

“I Didn’t Do It:” Responsibility Biases in Open and Closed Groups

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Group members often take more responsibility for the group’s outcomes than others give to them. Extending evidence that egocentrism can be muted when group members are individuated (the “unpacking effect”), the authors predicted that members of open groups would be less egocentric than members of closed groups. In open groups, the possibility of membership fluctuation reduces collectiveness, breaking the group into individuals, which in turn lessens egocentrism. The authors tested these predictions in a study of groups of students working on a task relevant to their academic success. Members claimed more personal responsibility when they worked in closed groups relative to open groups (egocentrism), and lack of cohesion mediated the open- versus closed-group link to responsibility allocations. Moreover, members of open groups did not take more responsibility after a success than a failure, whereas those in closed, successful groups claimed more credit than members of failure groups (self-serving bias). The discussion suggests that open groups, although often thought to create conflict as members compete, may contribute to a reduction in both egocentrism and self-serving responsibility allocations.

Keywords: egocentrism, responsibility allocations, unpacking, open groups, closed groups

Researchers have long been interested in that uneasy, and in some cases illusory, boundary between the individual and the group. From the early analyses of phenomena thought to meld individuals truly into groups—such as deindividuation, collective consciousness, and mob mentality—to current conceptions of social identity, collective efficacy, and group-level evolutionary mechanisms, researchers have speculated about the interface between the individual and the group. The individual can be considered a solitaire—a separate entity with self-determination and independence from others. However, in most situations the individual is linked, albeit extricably, to a group, with the

result that when an individual joins a group his or her self is an augmented, expanded, communal self (Forsyth & Burnette, 2005).

The current research focuses on one facet of this interface of the individual and the group. Specifically, we examine responsibility allocations to self and to others for collective endeavors after success versus failure performance feedback. When individuals work collectively, the contributions of each person are rarely known explicitly, and so questions of relative contribution to the effort and, of course, relative rewards for the work, are not answered with complete clarity. In this relatively undifferentiated attributional context, members of groups often take more responsibility for the group’s outcomes than others give to them, regardless of performance outcomes; they display an *egocentric bias* (Ross & Sicoly, 1979; Savitsky, 2007). They also tend to display a *self-serving bias*, giving themselves more credit after success than failure (e.g., D. T. Miller & Ross, 1975).

Prior research indicates that egocentrism is exacerbated if members are seen as a collective (e.g., Savitsky, Van Boven, Epley, & Wight, 2005). Additionally, group members are more likely to externalize failures and internalize successes when they are invested in the group and

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thus there are implications for their self-worth (Dietz-Uhler & Murrell, 1998). These findings suggest that egocentrism and self-serving biases will be reduced in what Ziller (1965) called *open groups*; groups whose boundaries are permeable rather than fixed. Members of such groups, recognizing that members may be excluded and new members added, should be less likely to see the group as a collective and should be less personally invested, which would thereby reduce responsibility biases. We briefly review empirical studies of responsibility biases in groups before describing the results of an experiment that lends support to the idea that biases are the rule in closed groups but the exception in open ones.

Responsibility Biases in Groups

Individuals, after they have completed a task, expend considerable mental energy reviewing their efforts and outcomes: They evaluate the quality of their performance, identify factors that hampered their efforts, and critique the strategies they used to reach their goals. These performance-focused cognitive processes become more complex when individuals work with others, for groups must also review each member's performance; assign credit and blame; make decisions regarding rewards, power, and status; and decide who is responsible for the group's outcomes. Anyone who has done anything in a group—played a team sport, coauthored an article with others, or jointly planned and executed a project—knows individuals in groups sometimes take more responsibility for the collective outcome than seems reasonable. When estimating time spent, contributions made, quality of performance, and so on, people give themselves relatively rosy marks.

Ross and Sicol (1979) labeled this *egocentrism*, which they defined as the tendency for individuals "to accept more responsibility for a joint product than other contributors attribute to them" (p. 322). In their work they documented this tendency by asking married couples to indicate the extent to which they or their spouse was responsible for such household tasks as shopping or preparing breakfast. The couples' joint claims usually exceeded 100%, indicating an overestimation of contribution by at least one of the partners. This overestimation was also

seen for negative events such as which partner was responsible for starting arguments.

Ross and Sicol (1979) stress the greater availability of one's own contributions, and the inevitable greater weighting such contributions receive when credit is tallied. For example, in a group context, they noted that group members presumably attempt to recall each participant's contributions to the final product, but for a variety of reasons people's personal contributions are more available in memory than are the inputs of other group members: They possess more information regarding their own contributions than others' contributions, they encode their own contributions more clearly because of greater salience or importance, they retrieve their contributions from memory more easily, and they may spend more time thinking (both prospectively and retrospectively) about their own rather than others' inputs to the joint endeavor. As a result of these heuristic biases, people may claim more credit for group outcomes than others assign to them (Ross & Sicol, 1979; Thompson & Kelly, 1981).

Egocentrism is typically thought to occur because of differential accessibility to one's own contributions, although the motive to protect and enhance the self can play a role in intensifying the effect. From a motivated reasoning perspective, the quality of the outcome that results from the collaboration—was the group successful or unsuccessful?—is particularly important (Mynatt & Sherman, 1975; Wolosin, Sherman, & Till, 1973). As in individual performances, reactions to collective endeavors are asymmetrical: Members see themselves as more creditable for the outcome when it is positive and less accountable when negative. This bias is often labeled the *self-serving bias* because the individual's private self is thought to be "served" by increasing its link to good, positive outcomes, and decreasing the link to negative outcomes (Leary & Forsyth, 1987; R. S. Miller & Schlenker, 1985). As a consequence, group members who consider the task to be particularly important (e.g., Forsyth & Schlenker, 1977) or more strongly invest in their group (e.g., Dietz-Uhler & Murrell, 1998) are more likely to externalize failures and internalize successes, relative to those who do not think the task, or the group's outcomes, have implications for their self-worth.

Limiting and Increasing Responsibility Biases

A number of situational and psychological factors have been shown to reduce or enhance responsibility biases. For example, members of face-to-face groups are more biased, compared to nominal, noninteracting groups (Rantilla, 2000). Individuals who are part of a subgroup within the larger group are also less likely to display egocentrism (Schlenker & Miller, 1977). Smaller groups, and perhaps dyads in particular, are more likely to be egocentric than larger groups (Forsyth, Zyzniewski, & Giammanco, 2002). These findings could be due, in part, to greater cohesion and collectiveness in smaller face-to-face groups, which perhaps makes members more likely to see the group as a collective rather than breaking the group into its individual parts, and the unity also often leads to more self-involvement. Further aspects of groups that have been explored include, for example, that members of groups anticipating repeated work as a team in the future are as biased as one-time only groups (Forsyth & Schlenker, 1977) and individuals display biases whether or not their responses will be made public or kept private (Schlenker & Goldman, 1978). Responsibility biases are muted, however, on certain tasks—particularly difficult tasks where one's own performance is shaky (Kruger & Gilovich, 1999). Individuals whose performance is objectively inferior to others tend to be less biased, as reality creates constraints on claims of responsibility (Forsyth & Kelley, 1994).

Egocentrism also rises and falls as individuals shift their attention from themselves to others in the group (Burger & Rodman, 1983; Caruso, Epley, & Bazerman, 2006; Epley, Caruso, & Bazerman, 2006; Savitsky et al., 2005). Caruso and his colleagues (2006), for example, found that simply asking participants to think about their collaborators' contributions—what has been called *unpacking*—resulted in reduced egocentrism across three studies. When, for example, authors of published manuscripts wrote about their own contribution to an article or rated each collaborator's contribution, authors who considered their collaborators' efforts made fewer egocentric responsibility allocations. They also found a reduction in egocentrism when making participants' contribution

less salient (Caruso et al., 2006). Savitsky and colleagues (2005), across four studies, revealed that egocentrism is reduced when group members are conceptualized as individuals rather than "the rest of the group." They illustrated an unpacking effect by simply having participants rate their own contribution after estimating the proportion of work that each team member had contributed, with the provision that the allocations of responsibility could be summed and compared to a baseline of 100% (Savitsky et al., 2005). This unpacking, however, comes at a cost. The concept of naïve cynicism (see Kruger & Gilovich, 1999) suggests that if group members think about other people and their motives, then they may expect those others to claim more credit than is warranted by the facts of their collaboration. In consequence, unpacking reduces egocentrism, but group members also become less satisfied with the group and less committed to future work.

Responsibility Biases in Open Groups Versus Closed Groups

Egocentrism is more likely in groups in which members are seen as a collective but reduced when unpacking occurs and members are considered as individuals (Savitsky et al., 2005). Additionally, self-serving biases are somewhat mitigated when individuals do not identify with their group and thus their self-worth is not closely tied to the group's performance outcomes (e.g., Dietz-Uhler & Murrell, 1998). What leads some group members to be perceived as closely tied to one another and others to be seen as independent entities? One answer is the stability of the group's membership. As Ziller's (1965) theory of open and closed groups suggests, groups differ in the extent to which their boundaries and the membership rosters are open and fluctuating versus closed and fixed. Group membership can fluctuate because members are voted out of the group (e.g., governing committees) or because members voluntarily come and go (e.g., community service groups). Regardless of the reasons for group fluctuation, open groups are especially unlikely to reach a state of equilibrium because members recognize that they may lose or relinquish their place within the group at any time. Members of open groups, especially those in which membership is dependent on voting or

meeting a particular standard, are more likely to monitor the actions of others. Ziller writes: "In the expanded frame of reference of the open groups in which transfers frequently occur, more accurate and more reliable ratings of the members are possible. . ." (1965, p. 168). Similarly, support theory (Rottenstreich & Tversky, 1997; Tversky & Koehler, 1994) suggests that open groups lead members to consider each element of the group separately, thereby reducing group unity.

In contrast, closed groups are often more cohesive, as competition for membership is irrelevant and group members anticipate future collaborations. Thus, in closed groups, individuals are more likely to focus on the collective nature of the group and should be more likely to identify with their group as they work together to accomplish a collective goal. Ziller's theory suggests that open groups, by their very nature, trigger unpacking and a loss of group identity, and hence can retard egocentrism. Conversely, closed groups lead to more group unity, as the self becomes intertwined with the group. Thus, breaking each member into disjoint components is less likely. When individuals think of the group as a collective rather than individuals, egocentrism can be compounded (e.g., Savitsky et al., 2005).

We suggest that open groups not only mute egocentrism but also lead group members to temper their self-serving biases. Why might we expect this drop in motivated reasoning in open groups? Research suggests that self-serving biases are reduced when group members think the task is unimportant (e.g., Forsyth & Schlenker, 1977) and/or do not invest in their group (e.g., Dietz-Uhler & Murrell, 1998). Similarly, in open groups the motivation to protect the self may be tempered as members of these groups do not commit to or invest in their group, and thus their self-worth is less closely tied to group outcomes. In contrast, members of closed groups, whose group membership is secure and whose identity is more closely linked to the group, may let their motivations bias their judgments. Additionally, in open groups, members likely realize their contributions to the collective task are being monitored and thus temper their responsibility biases. In reference to the nature of open groups, Ziller notes, "since it is less possible to insulate and isolate oneself, inflated self-estimates do not remain unchecked or unchallenged for long" (1965, p. 168).

To examine the effects of membership mobility and performance outcomes on responsibility biases, we asked members of four-person groups to work on an educational task. Some groups were closed, but in open groups participants were told that one member would be selected for exclusion from the group. After receiving either success or failure feedback about the quality of their work, participants rated their responsibility on self-only-focused and group-focused measures and completed assessments of the collective nature of the group (i.e., cohesion). Merging support theory, unpacking effect research, and self-serving bias work with Ziller's open- and closed-group theoretical perspective, we posit the following:

Unpacking Effect Hypotheses

Hypothesis 1: Because we expected that members of closed groups would be egocentric, we predicted a main effect of type of group (open/closed) on responsibility allocations (but only on self-focused measures where responsibility was not already unpacked by the use of group-focused assessments).

Hypothesis 2: As is consistent with Savitsky et al. (2005) studies of unpacking, we expected that members of open groups would report less group unity (i.e., cohesion) than members of closed groups.

Hypothesis 3: We predicted that cohesion would in turn mediate the relationship between the type of group (open/closed) and responsibility allocation, such that when a group is open cohesion is reduced, and that reduction in cohesion will in turn temper egocentrism.

Self-Serving Effect Hypothesis

Hypothesis 4: We predicted that the tendency to take more responsibility for success than failure (the self-serving bias) would occur only in closed groups; hence, we expected that type of group (open/closed) would interact with performance condition (success/failure) in influencing responsibility allocations.

Method

Participants

We recruited undergraduate participants ($N = 96$; 64 women) most of whom were young adults ($M = 19.57$ years old, $SD = 4.24$). The sample was of varying ethnicity (56% White, 28% African American, 5% mixed, 6% Asian, and 5% other). All participants were enrolled in an introductory course in psychology and received credit for participating. Participants had completed and received feedback on at least one exam in their class prior to taking part in the research. Each group had four participants for a group sample size of 24.

Procedure

In this research we took advantage of a study-group program where students in psychology are encouraged to form study groups. We invited students to the group laboratory for their first session where they completed individualized tests before working together in a same-sex study group. Across conditions, the experimenter informed participants that the current study would take 1 hr and that being involved in study groups typically helps students improve their scores in introductory psychology.

We then assigned half of the groups at random to the open-group condition and half to the closed-group condition. In the open condition, the experimenter informed participants that not all study groups are created equally and thus we are interested in studying what might make some groups more effective than others. Specifically, we are exploring how open groups perform relative to closed groups: that is, when members can be dropped for not contributing to the group effort, are study groups more effective? The experimenter went on to explain that group members would identify individuals who should be dropped from membership at the end of the session. Specifically, participants were informed that they would vote for one member to be excluded and would then work on another task either alone (if voted out) or together if one of the three remaining participants. In the closed-group condition, participants were also told that the purpose of the study was to examine the effectiveness of study groups, but they had no reason to believe that group membership could or would fluctuate. Members of closed

groups were also informed that they would work together on a future task.

Following the open-/closed-group manipulation, the experimenter introduced the group task to the participants. The experimenter informed participants that they would work alone on tasks that test their knowledge on previously covered material in introductory psychology. The experimenter explained that participants first work alone because in most study groups people often prepare on their own before joining the group. The study simulated that individual activity by having people work on problems both individually and in the group. The experimenter informed participants that after 10 min of working alone, they would work as a four-person group on another task related to their introductory psychology material. The experimenter then informed participants that their group performance score would be a composite of each member's correct answers on the individual test and the groups' total correct answers on the group task. We included both an individual and group component to make the performance manipulation more credible and the responsibility allocations more ambiguous.

After completing a short list of multiple-choice questions pertaining to topics they were currently studying in their classes, the members moved from their individual seats to sit face-to-face at a small table. Each one was identified by a letter (A, B, C, and D), and they used these labels rather than their names as they worked on a second set of multiple-choice and essay questions. They spent approximately 10 min working collectively to answer these questions before moving back to partitioned stations where they were unable to see the other group members. The experimenter appeared to spend time at the computer located in the room, scoring the participants' individual and group responses by running the answer sheets through a scoring machine and grading the short-answer written sections. While the experimenter seemingly computed performance scores, the participants completed filler items. The experimenter then randomly assigned groups to the success or failure condition. Groups in the success condition received feedback indicating that their group was in the top 10% of all groups that had been tested. In contrast, groups in the failure condition received feedback indicating that they scored in the bottom 50% of all groups that had

been tested. These success and failure percentages coincide with what students typically see as successful and as failing in terms of their grades (e.g., top 10% is an A, below 50% is an F). After receiving their feedback, participants completed measures of responsibility and cohesion.

Measures

The survey that participants completed explained that their perceptions of their group would help researchers better understand study groups and their effectiveness. They were assured that their responses would remain strictly confidential, and were cautioned to not put their name anywhere on the form.

Responsibility. We measured personal responsibility by asking participants to rate their own personal responsibility on a single-item assessment that asked, "how responsible are you personally for your group's outcome?" Participants completed this self-focused question using a 9-point scale with 1 (*not very responsible*) and 9 (*very responsible*) as end points. This assessment is similar to the control condition in Savitsky et al. (2005). Participants also completed a group-focused assessment on which they allocated 100 points among all the members of the four-person groups, giving more points to the more responsible member. This measure is similar to the unpacking conditions in Savitsky et al. (2005) work. As in Forsyth et al. (2002), all members (including the participants themselves) were listed by letter only. This assessment yielded three different ways of examining responsibility biases.

Participant's own responsibility was calculated by dividing the total number of responsibility points allocated to the self by the total number of possible points (i.e., 100). Thus, if every group member gave equal allocation, each member would have a percentage of 25. Overall *group responsibility allocation* was calculated by summing each group member's percentage contribution. If this exceeded 100%, it would indicate that at least one group member over-claimed responsibility. *Relative responsibility allocation* to the joint effort was also calculated by comparing each participant's rating of his or her own responsibility to the amount of responsibility he or she was given by the other group members. We computed this assessment by adding the other 3 group members' assessment of the participant's responsibil-

ity, dividing by 3, and then subtracting this mean from the participant's own responsibility allocation. For example, a score of plus 10 suggests participants overestimated their contribution relative to the other group members' assessment of the participant's contribution by 10 percentage points.

Group unity. We measured the cohesion of the group with the use of a five-item scale that included measures of perceived unity of the group (Dion, 2000). An example of a cohesion item is, "There was a feeling of unity and cohesion in my group." Participants responded using a 5-point scale with 1 (*strongly disagree*) and 5 (*agree strongly*) end points ($\alpha = .84$).

Group investment. We thought that not only would open groups break down the group unity but that individuals would also be less likely to invest in the group task. We assessed this in two ways. First, we used *role allocations*, assuming that individuals who were more invested in their group would be more willing to accept a leadership position within that group, so following Forsyth et al. (2002), group members were given a list of eight possible roles that may have existed in their group: leader, critic, joker, harmonizer, follower, observer, communicator, and participator. They assigned these role labels to each of the group members, including themselves. Additionally, we assessed the degree to which the group task was a collaborative effort by asking "In this group, members did not need to cooperate to complete the group tasks." Participants responded with the use of a 5-point scale with 1 (*strongly disagree*) and 5 (*agree strongly*) end points.

Manipulation checks. We manipulated both group type (open/closed) and performance feedback (success/failure). One item assessed the performance outcome manipulation, "How was the overall rating of performance for the group as a whole on the task?" with 1 (*very poor*) and 9 (*very good*) as end points. One item served to check that group fluctuation was a clear possibility in the open groups but not in closed groups. The item stated, "At what point during the study were you aware that the size of the group would vary?" with *at the beginning* and *the end* as the possible choices. As part of another ongoing project, participants in the closed condition, after completing all necessary information for the current study, were asked to exclude one person from the group. This ma-

nipulation check was included at the end of the second study's assessment after the members of the closed group had been informed of exclusion but prior to debriefing.

Results

Because members worked in face-to-face groups, we tested for nonindependence of participants' responses within the groups by computing the intraclass correlation coefficient (ICC) for the dependent measures. The ICC is calculated by using mean squares from a fixed-effects ANOVA in which group is nested within the independent variable (see Cohen, Cohen, West, & Aiken, 2003; Kenny, Kashy, & Bolger, 1998). The ICCs for the self-focused responsibility measure ($r = .08, p = .25$), the group-focused responsibility rating for oneself ($r = .05, p = .21$), role allocations ($r = .03, p = .33$), and cooperation ($r = .09, p = .13$) were nonsignificant. Even considering the recommendation by Kenny and colleagues that a liberal alpha of .10–.25 should be used to avoid erroneously rejecting the existence of nonindependence, the ICC calculations for these outcomes indicate that the assumption of independence was met and the data should be analyzed at the individual level (Kenny, Mannetti, Pierro, Livi, & Kashy, 2002). However, results revealed significant ICCs for the relative group-focused responsibility measure ($r = .27, p < .05$) and the cohesion assessment ($r = .34, p < .05$). Additionally, the group-focused total responsibility allocation assessment is a group-level construct. Thus, analyses involving relative responsibility, total group responsibility, and cohesion are reported with group used as the unit of analysis ($N = 24$).

We examined our hypotheses, unless otherwise noted, with the use of a 2 (performance outcome: success vs. failure) \times 2 (group type: open group vs. closed) ANOVA. For the individual-level responsibility allocation assessment, group members' scores on the individual portion of the task served as a covariate to control for variations in academic preparation. We included sex in both the individual-level and group-level full-factorial models, but because it had no significant effect on key outcomes, we excluded sex from analyses. To examine the hypothesis that the open/closed egocentrism effect would be mediated by a breakdown in a sense of collectiveness (i.e.,

cohesion), we employed the standard regression approach recommended by Kenny et al. (1998).

Manipulation Checks

To check the effectiveness of the performance-feedback manipulation, participants were asked "How was the overall rating of performance for the group as a whole on the task?" The significant main effect, $F(1, 89) = 160.60, p < .01$, indicated members of groups who failed rated their group's performance more negatively than did members of successful groups; the means were 4.13 and 8.27, respectively.

The group type (open/closed) manipulation was also effective. We asked participants in a final questionnaire at what point during the study they realized the size of the group would vary. Thirty-six of the 38 participants in the open-group condition (95%) who responded indicated that they were apprised of the possibility of exclusion at the beginning of the experiment, whereas 35 of the 41 participants in the closed-group condition (85%) checked the "at the end" response for the "at what point during the study were you aware that the size of the group would vary?" question; $\chi^2(N = 79, df = 1) = 50.82, p < .001$.

Biased Responsibility Allocations: Self-Focused Assessment and Egocentrism

We predicted that members of closed groups relative to open groups would show egocentrism in their responsibility claims. However, we only expected this main effect on the self-focused measure that assessed personal responsibility but did not include considering and ranking other group members' contributions (which would in and of itself lead to unpacking, as demonstrated by Savitsky et al., 2005). The significant main effect, $F(1, 83) = 4.66, p < .05$, of open/closed group on the single-item measure, "How responsible are you personally for your group's performance?" supported our egocentrism prediction. Individuals in open groups reported less egocentrism ($M = 4.56, SD = 1.11$) than those in closed groups ($M = 5.10, SD = 1.24$). Additionally, individuals in successful groups ($M = 5.10, SD = 1.08$), claimed significantly, $F(1, 83) = 4.45, p < .05$, more responsibility rela-

tive to failure groups ($M = 4.57$, $SD = 1.27$). The interaction, although in the predicted direction, did not reach significance; $p = .12$.

Group Unity

We suggested that reduced egocentrism would be due to a loss in the connection between the individual members and the group as a whole in open relative to closed groups. Although not directly postulated, we also expected that success would strengthen individual–group bonds, and failure would weaken them. As predicted, open groups were less cohesive than closed groups; $F(1, 20) = 5.49$, $p < .05$. The means were 3.65 and 4.03, respectively. Additionally, analyses revealed a significant main effect of performance feedback on group cohesion; $F(1, 20) = 13.85$, $p < .001$. Members of groups that succeeded rated their groups as more cohesive ($M = 4.14$) than those in groups that failed ($M = 3.53$). The two-way interaction of group type and performance outcome was not significant.

Mediation Model: Unpacking Effect

In line with unpacking research, we predicted that impact of type of group (open vs. closed) would be mediated by a loss of cohesion in open groups. Replicating the two-way ANOVA analyses reported earlier, in the first step of the mediation model, type of group (open versus closed) accounted for a significant proportion of

variance in personal responsibility allocations (single-item question, “How responsible are you personally for the group’s performance?”); $\beta = .24$, $t(88) = 2.28$, $p < .05$ and in the second step of the mediation model, group condition predicted cohesion, $\beta = .24$, $t(94) = 2.43$, $p < .05$. Then, completing Steps 3 and 4 in a single regression analysis revealed that the mediator (cohesion) $\beta = .37$, $t(88) = 3.67$, $p < .001$ accounted for unique variance in personal responsibility allocations. Specifically, greater cohesion predicted more egocentrism. When the variance accounted for by cohesion (mediator) was partialled, the association between group condition and responsibility allocations was no longer statistically significant; $\beta = .15$, *ns*; Sobel $z = 2.02$, $p < .05$ (see Figure 1).

Responsibility Allocations: Group-Focused Assessments and Self-Serving Biases

In addition to a reduction in egocentrism, we also expected members of open groups to be less self-serving in their responsibility allocations. That is, we expected members of open groups to allocate equal responsibility regardless of group performance, but members of closed groups to claim more responsibility for success than failure. We found support for this prediction across the three group-focused responsibility assessments.

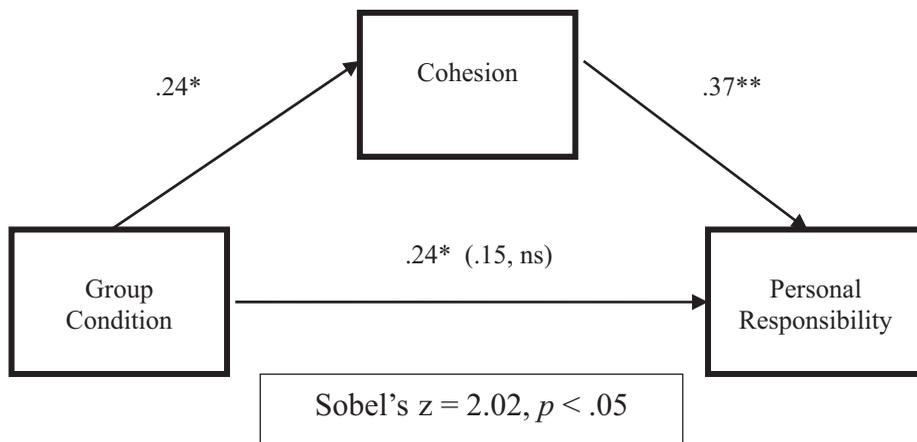


Figure 1. Mediation model: Cohesion mediating the effect of open-/closed-group condition on responsibility allocations.

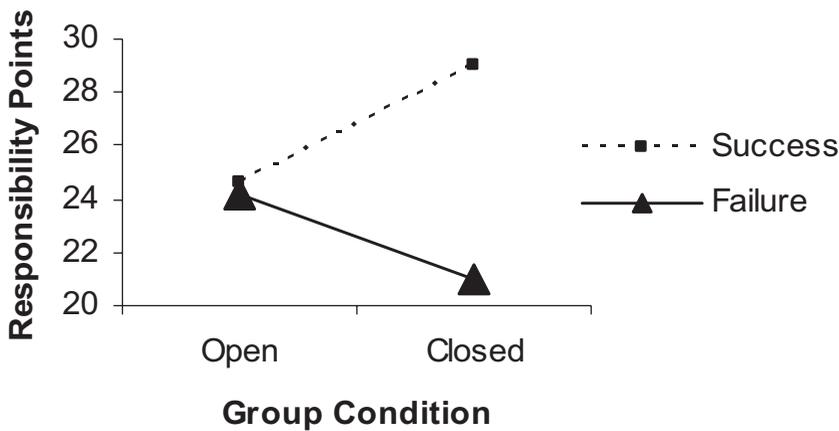


Figure 2. Allocation of responsibility to self in open and closed groups following success and failure.

Own responsibility claims. Analysis of the percentage of responsibility each group member claimed for himself or herself, when evaluating all the group members, supported our predictions. The main effect for group condition was nonsignificant, and the main effect for the performance condition was only marginally significant, $F(1, 83) = 3.39, p = .07$, with members of successful groups ($M = 26.47, SD = 8.03$) taking slightly more credit than members of failure groups ($M = 23.19, SD = 8.91$). However, the interaction of group type and performance condition was significant, $F(1, 83) = 3.94, p = .05$. As Figure 2 and simple effects testing with Tukey post hoc tests ($p < .05$) suggest, only members of closed groups

displayed the self-serving bias by claiming less responsibility after failure than success (also see Table 1).

Group responsibility. As Ross and Sicoly (1979) note, when all the personal claims of responsibility by members are totaled, they often surpass the logical limit of 100%. Our subjects displayed this tendency to overclaim responsibility, but only in the closed groups experiencing success. The main effect for group and performance condition were nonsignificant, but the interaction of group type and performance condition reached significance; $F(1, 20) = 6.52, p < .05$. Simple effects testing ($p < .05$) revealed that participants were self-serving, but only in closed groups (see Table 1).

Table 1
Cell Means, Standard Deviations, *F* Ratios, and *p* Values for the Interaction of Type of Group (Open/Closed) and Performance (Success/Failure) on Responsibility Allocations

Measure	Closed		Open		<i>F</i> ratio	<i>p</i> value
	Success	Failure	Success	Failure		
Own responsibility Allocations*	28.73 ^a (9.00)	21.83 ^b (9.09)	24.25 (6.50)	24.50 (8.72)	3.94	=.05
Group responsibility Allocations**	113.67 ^a (9.69)	95.83 ^b (10.15)	97.00 ^b (7.48)	103.50 (17.09)		
Relative responsibility Allocation**	5.57 ^a (3.59)	-3.50 ^b (6.84)	-0.91 (2.34)	1.51 (6.55)	7.32	<.05

Note. For any single measure, means with a common superscript (a) differ at the $p < .05$ level by Tukey post hoc tests from means with alternative superscript (b). Means without superscripts did not differ. The number in parentheses is the standard deviation.

* Individual-level analysis; $n = 96$.

** Group-level analysis; $n = 24$

Relative responsibility allocation. We found similar results when we examined how much responsibility participants took relative to the amount of responsibility others gave them. For this assessment, higher scores indicate that group members overestimated their responsibility relative to others' estimation. Again, the only significant effect was the interaction of group type and performance condition; $F(1, 20) = 7.32, p < .05$. As simple effects testing with Tukey post hoc tests ($p < .05$) suggest, only members of closed groups claimed less responsibility after failure than others gave them, and only members of closed groups claimed more responsibility after success than others gave them (see Table 1).

Investment in Open and Closed Groups

We postulated that perhaps open-group members do not invest in the group and thus are not motivated to protect the self. Although we do not have a direct assessment of this supposition, we have indirect indications. We expected fewer participants to report taking on involved roles such as the leader in open compared to closed groups. In line with this proposition, of those reporting roles for themselves, only 4.7% of subjects in the open group identified as leaders, whereas 26.3% of participants in the closed group indicated a leadership position, $\chi^2(N = 88, df = 1) = 5.46, p < .05$. Additionally, members of open groups reported significantly less need to cooperate and work as a team to complete the group task than members of closed groups, $t(93) = 2.00, p < .05$.

Discussion

Across a wide array of contexts including co-authoring manuscripts, working on a collective task, living with a roommate, or playing a team sport, responsibility biases are pervasive. The results from the current study, in line with past research (e.g., Caruso et al., 2006; Rottenstreich & Tversky, 1997; Savitsky et al., 2005), suggest a way to reduce these biases. Specifically, we found that making membership fluctuation salient led to a breaking apart of the group, which in turn predicted less egocentrism. We attribute this finding to an unpacking effect. That is, we suggest that the group type (open/closed) manipulation separated the individual from the collective. This proposi-

tion was supported with results revealing that members of open groups report less cohesion than members of closed groups. This loss of collectiveness in turn mediated the open-/closed-group effect on self-focused personal responsibility allocation. The mediation revealed in the current article directly supports the work of Savitsky and colleagues (2005), suggesting that egocentrism stems, at least in part, to individuals' inclinations to regard their fellow group members as a collective.

Additionally, in line with Savitsky and colleagues (2005), our egocentrism hypothesis was only supported when participants were asked how responsible they were on self-focused assessments. As Gilovich, Medvec, and Savitsky (2000) note, because "each of us is the center of our universe" it can be difficult to arrive at accurate assessments (p. 211). However, sometimes all people need is a little reminder of their group members' potential efforts to avoid egocentric biases. Thus, it is not surprising that we failed to find an open/closed egocentrism effect on the group-focused assessments as the measure itself required breaking the group apart into individual components. These group-focused assessments matched the unpacking condition in the first two studies by Savitsky and colleagues (2005), and replicated the implicit unpacking condition in their third experiment.

However, what about self-serving biases? As the old saying suggests, "victory finds a hundred fathers, but defeat is an orphan." Results from our research suggest that this self-serving tendency is prevalent in closed groups but not as pervasive in open groups. Across our three group-focused responsibility assessments, open groups tempered the self-serving bias. Because membership fluctuation depended on the vote of each member of the group, competition likely increased and social identity dwindled. Thus, perhaps members of open groups did not need to use motivated reasoning, as their self-worth was not attached to the group. This prediction is in line with research suggesting that self-serving biases are somewhat mitigated when individuals do not invest in their group, and thus their self-worth is not closely tied to the group's performance outcomes (e.g., Dietz-Uhler & Murrell, 1998). In support of the idea that members of open groups were not as invested in the group, we found that they were less likely to take on active roles such as the leader and less

likely to report that the group task required a cooperative effort. However, future work is needed to examine if this lack of self investment serves a mediating function. Additionally, in other types of groups in which membership flows as members voluntarily come and go (e.g., community-service-oriented groups), there could be different implications for responsibility biases compared to the type of open group used in the current study. Thus, future research is still needed to examine not only *why* open-group membership reduces self-serving responsibility allocations, but also to explore if this effect primarily holds for open groups that compete for membership.

Although our findings support recent research on responsibility biases after collective endeavors, there are a few limitations of the present research worth noting. First, like much research in personality and social psychology, our sample was limited to university students in the United States. It seems plausible that there could be cultural differences in the degree to which one's perspective of the group merges with his or her self-identity. In more collectivistic societies, it could prove more difficult for participants to unpack the individual from the group. Additionally, members of collectivistic societies are often less self-serving in their responsibility claims. For example, a meta-analytic review of self-serving attributions revealed that Asian samples display significantly smaller biases than U.S. or Western samples (Mezulis, Abramson, Hyde, & Hankin, 2004). Future research could explore the cross-cultural nature of the unpacking effect and subsequent effects on both egocentrism and self-serving biases.

The use of students, although a limitation, is also a strength, because participants took part in a group whose outcome and procedures were personally relevant to them. Much previous research on responsibility biases has examined how members respond to outcomes produced in ad hoc laboratory groups, and such situations may not adequately represent the psychological power of failure and success as personally meaningful tasks. Participants in our research, in contrast, worked on problems that were of critical importance to their success in college, and hence the desire for success could have been a strong motivator, especially for closed groups, where group identity was stronger. The groups were, however, short-term ones, and future research could explore the unpacking effect

and self-serving biases in naturally existing and longer-lasting open and closed groups.

Although the current study sheds light on the role of open groups in achieving an unpacking effect and reducing self-serving biases, the complexity of the manipulation raises the question of what exactly the psychological reaction of participants was after hearing news of possible exclusion. We suggest that in open groups, the collective nature of the group was lost and individuals did not invest in the group. The results support this prediction, in part, with cohesion fully mediating the open/closed personal responsibility allocation link and with members of open groups taking on less active roles and reporting less need for cooperation. However, the possibility of exclusion could have also transformed the group session into a mixed-motive situation. For example, as Park and Hinz (2006) note, if a group member is socially anxious and the group is thus a source of threat, then increases in avoidance motivation can be expected. Perhaps the open-group manipulation activated the avoidance-motivation system and thus prompted vigilant processing of information (Watson, Wiese, Vaidya, & Tellegen, 1999). In contrast, when groups provide a sense of unity and security like that found in closed groups, an approach-oriented motivation system is activated and goal commitment increases (Gray, 1972). In light of the Park and Hinz (2006) theoretical article calling for researchers to apply the approach-avoidant motivational perspective to group research, future work could explore whether responsibility biases in open groups where members can be excluded is due, in part, to the avoidant motivation system being activated.

These limitations aside, the current study builds on a burgeoning research that explores the contexts that enhance or reduce particularly pervasive biases in judgments, namely, egocentrism and self-serving tendencies. Egocentrism and self-serving biases are an almost inevitable aspect of group involvement and can have damaging effects on groups. For example, self-serving tendencies can lead to conflict and dissatisfaction in groups (e.g., Babcock & Loewenstein, 1997). Thus, finding ways to reduce these biases has relevant implications and applications for fostering effective group interaction. The present research revealed one such way to reduce overestimations of contributions. Namely, individuals in open groups, in which membership fluctuated, were less likely

than members of closed groups to enhance their responsibility claims.

Building on our initial line of research, future work could explore how the transient versus stable nature of groups influences additional group- and individual-level processes. For example, researchers could explore the presence or absence of fear of exclusion in open groups by using one of three conditions: (a) one person is removed from the group randomly, (b) one person is removed by popular vote, and (c) one person is removed on the basis of experimenter-judged contributions. It might also be interesting to contrast a condition in which the weakest link is removed from the group with one in which the top performer is promoted up to a more desirable group. Along this line, building on Leary's sociometer work (see Leary, Tambor, Terdal, & Downs, 1995), in which self-esteem is a gauge of social inclusion, research could also examine how being excluded from these different types of open groups influences an individual's self-esteem. It could also prove fruitful to examine naturally existing open groups in which membership is voluntary to explore how this effects not only responsibility allocations but also other individual and group processes. For example, perhaps open groups, especially those in which members are excluded for not contributing, also reduce social loafing. Additionally, what happens to the group's performance in these shifting groups? Are open groups more effective after members are dropped? Or, perhaps closed groups with their sense of group unity outperform open groups. Our initial line of work suggests open groups can reduce responsibility biases, but perhaps they can also lead to other desirable outcomes (e.g., reduced social loafing, better performance).

However, open groups also came at a cost—a reduction in group unity. Reduced group cohesion is in turn associated with a plethora of problems for groups, including, for example, lower goal commitment and achievement (see Mullen & Copper, 1994) and reduced enjoyment of one's group (e.g., Hackman, 1992; Hogg, 1992). Although studies have highlighted potential ways to reduce egocentrism without affecting group cohesion (e.g., Epley et al., 2006, Study 5), future research could explore additional means of introducing an unpacking effect that does not also introduce a competitive environment. Combining our findings with the

theoretical perspectives offered in the Park and Hinsz (2006) work on avoidance versus approach motivation could be productive when exploring ways to reduce responsibility biases but not group unity. For example, perhaps having individuals unpack but also adopt approach-oriented goals could result in net positive outcomes (i.e., reduced egocentrism and greater goal commitment). In conclusion, before applying an open group and unpacking perspective to interventions aimed at reducing responsibility biases, the loss of group identity and investment suggests that more research and thought is needed.

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