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PESSIMISM-OPTIMISM AND RISK TAKING IN INDIVIDUAL AND GROUP CONTEXTS[1]

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Choice-dilemmas items were administered with the customary risk-taking format (minimal acceptable odds to warrant recommendation of the desirable risky alternative) and with a pessimism-optimism format (estimation of the actual real-world probability of success of the desirable risky alternative). Following individual testing to establish base-line levels, subjects were randomly assigned to either a risk-pessimism or pessimism-risk treatment. In the former, discussion to consensus was focused on the risk dimension, and subsequent pessimism-optimism judgments were made privately; in the latter, discussion to consensus was focused on the pessimism-optimism dimension, and subsequent risk decisions were made privately. Results indicated that the link between risk and pessimism was asymmetrical. The risky shift was produced only when discussion was oriented along the risk-taking dimension. In contrast, pessimistic shifts were obtained following both risk-oriented and pessimism-oriented discussions. Group-induced pessimism was attributed to pooling or heightened realization of the "things that might go wrong" in pursuing a risky course of action.

As studies on the risky-shift phenomenon in groups continue to proliferate, investigators have begun to inquire into the conditions that militate against the phenomenon in both laboratory and real-world contexts. Thus, Madaras and Bem (1968) have recently pointed to three factors that place limits on the generalizability of risky-shift effects following group interaction: (*a*) moral or other "cost" considerations associated with the risky alternative; (*b*) the impingement of the decision consequences on persons other than those involved in the act of decision making; and (*c*) the observation that the shift toward risk is accompanied by a shift toward pessimism, the latter possibly having a decisive effect in a complex decision-making situation.

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With regard to the first of these, Rabow, Fowler, Bradford, Hofeller, and Shibuya (1966) and Stoner (1968) have been able to produce conservative shifts by enhancing the moral or nonmoral costs attendant upon the pursuit of risky alternatives. Both studies employed altered or newly written choice-dilemmas items of the type originally developed by Wallach and Kogan (1959). As Madaras and Bem (1968) have observed, some of the revised items may violate the principle in terms of which such items were composed—namely, that the risky alternative be more desirable than the conservative choice. Those authors also recognize that the intrusion of moral values "may have actually removed the problems from the dimension of risk-conservatism altogether [p. 356]."

The second factor considered by Madaras and Bem—the consequences of decisions impinging upon others—has been relatively neglected as a group phenomenon. *Individuals* become more conservative in a problem-solving context when others' interests are at stake (Wallach, Kogan, & Bem, 1964), but there is only equivocal evidence that *groups* make more conservative decisions when others are

implicated than when deciding for themselves alone (Kogan & Zaleska, 1969).

The third and final point raised by Madaras and Bem—a shift toward pessimism—receives empirical confirmation in their study. The finding is an important one, as those investigators emphasized, because considerations of optimism-pessimism—the perceived probability that the risky choice will in fact prove successful—could well counter dispositions toward risk taking in real-life situations. In the present authors' view, the foregoing finding is provocative and well worth further efforts to establish its stability and assess its theoretical import. The present investigation, then, attempts a systematic examination of the relation between optimism-pessimism and risk taking in the judgments and decisions of individuals and groups.

In the choice-dilemmas format, the subject is asked to state the minimum odds of success deemed acceptable for the risky alternative to warrant choosing it. The odds range from 1 in 10 to 9 in 10, with the further option of refusing to take any risk whatever (scored as 10 in 10). The risk index has also been conceptualized as a measure of the disutility or deterrence value of failure (Wallach & Kogan, 1961). The higher the probability level that is selected, the more strongly is the subject deterred by potential failure from pursuing the desirable, though risky, alternative.

As Madaras and Bem have demonstrated, the choice-dilemmas items can be used with a different response format—one that inquires into the real-world probability of success of the risky alternative. This can be considered an optimism-pessimism dimension, and it is logically, though not necessarily empirically, independent of the degree to which the subject is deterred by possible failure in pursuing the desired, risky course of action. Consider, for example, the fourth choice-dilemmas item: a football captain who can choose a safe play which will tie the score in the waning seconds of a game with the traditional rival or a risky play that would bring victory if successful, defeat if not. A subject might opt for the risky alternative at minimum odds of 1 in 10. This is the highest level of risk taking possible on the choice-dilemmas instrument, and is indicative of a situation in which the utility of success heavily outweighs the deterrence value of failure. Such a person, however, might be relatively pessimistic or optimistic in terms of estimating the actual probability of success of the risky course of action.

Madaras and Bem, leaning on early research by Shaw (1932) and Thorndike (1938), attributed the pessimistic shift to the reduction of misinformation in the group discussion, which thereby makes the group product more accurate. More accurate and more confident members are presumed to exert greater influence. While it appears unlikely that pessimistic shifts would be induced by more confident group members, Madaras and Bem may well be on the right track in linking pessimistic shifts to accuracy. Where individual subjects are concerned, there is a distinct tendency to judge desirable events as more probable and to judge undesirable events as less probable (Crandall, Solomon, & Kellaway, 1955; Irwin, 1953). At the individual level, then, subjects exhibit a bias toward optimism. Group discussion might conceivably have the effect of diminishing such bias. Pessimistic shifts in such a case would in fact reflect probability estimations that are more realistic and accurate.

Where the discussion is focused on the issue of desired risk level, the weight of the evidence points to the strong influence of cultural values favoring risk taking over conservatism. The risky-shift effect in groups can thus be explained on the basis of group members' unanticipated discovery in the group context that some of their peers favor higher risk levels and hence endorse the cultural value more strongly (Brown, 1965; Levinger & Schneider, 1969; Teger & Pruitt, 1967; Wallach & Wing, 1968). Kelley and Thibaut (1969) complemented the value interpretation with their claim that risk taking offers a richer rhetoric than does caution.

From the perspective of cognitive-dissonance theory (Festinger, 1957), subjects who commit themselves (through group discussion) to more risky positions should subsequently manifest greater optimism in an effort to bolster their risky stands. Regrettably, the Madaras-Bem research sheds no light on this

interesting issue because pessimism judgments preceded decisions on desired risk levels. Further, that research was not designed to uncover possible sequential effects in the pessimism-risk relationship. Rather, Madaras and Bem were concerned exclusively with the effects of optimism-pessimism and risk discussions on individual-to-group shifts along those respective dimensions taken separately. Those authors observed that both pessimism and risk taking were enhanced under the foregoing conditions.

In the present study, individual base-line data on risk and pessimism levels were obtained for all subjects. Some engaged in discussions oriented around the pessimism-optimism dimension; the others participated in the traditional risk-oriented discussions. All discussions proceed to consensus. Finally, individual pessimism and risk judgments were obtained for all subjects. In addition to a replication of the Madaras-Bem investigation, the foregoing design allows for the examination of sequential effects. Do risk-oriented discussions, in addition to producing risky shifts, also affect subsequent private judgments of optimism-pessimism? Similarly, do group discussions relevant to optimism-pessimism—the actual probability of success or failure of the risky, more desirable alternative—bring about changes in subsequent private risk-taking preferences? We assume for the moment that, consistent with Madaras and Bem, such optimism-pessimism discussions will in fact produce pessimistic shifts. It is hoped that the present work will indicate whether the risk-pessimism link is sequentially reversible or irreversible.

Neither the Madaras-Bem research nor the new empirical work proposed thus far has considered the issue of whether genuine group effects are involved in the observed outcomes. The pessimistic shifts observed by Madaras and Bem may not represent a group-induced phenomenon. Conceivably, subjects become more pessimistic over successive judgments without intervening group discussion.[3] Individual control groups must be employed in order to settle this issue.

In sum, the objectives of the present experiment are as follows: (*a*) to attempt to replicate the pessimistic shifts observed by Madaras and Bem; (*b*) to observe whether such shifts occur where the focus of the discussion is upon risk rather than optimism-pessimism; (*c*) if pessimistic shifts are obtained under both of the conditions described, to examine the sequential reversibility of the risk-pessimism association; (*d*) to determine whether pessimistic shifts represent a genuine group phenomenon rather than one located in the individual.

Method

Subjects

Male students ($N = 130$) at the University of Mannheim (Germany) volunteered to serve as paid subjects.

Instrument

The choice-dilemmas task (Kogan & Wallach, 1964, Appendix E) was used to measure the risk-taking dimension. The original instrument was modified to allow for a 10-point scale ranging from a 10% to a 100% chance that the risky alternative would prove successful. Percentages were summed across items to yield a total risk-taking score, lower values reflecting greater risk. Items 6 and 12 were omitted from the present instrument, and the remaining items were translated and adapted to fit the German cultural context. These adaptations are described by Lamm and Kogan (1970).

For the assessment of pessimism-optimism, the response format of the 10 choice-dilemma items was altered accordingly. For each item, subjects estimated the probability that the risky alternative could be successfully implemented in the type of situation described. An 11-point scale was employed, probabilities ranging from 0 in 10 to 10 in 10 that the risky alternative would in fact lead to a successful outcome if chosen. A subject's total score was obtained by summing across items, a high score indicating less pessimism in predicting outcomes.

Procedure

At an initial preliminary testing session, all subjects filled out the choice-dilemmas questionnaire under both risk-taking and pessimism-optimism instructions. The sequence was randomized, half of the subjects first expressing risk preferences, the remaining half first making pessimism judgments. This pre-

[3] Bateson (1966) and Flanders and Thistlethwaite (1967) have offered evidence to show that the risky-shift phenomenon is not dependent upon group interaction but rather can be produced if individual subjects are required to generate pro- and anti-risk arguments. Efforts to replicate such "familiarization" effects, however, have been entirely unsuccessful (Teger, Pruitt, St. Jean, & Haaland, 1970).

experimental phase provided base-line risk (R_1) and pessimism (P_1) indexes.

Approximately 2 weeks after the foregoing initial assessment, subjects were assigned at random to one of four conditions. More subjects were assigned to the pessimism-risk (P-R) treatment and control ($n = 73$) than to the risk-pessimism (R-P) treatment and control ($n = 57$), because the latter represented the standard risk-taking discussion, whereas the former—pessimism discussions—represented a relatively new experimental condition.

R-P treatment: Group condition. For those subjects assigned to the group condition of the R-P treatment ($n = 28$, divided into seven 4-man groups), instructions called for the group to achieve consensus on a desired risk level (R_2) for each of the choice-dilemmas items. Each member recorded the group decision in his booklet. Seven minutes were allotted for the discussion of each item. Subjects were notified when 6 minutes had elapsed so that they might use the last minute for a special effort to reach a consensus. If deadlock occurred—that is, if a unanimous decision was not made within 7 minutes—the experimenter called on each group member to state the position closest to those of the other group members to which he was able to agree. The experimenter computed the average of these four positions, and asked the group members to record it as the group "decision" (R_2). Following the end of discussion on each choice-dilemmas item, the group members privately estimated the "actual" probability of success of the risky alternative for that item—what we have called a pessimism judgment (P_2). A separate answer sheet was provided for recording these responses.

After R_2 and P_2 information had been obtained for all 10 items, the material containing the pessimism judgments was removed. The booklet containing the subjects' group decisions (R_2) remained in their possession and was used to record their private post-discussion risk preferences (R_3). Subjects were informed that the latter could be the same as or different from the group decision, depending upon whether they were in agreement with or felt pressured into the prior consensus.

R-P treatment: Individual control. Subjects ($n = 29$) in the individual control for the R-P treatment made the same decisions and judgments as those in the group condition. The control subjects, of course, did not engage in any group discussion. In justifying a second round of risk-taking decisions in the choice-dilemmas task (R_2), the experimenter indicated to the subjects that they should not try to remember their responses of 2 weeks ago, but should truly reconsider each situation. These instructions were essentially identical to those used by Wallach, Kogan, and Bem (1962) for their control condition. Following each R_2 decision, subjects estimated the "real" probability of success of the risky alternative—the pessimism judgment P_2. Finally, to maintain strict comparability with the matched group condition, subjects made a third round of risk-taking decisions (R_3).

TABLE 1

MEANS OF RESPONSES ON CHOICE DILEMMAS

Measure	R-P treatment		P-R treatment	
	Group ($n = 7$)	Control ($n = 7$)	Group ($n = 9$)	Control ($n = 9$)
Risk taking[a]				
R_1	50.89	49.55	49.44	50.57
R_2	40.29	50.50	51.19	53.33
R_3	39.71	49.59	—	—
Pessimism[b]				
P_1	52.04	47.93	47.03	51.62
P_2	42.79	45.57	39.56	48.57
P_3	—	—	39.56	46.68

[a] Lower values reflect greater risk taking.
[b] Lower values reflect greater pessimism.

P-R treatment: Group condition. The procedure in the present case can be considered the mirror image of that employed in the R-P treatment. A total of 36 subjects served in this condition, constituted as nine 4-man groups. Discussion to consensus (P_2) was focused on pessimism-optimism, and this was followed for each item by private individual risk preferences (R_2). Further, final postexperimental responses concerned pessimism-optimism (P_3).

P-R treatment: Individual control. Consistent with the comparison between the two group conditions, the present control ($n = 37$) represents a mirror image of the control for the R-P treatment. Subjects made private pessimism (P_2) and risk judgments (R_2) in that order, and the same kind of rationale was offered by the experimenter as in the control for the R-P treatment. P_3 responses were obtained in the present condition for the same reason that R_3 responses were secured in the R-P control.

RESULTS

Mean risk and pessimism-optimism levels for each phase of the experimental procedure are presented in Table 1. In order that analyses be based on comparable data, control subjects were randomly combined into synthetic groups—six four-man groups and one five-man group in the R-P treatment; eight four-man groups and one five-man group in the P-R treatment. Hence, analyses of variance were based exclusively on group scores. Two analyses were carried out, one based on shifts in risk taking ($R_1 - R_2$) as the dependent variable and the other based on shifts in pessimism-optimism ($P_1 - P_2$) as the dependent variable. For both analyses, treatment (R-P versus P-R) and the experimental versus control (group versus individual), contrast constituted between-group independent vari-

TABLE 2

ANALYSES OF VARIANCE FOR SHIFTS IN RISK TAKING AND PESSIMISM

Source	Risk taking ($R_1 - R_3$)			Pessimism ($P_1 - P_3$)		
	df	*MS*	*F*	*df*	*MS*	*F*
R-P vs. P-R treatment (A)	1	395.20	15.92**	1	2.35	
Group vs. individuals (B)	1	310.98	12.53**	1	251.74	7.60*
A × B	1	218.96	8.82**	1	11.95	
Error	28	24.83		28	33.12	

* $p < .02$.
** $p < .01$.

ables. The outcomes of these analyses are shown in Table 2.

Where pessimism-optimism is the dependent variable, the findings are unequivocal—an experimental versus control (i.e., group versus individual) difference in the direction of greater pessimism following group interaction. This represents both a replication of the Madaras-Bem finding and a demonstration that prior discussions focused on pessimism are not a necessary precondition for pessimistic shifts. In other words, enhanced pessimism appears to be the outcome both of risk-oriented discussion (and its risk enhancing properties) and of discussion relevant to the pessimism-optimism dimension.

The results obtained in the case of risk-taking shifts are somewhat more complex. Significant main effects were found for both independent variables, but the outcome of major importance is the significant interaction. The manner in which this interaction was produced is apparent from the means shown in Table 1. The often-replicated risky shift is found when the discussion content concerns risk. This substantial enhancement in risk level stands in marked contrast to the relevant control group where virtually no shift occurred. When the discussion concerned pessimism-optimism, on the other hand, no such experimental versus control (group versus individual) difference in risk-taking shift was observed. Negligible conservative shifts were obtained in that case. It is thus evident that discussion oriented toward pessimism-optimism, while pessimism inducing, does not bring risky shifts in its wake. The present analysis has thus uncovered a basic asymmetry in the risk-pessimism relationship. Reversibility appears to be only partial; risky shifts are followed by greater pessimism, but pessimistic shifts are not followed by greater risk taking.

Since R_3 and P_3 responses were available only for the R-P and P-R treatments, respectively, t tests were carried out within each treatment for the experimental-control difference in $R_1 - R_3$ and $P_1 - P_3$ change scores. For risk-taking shifts, the difference was highly significant ($t = 3.50$, $df = 12$, $p < .01$). On the other hand, the difference in $P_1 - P_3$ between experimental and control groups was not significant ($t = .99$, $df = 16$), due to the progressive increase in pessimism over successive individual administrations of the choice-dilemmas instrument in the control group. We shall later consider why repeated consideration of the same choice situations may make individuals more pessimistic about the success likelihood of risky courses of action.

DISCUSSION

Implications for the Risky-Shift Phenomenon

The results of the present research constitute further testimony to the trans-national generality of the risky-shift effect. With translation and appropriate adaptation to the specific cultural setting the choice-dilemmas instrument in the context of the group risk experiment has generated risk-taking shifts with German and French (Kogan & Doise, 1969) university students whose magnitude is quite comparable to that reported for Americans. In addition, comparable risky shifts have been obtained in Israel (e.g., Rim, 1964) and New Zealand (Jamieson, 1968) for groups whose members were heterogeneous in age, sex, and occupation. The trans-national generality of the risky-shift phenomenon is not limited to the choice-dilemmas procedure, however. Kogan and Zaleska (1969) have obtained the phenomenon with a sample of French students in the context of group betting.

The present experiment offers still another confirmation of the principle that risky shifts require prior risk-oriented discussions. When the materials provided for discussion do not

involve the risk dimension, shifts toward enhanced risk taking (assessed in terms of the difference between prediscussion and postdiscussion risk measures) are not found (see Alker & Kogan, 1968; Pruitt & Teger, 1969). The latter authors have, in addition, shown how their findings run counter to the Wallach and Kogan (1965) proposal that the "affective bonds" between group members formed during discussion contribute to the group's willingness to choose more risky options. The present experiment indicates that even when the discussion materials are risk relevant (and few will deny that the choice-dilemmas items possess that quality), discussion oriented toward another property of the situations—pessimism-optimism—does not produce consistent shifts in the direction of greater risk taking. It is now evident that the risky-shift effect is dependent upon group discussion specifically focused on risk taking as such. In fact, the effect is item dependent. Discussion of one subset of choice-dilemmas items does not bring about shifts on a different subset (Madaras & Bem, 1968).

Pessimism-Optimism Issue

The present research has demonstrated that discussion of success-failure likelihoods—the procedure employed in the Madaras-Bem investigation—is not a necessary condition for shifts toward pessimism. Prior risk-oriented discussions generate enhanced pessimism. Contrary to what a dissonance-reduction interpretation might predict, commitment to risky alternatives is not followed by heightened optimism regarding the success likelihood of such alternatives. Rather, it appears as if the increase in pessimism acts as a brake against implementation of risky options. Such a compensatory principle cannot be invoked to explain the pessimistic shift, however, for the latter has been shown to occur without the prior commitment to enhanced risk produced through risk-oriented discussion. On what basis, then, can the phenomenon of the pessimistic shift be explained?

In the authors' view, the pessimism-optimism ratings obtained in the present study are representative of a class of situations in which subjects have reason to believe that there is an optimal judgment. An individual's desire to make accurate estimations, on the one hand, and to avoid faulty estimations, on the other, should be mutually reinforced and strengthened in the group context. Such a set toward accuracy in the choice-dilemmas context might well lead to consideration of the many contingencies that could interfere with the successful implementation of risky choices. In contemplating a risk course of action, one necessarily focuses on all of the things that might go wrong—in order to guard against them—not on the things that will assuredly go right.[4] Where decision making is concerned, there may well be a richer rhetoric associated with risk taking than with conservatism (see Kelley & Thibaut, 1969). But where the focus is on the estimation of success and failure probabilities, the rhetoric of pessimism may be more fully developed than the rhetoric of optimism. Relevant in this regard is Cohen's (1960) evidence of the perceived asymmetrical effects of good and bad luck on achievement. In a series of motor skill tasks, good luck was estimated to bring about a 6%–26% improvement in performance. In comparison, the perceived decrements attributed to bad luck ranged from 15% to 80%. Clearly, the decrement in performance attributed to bad luck was substantially larger than the possible increment in performance attributed to good luck.

It is likely that a group will come up with a larger inventory of "things that might go wrong" than will be the case for any single individual. Pessimistic shifts would then be a natural consequence of proceeding from the individual to the group context. The tendency toward individual shifts in pessimism over time also can be made comprehensible within the above framework. Successive consideration of the success probability of a particular risky action should increase the opportunities for thoughts about additional "things that might go wrong."

The asymmetrical risk-pessimism relationship can now be placed in appropriate perspective. Commitment to a risky course of action through group discussion (whether by virtue of the influence of social values, the

[4] Some might consider the hero of the good spy novel or film as a case in point.

rhetoric of risk, or other mechanisms) does not produce what might be considered a dissonance-reducing surge toward optimism. In quite the contrary manner, the change in focus from risk to the estimation of success and failure probabilities is associated with heightened pessimism. Conceivably, some of the arguments offered against risk taking in the prior discussion, while ineffective in preventing a risky decision, may nevertheless enter into pessimism-optimism judgments.

Where pessimism-optimism judgments precede decisions about risk level, in contrast, group consideration of the diverse ways in which things might go wrong (the presumed basis for the pessimistic shift[5]) has been shown to have no appreciable effect on risk level. In short, the relationship in question does not proceed in both directions; there is no reversibility. Shifts toward greater risk in groups occur only when prior discussion is oriented toward the dimension of risk taking. Only under such conditions can the greater social value and richer rhetoric of risk come into play.

Implications for "Choice Shifts" in Groups

Levinger and Schneider (1969) have recently proposed that the risky-shift phenomenon can be considered an exemplar of a more general tendency for groups to be more extreme than the average of their component members. Consistent with this view, Moscovici and Zavalloni (1969) observed that discussion of attitude items yields a "group attitude" more extreme in nature than characterizes the group members taken separately. Comparable effects have been obtained by Doise (1969) in the domain of intergroup opinions. Both of the foregoing studies describe the group as a "polarizer" of attitudes and opinions. Such polarization bears a resemblance—metaphorical at the very least—to group-enhanced risk taking. As Levinger and Schneider (1969) have noted, the kind of social value interpretation invoked to explain risk-taking shifts can be extended to domains other than risk-conservatism, hence accounting for all manner of "choice shifts" in groups.

A difficulty arises, however, in the fact that a group consensus can deviate from the central tendency of the individual members in the direction of greater conservatism, caution, and deliberateness (see Collins & Guetzkow, 1964; Kogan & Wallach, 1967) in contexts where social value considerations do not appear relevant. Consider the judgment task employed by Kogan and Wallach (1966). Subjects had to estimate the probabilities of occurrence of a diverse set of events. Group discussion yielded shifts in probability estimation away from the 0 in 100 and 100 in 100 extremes toward more moderate probability values. Through group pooling of information, subjects recognized the greater error potential of extreme estimates and hence modified their judgments accordingly. Similar effects were obtained by Wallach, Kogan, and Burt (1968) with a set of "human relations" problems. A group-induced decline was found in the certitude or conviction with which solutions are offered following group discussion. Consistent with these findings of increased group uncertainty, Zander and Medow (1963) observed that groups are more likely than individuals to lower their level of aspiration following failure in a motor-skill task.

A salient-feature of the foregoing judgmental situations is a search for veridicality—the best possible or most reasonable estimate, judgment, or solution. It can be maintained, of course, that the pursuit of veridicality represents a value in its own right—truth is obviously more highly valued than error. Nevertheless, it may be useful for heuristic purposes to retain the distinction between social-value-oriented and veridically oriented decision situations, even though both elements may be present in some decision contexts. Zajonc, Wolosin, Wolosin, and Sherman (1968, 1969), for example, used a two-choice uncertain-outcome situation with feedback on the correctness of choices following each trial. In the case of their first experiment, Zajonc and his associates explained the group-induced tendency to choose the higher probability–lower payoff (conservative) alternative in terms of the members' desire to minimize the number of incorrect predictions. In their sec-

[5] Systematic coding of the content of pessimism-optimism discussions is one possible method for testing the hypothesis proposed. Regrettably, it was not possible to make tape recordings of the present study's discussions.

ond experiment, however, those authors concluded that a group-induced tendency to maximize correct predictions (i.e., an exclusive orientation toward veridicality) represents an oversimplification. Rather, it appeared that subjects are highly sensitive to differential payoffs. Thus, considerations of value (monetary value in the present case) are dominant over considerations of veridicality (accuracy of prediction).

In the present authors' view, the contrast between risky and pessimistic shifts can be assimilated to the foregoing tradition of research on group judgment. Where the subjects' task is to arrive at real-world probabilities, group-induced error-avoidance tendencies seem to come into play, taking the form of heightened sensitivity to "things that might go wrong." Where the subjects' task is to select an acceptable risk level, social value considerations are predominant. As the choice-dilemmas task is comprised of hypothetical situations, we do not really know how the elements of risk and pessimism would interact in the case of decisions with real consequences. Zajonc and his co-workers have offered us some leads in this regard, but it is difficult to gauge how far one can generalize from their laboratory task. The issue of the risk-pessimism relation could well profit from research in other decision contexts.

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