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Case report

Group identification as a means of attitude restoration☆

Joshua Clarkson [a,*], Eliot Smith [b], Zakary Tormala [c], Riley Dugan [d]

[a] Carl H. Lindner College of Business, University of Cincinnati, Cincinnati, OH 45221, United States
[b] Department of Psychological and Brain Sciences, Indiana University, Bloomington, IN 47405, United States
[c] Graduate School of Business, Stanford University, Stanford, CA 94305, United States
[d] School of Business Administration, University of Dayton, Dayton, OH 45469, United States

HIGHLIGHTS

- Attitude uncertainty, independent of self-certainty, motivates group identification.
- Group identification in turn is shown to allay this attitude uncertainty.
- This effect is shown only for relevant groups (i.e., groups that offer attitude-relevant norms).
- Reducing certainty can backfire when a relevant group is available to restore the attitude.

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ABSTRACT

This paper investigates the possibility that individuals selectively identify with groups as a means of restoring certainty in their attitudes. Specifically, we contend that (i) groups offer social validation in the form of attitudinal norms, (ii) individuals heighten their identification with groups that offer norms that are consistent with attitudes that have been undermined, and (iii) access to these norms reduces attitude uncertainty. Two experiments support this hypothesis by demonstrating greater identification following a loss of attitude certainty, though only with groups offering relevant attitudinal norms. Moreover, this identification is subsequently shown to promote attitude restoration in the form of increased certainty. Consequently, groups serve an important role in attitude restoration by protecting attitudes against uncertainty when a relevant group is available to bolster the attitude.
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We are drawn to groups for a host of reasons, one of the more intriguing being that identifying with others offers considerable psychological benefits. Indeed, identifying with a group can help us find value in ourselves (Leary and Baumeister, 2000; Tajfel and Turner, 1979), relieve subjective feelings of uncertainty about our world (Hogg and Abrams, 1993), balance the social needs of distinctiveness and belongingness (Brewer, 1991), and even assist us in finding existential meaning (Solomon, Greenberg, and Pyszczynski, 1991). The purpose of the present research is to explore a novel psychological benefit to group identification—specifically, the restoration of certainty in weakened attitudes.

Attitude certainty is defined as the subjective sense of confidence or conviction people have about their attitudes (Abelson, 1988; Rucker, Tormala, Petty, and Briñol, 2014). While much of the interest in attitude certainty stems from its important attitude-relevant consequences (i.e., resistance to attack, stability over time, prediction of behavior, information processing; see Rucker et al., 2014), we propose that attitude certainty has implications that extend beyond the attitude itself. In particular, we contend that *undermining* attitude certainty can increase people's level of group identification.

This prediction is in line with the proposition that uncertainty is a fundamental motivator of group identification (Hogg, 2007; Hogg and Abrams, 1993). Specifically, work on Uncertainty-Identity Theory (see Hogg, 2007) contends that uncertainty about oneself and the world can be an aversive experience and, in order to relieve it and maintain a coherent sense of self, people seek out groups as a means of depersonalization. Depersonalization describes a process in which group members apply a group prototype to themselves, because group prototypes offer prescriptive norms regarding judgments, behavior, and attitudes

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* Corresponding author.
E-mail addresses: joshua.clarkson@uc.edu (J. Clarkson), esmith4@indiana.edu (E. Smith), ztormala@stanford.edu (Z. Tormala), rdugan1@dayton.edu (R. Dugan).

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(Abrams and Hogg, 2001; Hewstone, Rubin, and Willis, 2002; Terry and Hogg, 1996). Thus, the theory suggests groups can help alleviate uncertainty by providing guidelines for how one should think and act. For instance, Europeans like soccer, environmentalists support recycling, and Libertarians dislike taxes. If an individual is uncertain, depersonalization then allows one to accept these group norms to maintain a coherent sense of the world and oneself.

In the current research, we examine whether groups might also be viewed as a relevant resource for restoring weakened attitudes. That is, we submit that individuals are motivated to identify with groups as a means of increasing attitude certainty, irrespective of any potential benefits to the self-concept. Consistent with this possibility, research suggests that people actively look to others to validate their attitudes (Festinger, 1954) and that perceived attitude consensus can offer social validation, which builds attitude certainty (e.g., Petrocelli, Tormala, and Rucker, 2007; Visser and Mirabile, 2004). In a similar vein, the process of depersonalization provides individuals with attitudinal norms they may actively seek out as a means of attitude restoration. In other words, groups may serve as a source of attitude consensus and thus social validation (see White, Hogg, and Terry, 2002), which in turn allows individuals to restore certainty in weakened attitudes. For instance, individuals uncertain of their favorable attitude toward recycling might be motivated to heighten their identification with environmentalists, not to clarify the self but rather to internalize a norm that also espouses a favorable attitude toward recycling.

Of importance, however, we hypothesize that individuals will be selective in this process, using only groups they see as a diagnostic source of information. Specifically, individuals should identify only with groups that are *relevant* to the undermined attitude—that is, groups that provide a clear attitudinal norm that is consistent with the individuals' attitude. For instance, not only should the group possess a norm that relates to the undermined attitude (e.g., environmentalists favor recycling), but that norm should be consistent with individuals' attitude (e.g., both the group norm and the individual attitude are in favor of recycling).

These predictions for attitude uncertainty reduction extend prior research on uncertainty in several important ways. First, they depart from past research on uncertainty reduction and group identification in positing that: (1) the attitude does not have to be self-relevant (c.f., Mullin and Hogg, 1999), (2) the induction of attitude uncertainty can be independent of self-uncertainty, and (3) the uncertainty should only motivate identification with groups that possess a clear norm relevant to the undermined attitude. Furthermore, if obtained, our findings would advance the literature on attitude certainty by: (1) shedding light on a new consequence for attitude uncertainty that extends beyond the attitude itself (which has been the traditional focus of research on attitude certainty), and (2) suggesting that attitude uncertainty can produce a kind of biased processing and impact (in this case, on group identification) that traditionally would be expected to stem from high levels of attitude certainty. Indeed, there is a growing literature delineating the instances in which classically-defined weak attitudes can have powerful motivating influences traditionally assumed to be associated with attitude *strength* (e.g., Clark, Wegener, and Fabrigar, 2008; Clarkson, Tormala, and Rucker, 2008; Van Harreveld, Van der Pligt, and De Liver, 2009; Sawicki et al., 2011). Our research builds on this work by exploring the effects of attitude uncertainty on group identification. We present two experiments exploring these issues. In each, we report all measures and manipulations.

1. Experiment 1

Experiment 1 offered an initial test of our hypothesis that attitude uncertainty increases group identification. Specifically, we manipulated participants' certainty in their attitude prior to having them indicate their level of group identification. Certainty was manipulated by having participants generate two or eight reasons for their attitude, as prior research demonstrates that retrieving eight (two) reasons is more (less) difficult and thus undermines attitude certainty (e.g., Haddock, Rothman, Reber, and Schwarz, 1999). Importantly, because manipulations of attitude certainty can facilitate changes in self-certainty (Clarkson, Tormala, DeSensi, and Wheeler, 2009) and self-certainty can affect group identification (Jetten, Hogg, and Mullin, 2000; Mullin and Hogg, 1999), we also manipulated the ingroup presented to participants following the attitude certainty manipulation—specifically, a high or low relevance group. As noted, because groups offer *distinctive* information concerning normative attitudes, beliefs, and behaviors (Terry and Hogg, 1996), normative information should be relevant to restoring attitude certainty only when it pertains to the specific attitude in question. Consequently, attitude uncertainty should only heighten identification with groups that offer a clear attitudinal norm that is consistent with the focal attitude. Specifically, group identification should increase for individuals in the eight (versus two) reasons condition when the group is high but not low in attitudinal relevance. Alternatively, if our attitude certainty manipulation is altering identification through induction of *self*-uncertainty, then the normative relevance of the group to the specific attitude should have no effect on identification (Grieve and Hogg, 1999).

1.1. Method

1.1.1. Participants and design

Based on a priori power estimates for medium effect sizes (see Cohen, 1992), we targeted 160 participants in exchange for course credit. After data collection, we obtained 158 undergraduates (55.7% female; $M_{age} = 20.67$) who were randomly-assigned to a 2 (retrieval: easy or difficult) × 2 (group relevance: high or low) between-participants design.

1.1.2. Procedure

Participants were informed at the outset of the experiment they would be participating in several tasks. In the first, participants were told the experimenters were interested in student reactions to a new identification card policy being debated by administrative officials, after which they were provided with background information about the policy (e.g., requirement of identification cards to access campus buildings; see Petrocelli et al., 2007). Following this information, participants were asked to report their attitude toward the identification card policy. Attitude certainty was then manipulated by instructing participants to generate either two or eight supportive reasons for their attitude (*see Retrieval description*). Following the retrieval manipulation, we assessed both attitude and self-certainty (on separate two-item composites presented in random order) before having participants proceed to the second task. For the second task, participants were informed that we would be assessing their perceptions of a particular group. Participants were then randomly assigned to report their identification with one of two groups pretested to vary on relevance toward the target issue (*see Group Relevance description*). Upon completion of this task, participants were debriefed and thanked.

1.1.3. Independent variables

1.1.3.1. Retrieval. After reporting attitudes toward the policy, participants were informed of our interest in understanding the reasons underlying their attitude and were asked to list either two (easy) or eight (difficult) reasons in support of their attitude toward the identification card policy. This manipulation has been used successfully in prior research, with two reasons increasing and eight reasons decreasing participants' attitude certainty (adapted from Haddock et al., 1999).

1.1.3.2. Group relevance. As noted, following the attitude certainty manipulation, participants were randomly assigned to report their identification with one of two groups: college students (high relevance) or environmentally-concerned individuals (low relevance).[1]

1.1.4. Dependent measures

1.1.4.1. Attitudes. Participants' attitudes toward the identification card policy were assessed on two semantic differentials ranging from 1 to 9 and anchored at *Negative—Positive* and *Unfavorable—Favorable*. Responses were averaged to create a composite index ($r = 0.91$, $p < 0.001$), with higher values indicating more favorable attitudes toward the policy.

1.1.4.2. Attitude certainty. Attitude certainty was assessed with two items (adapted from Clarkson et al., 2008): "How confident are you of your attitude toward the ID card policy?" and "How certain are you of your opinion toward the ID card policy?" Responses were provided on scales ranging from 1 to 9 and anchored at *Not confident at all—Very confident* and *Not certain at all—Very certain*. Responses were averaged to form a composite index ($r = 0.78$, $p < 0.001$), with higher values indicating greater attitude certainty.

1.1.4.3. Self-certainty. Self-certainty was assessed with two items (Grant and Hogg, 2011): "In general, how certain do you feel about yourself right now?" and "In general, how confident are you of yourself right now?" Responses were provided on 9-point scales anchored at *Not at all certain—Extremely certain* and *Not at all confident—Extremely confident*. Responses were averaged to form a composite index ($r = 0.92$, $p < 0.001$), with higher numbers indicating greater self-certainty.

1.1.4.4. Group identification. Finally, participants were asked to indicate the extent to which they identified with either college students or environmentally-concerned individuals on a 100-point response scale (Judd, Park, Ryan, Brauer, and Kraus, 1995; Newheiser and Olson, 2012). Higher values indicated greater identification with the target group.

1.2. Results

All dependent measures were submitted to a two-way ANOVA, with retrieval (8 reasons or 2 reasons) and group relevance (low or high) as the independent variables (see Appendix A for inter-correlations of dependent measures).

1.2.1. Preliminary analyses

1.2.1.1. Attitudes. As expected given that attitudes were measured before the manipulations, there were no significant differences in participants' attitudes toward the policy ($M = 6.09$, $SD = 2.45$) across conditions ($ps > 0.26$).

1.2.1.2. Attitude certainty. Analysis of participants' attitude certainty revealed a significant main effect of the retrieval manipulation ($F(1154) = 4.89$, $p = 0.028$, $\eta_p^2 = 0.031$); participants who generated two reasons ($M = 6.40$, $SD = 1.97$) reported significantly more certainty in their attitudes toward the identification card policy than did participants who generated eight reasons ($M = 5.64$, $SD = 2.12$). No other effects were significant ($Fs < 1$).

1.2.1.3. Self-certainty. Analysis of participants' self-certainty revealed an unexpected marginal effect of the retrieval manipulation ($F(1154) = 2.88$, $p = 0.092$, $\eta_p^2 = 0.018$); participants who generated two reasons ($M = 6.99$, $SD = 1.72$) reported marginally more self-certainty than did participants who generated eight reasons ($M = 6.51$, $SD = 2.14$). No other effects were significant ($ps > 0.26$). Given this marginal effect, we controlled for self-certainty in the main analysis.

1.2.2. Main analysis

1.2.2.1. Group identification. Analysis of the group identification measure revealed a main effect of group relevance ($F(1153) = 10.00$, $p = 0.002$, $\eta_p^2 = 0.061$) that was qualified by a retrieval × group relevance interaction ($F(1153) = 4.45$, $p = 0.036$, $\eta_p^2 = 0.028$; see Fig. 1, left-panel). Participants reported greater identification with the high relevance group (college students) after generating eight (vs. two) reasons ($F(1153) = 6.59$, $p = 0.011$, $\eta_p^2 = 0.041$). However, participants showed no difference in their identification with the low relevance group (environmentally-concerned individuals) as a function of retrieval ($F < 1$). Additionally: (i) self-certainty (treated as a covariate) tended to predict group identification ($F(1153) = 2.21$, $p = 0.139$, $\eta_p^2 = 0.014$), a finding directionally consistent with prior research (Mullin and Hogg, 1999), and (ii) the group identification interaction held with self-certainty excluded from the model ($F(1154) = 4.61$, $p = 0.033$, $\eta_p^2 = 0.029$).

1.2.3. Mediation analysis

We expected the retrieval manipulation to impact attitude certainty and that attitude certainty would then interact with group relevance to predict group identification, controlling for self-certainty. We tested the significance of the full moderated indirect pathway by computing a confidence interval around the indirect effect of retrieval on group identification through attitude certainty at both levels of group relevance (Model 14; Hayes, 2013). The mediating pathway was significant for the high (95% CI: −8.56, −0.38) but not low (95% CI: −1.50, 3.27) relevance group. Moreover, this pattern maintained with self-certainty removed from the model: High (95% CI: −8.68, −0.73) versus low (95% CI: −1.40, 3.67) relevance group.

1.3. Discussion

Experiment 1 revealed that group identification increased for those whose attitudes were undermined by the retrieval manipulation. Critically, however, this pattern only emerged when the group was relevant to the attitude; attitude certainty had no impact on identification with the irrelevant group. This pattern was supported by our mediation analysis. Additionally, these effects occurred even after controlling for self-certainty, bolstering support for *attitude uncertainty* as a novel, independent catalyst for group identification.

2. Experiment 2

Having established that attitude uncertainty can stimulate group identification, in Experiment 2 we sought to examine whether the process of identifying with a relevant group can *restore* attitude certainty. That is, does identifying with a relevant group reduce attitude uncertainty? Additionally, Experiment 2 sought to remedy a potential methodological issue with respect to Experiment 1. It could be argued that

[1] To pretest perceived group relevance, an independent sample of undergraduates ($N = 26$) was randomly assigned to indicate the extent to which either college students or environmentally-concerned individuals had clear attitudes toward the use of identification cards to access campus buildings and held attitudes similar to their own (i.e., similar to participants) toward the issue. Responses were obtained on 9-point scales anchored at *Not clear at all—Very clear* and *Not similar at all—Very similar*. As intended, college students were rated as having clearer ($M_{student} = 5.62$ vs. $M_{environmentalist} = 3.15$; $t(24) = 2.82$, $p = 0.009$) and more similar ($M_{student} = 7.15$ vs. $M_{environmentalist} = 5.00$; $t(24) = 3.61$, $p = 0.001$) attitudes toward identification cards than were environmentally-concerned individuals.

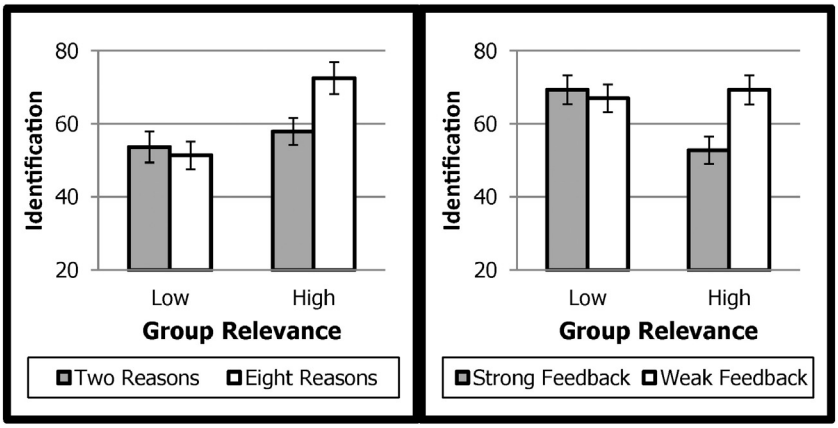

Fig. 1. Group identification as a function of: (i) retrieval and group relevance in Experiment 1 (left-panel) and (ii) feedback and group relevance in Experiment 2 (right-panel). *Note: Bars represent standard errors.*

the group relevance manipulation in Experiment 1 varied on a variety of dimensions other than attitude relevance that could influence identification—for instance, level of abstractness, perceived homogeneity, or perceived entitativity (Hogg, Sherman, Dierselhuis, Maitner, and Moffitt, 2007; Hamilton, Sherman, and Rodgers, 2004). To address this issue, we retained the manipulation from Experiment 1 but switched which group would be attitudinally relevant. Specifically, we presented participants with false feedback regarding the strength of the reasons underlying their attitude toward recycling. This false feedback manipulation was intended to alter attitude certainty while making environmentally-concerned individuals (rather than college students) the high relevance group. If group relevance moderates identification under attitude uncertainty, as we contend, then we would expect to conceptually replicate the pattern of group identification observed in Experiment 1, but observe higher identification with environmentally-concerned individuals rather than college students.

2.1. Method

2.1.1. Participants and design

As in Experiment 1, we targeted 160 participants in exchange for course credit. After data collection, we obtained 146 undergraduates (50% female; $M_{age} = 20.23$) who were randomly-assigned to a 2 (feedback: weak or strong) × 2 (group relevance: high or low) between-participants design.

2.1.2. Procedure

Participants were informed at the outset of the experiment that they would be participating in several tasks. In the first, participants were told the experimenters were interested in student reactions to contemporary social issues in general, and to recycling in particular. Following this information, participants were asked to report their attitude toward recycling. Attitude certainty was then manipulated by providing participants with false feedback regarding the strength of the reasons underlying their attitude (*see Feedback description*). Following the feedback manipulation, we assessed attitude certainty before proceeding to the second task. For the second task, participants were informed that we would be assessing their perceptions of a particular group. Participants were then randomly assigned to report their identification with one of two groups pretested to vary on relevance toward the target issue (*see Group Relevance description*). Upon completion of this task, participants completed a brief survey about groups which required them to indicate their attitude certainty toward several issues (one of which was the target issue of recycling) prior to being debriefed and thanked for their time.

2.1.3. Independent variables

2.1.3.1. False feedback. To manipulate certainty in participants' attitudes toward recycling, we provided participants with feedback concerning the strength of their reasons for their attitude toward this issue. Specifically, after reporting their attitude toward recycling and then being asked to list four reasons for their attitude, participants were told that—to gauge the strength of their reasons—those reasons would be compared to a global database of reasons from other individuals toward the issue of recycling. After a delay of seven seconds, participants received feedback indicating where their reasons fell on a strength index ranging from 1 to 30. In the *weak feedback* condition, participants were informed their strength index was 3, indicating that their reasons for holding their attitude were very weak and not compelling. In the *strong feedback* condition, participants were informed their strength index was 28, indicating that their reasons were very strong and compelling. This manipulation was adapted from manipulations used in prior research to vary attitude certainty (e.g., Tormala, Clarkson, and Petty, 2006).

2.1.3.2. Group relevance. Following the false feedback manipulation and attitude certainty items, participants were asked to report their identification with either environmentally-concerned individuals (high relevance) or college students (low relevance).[2]

2.1.4. Dependent measures

2.1.4.1. Time 1 attitudes. Participants indicated their attitude toward recycling on a single 9-point semantic differential anchored at *Unfavorable—Favorable*. Higher values therefore indicated more favorable attitudes toward recycling.

2.1.4.2. Time 1 attitude certainty. Participants reported their level of certainty in their attitude toward recycling on a single item (Fazio and Zanna, 1978): How certain are you of your attitude toward recycling? Responses were obtained on a 9-point scale anchored from *Not at all certain—Extremely certain*. Higher values indicated greater attitude certainty.

2.1.4.3. Group identification. Group identification was assessed on the same scale as in Experiment 1.

[2] Group relevance was assessed in a separate pretest ($N = 28$) conducted in the same manner as described in Footnote 1. As intended, environmentally-concerned individuals were perceived to have clearer ($M_{environmentalist} = 6.93$ vs. $M_{student} = 4.36$; $t(26) = -4.33$, $p < 0.001$) and more similar ($M_{environmentalist} = 6.79$ vs. $M_{student} = 5.21$; $t(26) = -2.56$, $p = 0.017$) attitudes toward recycling than were college students.

2.1.4.4. Time 2 attitude certainty. Following the group identification measure, participants were presented with a survey of different attitude issues. Embedded within these issues was our target issue of recycling. Participants were asked to report their attitude certainty toward recycling (as well as the other issues to substantiate our cover story) on the same item as at time 1.[3]

2.2. Results

All dependent measures were submitted to a two-way ANOVA, with feedback (weak or strong) and group relevance (low or high) as the independent variables (see Appendix B for inter-correlations of dependent measures).

2.2.1. Preliminary analyses

2.2.1.1. Attitudes. Analysis of participants' attitudes toward recycling revealed an unexpected marginal effect of group relevance ($F(1142) = 2.74$, $p = 0.10$, $\eta_p^2 = 0.019$). No other effects were significant ($Fs < 1$). Importantly, controlling for attitudes ($M = 7.60$, $SD = 1.65$) in all subsequent analyses leaves the results unchanged.

2.2.1.2. Attitude certainty. Analysis of participants' attitude certainty revealed a significant main effect of the feedback manipulation ($F(1142) = 8.83$, $p = 0.003$, $\eta_p^2 = 0.059$); participants who received the strong feedback ($M = 7.07$, $SD = 1.74$) reported more certainty in their attitudes toward recycling than did participants who received the weak feedback ($M = 6.14$, $SD = 2.19$). No other effects were significant ($ps > 0.21$).

2.2.2. Main analyses

2.2.2.1. Group identification. Analysis of the group identification measure revealed marginal main effects of both feedback ($F(1142) = 3.36$, $p = 0.069$, $\eta_p^2 = 0.023$) and group relevance ($F(1142) = 3.38$, $p = 0.068$, $\eta_p^2 = 0.023$) that were qualified by a feedback × group relevance interaction ($F(1142) = 5.94$, $p = 0.016$, $\eta_p^2 = 0.040$; see Fig. 1, right-panel). Participants reported greater identification with the high relevance group (environmentally-concerned individuals) after receiving the weak (vs. strong) feedback ($F(1142) = 9.10$, $p = 0.003$, $\eta_p^2 = 0.060$). However, participants showed no difference in their identification with the low relevance group (college students) as a function of feedback ($F < 1$).[4,5]

2.2.2.2. Uncertainty reduction. The uncertainty data were submitted to a three-way mixed ANOVA, with feedback and group relevance as between-participants factors and time of measurement (time 1 or time 2) as a within-participant factor. The result revealed a significant three-way interaction ($F(1142) = 6.32$, $p = 0.012$, $\eta_p^2 = 0.043$; see Fig. 2). For those exposed to the high relevance group, there was a significant feedback × measurement interaction ($F(1,71) = 7.33$, $p = 0.009$, $\eta_p^2 = 0.094$), such that participants gained certainty from time 1 to time 2 in the weak ($t(33) = -2.73$, $p = 0.010$) but not strong ($t < 1$) feedback condition. For those exposed to the low relevance group, the feedback × measurement interaction was not significant ($F < 1$).[6]

2.2.3. Mediation analyses

2.2.3.1. Does attitude certainty predict group identification?. We first assessed the mediational impact of attitude certainty on group identification, as in Experiment 1. We expected a direct effect of the feedback manipulation on the mediator (attitude certainty), as well as a moderated effect of the mediator (group relevance × attitude certainty) on group identification (Model 14; Hayes, 2013). The mediating pathway was significant for the high (95% CI: −8.59, −0.72) but not low (95% CI: −5.95, 0.23) relevance group.

2.2.3.2. Does group identification predict uncertainty reduction?. We also assessed the mediational impact of group identification on uncertainty reduction. Specifically, we created an uncertainty reduction score by subtracting participants' time 1 certainty rating from their time 2 certainty rating. We then computed a confidence interval around the indirect effect of the feedback × group relevance interaction on uncertainty reduction through identification (Model 4; Hayes, 2013). The results yielded a significant pathway (95% CI: −1.48, −0.16).[7]

2.3. Discussion

Having demonstrated that attitude uncertainty can motivate group identification, Experiment 2 assessed the possibility that group identification could in turn facilitate uncertainty reduction. Results indicated that individuals whose attitudes were undermined prior to the opportunity to identify with a high relevance group expressed greater identification with an attitudinally relevant group, and this increase in group identification reduced attitude uncertainty. Thus, Experiment 2 demonstrated that group identification can in fact facilitate attitude restoration—in the form of uncertainty reduction—as long as the group is relevant to the undermined attitude. Additionally, Experiment 2 presented a more stringent test of the importance of group relevance by conceptually replicating the findings observed in Experiment 1 despite switching the relevance of the specific groups to control for any naturally occurring differences between them.

3. General discussion

The present research demonstrated that attitude uncertainty can act as a unique and independent determinant of group identification, and group identification in turn is a novel means by which attitude uncertainty can be reduced. These findings support our hypothesis that groups serve an important role in the accrual of restorative information. Indeed, restoration—defined here in terms of uncertainty

[3] We elected to use a single-item certainty measure at Time 1 and Time 2, and embedded this item in a broader survey at Time 2, to provide a simple direct comparison in certainty over time that minimized suspicion and potential consistency biases.

[4] For exploratory purposes, we also assessed group identification on a 14-item, multidimensional group identification scale (Leach et al., 2008). This scale treats group identification as a collective of specific factors (e.g., solidarity, in-group homogeneity) rather than a singular construct. Participants indicated the extent to which they agreed with statements related to either college students or environmentally-concerned individuals on 7-point scales anchored at *Strongly disagree—Strongly agree*. Analysis of each subscale, however, failed to reveal a significant interaction (see Supplement A for results).

[5] Though the identification pattern varies somewhat between experiments, the overall interaction pattern was quite similar in that the focal identification effect was significant only under high relevance conditions in each study. The key difference is that participants reported more identification with the low relevance group in Experiment 2 than in Experiment 1, likely reflecting different baseline levels of identification with the groups—that is, college students identified more strongly with other college students than with environmentalists.

[6] Though time 1 certainty appears to be somewhat lower in the weak feedback/high relevance condition than in the weak feedback/low relevance condition—which could contribute to the overall interaction—we did not find a difference in time 1 certainty across these conditions ($t(70) = 1.54$, $p = 0.127$). Additionally, in both the high and low relevance weak conditions, there was ample room to change after time 1. Thus, the interaction appears to stem from differential change across conditions, and not differential stating points or ceiling effects.

[7] For convergence, we also computed a confidence interval around the indirect effect of our feedback manipulation on time 2 certainty through time 1 certainty and group identification. This serial analysis was computed separately for those high and low in group relevance (Model 6; Hayes, 2013). The results yielded a significant serial mediation pathway for the high (95% CI: −0.35, −0.015) but not low (95% CI: −0.16, 0.045) relevance group.

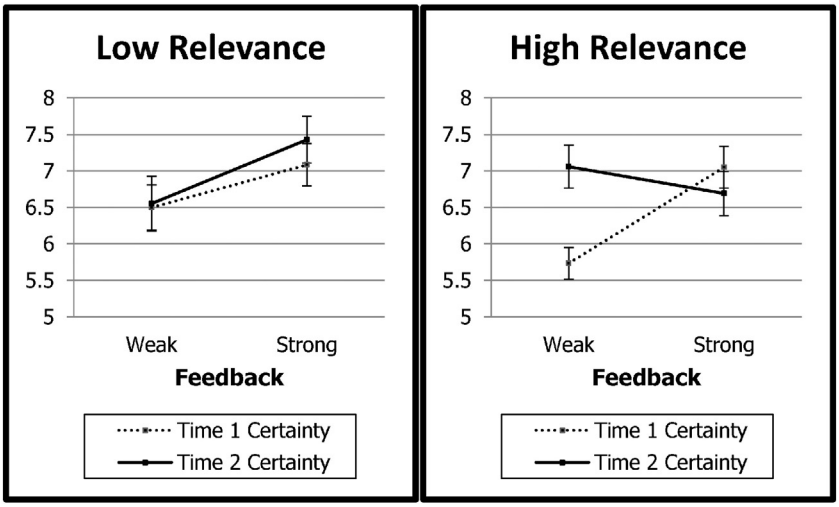

Fig. 2. Attitude certainty as a function of time of measurement and feedback for the low (left-panel) and high (right-panel) relevance group in Experiment 2. *Note: Bars represent standard errors.*

reduction—only occurred when individuals were provided the opportunity to identify with a group that offered a clear and relevant attitudinal norm. Consequently, groups—and the attitudinal norms they provide—offer a unique source of information to those seeking to restore certainty in an undermined attitude.

As noted, a significant body of research argues that uncertainty reduction is a fundamental motivator of group identification (Hogg, 2007; Hogg and Abrams, 1993). The current findings build upon this work in at least two significant ways. First, the present research demonstrates that individuals can be motivated to identify with a group by a reduction in *attitude* certainty, independent of self-certainty. Thus, while self-uncertainty undoubtedly affects identification (see Hogg, 2007), it is not required. Second, the present research demonstrates that the relevance of the group to the undermined attitude is critical to this process. As such, while subjective feelings of attitude uncertainty can be a catalyst for group identification, these feelings are not sufficient to heighten identification; the group must also have potential to reduce those feelings of uncertainty as they relate to a particular attitude in question.

The current findings underscore the importance of understanding the consequences of attitude certainty that extend beyond the attitude—that is, beyond demonstrating an attitude's resistance, stability, and predictive utility. The studies presented here offer consistent evidence for group identification as a novel consequence of attitude uncertainty. Moreover, though past research demonstrates that attitude certainty can impact how individuals view themselves (Clarkson et al., 2009; see also DeMarree, Petty, and Briñol, 2007), the effect of attitude uncertainty on group identification was independent of any differences in self-certainty. Thus, attitude uncertainty exerts a direct impact on group identification.

These findings suggest that threatening or reducing attitude certainty can trigger a restorative (or bolstering) process in the form of heightened identification. They also highlight a context in which attitude *uncertainty* produces more attitudinal bias than does attitude certainty. This finding reflects a reversal of the conventional view of certainty as a stronger biasing agent than uncertainty. For instance, past work suggests that certainty promotes resistance to counter-attitudinal information and greater generation of attitude-consistent thought (see Rucker et al., 2014). Our findings build on an emerging literature showcasing the motivational consequences of seemingly weak attitudes (Clark et al., 2008; Clarkson et al., 2008; Van Harreveld et al., 2009; Sawicki et al., 2011) by uncovering a new confirmatory process that attitude uncertainty can trigger.

Finally, this research raises an important question concerning uncertain individuals' reactions to relevant groups that disagree with their attitudes. On one hand, uncertain individuals might still increase their identification with these groups but not increase certainty due to a lack of attitude consensus. Alternatively, individuals might simply perceive this group to be irrelevant because, like the other low relevance groups, it does not satisfy their primary motivation for identification: attitude restoration. Pitting these hypotheses against one another could offer intriguing insights into when and why individuals place greater emphasis on their group identities versus their attitudes. We see this as a promising direction for future research.

4. Conclusion

Groups provide rich sources of normative information that can be used to restore undermined attitudes. By defining a group's relevance to this specific type of uncertainty in terms of the normative information provided about the attitude, the present work is able to show a direct and dynamic relationship between attitude uncertainty and group identification. Indeed, a core yet counterintuitive implication of this research is that a threat to one's attitude could backfire if a relevant group is available by triggering individuals to identify with a relevant group and restore the undermined attitude. This possibility highlights the need to further develop our understanding of the associations between attitudes and group identities.

Supplementary data to this article can be found online at http://dx.doi.org/10.1016/j.jesp.2016.07.001.

Appendix A. Correlation matrix of dependent measures in Experiment 1.

	Attitudes	Attitude certainty	Self-certainty	Group identification
Attitudes	–			
Attitude certainty	0.334***	–		
Self-certainty	.063	0.187*	–	
Group identification	.110	−.129	.088	–

Note. ***$p < 0.001$, *$p < 0.05$.

Appendix B. Correlation matrix of dependent measures in Experiment 2.

	Attitudes	T1 certainty	Group identification	T2 certainty
Attitudes	–			
T1 certainty	.120	–		
Group identification	.056	−0.258**	–	
T2 certainty	0.158^	0.267**	0.187*	–

Note. $^{**}p < 0.01$, $^{*}p < 0.05$, $^{\wedge}p < 0.10$.

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