

OREGON RESEARCH INSTITUTE

Sex Differences in the Risks a Person Selects for Himself
and the Risks he Selects for Someone Else

Paul Slovic, Malcolm S. Weinstein,

and Sarah Lichtenstein

Oregon Research Institute, Eugene

Research Bulletin
Vol. 7 No. 10

October 1967

SEX DIFFERENCES IN THE RISKS A PERSON SELECTS FOR HIMSELF
AND THE RISKS HE SELECTS FOR SOMEONE ELSE

Paul Slovic, Malcolm S. Weinstein,
and Sarah Lichtenstein
Oregon Research Institute, Eugene

Abstract

102 undergraduates, working in pairs, selected bets for themselves and bets for the "other subject" to play. It was found that persons chose essentially the same probability of winning for the other person as for themselves, regardless of the sex of the other person. Women's choices were more conservative than men's choices.

SEX DIFFERENCES IN THE RISKS A PERSON SELECTS FOR HIMSELF
AND THE RISKS HE SELECTS FOR SOMEONE ELSE¹

Paul Slovic, Malcolm S. Weinstein,
and Sarah Lichtenstein
Oregon Research Institute, Eugene

This study addresses three questions concerning the social and personal determinants of risk taking. First, are women more conservative risk-takers than men? Second, when one has the responsibility of making decisions for someone else, will these decisions be more or less conservative than the decisions one makes for oneself? Third, how does one's own sex and the sex of the other person influence one's decisions for the other person?

With regard to the question of sex differences in risk taking, the belief that men should, and do, take greater risks than women is quite prevalent in our culture. As a consequence of cultural pressures exerted in the home and school, children develop well-defined conceptions of "boy-traits" and "girl-traits." Tuddenham (1952) notes that children in the primary grades picture the typical boy as more daring than the typical girl. In addition, boldness is positively correlated with popularity in boys but negatively correlated with popularity for girls (Tuddenham, 1951). It would be quite surprising if the strong social pressures exerted upon the young child did not result in clearly discernible sex differences among older children and adults.

Two recent studies of children have found sex differences in risk taking. Kass (1964) had subjects aged 6, 8, and 10 years repeatedly play

their choice among three slot machines. The machines were programmed to be equal in expected monetary return but differed in probability of payoff. Boys chose the low and intermediate probabilities of payoff significantly more often than did girls.

Slovic (1966) studied risk taking in children between the ages of 6 and 16. The decision-making task consisted of a panel of ten switches, nine of which were "safe" while the tenth was a "disaster" switch. The subjects could pull as many switches as they wished (being rewarded with candy along the way) so long as the disaster switch was not pulled. If the disaster switch was pulled, the subject forfeited all the candy he had accumulated. There were no sex differences in risk taking among the children between the ages of 6 and 8. Boys aged 9 and older were bolder than girls, i.e., they pulled more switches.

Turning from research on children to studies of adults, a different picture emerges. Only one study, Greene (1964), has been able to demonstrate greater risk taking by adult males. Greene's subjects, 21 men and 35 women teachers, completed a two-part questionnaire dealing with their attitudes toward risk. One part of the questionnaire dealt with preferences among hypothetical gambles. The second part observed required odds for success in business situations involving risk. Only 25% of those least willing to gamble were men, while about 75% of those most willing to gamble were men.

Opposition to what they term the "stereotype of feminine conservatism" has been voiced by Wallach and Kogan (1959). Using hypothetical choice dilemmas, they observed no general sex differences. Instead, men and women exhibited differential risk taking in particular content areas that could be distinguished in terms of the extent to which they engaged distinctly

masculine or feminine values. Each sex appeared more willing to tolerate higher risk levels in pursuit of values considered more appropriate to their sex. A later study by the same workers (Kogan & Wallach, 1964) failed to find any consistent masculine boldness or feminine conservatism among adults across a diverse battery of risk-taking tasks.

In discussing the discrepancy between the Kass and Slovic data dealing with children and their own findings with adults, Kogan and Wallach (1967) state: "So little research has been specifically directed to the problem of sex differences in risk-taking behavior that we are distinctly handicapped in arriving at generalizations for both children and adults [p. 167]."

The second question of interest, concerning the comparative riskiness of decisions made for oneself and decisions made on behalf of another person, is virtually unexplored. The lack of research in this area is indeed remarkable when one considers the frequency with which persons in positions of power and authority are called upon to select courses of action involving risk which other people are committed to pursue. Decisions made by investment brokers, military or governmental leaders, and physicians often place other persons in jeopardy, presumably to gain some valued objective such as money, power, freedom, or health for these persons. While the "other party" often has considerable voice in determining the decisions made on his behalf, it is not uncommon to find mitigating circumstances which restrict communication and force the decision maker to act on the basis of minimal information concerning the desires of his "client." In such circumstances it is important to know whether any bias towards risk or conservatism exists.

To our knowledge no studies directly related to this issue have been conducted. Lonergan and McClintock (1961) investigated situations in which all members of a group suffered the consequences of a risk-taking decision made by one member of the group. Involvement of the group reduced the individual differences that were present when decision makers were acting solely on their own behalf. A large number of studies have investigated the differences between risk-taking advice given to a client by individuals and advice given by groups (Kogan & Wallach, 1967). The advisory situations have usually been hypothetical. Advice given by the group after discussion has been found to be riskier than advice given individually by the members of the group.

In none of the previous studies has the riskiness of a person's decisions made on his own behalf been compared with the risks he commits others to take. Perhaps the most relevant research has been done by Hinds (1962). Using Kogan and Wallach's choice dilemmas questionnaire, Hinds asked subjects to guess what alternatives would be selected by other persons like themselves. Subjects consistently guessed that others would choose more cautiously than they did themselves. Brown (1965, p. 700) has since replicated this finding. On the basis of these results, one might expect decision makers to select more conservative courses of action for other persons than they select for themselves. An alternative hypothesis, generated by our cultural expectations concerning masculine boldness and feminine conservatism, is that males will choose less risky courses of action for women than they (males) choose for themselves, while women's choices for men will be more daring than women's choices for themselves.

The present experiment attempts to study sex differences and self-other decision making in the context of a task explicitly designed to measure risk taking.

Method

Subjects were 46 women and 56 men undergraduates from the University of Oregon. They participated in pairs. There were 9 female-female pairs, 14 male-male pairs, and 28 mixed pairs. Members of a pair faced each other across a shoulder-level partition. Each knew only the other's name.

Subjects were shown the four sets of bets in Table 1. Each bet was of the form, $X/18$ to win $\$Y$, $(18-X)/18$ to win nothing. No losses were involved. The expected values of the bets, shown in Table 1, were not displayed to the subjects.

Insert Table 1 about here

The four sets of bets varied with respect to the relationship between expected value and conservatism. Conservatism here means preference for bets with high probability of winning (P_w). In Set 1 all bets had the same expected value. In Sets 2, 3, and 4, expected value was maximized by choosing the extremely conservative, extremely risky, and intermediate risk bet, respectively.

Each subject selected one bet for himself and one bet for the other person to play from each of the four sets. After the subject made these eight choices, he played one of these bets to determine his salary for the experiment. Subjects were told that a random device would determine

separately for each person (a) from which set the bet to be played would come, and (b) whether he would play the bet he chose for himself or the bet the other person chose for him.

After completing their choices, 68 subjects filled out a brief questionnaire which asked them to place themselves and the other person on a continuum indicating preference for "long shots" at one extreme and preference for "sure things" at the other.

Results and Discussion

The results of interest did not vary across the four sets of bets. Therefore, the findings reported here are averaged across sets.

Table 2 presents the average bet chosen as a function of sex of self and sex of other. Each choice was coded according to the numerator of the probability of winning, here called P_W . None of the differences between mean P_W for self and mean P_W for other were statistically significant for any of the four sex combinations. There was no general bias towards greater or lesser conservatism in the self-other comparison. The finding that subjects chose essentially the same bet for the other person as for themselves was supported by the fact that the average correlation, across 102 persons, between P_W selected for self and P_W selected for other (within a given set of bets) was .65. In addition, the average absolute discrepancy between P_W selected for self and P_W selected for other was only 2.57. One half of these absolute discrepancies were either 0 or 1.

Insert Table 2 about here

Further examination of Table 2 indicates that women's choices for themselves were more conservative than men's choices for themselves. The difference between the average self choices for the two sexes was shown to be significant by the Mann-Whitney Test ($z = 2.05$; $p < .02$). When the average levels of P_W for men and women were combined into one distribution, 15 of the 17 most risky values belonged to men while 14 of the 22 most conservative values belonged to women.

Analysis of the post-experiment questionnaire indicated a slight tendency for subjects to feel that the other person would prefer to play more conservative gambles (i.e., gambles with higher P_W) than they themselves preferred (see Table 3). This belief was strongest in the male-female subgroup. These results are consistent with the findings reported by Hinds (1962) and Brown (1965, p. 700). However, the beliefs expressed in the questionnaire were not strongly related to the actual choices subjects made. The correlation between the rated discrepancy in risk preference between oneself and the other person and the actual discrepancy in the chosen bets was only .21.

Insert Table 3 about here

In summary, choices for a person of the opposite sex were not biased in the direction of the cultural stereotype. Instead, the tendency to make the same choice for someone else as for oneself coupled with the actual difference in the preferred risk levels of men and women led women's choices for men to be less risky than men's choices for themselves. Similarly, men's choices for women were not as conservative as women's choices for themselves.

It is interesting to speculate about why the present study found sex differences in risk taking by adults whereas the investigation by Kogan and Wallach (1964) did not. One reason might be the high level of interest and involvement generated by the extremely large payoffs offered in the present study. A second reason may stem from the fact that risk taking was enacted here in the presence of another person. As Kogan and Wallach (1967) note in their discussion of Slovic's (1966) experiment with children, performing in public would maximally pressure persons into following their culturally prescribed role. This same lack of privacy may also account for the tendency of subjects to choose the same level of risk for the other persons as for themselves. It is clear that the study of sex differences and self-other risk taking needs to be extended to situations where decisions are made and consequences accepted in private.

References

- Brown, R. Social psychology. New York: Free Press, 1965.
- Greene, M. R. "Insurance mindedness"--Implications for insurance theory. Journal of Risk and Insurance, 1964, 31, 27-38.
- Hinds, W. C. Individual and group decisions in gambling situations. Unpublished master's thesis, Massachusetts Institute of Technology, 1962.
- Kass, N. Risk in decision-making as a function of age, sex, and probability preference. Child Development, 1964, 35, 577-582.
- Kogan, N., & Wallach, M. A. Risk taking: A study in cognition and personality. New York: Holt, Rinehart, and Winston, 1964.
- Kogan, N., & Wallach, M. A. Risk taking as a function of the situation, the person, and the group. In New directions in psychology III. New York: Holt, Rinehart, and Winston, 1967.
- Lonergan, B. G., & McClintock, C. G. Effects of group membership on risk-taking behavior. Psychological Reports, 1961, 8, 447-455.
- Slovic, P. Risk-taking in children: Age and sex differences. Child Development, 1966, 37, 169-176.
- Tuddenham, R. D. Studies in reputation: III. Correlates of popularity among elementary-school children. Journal of Educational Psychology, 1951, 42, 257-276.
- Tuddenham, R. D. Studies in reputation: I. Sex and grade differences in school children's evaluation of their peers. II. The diagnosis of social adjustment. Psychological Monographs, 1952, 66, No. 333.
- Wallach, M. A., & Kogan, N. Sex differences and judgment processes. Journal of Personality, 1959, 27, 555-564.

Footnote

1. This research was supported by Grants MH 04439 and MH 12972 from the United States Public Health Service. Computing assistance was obtained from the Health Sciences Computing Facility, UCLA, sponsored by NIH Grant FR-3.

Table 1
Sets of Bets Seen by Each Subject

Probability of Winning	Set 1		Set 2		Set 3		Set 4	
	Amount to Win	Expected Value	Amount to Win	Expected Value	Amount to Win	Expected Value	Amount to Win	Expected Value
1/18	\$27.00	\$1.50	\$18.00	\$1.00	\$46.80	\$2.60	\$25.20	\$1.40
2/18	13.50	1.50	9.45	1.05	22.50	2.50	13.05	1.45
3/18	9.00	1.50	6.60	1.10	14.40	2.40	9.00	1.50
4/18	6.75	1.50	5.18	1.15	10.35	2.30	6.98	1.55
5/18	5.40	1.50	4.32	1.20	7.92	2.20	5.74	1.60
6/18	4.50	1.50	3.75	1.25	6.30	2.10	4.93	1.65
7/18	3.86	1.50	3.34	1.30	5.14	2.00	4.36	1.70
8/18	3.38	1.50	3.04	1.35	4.28	1.90	3.92	1.75
9/18	3.00	1.50	2.80	1.40	3.60	1.80	3.60	1.80
10/18	2.70	1.50	2.61	1.45	3.06	1.70	3.14	1.75
11/18	2.45	1.50	2.45	1.50	2.62	1.60	2.76	1.70
12/18	2.25	1.50	2.32	1.55	2.25	1.50	2.46	1.65
13/18	2.08	1.50	2.21	1.60	1.94	1.40	2.21	1.60
14/18	1.93	1.50	2.11	1.65	1.67	1.30	1.99	1.55
15/18	1.80	1.50	2.03	1.70	1.44	1.20	1.80	1.50
16/18	1.69	1.50	1.96	1.75	1.24	1.10	1.63	1.45
17/18	1.59	1.50	1.90	1.80	1.06	1.00	1.48	1.40

Note.--The alternative to winning the stated amount was to win nothing.

Table 2
Average Probability of Winning for the Selected Bets as
a Function of Sex of Self and Sex of Other

Sex of Self	Sex of Other	N	Average P_W over 4 Sets ^a	
			Self	Other
F	F	18	10.3	10.3
F	M	28	9.9	9.6
M	F	28	8.4	8.7
M	M	28	8.5	8.8
Average		102	9.2	9.3

^aCell entries represent the average numerator of the probability of winning for the chosen bets.

Table 3

Rated Conservatism of Self and Other

Sex of Self	Sex of Other	Number of Persons Who Felt the Other Person Was:		
		More Conservative	Less Conservative	The Same as Themselves
F	F	7	4	3
F	M	8	7	5
M	F	10	3	5
M	M	6	4	6
Total		31	18	19