

# Discussion arguments, information about others' responses, and risky shift\*

DAVID G. MYERS and DAVID W. WONG†

Hope College, Holland, Mich. 49423

and

PETER MURDOCH

Center for Creative Leadership, Greensboro, N.C. 27402

The discussion-arguments and information-exchange explanations of the risky-, cautious-shift phenomenon were tested in three conditions. An information-exchange-only condition provided mere exposure to others' initial responses, a discussion-only condition elicited discussion without information exchange, and a discussion-plus-information-exchange condition combined the two elements. Significant shift was observed in each of the three conditions. Other analyses examined the relationship between perceived relative riskiness and shift and between Ss' aptitude scores and initial tendencies in the valued direction. The data generally supported the discussion arguments explanation.

Brown (1965) has suggested that risky and cautious shifts following discussion of choice dilemma items occur because: (1) discussion provides arguments mostly in support of the dominant initial values; and (2) mere information about others' initial decisions indicates to the average S that, relative to others, he is not as strongly in the valued direction as he had supposed. The first idea of mutual reinforcement through the pooling of arguments is here called the *discussion arguments* hypothesis. The second suggestion of social comparison effects after mere exposure to the opinions of one's peers has been called the *information exchange* hypothesis (Kogan & Wallach, 1967).

The present experiment tested contrasting predictions from the discussion-arguments and information-exchange explanations by isolating these elements of the typical group discussion. An information-exchange-only condition (IE-only) provided mere exposure to the initial responses of others, a discussion-only (D-only) condition elicited discussion arguments while suppressing the exchange of information about initial responses, and a discussion-plus-information-exchange (D + IE) condition combined the two components. In the latter two conditions, Ss also estimated the average responses of their fellow students before and after the discussion.

The discussion-arguments

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†Now at Ball State University, Muncie, Ind.

explanation predicts that conditions with discussion (D-only and D + IE) will shift more than the no-discussion (IE-only) condition. The information-exchange hypothesis predicts that the information-exchange conditions (IE-only and D + IE) will shift more than the no-information-exchange condition (D-only). If both elements are operating, then the IE-only and D-only conditions should both produce shift, but less than when both elements are combined in the D + IE condition.

Additional predictions were also derived regarding misperceptions of one's own relative riskiness. The information-exchange explanation suggests that any treatment which produces shift will also yield a revised perception of the response of the average other, relative to one's own initial response. If shift occurs even though misperceptions about others' cautiousness persevere (e.g., in the D-only condition), this would contradict the information-exchange explanation. The information-exchange hypothesis also predicts a relationship between the extent to which a person perceives himself to be more in the valued direction than others and the amount of his shift. As Pruitt & Teger (1967, p. 8) reasoned, "The farther ahead of the pack one initially thinks he is, the more catching up he has to do when he finds that he is performing in an average fashion." They observed that on a given item, the average difference between own risk and risk attributed to others was not a good predictor of the average shift that the item elicited. The present study relates the perceived relative riskiness of a particular individual on an item to the amount of his shift.

A final prediction, derived from the discussion-arguments hypothesis, is

that Ss' aptitude scores are related to their initial tendencies in the valued direction. Drawing from the reservoirs of reasons supporting the valued and nonvalued alternatives should yield arguments that mostly support the dominant value (cf. Myers & Bishop, in press). Hence, being risky on risk-valued items and cautious on caution-valued items would seem more justified and rational after pooling the various reasons supporting the dominant value. Therefore, high-aptitude people, who presumably could think of more of those reasons to begin with, should initially be more in the valued direction than their low-aptitude peers.

## SUBJECTS

Ten groups (six female, four male) of introductory psychology students participated in each experimental condition—seven five-person groups, two four-person groups, and one three-person group.

## MATERIALS

Six choice dilemma-type items used by Myers, Murdoch, & Smith (1970) were selected as stimulus materials. Three *risky items* have produced initial and shift responses in the risky direction, and three *cautious items* have produced responses in the cautious direction.<sup>1</sup>

## PROCEDURE

The Ss were seated in desk chairs arranged in a circle and given the initial six-item questionnaire. An additional page at the end of the questionnaire instructed Ss to estimate the average response of fellow students to each item. After this common initial baseline, new questionnaires were distributed and different tape-recorded instructions were given to the three conditions.

### IE-Only Condition

One round of information exchange was elicited by asking Ss: "...to compare notes by informing each other of your initial decisions as best as you can remember them... On each item we will ask someone to start by simply telling his (her) choice to the other group members by saying "3-in-10" or "7-in-10" or whatever. After the first person, we will then continue clockwise around the table with each person in turn indicating his (her) choice."

The Ss were urged to reconsider their decisions without feeling bound by their previous responses. After each information exchange, E said, "OK, would you think about how you feel right now and then mark your decision."

### D-Only Condition

To stimulate discussion of the items without an exchange of information about initial decisions, Ss were told: "Now we would like to give you an

Table 1  
Mean Shift Per Item on Risky and Cautious Items by Condition

Condition	N†	Risky Items			Cautious Items			Diff(1) — Diff(2)
		Initial	Final	Diff(1)	Initial	Final	Diff(2)	
IE Only	10	3.46	3.29	0.16	7.08	7.24	-0.16*	+ .33**
D Only	10	3.31	2.71	0.59**	7.10	7.47	-0.37	+ .96**
D + IE	10	3.41	3.06	0.34	7.49	7.68	-0.19**	+ .53**

Note—Positive difference scores indicate risky shifts. †Number of groups; \* $p < .10$ , two-tailed  $t$  test of difference from zero; \*\* $p < .05$ , two-tailed  $t$  test of difference from zero

opportunity to discuss each situation . . . . In the discussion please do not tell each other your initial decision—simply discuss the arguments for and against each alternative. You can express your general feelings, for example, about whether or not Peter ought to run for governor, without saying exactly what you put down the first time."

Three-minute discussions were elicited without a consensus requirement, although E terminated the discussion if, on a particular item, a 30-sec silent period elapsed before the time limit. Ss were also requested after each new decision to "again estimate the average response to this item by other students here at Hope College. You needn't feel bound by your first estimate since the discussion may have altered your impression." Finally, as a check on the success of the attempt to suppress information exchange, Ss were asked to: ". . . guess the initial prediscussion responses of each of the other group members. Do this by marking the initials of each of the other group members next to the probability you think he might have chosen when taking the questionnaire the first time."

Each S had a card with his initials placed in front of him for this purpose.

#### D + IE Condition

This condition was a combination of the IE-only and D-only conditions, with one round of information exchange followed by a 3-min discussion of each item. As in the D-only condition, the instructions indicated that each discussion would be followed by three responses: an individual postdiscussion decision, a

second estimate of the average peer response, and guesses of the other group members' initial responses.

#### RESULTS

##### Check on the Information Exchange Manipulation

Since D-only Ss could have given cues about their initial decisions, it was ascertained whether less information exchange occurred in the D-only or in the D + IE condition. For each person in these two conditions, we calculated the mean absolute difference between his actual initial response on an item and the responses which the other members of his group guessed he made. Averaging across the six items for each person yielded an index of the accuracy of guesses about his initial decisions. As predicted, D + IE Ss were significantly more accurate in guessing fellow group members' initial responses (mean absolute error per item = 0.84) than were D-only Ss (mean error = 2.11,  $t = 9.87$ ,  $df = 90$ ,  $p < .001$ ).

Although D-only Ss had less information about the specific initial decisions of their group members than did D + IE Ss, the discussion may still have given them some cues to other's responses (as might be indicated by comparison to some chance level of guessing accuracy). To find the extent to which the discussion did provide such cues, we reasoned that if discussion provided no cues to the specific initial responses of a S, then guesses directed at him would predict his initial responses no better than guesses which were directed at other Ss. So we computed, using the D-only condition data, the mean of absolute deviations of a S's initial response on an item from all guesses of initial responses

for that item made by Ss in other groups. Averaging these mean deviations across the six items yielded a new index for each S which can be compared with the accuracy index calculated previously. This would indicate whether guesses directed at other Ss were less accurate estimates of a particular S's initial response than were the guesses intended specifically for him. For the D-only condition, this new mean deviation per S of 2.39 differed significantly (related measures  $t = 4.08$ ,  $df = 91$ ,  $p < .001$ ) from the mean guessing error of 2.11 noted above. Evidently, discussion did provide D-only Ss with some minimal information about others' responses, although considerably less than what D + IE Ss received.

##### Shift Scores

Mean shifts on risky and cautious items are reported for each condition in Table 1. Total shift in the valued direction (the difference in mean shift on risky and cautious items—see Table 1, last column) was significant for each of the three conditions. The discussion-arguments interpretation predicts greater shift in the discussion conditions than in the IE-only condition (whereas the information-exchange explanation predicts least shift in the D-only condition). However, pairwise comparisons of conditions within each of the three difference score columns yielded entirely nonsignificant results.

##### Perceived Relative Riskiness

Table 2 contrasts the mean of Ss' own initial responses with the mean of their pretreatment and posttreatment estimates of peer responses. On the initial questionnaire, Ss tended to perceive themselves as more in the valued direction than their peers—as more risky on risk-valued items and as more cautious than their peers on caution-valued items. As expected, the D + IE experience was sufficient to alter this misperception, bringing their posttreatment estimate of peer responses into line with their own initial average. Surprisingly, the D-only treatment yielded the very same revised perception of their average fellow student.

Regarding the relationship between individual Ss' perceived relative riskiness on specific items and shift amounts, the information exchange hypothesis implies that when a S perceives himself as way ahead of his average peer, he will suffer more disconfirmation of his perceived relative riskiness. Hence, his shift will be greater than one who perceives himself as less in the valued direction than others. There should therefore result a negative correlation between perceived difference from peers (own initial response minus estimate of others) and amount of risky shift.

Table 2  
Mean of Own Responses Per Item and Mean Estimate of Average Other

Condition	Item	N	Own Initial	Pre-	Post-
				treatment	treatment
				Estimate	Estimate
IE Only	Risky	46	3.41	4.40†	—
	Cautious	46	7.02	6.87	—
D Only	Risky	46	3.27	4.30†	3.32
	Cautious	46	7.05	6.47**	7.22
D + IE	Risky	46	3.43	4.67†	3.64
	Cautious	46	7.41	7.09*	7.36

\* $p < .10$ , two-tailed test of differences from own initial

\*\* $p < .05$ , two-tailed test of differences from own initial

† $p < .001$ , two-tailed test of differences from own initial

Contrary to this prediction, the relevant correlations are significantly positive (ranging from .16 to .29;  $N = 276$  for each condition, 6 items  $\times$  46 Ss); the amount of risky shift is directly related to the tendency to perceive oneself as more cautious than others. This may be due to differences in own initial risk, which are correlated with the perceived difference score ( $r = .65$ ). That is, the riskier that Ss are initially, the more they perceive themselves as riskier than their peers. On a given item, it is the most cautious initial respondents who show the most risky shift (Vidmar, 1970), so actual initial risk level needs to be held constant when examining the relationship between perceived relative riskiness and shift amount. After separating out (by partial correlation) variance due to own initial scores, the relationship between perceived difference and shift is near zero (correlations of .11, .08, and .12 for the three conditions).

#### Aptitude Scores and Initial Responses

To test the predicted relationship between aptitude and initial tendency in the valued direction, Scholastic Aptitude Test totals (verbal plus quantitative) were obtained from college records for 115 of the Ss. The correlation between SAT total and initial tendency in the valued direction (initial mean on cautious items minus initial mean on risky items) was  $+4.0$  ( $p < .001$ ), supporting the hypothesis.

#### DISCUSSION

The study examined differing predictions from the discussion-arguments and information-exchange explanations of the risky-, cautious-shift phenomenon. Consistent with the discussion-arguments hypothesis and contrary to the information-exchange hypothesis, significant shifts occurred in the D-only condition. Independently of this study, Clark, Crockett, & Archer (in press) and St. Jean (1970) also found shift in a D-only-type condition. Clark et al were surprised by an additional finding, replicated in the present study, that the D-only treatment was sufficient to alter Ss' misperceptions of their average peer. They interpret shifts in this condition as consistent with the information-exchange hypothesis if one assumes "... that listening to and participating in a discussion of arguments in favor of risk, even without clear commitment from each S to an alternative, provides subtle but unequivocal information about each participant's choices. In this way, a discussant can learn that his peers are riskier than he had thought... For the information-exchange hypothesis to remain a plausible

explanation of these results, it must be demonstrated that Ss can infer reliably from the group discussion alone the preferred positions of the others."

Our check on the information exchange manipulation indicated that Ss in the D-only condition were not receiving "unequivocal information about each participant's choices." Still, D-only Ss did conclude correctly that the average peer was more in the valued direction than they had originally thought. It is impossible to determine whether their altered perception of the average peer was a cause of the shift, a concomitant, or a result of the shift.

Significant shift in the valued direction was obtained in the D + IE condition, although the magnitude was small compared with previous shifts produced by discussion of the same items (Myers et al, 1970). Small but significant shifts also occurred in the IE-only condition. The public commitment prior to the information exchange manipulations may have attenuated somewhat the effect of these treatments, although the instructions to consider initial decisions may have counterbalanced this with E demand for change.

Contrary to the information-exchange hypothesis, the difference between own riskiness and the perceived riskiness of others was not related to shift scores. Clark et al (in press) report a finding which, at first glance, may appear to contradict this. Groups composed of Ss who perceived themselves to be at least as risky as their peers shifted more to risk than did groups of Ss who perceived themselves to be more cautious than their peers. As in the present study, Clark et al also found that Ss who perceived themselves to be relatively risky were, in fact, actually riskier than those who perceived themselves to be relatively cautious. These risk-valuing groups may have shifted more to risk because (1) of information gained about others' initial decisions or (2) their valuing of risk influenced the flow of discussion arguments. Cartwright (in press) concluded that "Further research, which relates shifts to the beliefs and values of specific individuals for specific items, is required before the issue can be settled." The present finding of essentially no relationship between shift and magnitude of perceived relative riskiness (by specific individuals on specific items) casts doubt on the first interpretation. A content analysis of the discussions would be necessary to determine if discussion arguments do differ for risk-valuing and caution-valuing groups, as implied by the second interpretation.

Consistent with the idea that

discussion arguments result in an accumulation of reasons disproportionately supporting the dominant value, high-aptitude Ss were found to be more in the valued direction than low-aptitude Ss. This correlational finding is only indirect evidence for the discussion-arguments explanation, since it could be due to other factors which covary with aptitude.

In summary, the findings of (1) shifts in the D-only condition (with little information gained about specific initial decisions of other group members), (2) no relationship between perceived relative riskiness and shift amount, and (3) a positive relationship between aptitude and initial tendency in the valued direction, add support to the idea that risky and cautious shifts result from the pooling of discussion arguments which disproportionately support the dominant value.

#### REFERENCES

- BROWN, R. *Social psychology*. New York: Free Press, 1965.
- CARTWRIGHT, D. Risk taking by individuals and groups: An assessment of research employing choice dilemmas. *Journal of Personality & Social Psychology*, in press.
- CLARK, R. D., III, CROCKETT, W. H., & ARCHER, R. L. Risk-as-value hypothesis: The relationship between perception of self, others and the risky shift phenomenon. *Journal of Personality & Social Psychology*, in press.
- KOGAN, N., & WALLACH, M. A. The risky shift phenomenon in small decision-making groups: A test of the information-exchange hypothesis. *Journal of Experimental Social Psychology*, 1967, 3, 75-84.
- MYERS, D. G., & BISHOP, G. The enhancement of dominant attitudes in group discussion. *Journal of Personality & Social Psychology*, in press.
- MYERS, D. G., MURDOCH, P. H., & SMITH, G. F. Responsibility diffusion and drive enhancement effects on risky shift. *Journal of Personality*, 1970, 38, 418-425.
- PRUITT, D. G., & TEGER, A. I. Is there a shift toward risk in group discussion? If so, is it a group phenomenon? If so what causes it? Paper presented at the American Psychological Association convention, 1967.
- ST. JEAN, R. A reformulation of the value hypothesis in group risk taking. *Proceedings of the 78th Annual Convention of the American Psychological Association*, 1970, 5, 339-340.
- VIDMAR, N. Group composition and the risky shift. *Journal of Experimental Social Psychology*, 1970, 6, 153-166.
- VINOKUR, A. Review and theoretical analysis of the effects of group processes upon individual and group decisions involving risk. *Psychological Bulletin*, in press.

#### NOTES

1. To clearly indicate that the task is to advise what the probability of success should be (not to estimate what it actually is), the word "If" was inserted before each alternative (e.g., "If the chances are 2 in 10...").