influence these decisions."

Collective action intentions. Five items ($\alpha = .93$) taken from previous studies (van Zomeren, Leach, et al., 2010; van Zomeren et al., 2004) were adapted for the Chinese context. These items were: "I would like to vote against the decision on the Bulletin Board System (BBS)[2] of our school," "I would like to sign a petition to protest against the proposal," "I would like to do something together with fellow students to stop this proposal," "I would like to participate in a student-organized activity, meeting school leaders face-to-face to protest against the proposal," and "I would like to participate in some form of collective action to stop this proposal."

An exploratory factor analysis[3] using principal axis factoring with an oblique rotation showed three factors, explaining 67.33% of the variance, with items loading strongly and clearly onto separate factors (factor loadings > .50).

Table 1. Descriptive statistics including means (standard deviations) and bivariate correlations, Experiment 1.

	Procedural fairness condition		2	3	4
	Unfair (*n* = 38)	Fair (*n* = 28)			
1 Procedural fairness	3.33 (1.21)	4.65 (1.48)	−.25*	−.12	−.36**
2 Anger	5.19 (1.22)	3.87 (1.53)		.19	.42***
3 Group efficacy	4.66 (1.20)	4.49 (1.14)			.44***
4 Collective action intentions	5.53 (0.92)	4.97 (1.17)			

Note. All responses were made on 7-point scales with endpoints ranging from "*strongly disagree*" to "*strongly agree.*"
*p < .05, **p < .01, ***p< .001.

The results support the construct validity of our measures. Furthermore, the correlations between the latent factors were as follows: between anger and efficacy, *r* = .23; anger and action intentions, *r* = .19; and efficacy and action intentions, *r* = .36.

Results and Discussion

Descriptive statistics for all variables in each experimental condition are presented in Table 1. Preliminary analysis revealed no differences between gender groups on the measured variables. Hence gender was not included in the following analyses.[4]

Manipulation check. The manipulation of procedural fairness was successful, *t*(66) = 3.87, *p* < .001. Participants in the procedural fairness condition perceived significantly more procedural fairness than those in the unfairness condition.

Hypotheses testing. Three Bonferroni-adjusted *t* tests (α = .017) were conducted to examine the effect of the procedural fairness manipulation. These tests revealed that participants were significantly more angry after reading about tuition fee increases that were procedurally unfair compared to those that were procedurally fair, *t*(64) = 3.90, *p* < .001. Procedural fairness also had a marginal effect on collective action intentions, *t*(64) = 2.17, *p* = .033, with participants marginally more willing to take collective action after reading about procedurally unfair tuition fee increases. There

was no effect of procedural fairness on perceived group efficacy, *t*(64) = .59, *p* = .555.

Dual-pathway model. We predicted that, as in previous work (van Zomeren et al., 2004), procedural unfairness would indirectly predict collective action intentions via group-based anger but not via perceived group efficacy. We also hypothesized that group-based anger and perceived group efficacy would independently predict collective action intentions. To test these hypotheses we conducted a multiple mediation analysis using bootstrapping with 5,000 samples (Preacher & Hayes, 2008). Confidence intervals reported are bias-corrected.

As described before, procedural unfairness (dummy coded: 1 = unfair; 0 = fair) significantly and positively predicted group-based anger but not perceived group efficacy or collective action intentions. Regressing collective action intentions onto procedural unfairness, group-based anger and perceived group efficacy revealed a significant overall effect, *F*(3, 62) = 9.71, *p* < .001, *R*² = .32. Group-based anger significantly and positively predicted collective action intentions (see Figure 1). Participants who felt more anger at the proposed tuition fee increases reported stronger collective action intentions. Perceived group efficacy also significantly and independently predicted collective action intentions, such that when participants perceived their group as more able to achieve change, they reported stronger intentions to take collective action. As expected, group-based anger and perceived group efficacy
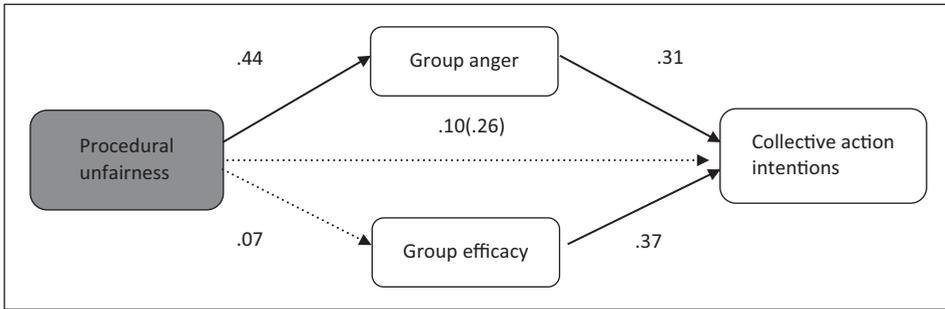
Figure 1. Experiment 1 reveals that anger mediates the effect of procedural unfairness on collective action intentions, and anger and efficacy directly predict collective action intentions. Numbers in parentheses refer to the beta before the mediators were added to the regression equation. Shaded boxes represent experimental manipulating variables; all coefficients are standardized; solid lines represent significant coefficients ($p < .05$).

independently predicted intentions to take collective action against tuition fee increases.

Bootstrap analyses revealed a stable indirect effect of procedural unfairness on intentions via group-based anger, because the 95% bias-corrected confidence interval did not include zero, 95% CI [.06, .69]. As predicted, participants in the procedural unfairness condition felt more anger, which in turn led to greater collective action intentions. Also as predicted, there was no indirect effect of procedural unfairness on intentions via perceived group efficacy, 95% CI [−.11, .34].

In sum, the results show that predictions of the dual-pathway model of collective action held in this novel context where we examined collective action intentions of Chinese postgraduate students. As in van Zomeren et al. (2004), manipulated procedural unfairness indirectly predicted intentions to take collective action against student fee increases via group-based anger, but not via perceived group efficacy. In addition, both anger and efficacy predicted collective action intentions, indicating for the first time empirically that Chinese individuals also engage in collective action as a form of emotion-focused or problem-focused coping with collective disadvantage. To provide further support for the applicability of the dual-pathway model in China, we conducted a second experiment in another context: we examined collective action intentions among students who were concerned about the safety of university food.

Experiment 2

In Experiment 2, we aimed to directly test the independent causal pathways of emotion- and problem-focused coping by simultaneously and independently manipulating group-based anger and group efficacy to investigate their impact on collective action intentions. We predicted that after students read that the food safety in a university cafeteria was negligently poor (high group-based anger condition) and that student action could be effective in changing university cafeteria food safety (high group efficacy condition), they would report stronger intentions to take collective action. We further predicted that there would be no significant group-based anger by group efficacy interaction.

The context for this experiment was that of food safety in Chinese colleges and universities. In these institutions most students eat and sleep on campus, and they depend on the cafeteria to provide meals because most students do not have any cooking facilities. Because of its labor-intensive service mode, a university cafeteria can be considered high risk with respect to food hygiene and safety (Yao, 2004). As the Chinese higher education environment continues to grow, students, parents, and the media have begun to pay more attention to food safety and health. Those students whose university cafeterias have serious problems have been taking action by sending student representatives to hearings, attending

student hearings, or attending rallies in an attempt to persuade the university and logistics management department to improve food health and safety. As such, we considered collective action around food safety issues in universities an ideal context for this study.

Method

Participants, design, and procedure. The study comprised 104 Chinese undergraduate students (19 males and 85 females, M_{age} = 20.50, SD_{age} = 1.05) who had never participated in similar experiments.

Participants were randomly assigned to one of four experimental conditions in a 2 (group-based anger: high vs. low) × 2 (group efficacy: high vs. low) between-subjects design. Participants first read a fictional account of food safety issues in university cafeterias: "The issue of food safety in universities has always been a focus among students and in society more generally. Recently, we conducted some interviews to investigate food safety on our two campuses." Participants then read information intended to provoke (or not provoke) anger, and they received information aimed to manipulate perceived high (or low) group efficacy in addressing the food safety issues. Participants were then asked to complete the dependent measures. After finishing the questionnaires, participants were told that the information was fictional and they were debriefed.

Manipulation of group-based anger. In the high group-based anger condition participants read:

> We found that, on the whole, the food safety condition on the two campuses was problematic: the mess kit was untidy and greasy, disinfection facilities were not working properly, and containers were used regardless of whether they had held raw or cooked food. In addition, staff were found smoking while processing food or they were not wearing masks while handling food.

Conversely, in the low group-based anger condition participants read:

We found that, on the whole, the food safety condition on the two campuses was good: the mess kit had been properly disinfected by using specialized disinfection equipment, all staff wore their uniform and food was prepared and processed meeting safety standards.

Manipulation of group efficacy. In the high group efficacy condition participants read:

> Studies on collective action have shown that, especially in educational administrative institutions such as schools, many problems can be solved when group members are united. Results showed that collective action can help solving the issue of food safety in university cafeterias.

In the low-efficacy condition, participants read:

> Studies on collective action have shown that, especially in educational administrative institutions such as schools, many problems cannot be solved even when group members are united. Results showed collective action cannot help solving the issue of food safety in university cafeterias.

Measures. Participants completed all measures using a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Items were averaged to yield the indexes of the following measures.

Manipulation checks. Group-based anger was measured with three items (α = .93): "I feel angry about the food safety of our university"; "I feel angry about the school's quality control on food safety"; "I feel angry about the attention the school paid to food safety." Group efficacy was measured with four items (α = .84), for instance: "I think that if we unite together the food safety conditions in our university can be better"; "I think that if we unite together we can make cafeterias pay much more attention to food safety"; "I think that if we unite together we can make the university pay more attention to food hygiene standards"; "I think that if we unite together we can ensure our right to food safety."

Collective action intentions. Intentions to take collective action against food safety issues were measured with four items (α = .70): "I would like to sign a petition to protest against the failure of the school to ensure adequate quality control"; "I would like to vote via the BBS so that logistics would maintain and upgrade disinfection facilities in a timely manner"; "I would like to participate in a 'quitting eating in cafeterias' activity"; "I would like to participate in a student-organized meeting bringing school leaders together to address food safety issues."

The latent structure of our measures was assessed using confirmatory factor analysis (CFA) on the 11 items with three latent factors representing anger, efficacy, and collective action intentions. Each item was allowed to load only on its designated latent factor and no errors were allowed to correlate. Each latent factor was allowed to correlate with the other latent factors. The results showed that our hypothesized model of the three latent factors met thresholds for good fit. Excellent fit is indicated when the χ^2/df ratio is below 2 (in our case, χ^2 = 61.47, df = 41, p = .021, the ratio was 1.50). Inspection of the fit index of data corroborated this conclusion (goodness of fit index [GFI] = .92, comparative fit index [CFI] = .96, incremental fit index [IFI] = .96, nonnormed fit index [NNFI] = .95, root mean square error of approximation [RMSEA] = .07, standard root mean-square residual [SRMR] = .05). Inspection of the parameter estimates showed that all items loaded highly on their designated factor (all factor loadings > .66). Furthermore, the correlations between the latent factors were in line with our hypothesis: anger and efficacy were unrelated (r = .09, p = .499), whereas the correlations between anger and action intentions (r = .27, p = .006), and between efficacy and action intentions (r = .15, p = .017) were positive and significant. In sum, results showed that our measures had adequate construct validity.

Results and Discussion

Manipulation checks. We conducted two between-subjects ANOVAs to check the success of our manipulations of group-based anger and group efficacy. A summary of results is presented in Table 2. We found that manipulated group-based anger but not manipulated group efficacy significantly and positively predicted participants' reported group-based anger at poor food safety, $F(1, 100)$ = 26.84, p < .001, η^2 = .21. Similarly, manipulated group efficacy but not manipulated group-based anger significantly and positively predicted participants' perceived group efficacy, $F(1, 100)$ = 19.14, p < .001, η^2 = .16. From these results we can conclude that the manipulations of group-based anger and group efficacy were successful.

Hypothesis testing. To test the independent effects of group-based anger and group efficacy on students' collective action intentions, we conducted a between-subjects ANOVA. As predicted, we found significant and positive main effects of group-based anger, $F(1, 100)$ = 11.86, p = .001, η^2 = .11, and efficacy, $F(1, 100)$ = 7.34, p = .008, η^2 = .07, on collective action intentions. As hypothesized, participants in the high group-based anger condition were more likely to be willing to take collective action (M = 5.15, SD = 1.05) compared to participants in the low group-based anger condition (M = 4.53, SD = 0.88). Similarly, participants in the high (vs. low) group efficacy condition were more likely to be willing to take collective action, supporting our hypothesis. As predicted, the Group-Based Anger × Group Efficacy interaction was not significant, $F(1, 100)$ = 2.60, p = .110, η^2 = .03.

In sum and as hypothesized, both group-based anger and group efficacy were shown to independently predict collective action intentions, providing support for independent emotion- and problem-focused pathways to action. Furthermore, the pathways were shown to be additive: in the situation of high group anger and high group efficacy, group members' intentions to participate in collective action were most intense (see Table 2). These experimental findings provide clear empirical evidence for the independent role of group-based anger and group efficacy as independent predictors of collective action. In addition, the findings provide

Table 2. Means (and standard deviations) and bivariate correlation matrices, Experiment 2.

	High anger		Low anger		2	3
	High efficacy (*n* = 25)	Low efficacy (*n* = 27)	High efficacy (*n* = 26)	Low efficacy (*n* = 26)		
1 Anger	5.29 (1.13)	4.85 (1.00)	3.99 (1.36)	3.55 (1.55)	.10	.46***
2 Efficacy	6.18 (0.65)	5.21 (1.06)	5.78 (0.69)	5.13 (1.21)		.35***
3 Action intentions	5.56 (0.92)	4.77 (1.05)	4.63 (0.89)	4.43 (0.87)		

Note. All responses were made on 7-point scales with endpoints ranging from "*strongly disagree*" to "*strongly agree.*"
***p < .001.

additional support for the applicability of the dual-pathway model in a Chinese context.

There are two limitations in Experiment 2. First, the actual predictive power of the model may be limited by unexamined assumptions about which behaviors constitute collective action (e.g., Tausch et al., 2011). It is possible that actions with high versus low expected costliness—hard versus soft collective action—would be differentially predicted by each coping pathway. Second, we did not examine the role of another key variable that has been found to be important in the theoretical frameworks of collective action: group identification (Kelly & Breinlinger, 1996; Mummendey et al., 1999; van Zomeren, Postmes, et al., 2008). In Experiment 3, we therefore examine the moderating effect of group identification on each coping pathway to action. Specifically, we test in a less obvious group-relevant context whether identification with the disadvantaged group moderates the problem-focused pathway, as found by van Zomeren, Spears, et al. (2008).

Experiment 3

In Experiment 3, we sought to investigate the role of group-based anger and group efficacy in predicting different types of collective action intentions (soft vs. hard). In addition, we aimed to examine whether group identification would moderate the emotion-focused and problem-focused pathways to collective action. We hypothesized that anger (not efficacy) would predict soft collective action, and anger and efficacy would independently predict hard collective action. We

further hypothesized that for both hard and soft collective action, as in van Zomeren, Spears, et al. (2008), group identification would moderate the effect of efficacy on collective action intentions.

Method

Participants, design, and procedure. Participants were 135 undergraduate students at a Chinese university who had never participated in similar experiments. The sample was comprised of 33 males and 102 females (M_{age} = 19.49, SD_{age} = 1.26).

A 2 (group-based anger: high vs. low) × 2 (group efficacy: high vs. low) × 2 (collective action type: soft vs. hard) mixed-factor design was conducted, in which anger and efficacy were manipulated between-subject variables and type of collective action was a measured within-subject variable. All participants were randomly assigned to one of four experimental conditions. The procedure for administering the manipulations and questionnaires was the same as in Experiment 2.

Measures. Participants completed all measures using a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Items were averaged to yield indexes of the following measures.

Manipulation checks. We measured the success of our manipulations for group anger (α = .91) and group efficacy (α = .81) using similar items as used in Experiment 2.

Collective action intentions. We conducted a pilot study to create and validate separate scales

tapping soft and hard forms of collective action. Fifty-one undergraduate students were asked to indicate the expected costliness of various actions on the basis of time, effort, and losses if the action failed (on a 7-point scale). Responses on items were summed to yield the indexes of expected costliness. On the basis of media reports and interviews with students, seven different actions addressing cafeteria safety problems were chosen. Exploratory factor analysis using principal axis factoring with an oblique rotation yielded two components with eigenvalues greater than 1. These components accounted for 67.70% of the variance. Four items loaded primarily on the first component (loadings > .60): "I will support an appeal to the university asking for better checks on food safety standards"; "I would like to vote via the BBS so that disinfection facilities will be upgraded in a timely manner"; "I will vote via BBS to demand better inspection on food safety"; "I will vote on microblog[5] to support punishing those who do not conform to the hygiene standards." Items loading onto this component were categorized as "soft collective action intentions." Three items loaded primarily on the second component (loadings > .58): "I would like to participate in a 'quit eating in cafeterias' activity" to raise awareness of the hidden food safety problems"; "I will participate in a rally asking that the poor food safety problem will be addressed"; "I will participate in a student-organized meeting bringing school leaders together to address food safety issues." Items loading onto this component were categorized as "hard collective action intentions." In the present study, we thus measured soft collective action intentions with four items (α = .82), and hard collective action intentions with three items (α = .84).

Group identification. Four items (α = .84) were adapted from van Zomeren, Leach, et al. (2010): "I [see myself as/am glad to be] a student of [name of university]"; and "I [identify/feel connected] with other students."

To assess the construct validity of our measures, we performed a similar confirmatory factor analysis as used in Experiment 2. A model with

five distinct factors (anger, efficacy, group identification, hard intentions, and soft intentions) met the threshold for adequate fit: χ^2/df = 1.73 (χ^2 = 216.43, df = 125, p < .001), GFI = .86, CFI = .93, IFI = .93, NNFI = .91, RMSEA = .07, SRMR = .07. We concluded that the measures had adequate construct validity.

Results and Discussion

Manipulation checks. As in Experiment 2, the manipulations of group-based anger and group efficacy were successful. Only the main effect of group-based anger on anger items, $F(1, 131)$ = 54.93, p < .001, η^2 = .30, and the main effect of group efficacy on efficacy items, $F(1, 131)$ = 21.90, p < .001, η^2 = .16, were significant (see Table 3).

Experimental effects. We used 2 (anger: high vs. low) × 2 (efficacy: high vs. low) × 2 (types of collective action: soft vs. hard) mixed ANOVA. Results showed that the main effects of group-based anger, $F(1, 131)$ = 37.19, p < .001, η^2 = .22, group efficacy, $F(1, 131)$ = 10.75, p = .001, η^2 = .08, and types of collective action, $F(1, 131)$ = 177.62, p < .001, η^2 = .58, were significant. As predicted, the more anger and efficacy participants felt, the stronger their collective action intentions. In addition, participants were more likely to be willing to engage in soft (M = 5.76, SD = 0.89) than hard collective action (M = 4.23, SD = 1.55). Additionally, the Group-Based Anger × Collective Action Type interaction was significant, $F(1, 131)$ = 11.51, p = .001, η^2 = .08, as was the Group Efficacy × Collective Action Type interaction, $F(1, 131)$ = 4.19, p = .043, η^2 = .03. However, the three-way interaction between group-based anger, group efficacy, and collective action type was not significant, $F(1, 131)$ = 1.53, p = .218, η^2 = .01.

We unpacked the Group-Based Anger × Collective Action Type interaction using simple main effects analyses. As shown in Figure 2, when faced with soft collective action options, participants in the high group-based anger condition (M = 6.06, SD = 0.75) were more likely to be willing

Table 3. Descriptive statistics including means (standard deviations) and bivariate correlations, Experiment 3.

	High anger		Low anger		2	3	4	5
	High efficacy (n = 34)	Low efficacy (n = 31)	High efficacy (n = 35)	Low efficacy (n = 35)				
1 Anger	4.93 (1.37)	4.54 (1.34)	2.99 (1.20)	3.18 (1.25)	−.06	.16	.36***	−.04
2 Group efficacy	6.21 (0.64)	5.17 (1.11)	5.84 (0.74)	5.27 (1.02)		.23**	.22*	.08
3 Soft action intentions	6.25 (0.65)	5.85 (0.81)	5.56 (0.97)	5.39 (0.88)			.46***	.11
4 Hard action intentions	5.21 (1.25)	4.63 (1.09)	4.04 (1.80)	3.12 (1.13)				.09
5 Group identification	5.49 (0.85)	5.46 (1.18)	5.17 (1.21)	5.01 (1.27)				

*Note.* All responses were made on 7-point scales with endpoints ranging from "*strongly disagree*" to "*strongly agree*."
*$p < .05$, **$p < .01$, ***$p < .001$.

to take collective action than those in the low group-based anger condition ($M = 5.48$, $SD = 0.92$), $F(1, 131) = 16.36$, $p < .001$, $\eta^2 = .11$. Similarly, for hard collective action options, participants in the high (vs. low) group anger condition were more likely to be willing to take collective action ($M = 4.94$, $SD = 1.20$ vs. $M = 3.58$, $SD = 1.56$), $F(1, 131) = 33.86$, $p < .001$, $\eta^2 = .21$.

Unpacking the Group Efficacy × Collective Action Type interaction, simple main effects analyses revealed that, only when faced with hard collective action options, participants in the high group efficacy condition were more likely to be willing to take collective action ($M = 4.62$, $SD = 1.65$) compared to participants in the low group efficacy condition ($M = 3.83$, $SD = 1.34$), $F(1, 131) = 11.34$, $p = .001$, $\eta^2 = .08$. However, when faced with soft collective action options, group efficacy had no effect on collective action intentions ($M = 5.90$, $SD = 0.89$ vs. $M = 5.61$, $SD = 0.87$), $F(1, 131) = 3.86$, $p = .052$, $\eta^2 = .03$. These results suggest that the emotion-focused coping pathway is more relevant for predicting low-cost collective action with mild consequences for failure. In contrast, when considering collective action asking for a relatively high investment, group members are motivated to action by both emotion-focused and problem-focused coping.

Moderation by group identification. We first checked that group identification was independent from anger and efficacy. A between-subjects ANOVA revealed that neither group-based anger, $F(1, 131) = 3.81$, $p = .053$, $\eta^2 = .03$, nor group efficacy, $F(1, 131) = .23$, $p = .629$, $\eta^2 = .00$, significantly predicted group identification. The Anger × Efficacy interaction predicting group identification was also nonsignificant, $F(1, 131) = .13$, $p = .725$, $\eta^2 = .00$.

To examine the effect of group identification on the emotion- and problem-focused pathways to hard and soft collective action, we conducted a hierarchical multiple regression in which centered group identification and contrast coded group anger (1, −1) and group efficacy (1, −1) were entered as the predictors at the first step, the two interaction terms (Anger × Group Identification,
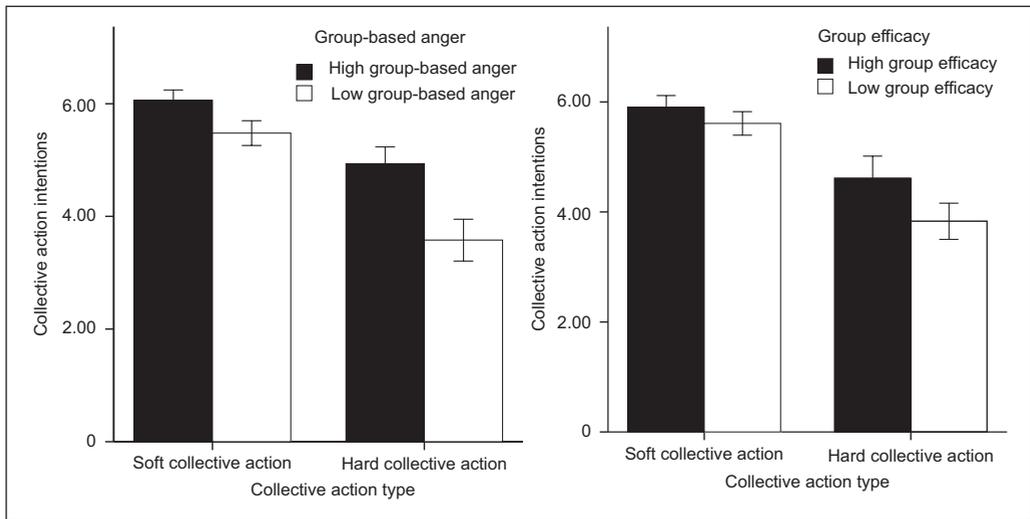
Figure 2. Collective action intentions in Experiment 3 for anger and collective action type, and efficacy and collective action type. Error bars represent standard errors of the mean difference between adjacent bars.

Efficacy × Group Identification) were entered at Step 2.

Anger was a significant predictor of soft collective action at Step 1, $\beta = .32$, $t(131) = 3.84$, $p < .001$. However, neither efficacy, $\beta = .16$, $t(131) = 1.91$, $p = .059$, nor group identification, $\beta = .05$, $t(131) = 0.62$, $p = .537$, were significant. Adding the interaction terms at Step 2 did not explain significant additional variance when predicting soft collective action intentions, $R^2_{\text{change}} = .00$, $F_{\text{change}}(2, 129) = 0.04$, $p = .965$.

Both anger, $\beta = .43$, $t(131) = 5.65$, $p < .001$, and efficacy, $\beta = .24$, $t(131) = 3.22$, $p = .002$, were significant predictors of hard collective action intentions. However, group identification did not predict hard collective action intentions, $\beta = .00$, $t(131) = 0.005$, $p = .99$. Adding the interaction terms at Step 2 explained significant additional variance, $R^2_{\text{change}} = .04$, $F_{\text{change}}(2, 129) = 3.78$, $p = .025$. Inspection of the coefficients revealed that the Efficacy × Group Identification interaction was significant,[6] $\beta = .21$, $t(129) = 2.74$, $p = .007$. The Anger × Group Identification interaction was not significant, $\beta = .04$, $t(129) = 0.50$, $p = .622$.

Simple slopes analysis was conducted to follow up the Efficacy × Group Identification interaction (see Figure 3). For those participants who were highly identified (+1 *SD*) with the disadvantaged group, participants in the high group efficacy condition reported significantly higher hard collective action intentions, $\beta = .45$, $t(131) = 1.20$, $p < .001$. However, for those participants who were less strongly identified (−1 *SD*), group efficacy was not associated with hard collective action intentions, $\beta = .05$, $t(131) = 0.41$, $p = .684$. This finding that group identification appears to facilitate the effect of group efficacy on hard collective action intentions is surprising because in previous work, group identification was found to moderate the effect of group efficacy on collective action intentions in a different way (van Zomeren, Spears, et al., 2008). This inconsistency is discussed further in the General Discussion section.

General Discussion

Our overall aim in the present research was to test and examine the extent to which predictions of the dual-pathway model of collective action (van Zomeren et al., 2004) hold in contexts that are not often examined by researchers interested in collective action. We also aimed to examine these
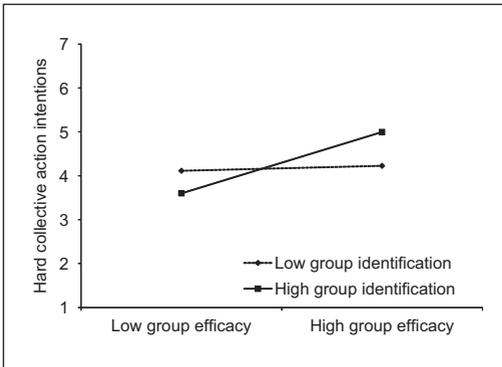
Figure 3. Experiment 3: The moderating effect of group identification on the relationship between group efficacy and hard collective action intentions.

predictions in a country that has only recently begun to see instances of citizens protesting and engaging in collective action—China. In addition, we sought to confirm the independent causal pathways of emotion- and problem-focused coping in predicting collective action intentions, we investigated hard versus soft types of collective action intentions, and we examined the moderating role of group identification on each pathway to action.

Emotion-Focused and Problem-Focused Pathways to Action

Findings from the three experiments converged to show that emotion-focused and problem-focused coping pathways mobilized students to action when they faced tuition fee increases or poor food safety in university cafeterias. Measured (Experiment 1) and manipulated (Experiments 2 and 3) group-based anger and group efficacy independently predicted students' intentions to take collective action, illustrating the emotion- and problem-focused forms of approach coping with collective disadvantage (e.g., Tausch et al., 2011; van Zomeren et al., 2004; van Zomeren, Spears, et al., 2010). These findings also provide the empirical confirmation that the emotion- and problem-focused pathways to action are independent.

In Experiment 3, we examined the utility of the dual-pathway model to predict different types of collective action intentions: soft collective action intentions, such as signing a petition (relatively effortless, low time or resource investment, low cost of failure); and hard collective action intentions, such as attending a demonstration (relatively effortful, high time or resource investment, higher cost of failure). We found that both hard and soft collective action intentions were predicted by the emotion-focused pathway. Emotion-focused coping involves regulation of emotions (e.g., group-based anger) that arise from an appraisal of whether the collective disadvantage is fair, just, and legitimate (e.g., Tausch et al., 2011; van Zomeren et al., 2004). In cases where the disadvantage is unjust, individuals will feel group-based anger, which will mobilize them to take part in collective action so that they can regulate their negative emotions. The focus on collective injustice indicates that individuals who feel more anger are more willing to take action, regardless of whether it is hard or soft collective action. In contrast, the problem-focused pathway predicted only hard collective action intentions. This result is consistent with the dual-pathway model, in that problem-focused approach coping focuses on mobilizing for action in order to improve social reality (e.g., Lazarus, 1991; van Zomeren et al., 2004). To determine whether such change is possible, individuals must consider the costs and benefits associated with action. Because hard collective action requires more investment, effort, and has a higher cost of failure than soft action, individuals will only be willing to consider hard collective action when they believe they have sufficient resources and that their group can succeed. The finding that efficacy does not predict soft collective action intentions is also consistent with theorizing: if the action is low-cost, then they need not consider its efficacy before deciding whether to act.

Group Identification

Group identification is a core variable in collective action research. Studies have conceptualized

group identification as a predictor (e.g., Cakal, Hewstone, Schwär, & Heath, 2011; Stürmer & Simon, 2009), a mediator (e.g., Livingstone et al., 2011; Louis, 2009; Thomas, McGarty, & Mavor, 2009; van Zomeren, Postmes, & Spears, 2012), or as a moderator (e.g., van Zomeren, Spears, et al., 2008). In Experiment 3, we tested the moderating effect of group identification on the dual-pathway model for hard and soft collective action intentions. We found that efficacy significantly and positively predicted hard collective action intentions among individuals who strongly identified with the disadvantaged group. For weak identifiers, group efficacy did not predict hard collective action intentions. Furthermore, group identification did not moderate the effect of efficacy on soft collective action, nor moderate the effect of anger on either type of collective action. These results are different to results that were obtained in previous investigations of the moderating role of group identification (e.g., van Zomeren, Spears, et al., 2008).

In van Zomeren, Spears, et al. (2008), group identification moderated the effect of group efficacy on collective action intentions, such that efficacy predicted intentions when social identity was less relevant or when participants weakly identified with their group. We argue that the incongruent effects are due to different processes and outcomes of self-relevance appraisal in the two lines of research. In the most recent extension of the dual-pathway model, van Zomeren, Leach, et al. (2012) theorize that when individuals first encounter a conflict, they appraise that conflict to determine whether the disadvantage suffered by the group is self-relevant, and thus whether they should respond as a member of that group. The participants in van Zomeren, Spears, et al. (2008) were either already engaged in collective action (Study 1) or were facing disadvantage that could only be addressed collectively (student fee increases, Study 2). In each case efficacy predicted collective action intentions despite measured or manipulated low self-relevance. In actuality, participants must have appraised the disadvantage as collective, allowing for the problem-focused coping pathway.

In contrast, participants in our Experiment 3 were informed of a food safety problem that affected many people but which could be addressed using individual strategies (e.g., bringing their own clean tableware) as well as collective strategies (e.g., negotiating with the university to raise standards). As such, group efficacy would motivate collective action intentions only when participants chose to follow a collective problem-focused coping strategy, which is more likely when participants see the disadvantage as collective, that is, strongly identify with the disadvantaged group. Under this lens, the present research supports and extends the dual-pathway model by revealing that group members who appraise the disadvantage as less self-relevant may elect to pursue individual rather than collective strategies to cope with the problem and thus see the efficacy of the group as irrelevant. Because this effect emerged only for hard collective action intention, it is possible that low identifiers are seeking to "free ride" on the actions of other group members and benefit from the outcomes of hard-won successful collective action without taking action themselves. A more nuanced investigation of how group identification may moderate other antecedents of hard and soft collective actions would be useful to shed light on the inconsistency of our results and those obtained in other studies.

Surprisingly, in Experiment 3 we found that group identification was not correlated with any other variables. Group identification did, however, moderate the effects of group efficacy when considering costly collective action intentions. Even though the latter effect is consistent with our theorizing, it is not so clear why there are no correlations between identification and other key variables. We speculate that this may reflect that effects of identification may no longer be relevant when individual strategies are perceived as effective to address the disadvantage. It could also be the case that we did not measure the right identity in this context. That is, it is possible that we would have been more likely to obtain the often observed correlation between group identification and collective action intentions if we

had assessed identities that mattered to the issue at hand.

Advantages and Limitations of Testing the Dual-Pathway Model in China

The dual-pathway model is well established as a robust and versatile framework for understanding predictors of collective action (van Zomeren, Spears, et al., 2008). However, its predictions have been the focus of extensive research in the West but not in the East. The present research represents the first empirical test of this model in China. We expect further examinations of the dual-pathway model and its attendant theories (e.g., relative deprivation, social identity) in China, as there are a number of advantages to studying collective action in this cultural context.

Chinese society is undergoing rapid transformations. The instability associated with large-scale and fast social change also means that old structures have lost their utility to deal with problems at hand. Observing new ways in which society is organized and responds to problems that arise also means that citizens are more likely to question reality as the only possible and fair reality (see Zhang, Jetten, Iyer, & Cui, 2013). This awareness also leads them to consider unjust or illegitimate disadvantage, sparking feelings of relative deprivation and collective anger. The widespread societal change that China is facing thus offers a unique opportunity to study the potential for collective action in contexts marked by rapid social change to the structure of society.

In addition, the Chinese context is also different from many Western contexts in the sense that Chinese society is collectivistic in nature. This means that people think of themselves more in terms of being part of a collective, or as a group member (Jetten, Postmes, & McAuliffe, 2002) than as a unique individual. Cultural social norms encourage individuals to endorse group interests ahead of individual interests and to adopt collective goals as their own. Thus at face value, it may appear that Chinese citizens should be particularly ready to want to mobilize and take collective

action against injustice that their group is facing. However, despite the growth in frequency and attendance of collective action events (Ru et al., 2010), grass-roots activism and social movements are limited in their influence. Both central and local governments retain absolute power in dealing with social protests, and there is very little legal protection of instigators and participants in collective action (Liu, 2004). In addition, because historically any type of protest was considered nonnormative in China and was therefore not allowed, the Chinese public has limited experience with collective action. This together with the emphasis on collective interests and goals (over individual interests and goals) group harmony, and social order, means that many Chinese people are unwilling to be the "tall poppy" that sticks out from the crowd, and is then cut down. This reluctance to initiate action can make it difficult to directly investigate the psychological factors of Chinese collective action, especially any action that may be considered nonnormative. Furthermore, it is of great importance that any context of disadvantage is selected so as to reflect social reality without arousing sensitivity. Nevertheless, and precisely because of China's unique cultural and historical context, Chinese culture and society offers an important new context for collective action research.

Limitations and Directions for Future Research

Two limitations of this set of experiments should be noted. First, even though it has been found that intentions are associated with actual protest behavior (de Weerd & Klandermans, 1999), we measured intentions to act rather than actual collective action behavior. We therefore recommend that future studies must measure collective action behaviors to determine whether the intention–behavior association is retained in this context.

Second, although we investigated the moderating effect of group identification, our measure of group identification may not have asked about the social identity that was most relevant for

participants to understand the problems they were facing. It is also possible that politicized (vs. nonpoliticized) identification would differently predict hard and soft collective action intentions, and that such forms of identification differentially moderate the emotion- and problem-focused coping approaches to collective action (e.g., Simon & Klandermans, 2001; Thomas et al., 2009). Future work should examine these predictions when further exploring the moderating role of group identification.

We propose three possible directions for future work to extend and build upon our findings, especially within a Chinese context. The first is to examine more distal antecedents of collective action, including the role that individual differences of group members (e.g., collectivist worldview), and the wider social context (e.g., norms of conformity) play in collective action. The second is to examine the psychological consequences of taking collective action (Becker, Tausch, & Wagner, 2011; Tausch & Becker, 2013; van Zomeren, Leach, et al., 2012) to determine whether taking collective action is an effective way of coping with disadvantage in China. The third is to investigate the "black box" of collective action in more detail. In the present research, we adapted an existing method of classifying actions as hard or soft depending on required investment and difficulty for the actor (Brunsting & Postmes, 2002). However, understanding how different types of collective action (e.g., visible, nonnormative, hard) may affect potential actors is of particular interest in the Chinese context where most people are part of a large and silent majority.

Conclusion

In this set of experiments we applied the dual-pathway model of collective action in two novel Chinese contexts. We further validated the model by independently manipulating group-based anger and group efficacy. Confirming previous research findings, we found that the emotion- and problem-focused coping pathways to collective action were indeed independent. In addition,

we explored how the dual-pathway model predicted hard and soft types of collective action, and investigated the moderating role of group identification. The aim of this research was to set the foundations for empirical research and theorizing about collective action in Chinese culture and society, as well as extending current theory on collective action. We hope that this paper provides a step towards a more comprehensive understanding of the collective coping processes through which people become motivated to participate in collective action.

Notes

1. As in Experiment 1, the questionnaires we used in Experiments 2 and 3 were translated and back-translated.
2. BBS is very popular in Chinese universities, and is used by the students to read news and bulletins, and exchange messages with others.
3. We used exploratory factor analysis here rather than confirmatory factor analysis because the sample size was small ($N = 66$).
4. Experiments 2 and 3 also showed no gender differences on the measures. Therefore gender was not included in the following analyses.
5. Microblog, a Twitter-like service, is one of the most popular online communication tools in China. Almost every university has its own microblog on which students can post freely.
6. The zero-order correlation between Efficacy × Group Identification interaction and hard collective action intentions was $r = .19$, $p = .030$. The variance inflation factor (VIF) for Efficacy × Group Identification interaction was 1.03, indicating very low multicollinearity (Myers, 1990). In addition, adding the interaction term did not push up the standardized regression coefficients of anger, efficacy, or group identification. Together, these results confirmed that the interaction term was not a suppressor variable.

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