

Evaluations of and Intentions to Engage in Group and Individual Action and Inaction: Reduced Personal Agency in Group Behavior

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People evaluate individual actions more positively than inactions, but the scientific literature is silent on the evaluations of *group* actions and inactions. Across five experiments (total $N = 2,684$; three preregistered), American adult participants reported the desirability of and intentions to engage in mundane actions (e.g., walking) and inactions (e.g., standing) carried out either individually or with others. Across these experiments, group actions were evaluated less positively than individual ones, which in turn led to weaker intentions to engage in them. The mechanism underlying these differences was that group behaviors (actions *and* inactions) were generally associated with a lower sense of personal agency than individual ones. The lower sense of agency undermined evaluations and intentions, but this path was significantly stronger for actions than inactions. Implications and limitations of these findings are discussed.

Keywords: action, inaction, individual, group, judgment, personal agency

All else being equal, actions are evaluated more positively than inactions (Albarracín et al., 2019). For example, when individuals rate words that vary in the level of activity, with some being more active (e.g., run and jump) than others (e.g., sleep and still), active words seem more positive than inactive ones (McCulloch et al., 2012). In fact, the tendency to associate action with “good” appears to be so ingrained in the human mind that people evaluate arbitrary actions more positively than arbitrary inactions. For example, even when one has no information about the outcome of a switch, flipping it seems more positive than not doing so (Sunderrajan & Albarracín, 2021a).

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One fundamental limitation of the literature on the desirability of action, however, is that its greater positivity has been uncovered either when no agent is mentioned (McCulloch et al., 2012) or when the agent is an individual (Sunderrajan & Albarracín, 2021a). Somewhat surprisingly, despite a notable interest in collective action in recent years, the desirability of group action has not been investigated. Collective action has been studied in relation to social identities (e.g., Van Zomeren et al., 2008), sociopolitical ideologies (e.g., Choma et al., 2020), and collective efficacy (e.g., Cohen-Chen & Van Zomeren, 2018), but basic questions about how group actions are perceived and evaluated remain unanswered. In this context, we examined fundamental, rudimentary aspects, such as whether, in the absence of evaluative information about their outcomes, group action is also evaluated more positively than group inaction. Specifically, we examined evaluations of mundane and minimally described group actions and inactions, behavioral decisions concerning those actions and inactions, and the processes that may lead to differences in group and individual behaviors.

EVALUATIONS OF ACTIONS AND INACTIONS

The Protestant work ethic (Amos et al., 2019; Grabowski et al., 2021) teaches us that hard work increases people's chances of success more than remaining idle. Accordingly, relatively unspecified individual actions are evaluated more positively than their inaction counterparts because actions are spontaneously associated with more desirable outcomes than inactions (Sunderrajan & Albarracín, 2021a). Going back to the switch example, people evaluate flipping it more positively than not doing so, even without knowing about the outcomes of either behavior (Sunderrajan & Albarracín, 2021a). Furthermore, when both flipping and not flipping the switch are described as leading to positive outcomes, the difference in the evaluations of actions and inactions decreases (Sunderrajan & Albarracín, 2021a). Therefore, flipping a switch seems positive because people assume that the action will produce positive outcomes.

Another factor contributing to more positive evaluations of actions than inactions is perceived effort because, in the moment, actions typically involve more cognitive and motor output than inactions (Albarracín et al., 2008). For example, when participants are presented with behaviors varying in activity level (e.g., running, meditating, and remaining stationary), more active behaviors seem more effortful (Sunderrajan, 2019). Because exerting more personal effort in a behavior is associated with its greater desirability (e.g., Aronson & Mills, 1959; Hsee et al., 2010; Olivola & Shafir, 2013), actions are evaluated more positively than inactions.

Another consideration is the sense of agency, wherein, by default, people perceive actions as being more intentional than inactions. For example, individuals perceive actions described as intentional just as intentional as actions with no intentionality information (Rosset, 2008; Sunderrajan & Albarracín, 2021b). Conversely, they perceive inactions described as unintentional just as unintentional as

inactions with no intentionality information. All in all, actions appear inherently agentic, whereas inactions appear inherently non-agentic. In addition, these perceived agency differences mediate differences in evaluations, such that actions are judged as more intentional and therefore more positive than inactions (Sunderrajan & Albarracín, 2021a). Nonetheless, these findings pertain only to situations where the agent of a behavior is an individual or is unspecified.

EVALUATIONS OF GROUP ACTIONS AND INACTIONS

This research aimed to compare evaluations of group actions and inactions with those of individual actions and inactions, an issue not previously addressed. On the one hand, group action might appear more positive than individual action because people might expect better outcomes when working in a group. To begin, humans rely on social learning and cooperation to adapt to and survive in novel environments (Boyd & Richardson, 2009). When pursuing goals, people rely on others for social and informational support, particularly when they are inexperienced and feel unsure about how to achieve their goals (Huang et al., 2015). People also combine forces with others when they attempt difficult goals (Slotter & Gardner, 2011). For example, they seek help during emergencies and advocate societal change on challenging issues (Lee, 2018; E. F. Thomas et al., 2009). From this standpoint, group actions could be evaluated more positively than individual actions.

On the other hand, group actions may seem less desirable than individual actions because of differences in personal effort or agency. First, group actions could be perceived as requiring less personal effort and agency than individual ones because personal involvement is typically lower in group actions than in individual actions. For example, people exert less individual effort when performing mundane tasks as group, compared to when performing the same tasks alone (Latané et al., 2008). Furthermore, working on a group task undermines feelings of personal agency because group members follow group goals more than personal preferences (Badea et al., 2021; Hogg et al., 2007). Because effort and agency promote the desirability of a behavior (Olivola & Shafir, 2013; Zhang et al., 2023), reductions of effort and agency in group (vs. individual) actions may result in group actions being judged less positively than individual actions.

Group (vs. individual) behaviors may also be perceived as requiring less effort and personal agency, regardless of whether they are actions or inactions. Indeed, personal involvement is diffused in group actions and inactions alike (e.g., collective silence; Beyer et al., 2017; Latané & Darley, 1968), and lower effort and personal agency in group behaviors may undermine positivity for both actions and inactions. Still, the negative effect of lower effort and agency on evaluations is likely to be larger for actions than for inactions because inactions are inherently seen as involving less of both, making effort and agency less relevant for evaluating inactions (Sunderrajan & Albarracín, 2021a). Together, whether group (vs. individual) actions undermine perceptions of effort and agency, or whether group

(vs. individual) behaviors undermine these perceptions, these differences will subsequently result in less favorable evaluations of group (vs. individual) actions.

OVERVIEW

Five experiments examined evaluations of actions and inactions in individual and group contexts. Experiment 1 examined people's evaluations of mundane actions (e.g., walking) or inactions (e.g., not walking) carried out individually or with others. Experiment 2 reanalyzed this effect with another set of mundane behaviors and tested the role of anticipated effort as a potential mechanism. To remove the potential confound in testing inactions through negations of action (e.g., not walking), Experiment 3 (preregistered) examined inactions denoted directly (e.g., standing instead of not walking). Experiment 4 (preregistered) examined effects on behavioral intentions as well as agency as a potential mediator of the obtained effects. Experiment 4a did not include preregistration of the mediating effects, whereas Experiment 4b did.

EXPERIMENT 1: COMPARING EVALUATIONS OF INDIVIDUAL AND GROUP ACTIONS

METHOD

Power Analysis. Experiment 1 employed a 2 (behavior: action or inaction) $\times$ 2 (agent: individual or group) between-participants experiment. We conducted a power analysis based on the univariate results of prior studies of the desirability of action that employed a similar design (Sunderrajan & Albarracín, 2021a). Specifically, a power analysis was conducted for a factorial design, with $\alpha = .05$, power = 0.80, number of groups = 4, and $d_f = 0.22$. We chose $d_f = 0.22$ because it was the smallest interaction effect across all univariate analyses observed in prior studies (Sunderrajan & Albarracín, 2021a). This analysis required a minimum sample size of $N = 230$.

Participants and Design. Two hundred and sixty-eight participants were recruited from Amazon Mechanical Turk to complete the study in return for monetary compensation (131 females, $M_{\text{age}} = 37.54$, $SD_{\text{age}} = 11.03$). Participants were randomly assigned to one of four conditions in a 2 (behavior: action or inaction) $\times$ 2 (agent: individual or group) between-participants experiment.

Procedures and Measures. Participants were asked to imagine themselves in three situations depending on their experimental condition. Participants in the individual action ($n = 69$) condition imagined themselves pressing a button, flipping a switch, and pushing a door by themselves, and those in the group action ($n = 63$) condition imagined the same behaviors but conducted with four other people. Participants in the individual inaction ($n = 66$) condition imagined themselves *not* pressing a button, *not* flipping a switch, and *not* pushing a door by themselves, and

those in the group inaction ($n = 70$) condition imagined the same behaviors but conducted with four other people.

After the imagination task, participants rated how much action was involved in the behavior on two scales ("Does this situation represent action or inaction?" "Is this passive or active?") from 1 (*complete inaction/completely passive*) to 7 (*complete action/completely active*), which served as our manipulation check. They then evaluated how positive each behavior was on two scales ("How positive or negative is this?" "How undesirable or desirable is this?") from 1 (*completely negative/completely not desirable*) to 7 (*completely positive/completely desirable*). Each set of scales had satisfactory internal consistency and was therefore averaged to create two separate indices (perceived *action*: $\alpha = .96$, $M = 4.59$, $SD = 1.81$; *evaluations*: $\alpha = .90$, $M = 4.72$, $SD = 1.26$). Upon completion of these measures, participants answered several demographic questions and were debriefed.

RESULTS

We conducted analyses of variance with behavior (action or inaction) and agent (individual or group) as between-participants factors and each of our measures as the dependent variable. Table 1 presents all descriptive statistics, F ratios for main and interaction effects, and t tests for all pairwise comparisons conducted on the measures we tested.

Manipulation Checks. We first examined whether participants perceived actions as being more active than inactions. As shown in Table 1, participants perceived situations describing actions as more active than situations describing inactions. This suggests that the manipulation was successful. We found no other effects.

Evaluations of Actions and Inactions. Next, we conducted the same analysis on participants' evaluations of individual and group actions and inactions (see Table 1). Consistent with prior research on the desirability of action (Sunderrajan & Albaracín, 2021a), participants rated all actions significantly more positively than all inactions (see main effect of behavior on evaluations in Table 1). In addition, participants rated individual behavior more positively than group behavior (see main effect of agent on evaluations in Table 1).

The primary question in this article, however, was whether evaluations of group actions differ from those of individual ones in relation to inactions. As shown by the contrasts in Table 1, group actions were evaluated less positively than individual ones ($M_{\text{diff}} = -.94$, $SE_{\text{diff}} = .21$), and group inactions were evaluated similarly positively as individual inactions ($M_{\text{diff}} = -.11$, $SE_{\text{diff}} = .21$). Also as shown, the difference in the evaluations of actions and inactions was smaller for group behaviors ($M_{\text{diff}} = -.04$, $SE_{\text{diff}} = .21$) than for individual ones ($M_{\text{diff}} = .79$, $SE_{\text{diff}} = .21$). These differences were supported by a significant interaction between type of behavior and agent.

Experiment 1 results were consistent with the idea that group actions are evaluated less positively than individual ones, which in turn results in a lesser desirability of action for group than individual behavior. This is an important starting

TABLE 1. The Effects of Behavior (Action, Inaction) and Agent (Individual, Group) on Perceived Action and Evaluations in Experiment 1

		Behavior		Contrast (action-inaction)	Overall
		Action	Inaction		
<i>Action as manipulation check</i>					
Agent	Individual	5.70 (1.11)	3.65 (1.82)	$t(264) = 7.63,$ $p < .0001$	4.70 (1.82)
	Group	5.34 (1.24)	3.72 (1.90)	$t(264) = 5.99,$ $p < .0001$	4.49 (1.81)
	Contrast (individual-group)	$t(264) = -1.31,$ $p = .19$	$t(264) = 0.26,$ $p = .79$		
	Overall	5.53 (1.18)	3.68 (1.86)		
Main effect of behavior		$F(1, 264) = 92.82, p < .0001$			
Main effect of agent		$F(1, 264) = 1.20, p = .28$			
2-way interaction		$F(1, 264) = 1.25, p = .27$			
<i>Evaluations</i>					
Agent	Individual	5.37 (1.10)	4.58 (1.06)	$t(264) = 3.80,$ $p = .0002$	4.98 (1.15)
	Group	4.42 (1.38)	4.47 (1.27)	$t(264) = -0.21,$ $p = .84$	4.45 (1.32)
	Contrast (individual-group)	$t(264) = 4.49,$ $p < .0001$	$t(264) = 0.54,$ $p = .59$		
	Overall	4.92 (1.32)	4.52 (1.17)		
Main effect of behavior		$F(1, 264) = 6.52, p = .01$			
Main effect of agent		$F(1, 264) = 13.22, p = .0003$			
2-way interaction		$F(1, 264) = 7.97, p = .005$			

point because it suggests quite basic differences in how these judgments operate, even for relatively mundane actions and inactions. However, it was important to replicate this finding in other contexts and explore possible mediators of the effect. Therefore, Experiment 2 included a measure of effort to determine if the difference in perceived individual effort was responsible for group actions being less positive than individual ones.

EXPERIMENT 2: COMPARING EVALUATIONS OF INDIVIDUAL AND GROUP ACTIONS IN OTHER CONTEXTS

METHOD

Power Analysis. Experiment 2 employed a 2 (behavior: action or inaction) × 2 (agent: individual or group) between-participants design. We conducted a power analysis based on the univariate results of prior studies of the desirability of action that employed a similar design (Sunderrajan & Albarracín, 2021a). Specifically, a

power analysis was conducted for a factorial design, with $\alpha = .05$, power = 0.80, number of groups = 4, and $d_f = 0.22$. This analysis required a minimum sample size of $N = 230$.

Participants and Design. Three hundred and four participants were recruited at a private university in the Eastern United States to complete the study in return for monetary compensation (213 females, $M_{\text{age}} = 27.11$, $SD_{\text{age}} = 11.43$). Participants were randomly assigned to one of four conditions in a 2 (behavior: action or inaction) $\times$ 2 (agent: individual or group) between-participants experiment.

Procedures and Measures. The procedures were identical to those in Experiment 1 except that the actual behaviors we introduced were different. Specifically, participants in the individual action ($n = 76$) condition imagined themselves walking on a street, raising hands, and entering a building alone, whereas those in the group action ($n = 76$) condition imagined the same behaviors carried out simultaneously with four other people. Participants in the individual inaction condition imagined themselves *not* walking on a street, *not* raising hands, and *not* entering a building by themselves, and those in the group inaction condition imagined the same behaviors while in the company of four other people.

For each behavior, we asked participants to rate how much action was involved using the manipulation checks from Experiment 1. Participants then evaluated how positive each behavior was using the same scales used in Experiment 1. Lastly, they rated the amount of effort involved in the situation on two scales ("How easy or difficult is this?" "How effortful is this?") from 1 (*completely easy/completely effortless*) to 7 (*completely difficult/completely effortful*). The scales measuring how active each situation was had satisfactory internal consistency, so they were averaged to create an index of perceived *action* ($\alpha = .93$, $M = 4.64$, $SD = 1.48$). The scales measuring evaluations also had satisfactory internal consistency and were averaged to create an index of *evaluations* ($\alpha = .91$, $M = 4.41$, $SD = .89$). Finally, the scales measuring the amount of effort had satisfactory internal consistency and were also averaged to create an index of *effort* ($\alpha = .90$, $M = 2.93$, $SD = 1.13$). Upon completion of these measures, participants answered demographic questions and were debriefed.

RESULTS

As in Experiment 1, we analyzed our data with analyses of variance. Table 2 presents all descriptive statistics, F ratios for main and interaction effects, and t tests for all pairwise comparisons conducted on the measures tested in Experiment 2.

Manipulation Checks. We first examined whether participants perceived actions as being more active than inactions. As shown in Table 2, participants perceived situations describing actions as more active than those describing inactions, suggesting that our manipulation was successful. We found no other effects.

Evaluations of Actions and Inactions. We next analyzed evaluations of actions and inactions as we did in Experiment 1. Replicating the effects of Experiment 1,

TABLE 2. The Effects of Behavior (Action, Inaction) and Agent (Individual, Group) on Perceived Action, Evaluations, and Anticipated Effort in Experiment 2

		Behavior		Contrast	
		Action	Inaction	(action-inaction)	Overall
<i>Action as manipulation check</i>					
Agent	Individual	5.86 (0.97)	3.64 (1.21)	$t(300) = 12.51,$ $p < .0001$	4.75 (1.56)
	Group	5.40 (1.04)	3.66 (1.13)	$t(300) = 9.85,$ $p < .0001$	4.53 (1.39)
	Contrast (individual-group)	$t(300) = 2.55,$ $p = .01$	$t(300) = -0.11,$ $p = .91$		
	Overall	5.63 (1.03)	3.65 (1.17)		
Main effect of behavior		$F(1, 300) = 250.09, p < .0001$			
Main effect of agent		$F(1, 300) = 2.98, p = .09$			
2-way interaction		$F(1, 300) = 3.55, p = .06$			
<i>Evaluations</i>					
Agent	Individual	5.10 (0.93)	4.11 (0.66)	$t(300) = 7.95,$ $p < .0001$	4.61 (0.94)
	Group	4.52 (0.83)	3.90 (0.63)	$t(300) = 4.95,$ $p < .0001$	4.21 (0.80)
	Contrast (individual-group)	$t(300) = 4.65,$ $p < .0001$	$t(300) = 1.65,$ $p = .10$		
	Overall	4.81 (.92)	4.01 (.65)		
Main effect of behavior		$F(1, 300) = 83.24, p < .0001$			
Main effect of agent		$F(1, 300) = 19.86, p < .0001$			
2-way interaction		$F(1, 300) = 4.51, p = .03$			
<i>Effort</i>					
Agent	Individual	2.83 (1.20)	2.72 (1.00)	$t(300) = 0.61,$ $p = .54$	2.78 (1.10)
	Group	3.31 (1.06)	2.86 (1.18)	$t(300) = 2.48,$ $p = .01$	3.08 (1.14)
	Contrast (individual-group)	$t(300) = -2.63,$ $p = .009$	$t(300) = -0.76,$ $p = .45$		
	Overall	3.07 (1.15)	2.79 (1.09)		
Main effect of behavior		$F(1, 300) = 4.75,$			
Main effect of agent		$F(1, 300) = 5.77, p = .02$			
2-way interaction		$F(1, 300) = 1.75, p = .19$			

participants evaluated actions more positively than inactions and individual behavior more positively than group behavior (see Table 2). Importantly, however, these main effects were qualified by an interaction between behavior and agent. Reproducing the findings of Experiment 1 (see Table 2), group actions were evaluated less positively than individual actions ($M_{\text{diff}} = -.58, SE_{\text{diff}} = .13$), but group

inactions were evaluated similarly positively as individual inactions ($M_{\text{diff}} = -.21$, $SE_{\text{diff}} = .13$). This then led to the difference between the evaluations of actions and inactions to be smaller for group ($M_{\text{diff}} = .62$, $SE_{\text{diff}} = .13$) than individual behavior ($M_{\text{diff}} = .99$, $SE_{\text{diff}} = .13$).

Effort as a Potential Mechanism. We next analyzed anticipated effort, which was measured in Experiment 2 as a possible explanation for the less positive evaluations of group (vs. individual) actions. As shown in Table 2, the behavior and agent manipulations had significant main effects on anticipated effort. Specifically, participants rated actions as more effortful than inactions and group behavior as more effortful than individual behavior. The interaction between behavior and agent was not significant. The results overall are contrary to our prediction that diffusion of effort may lead to group action being less positive than individual action. Rather, group actions were judged as more effortful than individual ones.

Nonetheless, we still explored the possibility of effort mediating our effects through differentially impacting evaluations of actions and inactions. Specifically, it is possible that increased effort rather than decreased effort anticipated in group behavior undermines evaluations of actions but not inactions, as some prior work has suggested that efforts associated with coordinating group actions can often prevent people from enacting group actions (Heckathorn, 1996; Oliver, 1993). Given the main effect of agent on perceived effort, we explored this possibility by obtaining a conditional indirect effect whereby anticipated effort mediates the effect of agent (individual or group) on evaluations, but this indirect effect is significantly larger for actions than inactions. Contrary to this possibility, however, a bias-corrected moderated mediation analysis with 1,000 bootstrap samples was not significant (Index = 0.002, $SE = .04$, 95% CI $[-0.08, 0.08]$). Specifically, although participants perceived group actions as more effortful than individual ones, this difference did not affect their evaluations ($b = 0.04$, $SE = .04$, 95% CI $[-0.01, 0.14]$). If anything, the indirect effect was stronger for inactions ($b = 0.04$, $SE = .02$, 95% CI $[0.006, 0.10]$). The additional results increase our confidence that effort did not play a role in mediating our findings.

Experiment 2 replicated Experiment 1 findings in other mundane contexts, showing that group actions are less positive than individual ones and that the desirability of action over inaction is overall less pronounced in group contexts. Experiment 2 further ruled out perceived effort as being responsible for this effect.

Despite the important findings from this experiment, one limitation of both Experiments 1 and 2 is that the actions and inactions differed not only in activity but also in the use of negation. In particular, inaction descriptions (e.g., *not* pressing a button and *not* walking on a street) always involved negated actions, whereas actions were always affirmative (e.g., pressing a button, walking on a street). Because negation is more difficult to process (De-Dios-Flores, 2019; Tian & Breheny, 2016), it was important to verify our effects after eliminating this confound. Experiment 3 was thus similar to Experiment 2 except for the use of inaction descriptions that did not use negations.

EXPERIMENT 3: ELIMINATING NEGATION AS A POSSIBLE CONFOUND

METHOD

Power Analysis. Experiment 3 employed a 3 (behavior: action, inaction with negation, inaction without negation) $\times$ 2 (agent: individual or group) between-participants design. We conducted a power analysis based on the univariate results of Experiment 1. Specifically, a power analysis was conducted for a factorial design to detect a small effect ($d_f = 0.18$), with $\alpha = 0.05$, power = 0.90, and number of groups = 6. We chose $d_f = 0.18$ because the value reflected the interaction effect observed on our main dependent variable in Experiment 1. This analysis required a minimum sample size of $N = 514$. We oversampled considering the possibility of exclusions due to missing data and attention check failures but did not exclude any participants.

Participants and Design. Six hundred and four participants were recruited from Prolific (329 females, $M_{\text{age}} = 37.47$, $SD_{\text{age}} = 13.37$) in return for monetary compensation. Participants were randomly assigned to six conditions in a 3 (behavior: action, inaction with negation, inaction without negation) $\times$ 2 (agent: individual or group) between-participants experiment. Experiment 3 was preregistered on aspredicted.org (https://aspredicted.org/FVQ_ZMY).

Procedures and Measures. Participants imagined themselves in three situations depending on their experimental condition. Participants in the individual action ($n = 102$) condition imagined themselves walking on a street, working on a task, and exercising alone, whereas participants in the group action ($n = 101$) condition imagined the same behaviors carried out simultaneously with four other people. Participants in the individual inaction with negation ($n = 101$) condition imagined themselves *not* walking on a street, *not* working on a task, and *not* exercising alone, and participants in the group inaction with negation ($n = 98$) condition imagined the same behaviors while in the company of four other people. Lastly, participants in the individual inaction without negation ($n = 101$) condition imagined themselves standing on a street, sitting in a room, and idling alone, and participants in the group inaction without negation ($n = 101$) condition imagined the same behaviors in the company of four other people.

For each behavior, we asked participants to rate how much action was involved using the manipulation checks from Experiment 2. Participants then evaluated how positive each behavior was using the same scales as in Experiment 2. The scales measuring how active each situation was had satisfactory internal consistency, so they were averaged to create an index of perceived *action* ($\alpha = .94$, $M = 3.88$, $SD = 1.85$). The scales measuring evaluations also had satisfactory internal consistency and were averaged to create an index of *evaluations* ($\alpha = .83$, $M = 4.22$, $SD = 1.11$). Upon completion of these measures, participants answered demographic questions and were debriefed.

RESULTS

We analyzed our data with analyses of variance. Table 3 presents all descriptive statistics, F ratios for main and interaction effects, and t tests for all pairwise comparisons conducted on the measures tested in Experiment 3.

Manipulation Checks. We again examined whether participants perceived actions as being more active than inactions. As shown in Table 3, participants perceived actions as more active than inactions (with or without negation), suggesting that the manipulation was successful. This time, however, participants also perceived group behavior as more active than individual behavior, and the main effects were qualified by a significant interaction between behavior and agent. As shown in Table 3, the differences in perceived action between actions and inactions (with or without negation) were less pronounced in the group behavior condition than in the individual one.

Evaluations of Actions and Inactions. Experiment 3 included a replication of the prior experiments but allowed us to also compare effects when inactions were manipulated with and without negation. As in the prior experiments, when considering the whole design, there was a main effect of behavior by which actions were evaluated more positively than inactions with and without negation. There was also a significant interaction between behavior and agent.

When the four cells included in Experiments 1 and 2 were considered, the previous interaction between behavior and agent was again present. This interaction justifies inspecting the pairwise contrasts within those four cells. As before, participants evaluated group actions less positively than individual ones ($M_{\text{diff}} = -.59$, $SE_{\text{diff}} = .14$). This time, however, participants also evaluated group inactions with negations more positively than individual inactions with negations ($M_{\text{diff}} = .95$, $SE_{\text{diff}} = .14$). Therefore, the difference between the evaluations of action and inaction with negation was smaller for group ($M_{\text{diff}} = .17$, $SE_{\text{diff}} = .14$) than individual behaviors ($M_{\text{diff}} = 1.71$, $SE_{\text{diff}} = .14$; see Table 3). In fact, participants perceived actions to be significantly more desirable than inactions in individual but not in group contexts.

We next considered the additional condition in which inaction was manipulated without negation. Contrasting with the findings for inactions with negation, participants evaluated group inactions without negation similarly to individual inactions without negation ($M_{\text{diff}} = -.01$, $SE_{\text{diff}} = .14$). Again, considering inactions without negation, the difference between the evaluations of group actions and inactions ($M_{\text{diff}} = .53$, $SE_{\text{diff}} = .14$) was smaller than the same difference for individual actions and inactions ($M_{\text{diff}} = 1.10$, $SE_{\text{diff}} = .14$).

Experiment 3 again found that group actions are less positive than individual ones and that the desirability of action over inaction is overall less pronounced in group contexts, even after eliminating the confound of the prior inaction manipulation with negation.

Still, several unaddressed limitations remain. Specifically, prior experiments did not examine possible impacts on behavior, nor did they clarify the underlying

TABLE 3. The Effects of Behavior (Action, Inaction With Negation, Inaction Without Negation) and Agent (Individual, Group) on Perceived Action and Evaluations in Experiment 3

	Behavior			Contrasts	Overall
	(a) Action	(b) Inaction with negation	(c) Inaction without negation		
Action as manipulation check					
Agent					
Individual	6.11 (.67)	2.21 (1.05)	2.87 (1.06)	(a) vs. (b): $t(598) = 25.44, p < .0001$ (a) vs. (c): $t(598) = 21.10, p < .0001$	3.74 (1.95)
Group	5.75 (0.84)	3.08 (1.56)	3.23 (1.19)	(b) vs. (c): $t(598) = -4.33, p = .0001$ (a) vs. (b): $t(598) = 17.21, p < .0001$ (a) vs. (c): $t(598) = 16.41, p < .0001$ (b) vs. (c): $t(598) = -0.93, p = .62$	4.03 (1.74)
Contrast (individual -group)	$t(598) = 2.34, p = .02$	$t(598) = -5.67, p < .0001$	$t(598) = -2.32, p = .02$		
Overall	5.93 (0.78)	2.64 (1.39)	3.05 (1.14)		
Main effect of behavior	$F(1, 598) = 544.02, p < .0001$				
Main effect of agent	$F(1, 598) = 10.89, p = .001$				
2-way interaction	$F(1, 598) = 16.23, p < .0001$				
Evaluations					
Agent					
Individual	5.10 (0.85)	3.38 (0.98)	3.99 (0.73)	(a) vs. (b): $t(598) = 12.45, p < .0001$ (a) vs. (c): $t(598) = 8.01, p < .0001$ (b) vs. (c): $t(598) = -4.43, p < .0001$ (a) vs. (b): $t(598) = 1.25, p = .43$ (a) vs. (c): $t(598) = 3.82, p = .0004$ (b) vs. (c): $t(598) = 2.54, p = .03$	4.16 (1.11)
Group	4.51 (1.18)	4.33 (1.07)	3.98 (1.01)		4.27 (1.11)
Contrast (individual-group)	$t(598) = 4.29, p < .0001$	$t(598) = -6.84, p < .0001$	$t(598) = 0.10, p = .92$		
Overall	4.80 (1.07)	3.85 (1.13)	3.99 (0.88)		
Main effect of behavior	$F(1, 598) = 55.65, p < .0001$				
Main effect of agent	$F(1, 598) = 1.98, p = .16$				
2-way interaction	$F(1, 598) = 31.60, p < .0001$				

mechanism of the group–individual differences. We therefore conducted two preregistered experiments to address these weaknesses. Experiment 4a not only measured participants' evaluations of actions and inactions but also their willingness to engage in them either individually or as a group. We hypothesized that if people perceive group action as less desirable than individual action, they may also be less inclined to engage in group than individual action. Experiment 4a further explored whether personal agency is implicated in our findings, such that a reduced sense of agency in group behaviors may lead to less favorable evaluations and intentions. Experiment 4b was a direct replication of Experiment 4a.

EXPERIMENT 4A AND EXPERIMENT 4B: FURTHER EXAMINING PSYCHOLOGICAL PROCESSES AND IMPACT ON BEHAVIORAL DECISIONS

METHOD

Power Analysis. Experiments 4a and 4b employed a 2 (behavior: action or inaction) $\times$ 2 (agent: individual or group) between-participants design. We conducted a power analysis for a factorial design to detect a small effect ($d_f = 0.18$), with $\alpha = 0.01$, power = 0.90, and number of groups = 4. This analysis required a minimum sample size of $N = 600$. We oversampled considering the possibility of exclusions due to missing data and attention check failures but did not exclude any participants.

Participants and Design. For Experiment 4a, we recruited 755 participants (391 females, $M_{\text{age}} = 40.61$, $SD_{\text{age}} = 13.05$), and for Experiment 4b, we recruited 753 participants (384 females, $M_{\text{age}} = 43.26$, $SD_{\text{age}} = 12.67$). Participants in both experiments were recruited from Prolific in return for monetary compensation. They were randomly assigned to four conditions in a 2 (behavior: action or inaction) $\times$ 2 (agent: individual or group) between-participants experiment. Both experiments were preregistered on aspredicted.org (Experiment 4a: https://aspredicted.org/1SZ_JL4; Experiment 4b: <https://aspredicted.org/qynm-h9kv.pdf>). The preregistrations were almost identical, with a few exceptions. The Experiment 4a preregistration indicated personal agency as an exploratory variable and did not specify the type of analyses we would perform on the variable, whereas the Experiment 4b preregistration indicated personal agency as a mediator and specified the planned mediation analyses.

Procedures and Measures. Experiments 4a and 4b had identical procedures. Participants were asked to imagine themselves in three situations depending on their experimental condition. Participants in the individual action ($n = 189$ in Experiment 4a and $n = 188$ in Experiment 4b) condition imagined themselves walking on a street, working on something, and exercising alone, whereas participants in the group action ($n = 188$ in Experiment 4a and $n = 190$ in Experiment 4b) condition imagined the same behaviors carried out simultaneously with four other people.

Participants in the individual inaction ($n = 189$ in Experiment 4a and $n = 186$ in Experiment 4b) condition imagined themselves standing on a street, sitting in a room, and idling alone, and participants in the group inaction ($n = 189$ in Experiment 4a and $n = 189$ in Experiment 4b) condition imagined the same behaviors in the company of four other people.

For each behavior, participants rated perceived action and evaluations using the same scales as in the previous experiments. Participants also rated their behavioral intentions using two items ("How much are you willing to engage in this behavior?" "How likely would you be to engage in this behavior?"; 1 = *none at all* to 7 = *a great deal*). Then participants were shown the list of three behaviors that were presented to them and answered questions about their sense of agency, using measures adopted from Tapal et al. (2017). Specifically, participants rated how intentional, predictable, and voluntary the behaviors were, how responsible they would feel for their outcomes, and how much control they would feel engaging in them (1 = *none at all* to 7 = *a great deal*). The scales that measured how active each situation was and the scales measuring evaluations had satisfactory internal consistency and were respectively averaged to form an index of perceived *action* ($\alpha = .94$, $M = 4.61$, $SD = 1.86$ in Experiment 4a and $\alpha = .95$, $M = 4.52$, $SD = 1.97$ in Experiment 4b) and *evaluations* ($\alpha = .83$, $M = 4.53$, $SD = 1.14$ in Experiment 4a and $\alpha = .84$, $M = 4.53$, $SD = 1.13$ in Experiment 4b). The scales measuring behavior intentions and the scales measuring a sense of agency also had satisfactory internal consistency and were respectively averaged to create an index of *intentions* ($\alpha = .85$, $M = 4.98$, $SD = 1.29$ in Experiment 4a and $\alpha = .84$, $M = 5.07$, $SD = 1.25$ in Experiment 4b) and *agency* ($\alpha = .85$, $M = 5.23$, $SD = 1.09$ in Experiment 4a and $\alpha = .84$, $M = 5.46$, $SD = 1.03$ in Experiment 4b). Upon completion of these measures, participants answered demographic questions and were debriefed.

RESULTS AND DISCUSSION

We analyzed our data with analyses of variance. Tables 4 and 5 present all descriptive statistics, F ratios for main and interaction effects, and t tests for all pairwise comparisons conducted on the measures tested in Experiments 4a and 4b.

Manipulation Checks. We examined whether participants perceived actions as more active than inactions, which was the case as shown in Tables 4 and 5. This main effect, however, was qualified by an interaction, showing that participants discriminated between actions and inactions less for group than for individual behavior.

Evaluations of Actions and Inactions. We performed the same analyses conducted in Experiments 1 and 2. As shown in Tables 4 and 5, we found that participants evaluated actions more positively than inactions. They also rated all individual behavior more positively than all group behavior. We also found the predicted interaction between behavior and agent. As shown by the contrasts in Tables 4 and 5 and replicating our prior findings, group actions were evaluated less positively

TABLE 4. The Effects of Behavior (Action, Inaction) and Agent (Individual, Group) on Perceived Action, Evaluations, Behavioral Intentions, and Personal Agency in Experiment 4a

		Behavior		Contrast (action-inaction)	Overall
		Action	Inaction		
Action as manipulation check					
Agent	Individual	6.42 (0.65)	2.91 (1.16)	$t(751) = 32.80, p < .0001$	4.66 (1.99)
	Group	5.87 (0.92)	3.26 (1.31)	$t(751) = 24.37, p < .0001$	4.56 (1.73)
	Contrast (individual-group)	$t(751) = 5.10, p < .0001$	$t(751) = -3.29, p = .001$		
	Overall	6.14 (0.84)	3.08 (1.25)		
Main effect of behavior		$F(1, 751) = 1634.43, p < .0001$			
Main effect of agent		$F(1, 751) = 1.77, p = .18$			
2-way interaction		$F(1, 751) = 35.20, p < .0001$			
Evaluations					
Agent	Individual	5.47 (0.91)	4.00 (0.83)	$t(751) = 14.42, p < .0001$	4.74 (1.14)
	Group	4.60 (1.70)	4.07 (1.00)	$t(751) = 5.19, p < .0001$	4.33 (1.12)
	Contrast (individual-group)	$t(751) = 8.57, p < .0001$	$t(751) = -0.64, p = .52$		
	Overall	5.03 (1.13)	4.04 (0.92)		
Main effect of behavior		$F(1, 751) = 192.44, p < .0001$			
Main effect of agent		$F(1, 751) = 31.56, p < .0001$			
2-way interaction		$F(1, 751) = 42.48, p < .0001$			
Behavioral Intention					
Agent	Individual	5.77 (1.01)	4.75 (1.17)	$t(751) = 8.31, p < .0001$	5.26 (1.20)
	Group	4.96 (1.31)	4.44 (1.25)	$t(751) = 4.30, p < .0001$	4.70 (1.31)
	Contrast (individual-group)	$t(751) = 6.54, p < .0001$	$t(751) = 2.54, p = .01$		
	Overall	5.37 (1.23)	4.60 (1.22)		
Main effect of behavior		$F(1, 751) = 79.45, p < .0001$			
Main effect of agent		$F(1, 751) = 41.41, p < .0001$			
2-way interaction		$F(1, 751) = 8.02, p = .005$			
Personal Agency					
Agent	Individual	6.11 (0.72)	5.36 (1.00)	$t(751) = 7.65, p < .0001$	5.74 (0.95)
	Group	5.21 (0.89)	4.61 (1.16)	$t(751) = 6.08, p < .0001$	4.91 (1.07)
	Contrast (individual-group)	$t(751) = 9.19, p < .0001$	$t(751) = 7.64, p < .0001$		
	Overall	5.66 (0.92)	4.99 (1.14)		
Main effect of behavior		$F(1, 751) = 94.27, p < .0001$			
Main effect of agent		$F(1, 751) = 141.88, p < .0001$			
2-way interaction		$F(1, 751) = 1.22, p = .27$			

TABLE 5. The Effects of Behavior (Action, Inaction) and Agent (Individual, Group) on Perceived Action, Evaluations, Behavioral Intentions, and Personal Agency in Experiment 4b

		Behavior		Contrast (action-inaction)	Overall
		Action	Inaction		
Action as manipulation check					
Agent	Individual	6.38 (0.64)	2.60 (0.98)	$t(749) = 39.56,$ $p < .0001$	4.50 (2.06)
	Group	6.12 (0.80)	2.97 (1.19)	$t(749) = 33.17,$ $p < .0001$	4.55 (1.87)
	Contrast (individual-group)	$t(749) = 2.69,$ $p = .01$	$t(749) = -3.94,$ $p = .0001$		
	Overall	6.25 (0.74)	2.79 (1.10)		
Main effect of behavior		$F(1, 749) = 2643.67, p < .0001$			
Main effect of agent		$F(1, 749) = .65, p = .42$			
2-way interaction		$F(1, 749) = 21.99, p < .0001$			
Evaluations					
Agent	Individual	5.45 (0.91)	3.94 (0.68)	$t(749) = 15.44,$ $p < .0001$	4.70 (1.11)
	Group	4.69 (1.16)	4.03 (0.98)	$t(749) = 6.77,$ $p < .0001$	4.36 (1.12)
	Contrast (individual-group)	$t(749) = 7.84,$ $p < .0001$	$t(749) = -0.93,$ $p = .35$		
	Overall	5.07 (1.11)	3.98 (0.85)		
Main effect of behavior		$F(1, 749) = 245.96, p < .0001$			
Main effect of agent		$F(1, 749) = 24.21, p < .0001$			
2-way interaction		$F(1, 749) = 38.30, p < .0001$			
Behavioral Intention					
Agent	Individual	5.78 (0.91)	5.02 (1.15)	$t(749) = 6.37,$ $p < .0001$	5.40 (1.10)
	Group	4.96 (1.25)	4.54 (1.31)	$t(749) = 3.51,$ $p = .001$	4.75 (1.30)
	Contrast (individual-group)	$t(749) = 6.88,$ $p < .0001$	$t(749) = 3.96,$ $p = .0001$		
	Overall	5.37 (1.17)	4.78 (1.26)		
Main effect of behavior		$F(1, 749) = 48.62, p < .0001$			
Main effect of agent		$F(1, 749) = 58.97, p < .0001$			
2-way interaction		$F(1, 749) = 4.18, p = .04$			
Personal Agency					
Agent	Individual	6.16 (0.69)	5.44 (0.96)	$t(749) = 7.59,$ $p < .0001$	5.80 (0.91)
	Group	5.38 (0.90)	4.84 (1.09)	$t(749) = 5.71,$ $p < .0001$	5.12 (1.03)
	Contrast (individual-group)	$t(749) = 8.24,$ $p < .0001$	$t(749) = 6.29,$ $p < .0001$		
	Overall	5.77 (0.89)	5.14 (1.07)		
Main effect of behavior		$F(1, 749) = 105.88, p < .0001$			
Main effect of agent		$F(1, 749) = 88.37, p < .0001$			
2-way interaction		$F(1, 749) = 1.85, p = .17$			

than individual actions ($M_{\text{diff}} = -.87$, $SE_{\text{diff}} = .10$ in Experiment 4a and $M_{\text{diff}} = -.77$, $SE_{\text{diff}} = .10$ in Experiment 4b). Also as shown, the difference in the evaluations of actions and inactions was smaller for group behaviors ($M_{\text{diff}} = .53$, $SE_{\text{diff}} = .10$ in Experiment 4a and $M_{\text{diff}} = .66$, $SE_{\text{diff}} = .10$ in Experiment 4b) than for individual ones ($M_{\text{diff}} = 1.46$, $SE_{\text{diff}} = .10$ in Experiment 4a and $M_{\text{diff}} = 1.52$, $SE_{\text{diff}} = .10$ in Experiment 4b). As in Experiments 1 and 2 and the inaction without negation condition in Experiment 3, participants' evaluations of inactions did not differ across individual and group contexts ($M_{\text{diff}} = .07$, $SE_{\text{diff}} = .10$ in Experiment 4a and $M_{\text{diff}} = .09$, $SE_{\text{diff}} = .10$ in Experiment 4b). Therefore, we concluded that Experiment 3's difference between group inaction with negation and individual inaction with negation was not reliable.

Behavioral Intentions. Experiment 4 also examined whether evaluations of the behaviors translated into intentions to execute them both individually and as a group. Tables 4 and 5 present the results. Overall, we found that participants were more willing to engage in actions than inactions. We also found that participants were more willing to engage in a behavior solo than as part of a group. However, these two main effects were qualified by a significant interaction between behavior and agent. As shown by the contrasts in Tables 4 and 5, participants were less willing to engage in group actions than individual actions ($M_{\text{diff}} = -.80$, $SE_{\text{diff}} = .12$ in Experiment 4a and $M_{\text{diff}} = -.83$, $SE_{\text{diff}} = .12$ in Experiment 4b). Participants were also less willing to engage in group inactions than individual inactions, although this difference was smaller than those of actions ($M_{\text{diff}} = -.31$, $SE_{\text{diff}} = .12$ in Experiment 4a and $M_{\text{diff}} = -.48$, $SE_{\text{diff}} = .12$ in Experiment 4b). Lastly, as shown, participants' intentions to engage in actions over inactions were less pronounced for group ($M_{\text{diff}} = .53$, $SE_{\text{diff}} = .12$ in Experiment 4a and $M_{\text{diff}} = .42$, $SE_{\text{diff}} = .12$ in Experiment 4b) than individual behavior ($M_{\text{diff}} = 1.02$, $SE_{\text{diff}} = .12$ in Experiment 4a and $M_{\text{diff}} = .77$, $SE_{\text{diff}} = .12$ in Experiment 4b).

Agency as a Potential Mechanism. Experiments 4a and 4b further examined personal agency as a possible mediator of the effects of behavior and agent on evaluations. As shown in Tables 4 and 5, participants perceived more agency for actions than inactions as well as more agency for individual than group behavior. No significant interactions emerged.

The absence of interaction between behavior and agent suggests that personal agency is lower for group (vs. individual) behaviors, regardless of whether they are actions or inactions. In turn, the lower personal agency of group behaviors may produce lower evaluations and intentions more for actions than for inactions (Sunderrajan & Albarracín, 2021a). We tested this possibility by examining if the main effect of group behavior on agency interacted with the type of behavior (action or inaction) to influence evaluations and ultimately intentions.

A bias-corrected moderated mediation analysis with 1,000 bootstrap samples showed a significant index of moderated mediation, which reflects a significant difference in the mediating role of agency between agent (individual or group) and evaluations across actions and inactions (Index = 0.39, $SE = .07$, 95% CI [0.27,

0.54] in Experiment 4a and Index = 0.31, $SE = .06$, 95% CI [0.21, 0.44] in Experiment 4b). Specifically, participants perceived group behavior as less agentic than individual ones, which led to evaluating group actions less positively than individual ones ($b = .63$, $SE = .08$, 95% CI [0.48, 0.79] in Experiment 4a and $b = .48$, $SE = .06$, 95% CI [0.38, 0.62] in Experiment 4b). This path was also present but weaker for evaluations of inactions ($b = 0.24$, $SE = .05$, 95% CI [0.16, 0.35] in Experiment 4a and $b = 0.17$, $SE = .04$, 95% CI [0.11, 0.25] in Experiment 4b).¹

We also examined conditional indirect effects for intentions, which again showed a significant moderated mediation (Index = 0.26, $SE = .08$, 95% CI [0.13, 0.42] in Experiment 4a and Index = 0.18, $SE = .06$, 95% CI [0.07, 0.31] in Experiment 4b). Specifically, participants perceived group behaviors as less agentic than individual ones and were therefore less willing to engage in group than individual actions ($b = 0.55$, $SE = .08$, 95% CI [0.41, 0.72] in Experiment 4a and $b = 0.39$, $SE = .06$, 95% CI [0.29, 0.51] in Experiment 4b). The same path was also present for inactions, but its strength was weaker ($b = 0.29$, $SE = .05$, 95% CI [0.20, 0.41] in Experiment 4a and $b = 0.21$, $SE = .05$, 95% CI [0.11, 0.31] in Experiment 4b). Together, the mediation results suggest that the differences in personal agency in group and individual behaviors lead to corresponding differences in evaluations of and intentions to engage in group and individual actions, an effect that was much weaker for inactions.

Lastly, we included all of the aforementioned elements in a single model and conducted a moderated serial mediation analysis. The analysis was intended to test whether differences in personal agency in group and individual behaviors produce differences in evaluations and ultimately in intentions. Furthermore, the analysis examines whether such a serial effect is stronger for actions than for inactions. Figure 1 presents this model, and Table 6 presents its results. As shown in Table 6, relative to individual behaviors, group behaviors were perceived as less agentic. The lower agency undermined evaluations and ultimately elicited less willingness to engage in group (vs. individual) actions. The same serial path was evident for participants' intentions to engage in group and individual inactions, but its strength was significantly weaker, as indicated by the difference between the two paths ($b = 0.25$, $SE = .09$, 95% CI [0.08, 0.41] in Experiment 4a and $b = 0.23$, $SE = .07$, 95% CI [0.11, 0.38] in Experiment 4b). These results overall indicate that group (vs. individual) behaviors were regarded as involving less personal agency, and this perception made evaluations more negative and behavioral intentions weaker, particularly for actions.

1. One might argue that perceived agency could reflect post hoc explanations of differences in evaluations or intentions to execute group and individual actions. To explore this possibility, we conducted further analyses of conditional indirect effects with perceived agency as the outcome variable, and participants' evaluations and intentions entered separately as a mediator of the effects of agent and behavior. In either case, the index of moderated mediation was not significant (Experiment 4a: Index = -0.03 , $SE = .03$, 95% CI [-0.09 , 0.03] for evaluations, and Index = 0.01, $SE = .03$, 95% CI [-0.06 , 0.07] for intentions; Experiment 4b: Index = -0.02 , $SE = .03$, 95% CI [-0.07 , 0.03] for evaluations, and Index = 0.06, $SE = .04$, 95% CI [-0.01 , 0.13] for intentions). These analyses thus supported that agency was a mediator rather than an outcome of our effects.

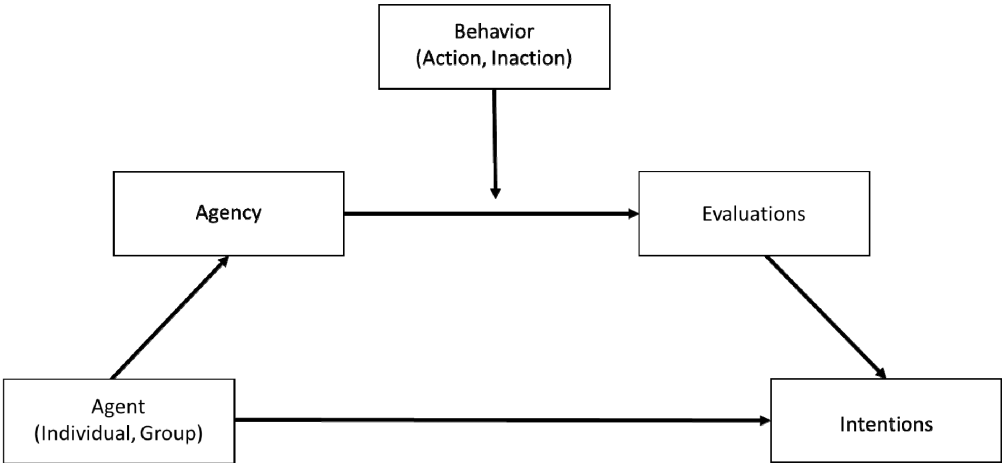


FIGURE 1. Conceptual model of moderated serial mediation analysis in Experiments 4a and 4b.

GENERAL DISCUSSION

We examined evaluations of group action in comparison to individual action, and evaluations of actions and inactions across individual and group contexts. Across five experiments, when participants considered mundane actions and inactions being carried out alone or with others, they evaluated group actions less positively than individual ones, which was caused by differences in the sense of personal agency (Experiments 4a and 4b). Specifically, participants anticipated less agency for group than solo behaviors, which led to corresponding differences in evaluations of actions. This mediating path, however, was weaker when people considered individual and group inactions because inactions are typically seen as less agentic, and thus people differentiate them less. Experiments 4a and 4b also showed that the differences in the evaluation of group and individual actions had corresponding effects for behavioral intentions, such that, for example, participants were less willing to walk, work on a task, and exercise with a group than alone. All in all, basic evaluative judgments that disadvantage group action seem to have corresponding effects on the intentions to take group action.

ALTERNATIVE EXPLANATIONS

Although we found support for personal agency underlying our findings across two preregistered experiments, personal agency might not be the only mechanism. For example, group inactions could produce a more concrete mental image than individual inactions. Specifically, relative to “standing on a street alone,” “standing on a street with four other people” might be easier to visualize because one might imagine alternative actions, such as conversing with others while standing.

TABLE 6. Moderated Serial Mediation Analyses in Experiment 4a and Experiment 4b

Mediator	Path	Behavior	Conditional Indirect Effects of Behavior				
			Coef (SE)		Bootstrap 95% CI		
			Experiment 4a	Experiment 4b	Experiment 4a	Experiment 4b	Experiment 4b
Agency	Agent (Individual or Group) → Agency → Intention	Action	0.10 (0.06)	0.05 (0.04)	-0.02, 0.24	-0.02, 0.13	
		Inaction	0.06 (0.04)	0.04 (0.04)	-0.02, 0.12	-0.03, 0.11	
		Difference	0.06 (0.07)	0.01 (0.05)	-0.08, 0.19	-0.10, 0.11	
Evaluations	Agent (Individual or Group) → Evaluations → Intention	Action	0.20 (0.09)	0.21 (0.08)	0.01, 0.36	0.05, 0.39	
		Inaction	-0.29 (0.09)	-0.23 (0.08)	-0.47, -0.10	-0.39, -0.09	
		Difference	0.48 (0.13)	0.44 (0.11)	0.22, 0.73	0.23, 0.67	
Agency and Evaluations	Agent (Individual or Group) → Agency → Evaluations → Intention	Action	0.47 (0.07)	0.38 (0.06)	0.35, 0.61	0.27, 0.49	
		Inaction	0.23 (0.05)	0.15 (0.03)	0.13, 0.34	0.08, 0.22	
		Difference	0.25 (0.09)	0.23 (0.07)	0.08, 0.41	0.11, 0.38	

Note. "Difference" indicates the difference between the indirect effects and is equivalent to the index of moderated mediation. Action is dummy coded as 2 and inaction is dummy coded as 1. Individual behavior is dummy coded as 2 and group behavior is dummy coded as 1.

Similarly, group inactions might also be perceived as more active than solo inactions because they may be seen as more intentional (e.g., a group standing together on the street to protest something). These differences may have led to more positive evaluations of group (vs. individual) inactions, contributing to the significant interactions between agent (individual or group) and behavior (action or inaction) that we observed across our experiments.

Nevertheless, our experiments did not support these possibilities. To begin, in only three out of five experiments were group inactions perceived as more active than individual ones (Experiments 3, 4a, and 4b), implying that our findings did not always coincide with differences in perceived action. Furthermore, perceived action differences did not correlate with corresponding differences in either evaluations or intentions, because group and individual inactions were rated similarly positive (Experiments 1, 2, 3 [inaction without negation], 4a–4b), and participants were more willing to engage in individual (vs. group) inactions and not vice versa (Experiments 4a and 4b).²

THEORETICAL AND PRACTICAL IMPLICATIONS

Our findings contribute to the literature on group action in several ways. As studied in multiple disciplines of social and behavioral sciences, group action is normally assumed to occur in response to contextual triggers such as experiencing discrimination (e.g., Selvanathan & Jetten, 2020) in conjunction with the anticipation that group actions will produce positive outcomes for the self and the group (Cohen-Chen & Van Zomeren, 2018). Even then, group actions can be difficult to motivate due to failures of coordination (K. A. Thomas et al., 2014) and free riding (Ibuka et al., 2014). However, our experiments showed that the barriers to group action begin at the level of the most basic judgment, an issue that should be in the mix when considering ways of mobilizing individuals to act as part of a group. Furthermore, our experiments demonstrate that group (vs. solo) actions were evaluated less positively even for situations where people typically anticipate positive outcomes, such as working and exercising. This suggests that the psychological barriers undermining the desirability of group (vs. individual) actions may be more profound than once thought.

What might undermine the desirability of group (vs. solo) actions, even when people have minimal information about the group members or the reasons or expected outcomes of a behavior? One contribution this research makes is identifying lower perceptions of personal agency as one factor potentially undermining group action. To be sure, prior work on determinants of group action has demonstrated the positive influence of believing that the group can achieve positive

2. Experiment 4b also directly asked participants how easily they could imagine the behaviors presented to them and how easy it was for them to visualize these behaviors. The two items were averaged to create a single index of mental simulation. There was only a main effect of agent, such that participants found it easier to simulate individual behavior than group behavior. No other effects were found. Data associated with this exploratory analysis can be found at <https://osf.io/g6asb/overview>.

outcomes (Bandura, 2000) and having a strong group identity (Drury & Reicher, 2005; Reicher, 2001). However, to the best of our knowledge, no work has previously shown how perceptions of personal agency influence evaluations of and engagement in group behavior.

Moreover, prior work on group action has emphasized contextual determinants, including group goals (e.g., Winton & Kane, 2016) and trust among group members (Kramer et al., 2014). Our work, however, demonstrates that personal agency can influence evaluations of and intentions to engage in group action in the absence of information about goals or trust, suggesting a reduced sense of personal agency as one of the core barriers to group action. In this regard, our findings provide useful insights into possible interventions to promote group actions. Given the underlying mechanisms suggested by our experiments, increasing people's perceptions of personal agency in group actions might increase their favorability. For example, one might highlight that participation in group actions is voluntary and offers control and responsibility in behavioral execution. Further research could also compare the efficacy of our proposed intervention with those tested in prior work (e.g., Bilali et al., 2017; Howe et al., 2021).

LIMITATIONS AND FUTURE DIRECTIONS

This research is not without limitations. Specifically, our experiments did not explore the role of group structure or size, as the group conditions were uniformly set as a group of five people including the participants. These factors, however, are worth exploring given the variability of groups in the real world. Group behavior may further decrease its appeal as the group size increases due to reduced personal agency in larger groups. For the same reason, group behavior may be even less appealing in synchronous (vs. asynchronous) groups, as people experience more deindividuation in these settings (Crossey et al., 2021).

Furthermore, some aspects of our results were inconsistent, such as participants' evaluations of inactions. For example, participants in Experiments 1, 2, 4a, and 4b evaluated individual and group inactions similarly. However, participants in Experiment 3, when inactions were presented as negations of actions, evaluated group inactions more positively than individual inactions. Because viewing group inactions in a more positive light may involve mechanisms distinct from those involved in viewing group actions in a less positive light, future research could systematically examine circumstances in which people may evaluate group inactions more positively than individual inactions. Likewise, it would be interesting to determine whether our findings extend to the evaluation of behaviors executed by others. The differences that actors experience may well dissipate when one judges the behavior of other individuals whose decisions are outside of our control.

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Artificial intelligence. No artificial intelligence–assisted technologies were used in this research or in the creation of this article.

Ethics approval. This research was approved by the Institutional Review Board of a private research university in the Eastern United States.

Conflicts of interest. The authors declare no conflicts of interest.

Preregistration. Experiments 1 and 2 were not preregistered. The hypotheses, methods, and analysis plans of Experiments 3, 4a, and 4b were preregistered at https://aspredicted.org/FVQ_ZMY, https://aspredicted.org/1SZ_JL4, and <https://aspredicted.org/qynm-h9kv.pdf>, respectively.

Materials, data, and analysis code availability. All study materials, data, and analysis code are publicly available at <https://osf.io/g6asb/overview>.

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