

## **Group polarization and choice-dilemmas: How important is self-categorization?**

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### *Abstract*

*Self-categorization proponents (e.g., Turner, 1991) assume that group polarization occurs because discussants wish to differentiate themselves from outgroup positions and implicitly think of such groups even when they are not specifically mentioned. Ingroup/outgroup salience is thought to heighten such effects. To examine this view, we had participants discuss Choice Dilemma items either with or without explicit knowledge of outgroup positions. Contrary to a self-categorization account, this manipulation of outgroup salience did not affect the degree of group polarization. In addition, rating measures revealed little spontaneous consideration of outgroup positions on the part of participants, nor was consideration of outgroup positions related to degree of polarization. Group members did show evidence of ingroup identification, but this identification was unrelated to participants' post-discussion conformity to the group consensus. Taken as a whole, these results suggest distinct limits to the self-categorization interpretation of group polarization involving Choice Dilemmas. Copyright © 2006 John Wiley & Sons, Ltd.*

Group polarization refers to the tendency of group members to increase the extremity of their position following discussion of a relevant issue (see Baron & Kerr, 2002 for review). This paper examines the argument that self-categorization processes can provide a full account for this effect (e.g., Turner, Wetherell, & Hogg, 1989). In contrast to models stressing social comparison (e.g., Sanders & Baron, 1977) or persuasive argumentation (e.g., Burnstein & Vinokur, 1973), the self-categorization model assumes that inter-group categorization processes cause group polarization. The purpose of this paper is to explore key assumptions stemming from the self-categorization view of group polarization, with specific focus on research involving the Choice Dilemma Questionnaire (CDQ; Kogan & Wallach, 1967), the most common instrument in group polarization research.

Self-categorization proponents argue that when group membership is salient, people generally wish to be 'bona-fide' group members (e.g., Turner, 1991). This encourages conformity to norms that are often displaced away from outgroup positions in an attempt to maintain group distinctiveness (e.g., McGarty, Turner, Hogg, David, & Wetherell, 1992). As Hogg, Turner, and Davidson (1990) put it,

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'under conditions which render an ingroup salient, people conform to the ingroup norm . . . the actual position of the ingroup norm is a tradeoff between minimization of intra-group differences and maximization of inter-group differences' (pp. 79–80). Given that people belong to a multitude of social categories, the salience of a particular inter-group context is crucial from a self-categorization perspective. Following Rosch's (1978) ideas about categorization, self-categorization theorists assume that making an ingroup salient leads to an automatic contrast with the complimentary outgroup, displacing category prototypes away from each other. In short, self-categorization theory asserts that (1) ingroup salience leads to group solidarity concerns, (2) these concerns manifest themselves in conformity to the ingroup norm, and (3) this norm will be displaced from outgroup norms thereby leading to group polarization (cf. Turner, 1991, p. 165).

This provocative view integrates insights from cognitive psychology with group polarization research. However, the self-categorization view runs into several difficulties when one considers that a great deal of the group polarization research conducted over the past 40 years involves laboratory groups discussing the hypothetical risk scenarios comprising the CDQ. First, in most of these studies group membership is temporary, raising questions regarding whether any significant feelings of group identification develop. There are little data on this point. A second issue is that the CDQ items are not particularly involving for participants. This fact, coupled with the ad hoc nature of the discussion groups, raises questions about the extent to which participants are concerned about differentiating themselves from outgroups in this paradigm. Third, in CDQ studies outgroups are seldom mentioned. To reconcile this fact with their model, self-categorization theorists propose that discussion leads group members to *implicitly* consider (and shun) relevant outgroups. (see e.g., McGarty et al., 1992). Such implicit consideration is attributed to the nature of the scales used in this research (McGarty et al., 1992). Such scales presumably create a 'social frame of reference' highlighting the fact that some individuals share our views while others (the 'outgroup') do not (Turner, 1991, pp. 168–169).<sup>1</sup> The extent to which the format of the CDQ items provokes such implicit consideration is an empirical issue that has not been directly assessed. One purpose of the present study is to examine this point. An additional issue is that while Turner and his associates emphasize that ingroup/outgroup status will normally be based upon attitudinal similarity (Turner, 1991, p. 168), it is also possible that under some circumstances the 'implicit' outgroups considered by group members represent decision groups from other sessions, other universities, or other genders. Accordingly, previous work from this tradition has considered ingroup/outgroup status based on such distinctions as perceptual similarity (Tajfel, Billig, Bundy, & Flament, 1971), task/decision group membership (e.g., Abrams, Wetherell, Cochrane, Hogg, & Turner, 1990; Wetherell, 1987, p. 159), and university affiliation (e.g., Mackie, Gastardo-Conaco, & Skelly, 1992). Indeed, self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987, p. 54) explicitly recognizes that given the almost infinite number of potential social categories possible, ingroup/outgroup status is likely to be based upon whatever distinction is momentarily salient.

The difficulty this poses is that without knowing who the implicit outgroup is, it is hard to make predictions regarding the extent or direction of group polarization. While this must be considered a

<sup>1</sup>Turner's (1991) argument that scale values can create a social frame of reference seems most plausible in those cases in which the scale values have a pro/con or agree/disagree character with a described neutral point (cf. Wetherell, 1987, pp. 156 & 161). However, most group polarization studies utilizing the CDQ do not use a pro/con format. Instead, such studies assess acceptable odds for success for some risk related option. When such likelihood measures are employed, the social frame of reference will not always be clear: is the value of 0.5 the necessary demarcation between risk and caution? As the answer here depends upon the context of each scenario, it will often be difficult for participants to decide who agrees with their general risk preferences simply by examining numerical odds endorsed by others. Of course, the implicit outgroup could be construed to be those people who hold any and all scale positions (be they numerical or verbal) not endorsed by ingroup members, but this would seem to imply implicit consideration of a multiplicity of outgroups each endorsing a different scale position.

weakness with the self-categorization formulation, the account clearly predicts that when the salience of a particular outgroup is increased, group members should be more likely to polarize away from the position that typifies that group. This, of course, could lead to polarization either toward risk (if the outgroup is cautious), or toward caution (if the outgroup is risky; Hogg et al., 1990). Accordingly, the present study manipulated outgroup salience and based this manipulation of outgroup status based on both attitudinal and affiliative differences in order to maximize the likelihood that the targeted social unit would be viewed as an outgroup.

The current research thus extends prior findings bearing upon the self-categorization account of group polarization. This earlier research indicated that polarization effects are more pronounced and arguments are more carefully processed when individuals listen to a discussion of ingroup versus outgroup members (e.g., Mackie, 1986; Mackie et al., 1992). This confirms that ingroup members are more credible and influential but does not directly confirm the key assumptions regarding participants' desires for differentiation from the outgroup. In contrast, studies that have examined whether high(er) ingroup salience amplifies polarization have yielded mixed results. For example, Spears, Lea, and Lee (1990) found that high ingroup salience increased polarization in anonymous computer groups but not in face-to-face groups. This is a crucial limitation given that most group polarization studies involve face-to-face discussion groups (see also Mackie, 1986, Experiment 2).

Perhaps the most convincing evidence in support of the self-categorization view of group polarization was provided by Mackie (1986) and Hogg et al. (1990), who in two conceptually similar studies documented that participants expected group norms to polarize away from outgroup positions. For example, Hogg et al. (1990) exposed participants to fictitious risky or cautious outgroups. As predicted, participants faced with a riskier outgroup exaggerated how cautious the ingroup norm would be, while the reverse was true for participants faced with a more cautious outgroup. However, Hogg et al. (1990) did not find significant evidence that pre-test–post-test shifts were affected by these predicted norms. In sum, although there is some support for the self-categorization view of group polarization, when it comes to studies using the CDQ, this support seems mixed and assumptions of some controversy are required. As such, there is reason to question the suggestion (Turner, 1991) that social identity based views represent a complete explanation for the vast array of group polarization findings, including those from the CDQ paradigm.

Before proceeding, it is important to clarify that we are not questioning the notion that, under certain circumstances, self-categorization processes may contribute to group polarization. Thus, when established social groups discuss a self-relevant issue and outgroup salience is high, it seems likely that some of the processes alluded to by self-categorization theory contribute to attitude polarization (as in Moscovici & Zavalloni's, 1969 study involving Parisian students' attitudes toward Americans). Rather, we question the ability of the theory to serve as a complete explanation for group polarization phenomena, and especially for those effects found with ad hoc laboratory groups using the standard CDQ paradigm where ingroup status is temporary, the discussion topic is hypothetical and irrelevant to ingroup/outgroup distinctions, and outgroups are not typically salient.

To examine these issues, we manipulated a key variable specified by the self-categorization model, that is, outgroup salience, in order to see whether it affected CDQ group polarization. This enabled us to examine several assumptions of the self-categorization view of group polarization; (a) that members of simple ad hoc laboratory discussion groups would identify with these groups; (b) that they think about and attempt to differentiate themselves from 'outgroup' others; (c) that feelings of group identification would be related to the degree of opinion shift exhibited by group members and (d) that heightening outgroup salience would lead to increased polarization away from that outgroup's position. Given the ubiquity of the CDQ paradigm in research on group polarization, failure to find support for self-categorization predictions under these conditions would call into question the notion that this model represents a full explanation for group polarization phenomena.

## METHOD

### Overview

Participants read and privately responded to five risk-prone CDQ scenarios indicating the acceptable level of risk they would advise. Next, based on random assignment, they either read unrelated material (control condition), engaged in face-to-face group discussion (discussion-only condition), or engaged in face-to-face group discussion while being exposed to outgroup opinions (salient-outgroup condition). To ensure that we had adequately manipulated outgroup status, we described the outgroup as individuals from another discussion group (cf. Abrams et al., 1990) attending a different university (cf. Mackie et al., 1992) and reaching an atypically cautious group consensus (cf. Hogg et al., 1990). Participants in the two discussion conditions arrived at group consensus for each choice-dilemma scenario, and then provided their private opinions again. In addition, they indicated (a) their degree of identification with their discussion group, (b) their expectations regarding group norms, and (c) the extent to which they thought about (outgroup) positions from others outside their group during discussion and item consideration.

### Participants

Eighty-three students from Elementary Psychology at the University of Iowa participated as one means of satisfying a course requirement. Participants arrived at the laboratory in groups ranging in size from 3 to 5. They were randomly assigned to one of the three experimental conditions in a 3 (control, discussion-only, salient-outgroup)  $\times$  5 (Scenario) mixed design. Shift scores were derived from repeated measures on the second factor.

### Materials and Procedure

Participants were first informed that they were about to participate in a study about risk taking, and were given pre-test packets that contained five choice-dilemma scenarios (CDQ items). We adopted the five scenarios from Kogan and Wallach (1967) that normatively provoke the most reliable shifts toward risk (Cartwright, 1971).<sup>2</sup> Each scenario used the standard CDQ 10-point scale on which participants indicate the lowest odds for success they would advise when considering the risky option. Also, participants indicated what position would be taken by the average person and what position they expected the group to agree on following discussion. After completing the pre-test packets, participants were assigned to one of the conditions. For the next 20 minutes, participants in the control condition read excerpts from a magazine, while participants in the other two conditions discussed each scenario. Ostensibly to aid discussion, participants in these experimental conditions were given supplementary information about each scenario. Packets for both experimental groups contained a few irrelevant sentences about the protagonist in each scenario (e.g., he enjoys watching movies). In addition, packets for the salient-outgroup condition contained a bar-graph for each scenario ostensibly depicting opinions of another discussion group from a different university. Both experimental groups received the

<sup>2</sup>See Kogan and Wallach (1967) for complete item content—we used items 1 (electrical engineer considers changing jobs), 4 (football captain considers attempting risky play), 6 (college senior considers which graduate school to go to), 7 (chess players considers attempting a risky maneuver), and 8 (piano aficionado considers pursuing music vs. medicine).

following instructions—the bracketed portion was read only to participants in the salient-outgroup condition:

‘Also, some people like to know how other people react to these scenarios. Thus, we provided you with some additional information [including the responses of the first group that went through this procedure at another university]. Please look this information over before discussion. Whether you choose to consider or discuss this information is completely up to you.’

When presented, outgroup opinions were always relatively cautious, both in absolute terms and in comparison to normative data (see Cartwright, 1971). These bar graphs depicted positions of 7 in 10 chances for two, and 6 in 10 chances for three of the five risk-prone scenarios. Participants in the two experimental conditions were given 20 minutes to discuss and reach consensus on all five scenarios.

Participants from all three conditions then completed post-test packets indicating their private opinions for each scenario. Furthermore, packets for participants in the two experimental conditions contained a free-response thought protocol asking them to ‘list what kind of thoughts occurred to you either during the discussion or during the response period.’ Finally, participants in the two discussion conditions completed a variety of rating measures.

### Rating Measures

The rating measures were randomly ordered, and ratings were made on a 1 (Completely disagree) to 4 (Neither agree nor disagree) to 7 (Completely agree) Likert-type scales.

Group identification was measured with a short five-item scale (pre-existing scales were not appropriate given that they refer to long-standing groups). These items were: ‘I liked members of my group,’ ‘I was interested in what other people from my group had to say,’ ‘I respected other members of my group,’ ‘I felt I shared many of the same attitudes and values with the other group members,’ and ‘Overall, I identified with other members of my discussion group.’ The scale proved to be both homogeneous and internally consistent ( $\alpha = 0.81$ ). Therefore, responses were averaged in order to arrive at an overall group identification score.

Experimental participants also responded to four items regarding *group membership concerns* (e.g., ‘On these problems I did not want to suggest a riskier [more cautious] decision than that favored by other folks in my group,’ ‘There was some pressure in the group to reach a common agreement,’ and ‘My responses in part reflected a desire to get along with other group members’), and two items relevant to *inter-group processes* (‘During the discussion, we often mentioned or referred to people from other groups’; ‘During the discussion, I privately considered what people from other groups would do’). Upon completion of these measures, participants were debriefed and dismissed.

## RESULTS

Group polarization (shift) scores for each participant on each CDQ scenario were constructed by subtracting the pre-test score from the post-test score. Mean shift for each participant was calculated by averaging shifts across all five scenarios.

Group polarization studies often use the discussion group as the unit of analysis given the formal lack of independence between individual responses within a given group. However, this practice is not absolutely required and can result in overly conservative statistical conclusions. In order to increase the power of performed analyses, we examined whether it would be appropriate to use the individual mean shift rather than the discussion group mean shift as the unit of analysis and found that we did in fact

have statistical justification for using individual responses as the unit of analysis and therefore used that strategy.<sup>3</sup> One particular advantage of using individual scores is the added ability to utilize correlational analyses. For completeness, group-based analyses were also conducted (using both group consensus and group post-discussion average as the post-test). These tests lead to similar conclusions as those reported below. Effect size estimates (standardized mean differences) are reported where appropriate. All *t*-tests are two-tailed unless otherwise specified.

### Manipulation Check on Outgroup Salience

Participants from the salient-outgroup condition agreed that they 'mentioned or referred to people from other groups' to a significantly greater degree ( $M = 2.8$ ) than did participants from discussion-only condition ( $M = 2.0$ ),  $t(54) = -1.72$ ,  $p < 0.05$ , one-tailed,  $d = 0.46$ . This indicates that our manipulation of outgroup salience was successful. Notice a general disagreement with this statement in *both* conditions. This observation is not consistent with the self-categorization hypothesis that participants are thinking about outgroup positions when considering their position on the CDQs.

### Group Identification Measure

Despite the ad hoc nature of discussion groups, this procedure was sufficient in creating a sense of identity for discussion groups. The grand mean of the group identification composite score ( $M = 4.98$ ,  $SD = 0.98$ ) was significantly different from the ambivalence point (middle anchor, 4) in the direction of agreement,  $t(16) = 4.14$ ,  $p < 0.001$ ,  $d = 1.00$ . The same result held if analysis was conducted within each experimental condition, without any differences between conditions ( $ps > 0.65$ ). Note that the explicit mention of the outgroup and a graphic depiction of their position did not enhance the level of ingroup identity produced by our group discussion procedure.

### Relative Outgroup Position

Inspection of Table 1 confirms that for each scenario, average pre-test opinions expressed by participants were riskier than the subsequently presented outgroup opinions. One can also notice that outgroup opinions are not *very* different from initial ingroup opinions (i.e., the outgroup mean is within the distribution of participants' opinions, as in Hogg et al., 1990), which is important since having a large difference could reduce the need for differentiation.<sup>4</sup> In short, the conditions in this study seem sufficient to expect risk-prone polarization on the part of the ingroup participants.

<sup>3</sup>Two approaches are commonly used to investigate within-group dependence; testing for differences between discussion groups *within* conditions (e.g., Feldt, 1993; Myers, 1972), and computing intra-class correlations between group membership and individual responses (e.g., Hays, 1973; Kenny & La Voie, 1985). Failure to find such effects/relations (using a liberal significance criterion) suggests that no 'session specific' events atypically biased the reactions of group members, and it provides a basis for utilizing each group member's response as the unit of observation. This in fact was the case for opinion shifts. Discussion groups did not significantly differ in the magnitude of their opinion shifts within the control condition,  $F(8, 17) = 1.03$ ,  $p > 0.20$ , the discussion-only condition,  $F(7, 18) = 0.31$ ,  $p > 0.20$ , or the salient-outgroup condition,  $F(8, 22) = 0.85$ ,  $p > 0.20$ . Likewise, the intra-class correlation between group membership and individual mean shift was trivial ( $-0.07$ ),  $F(4, 50) = 0.74$ ,  $p > 0.20$ . Given both of these approaches yielded similar results, we used only the former approach to investigate group dependencies in other rating measures. With the exception of items assessing ingroup identification, analyses of almost all other measures suggested no dependence ( $ps > 0.20$ ). For the sake of brevity, we report all ratings data with individual as the unit of analysis, acknowledging exceptions where appropriate.

<sup>4</sup>There is some controversy regarding this prediction. For a full discussion of this issue see Jetten, Spears, and Manstead (2001).

Table 1. The range of average pre-test group opinions and contrasting outgroup opinions across scenarios

Scenario	Pre-test opinions			Outgroup opinions
	Min	Mean	Max	Mean*
1	0.270	0.530	0.700	0.600
2	0.270	0.560	0.800	0.600
3	0.230	0.506	0.800	0.700
4	0.200	0.471	0.730	0.600
5	0.300	0.542	0.800	0.700

Note: Pre-test data is based on all groups, although the pattern holds when groups within individual conditions are considered.  $N = 83$ .

\*Means are fictitious.

### The Effect of Outgroup Salience on Opinion Shifts

Opinion shifts were submitted to a 3 (Condition)  $\times$  5 (Scenario) mixed analysis of variance (ANOVA), with Condition as a between and Scenario as a within-subjects factor. The predicted main effect of Condition was marginally significant,  $F(2, 79) = 2.67$ ,  $p = 0.076$ . ANOVA also revealed an expected main effect of Scenario,  $F(4, 316) = 2.75$ ,  $p < 0.05$ , and no interaction,  $F(8, 316) = 0.85$ ,  $p < 0.55$ . Although the effect of Condition on opinion shifts did not reach the conventional criterion for significance, we tested two linear contrasts given our strong a priori interest in differential shifts across conditions. The first contrast reflected predictions from a self-categorization account, where shifts are predicted to be greatest in the salient-outgroup condition, smaller in the discussion only condition, and smallest in the control condition (weights of 1, 0, and  $-1$ , respectively). The second contrast reflected the alternative prediction that shifts in the two discussion conditions should be similar but higher than shifts in the control condition (weights of 1, 1, and  $-2$ , respectively). Whereas the linear contrast implied by the self-categorization account failed to reach significance  $t(80) = 1.66$ ,  $p > 0.10$ , the alternative contrast was significant,  $t(80) = 2.11$ ,  $p < 0.05$ . Relevant means are displayed in Table 2.

Consistent with analyses of linear contrasts, pair-wise comparisons revealed that opinion shifts in the discussion-only condition were greater than shifts in the control condition,  $t(50) = 1.92$ ,  $p < 0.05$ , one-tailed,  $d = 0.54$ , as were the opinion shifts in the salient-outgroup condition,  $t(55) = 1.85$ ,  $p < 0.05$ , one-tailed,  $d = 0.49$ . Most importantly, however, increasing outgroup salience by describing an outgroup and presenting their position did *not* lead to larger opinion shifts,  $t(55) = -0.43$ ,  $p < 0.68$ ,  $d = 0.11$ ; if anything the opposite pattern was observed (see Table 2). In short, these results are not consistent with a self-categorization view of shifts within the CDQ paradigm. It is possible, however,

Table 2. Opinion shifts as a function of scenario and outgroup salience

Scenario	Control	Discussion-only	Discussion-outgroup	Overall
1	0.000 (0.098)	0.012 (0.213)	-0.013 (0.164)	-0.001
2	-0.050 (0.232)	-0.072 (0.314)	-0.100 (0.284)	-0.076
3	0.015 (0.191)	-0.092 (0.225)	-0.023 (0.196)	-0.032
4	0.019 (0.155)	-0.140 (0.250)	-0.100 (0.205)	-0.074
5	0.042 (0.142)	-0.040 (0.260)	0.007 (0.213)	0.004
Overall	0.005 (0.103)	-0.060 (0.139)	-0.046 (0.105)	-0.037

Note: Negative values indicate a shift toward a more risky position, shift of  $-0.10$  corresponds to acceptance of 10% additional risk. Standard deviations appear in parentheses.  $N = 83$ .

that the salience of out-group positions moderated opinion shifts for people who strongly identified with the group. In order to test this possibility, we added the mean score of our group identification measure as an additional predictor to the 5 (scenario)  $\times$  2 (discussion-only vs. salient-outgroup condition) mixed model ANOVA. Critically, the group identification factor did not interact with our manipulation of out-group salience in influencing opinion shifts,  $F(7, 31) = 1.3, p = 0.28$ . Likewise, no other effects involving group identification factor were significant ( $ps > 0.30$ ).

As a supplementary analysis, we compared the group consensus in each group to the 'prototypic group norm' derived via the meta-contrast ratio by 'dividing the individual's average difference from outgroup members by his or her average difference from ingroup members' (Turner, 1991 p. 77; see also McGarty et al., 1992 pp. 3–4). This analysis was conducted only within the salient-outgroup condition given that the meta-contrast ratio formula requires the specification of outgroup positions. If self-categorization theory is correct in its assumption that group polarization results from conformity to prototypic group norms, one would expect little difference between the group consensus and this norm. The results do not confirm this prediction. Although there was a correlation between the consensus and the norm across the scenarios ( $r(40) = 0.56, p < 0.05$ ), the average absolute difference between the two ( $M = 0.19$ , a difference representing roughly 20% of the scale range) was significantly different from zero ( $t(44) = 8.73, p < 0.001$ ). Moreover, the degree of group identification expressed by individual groups was not significantly correlated with the absolute degree of deviation from the groups' prototypic norms ( $r(9) = -0.20, p = 0.56$ ). Similarly, participants' private post-discussion opinions were significantly different from the prototypic norms across the scenarios ( $M = 0.05, t(30) = 2.55, p < 0.05$ ), and group identification scores were not substantially correlated with this deviation,  $r(31) = 0.20, p = 0.26$ .

### Thought Ratings

By design, thought ratings were available only in the two experimental conditions since only participants in those conditions engaged in discussion. For the sake of brevity, we only report data central to our hypotheses. A single rater, blind to conditions, examined all of the thought protocols and, adopting a very liberal criterion, coded them for any mention of outgroups. This assessment revealed that not a single participant spontaneously reported considering outgroups in any way during the course of the experiment. Furthermore, participants tended to disagree with the statement 'During the discussion, I privately considered what people from other groups would do,' as indicated by significant difference between their responses ( $M = 2.49$ ) and the ambivalence point in the direction of disagreement,  $t(56) = -7.25, p < 0.001, d = 0.96$ . This measure was not affected by the manipulation of outgroup salience,  $t(54) = -0.13, p < 0.90$ . These data too, are not what one would expect from a self-categorization perspective.

Furthermore, participants did not report concerns about deviating from group standards or maintaining their ingroup status. When rating their agreement with the statements relevant to these concerns (e.g., 'My responses in part reflected a desire to get along with other group members'), participants responses were significantly different from the ambivalence point in the direction of disagreement for all four statements,  $ts < -3.16, ps < 0.002$ .

In order to gather data relevant to the competitive social comparison account of group polarization we related the amount of opinion shift to (a) participants' initial opinions (i.e., pre-test), (b) their perceptions of opinions of the average other person, and (c) the *expected* consensus after group discussion. Consistent with the social comparison view, the level of risk initially endorsed by participants was negatively related to the amount of shift,  $r(57) = -0.46, p < 0.001$ . That is, those participants who initially endorsed a more cautious position showed greater polarization toward risk

following discussion than did those who were relatively high in initial risk. Moreover, the amount of shift for each participant was negatively related to their initial expectancies regarding the final group consensus,  $r(57) = -0.34$ ,  $p < 0.01$  and their initial perceptions of the pre-discussion risk preferences of the average person,  $r(57) = -0.30$ ,  $p < 0.05$ . Thus, participants polarized more toward risk *after* discussion when *prior to* discussion they expected both groups and other individuals to endorse lower levels of risk. These correlations did not substantially vary between conditions.

In contrast, group identification was largely unrelated to opinion shifts,  $r(17) = 0.16$ ,  $p < 0.54$ . Finally, the degree of group identification was not related ( $r = 0.01$ ) to the difference between private post-discussion responses and the group decision (i.e., the convergence of private opinions on the group norm). These relations too are inconsistent with a self-categorization account of group polarization.

## DISCUSSION

This experiment investigated key assumptions of the self-categorization account of group polarization: (1) whether discussion of CDQ items would be sufficient for creating a sense of group identity within ad hoc lab groups, (2) whether participants were concerned about outgroup positions, and critically (3) whether the amount of shift in this paradigm would be affected by the manipulated salience of divergent outgroup opinions and/or the measured degree of participants' identification with their discussion group.

The group identification data clearly support the assumption that feelings of group identification were created in our laboratory discussion groups. However, these feelings of group identification were not related to group polarization nor to the degree of conformity to prototypic group norms. In addition, participants did not seem concerned about endorsing a particular type of opinion because of the views of other group members, and did not report feeling pressure to do so from the groups. Moreover, group polarization on CDQ items does not appear to be driven by desires to maintain differentiation from outgroups. Although participants identified with their discussion groups and were more likely to report considering the outgroup position in the outgroup-salient condition, their opinion shifts were not affected at all by the manipulation of outgroup salience. Furthermore, participants never spontaneously reported considering any kind of outgroups, and even when asked directly, disagreed that they privately considered other groups during the discussion. While it is conceivable that these results may be a matter of participants being poor at being able to consciously recognize and accurately report on their cognitive operations (Nisbett & Wilson, 1977), at best, they cannot be taken as support for a self-categorization perspective and at worst, are counter to the emphasis on the importance of inter-group differentiation.

An additional finding was that the more cautious initial participants' opinions were, the larger was their shift toward risk. This finding could be explained in terms of participants moving toward a desired norm [*vis-à-vis* self-categorization theory] but as noted above, it could also be viewed as an attempt by participants to maintain a sense of comparative riskiness as specified by competitive social comparison views of group polarization. Note, in this regard, that participants who prior to discussion perceived others to be relatively cautious shifted *more* than participants who perceived others to be relatively risky; a finding generally taken as support for a competitive comparison interpretation of group polarization (see Dion, Baron, & Miller, 1970). According to this view, on the risk-prone choice dilemmas used in the present research, individuals generally admire risk and strive to be comparatively risky. Indeed, prior to discussion, most participants inaccurately assume that they are in fact, above average in risk on such items (Brown, 1965), a form of pluralistic ignorance. During discussion however, some participants invariably learn that they are in fact less risky than others. As a result these

individuals would have the greatest need to heighten the extremity of their risk estimates if they wished to maintain the relative positions they thought they held prior to discussion, which is precisely the pattern of results we report above. When viewed collectively then, the data lend little support to the view that concerns regarding social identity or self-categorization are mediating the group polarization observed in the CDQ paradigm while offering some support to formulations emphasizing competitive social comparison processes.

## **Conclusion**

The data reported here lend little support to the view that intergroup processes play a key role within the CDQ paradigm. This conclusion stems from the failure to find greatest polarization in the salient-outgroup condition, the unwillingness of participants to report group-related concerns, and the failure to find a relationship between degree of group identification and group polarization on the CDQ. The failure to support the predictions of the self-categorization model occurred despite the fact that, in at least one condition, we created the conditions that should have amplified group polarization according to the self-categorization perspective (i.e., member identification with a salient ingroup, active discussion of scaled decision items, and the existence of a salient, more cautious outgroup; cf. Turner, 1991; Wetherell, 1987). Thus, these data call into question the view that the self-categorization account of group polarization represents a full explanation for such effects at least with respect to the CDQ paradigm.

It would be premature, however, to conclude that self-categorization plays no role in group polarization phenomena. While self-categorization may not drive the polarization found in the temporary groups and hypothetical situations that typify research within the CDQ paradigm, it is still possible that concerns regarding self-categorization and social identity play more of a role in more established groups. More specifically, self-categorization may well affect polarization in a more limited set of circumstances in which (1) ingroup members share a history involving such things as common goals, achievements, traditions, allegiances, and/or mutual friendships, (2) the outgroup is particularly disliked (e.g., Moscovici & Zavalloni, 1969), (3) ingroup membership is made salient (e.g., Mackie & Cooper, 1984), (4) the issue under consideration is important to group members and perhaps relevant to the basis of their social categorization (e.g., Myers & Bishop, 1970), and (5) the existence of the disagreeing outgroup is salient or strongly implied (e.g., Abrams et al., 1990). In short, it is in contexts where the ingroup is likely to be an important source of social identity, the intergroup distinction is salient, and the discussion topic is self-relevant or otherwise engaging, that it would seem most likely that group members' attitudes would be noticeably affected by the salience of social categories and their desire to maximize similarity with the ingroup while distancing themselves from the outgroup. In such settings both the inter-group competitive comparisons emphasized by self-categorization theory and the interpersonal [within-group] competition stressed by social comparison may both contribute to group polarization effects. That is, one wants to be the best in one's group and be clearly different from a disliked outgroup. Hopefully future work will explore these similarities and, more importantly, seek to establish when intergroup context will play an influential role in group polarization effects.

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## REFERENCES

- Abrams, D., Wetherell, M., Cochrane, S., Hogg, M. A., & Turner, J. C. (1990). Knowing what to think by knowing who you are: Self-categorization and the nature of norm formation, conformity and group polarization. *British Journal of Social Psychology, 29*, 97–119.
- Baron, R. S., & Kerr, N. L. (2002). *Group process, group decision, group action* (2nd ed.). Philadelphia: Open University Press.
- Brown, R. (1965). *Social Psychology*. New York: The Free Press.
- Burnstein, E., & Vinokur, A. (1973). Testing two classes of theories about group induced shifts in individual choice. *Journal of Experimental Social Psychology, 9*, 123–137.
- Cartwright, D. (1971). Risk taking by individuals and groups: An assessment of research employing choice dilemmas. *Journal of Personality and Social Psychology, 20*, 361–378.
- Dion, K. L., Baron, R. S., & Miller, N. (1970). Why do groups make riskier decisions than individuals? In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology* (Vol. 5, pp. 306–378) New York: Academic Press.
- Feldt, L. S. (1993). *Design and analysis of experiments in the behavioral sciences*. Iowa City, IA: The University of Iowa Press.
- Hays, W. L. (1973). *Statistics for the social sciences*. New York: Holt, Reinhart & Winston.
- Hogg, M. A., Turner, J. C., & Davidson, B. (1990). Polarized norms and social frames of reference: A test of the self-categorization theory of group polarization. *Basic and Applied Social Psychology, 11*, 77–100.
- Jetten, J., Spears, R., & Manstead, A. S. R. (2001). Similarity as a source of discrimination: The role of group identification. *European Journal of Social Psychology, 31*, 621–640.
- Kenny, D. A., & La Voie, L. (1985). Separating individual and group effects. *Journal of Personality and Social Psychology, 48*, 339–348.
- Kogan, N., & Wallach, M. A. (1967). Risky-shift phenomenon in small decision-making groups: A test of the information-exchange hypothesis. *Journal of Experimental Social Psychology, 3*, 75–84.
- Mackie, D. (1986). Social identification effects in group polarization. *Journal of Personality and Social Psychology, 50*, 720–728.
- Mackie, D. M., & Cooper, J. (1984). Attitude polarization: The effects of group membership. *Journal of Personality and Social Psychology, 46*, 575–585.
- Mackie, D. M., Gastardo-Conaco, M. C., & Skelly, J. J. (1992). Knowledge of the advocated position and the processing of in-group and out-group persuasive messages. *Personality and Social Psychology Bulletin, 18*, 145–151.
- McGarty, C., Turner, J. C., Hogg, M. A., David, B., & Wetherell, M. S. (1992). Group polarization as conformity to the prototypical group member. *British Journal of Social Psychology, 31*, 1–20.
- Moscovici, S., & Zavalloni, M. (1969). The group as a polarizer of attitudes. *Journal of Personality and Social Psychology, 12*, 125–135.
- Myers, J. L. (1972). *Fundamentals in experimental design* (2nd ed.). Boston, MA: Allyn & Bacon.
- Myers, D.G., & Bishop, G. D. (1970). Discussion effects on racial attitudes. *Science, 169*, 778–779.
- Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review, 84*, 231–259.
- Rosch, E. (1978). Principles of categorization. In E. Rosch & B. B. Lloyd (Eds.), *Cognition and categorization* (pp. 27–48). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Sanders, G. S., & Baron, R. S. (1977). Is social comparison irrelevant for producing choice shifts? *Journal of Experimental Social Psychology, 13*, 303–314.
- Spears, R., Lea, M., & Lee, S. (1990). Deindividuation and group polarization in computer-mediated communication. *British Journal of Social Psychology, 29*, 121–134.
- Tajfel, H., Billig, M. G., Bundy, R. P., & Flament, C. (1971). Social categorization and intergroup behavior. *European Journal of Social Psychology, 1*, 149–178.
- Turner, J. C. (1991). *Social influence*. Pacific Grove, CA: Brooks/Cole.
- Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self categorization theory*. Oxford/New York: Blackwell.
- Turner, J. C., Wetherell, M. S., & Hogg, M. A. (1989). Referent informational influence and group polarization. *British Journal of Social Psychology, 28*, 135–147.
- Wetherell, M. S. (1987). Social identity and group polarization. In J. C. Turner M. A. Hogg P. J. Oakes S. D. Reicher, & M. S. Wetherell (Eds.), *Rediscovering the social group: A self-categorization theory*. Oxford/New York: Blackwell.