MAKING CHOICES BASED ON ADVICE FROM OPTIMISTIC OR PESSIMISTIC SOURCES

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ABSTRACT

Participants decided whether to draw a marble from an urn with a known percentage of winning marbles or from an urn whose percentage of winning marbles was estimated by a source who examined the urn. The source was described as either an optimist or a pessimist. Results were summarized by the scale-adjustment averaging model of Birnbaum and Stegner (1979); in particular, an estimate from an optimistic source was treated as an overestimate of the actual percentage compared to the same estimate by a pessimist. Participants also rated themselves on optimism-pessimism. Both optimists and pessimists would rather bet on an urn estimated by a pessimist to have 50% winning marbles than bet on an urn known to have exactly 50% winning marbles, and both groups would rather bet on this known urn than on the urn estimated by an optimist to have 50% winning marbles. Self-rated pessimists showed a slightly greater effect of source's personality.

BACKGROUND

Birnbaum and Stegner (1979) conducted a study where different models of source credibility were tested. In their experiment participants judged the price of hypothetical used cars according to estimates provided by sources with different expertise and bias. Birnbaum and Stegner found that the judged price of the cars was higher when the source was a friend of the buyer than when he was a friend of the seller.

In this study, the "friend of the buyer" was interpreted as a pessimist source, and the "friend of the seller" as an optimist source of information. Thus, similar results as those of Birnbaum and Stegner (1979) should be found for the current study.

Ellsberg (1961) found that people would rather bet on a risky option, where the probabilities are known, than on an ambiguous option, where the probabilities are ambiguous. In this study, we ask participants to decide whether to bet on an urn with known probabilities, or on an urn whose proportion of winning marbles has been estimated by a source who has examined the urns.

HYPOTHESES

This study hypothesized that the scale adjusted model (Birnbaum & Stegner, 1979) would predict the results:

• When decision makers receive advice from an optimist or pessimist, they will underestimate or overestimate the advice, respectively.

• Participants who identify as optimists or pessimists will prefer the advice of the optimist or pessimist source, respectively.

METHOD

• Internet experiment constructed with FactorWiz and SurveyWiz (Birnbaum, 2000).

• 357 participants (59% females, 41% males; ranged from 18 to 32 years of age) made choices between gambles based on advice of an optimist or a pessimist advisor.

• There were two imaginary containers with red and white marbles.
• Participants had to choose a container to draw a marble from:
  If the marble was red = $100
  If the marble was white = $0

Optimism/Pessimism Survey

1. ⊙
Urn A: Has exactly 90% red marbles and
Urn B: A *pessimist* estimates 30% red marbles.
Strongly prefer **Urn A** ○ ○ ○ ○ ○ ○ ○ ○ Strongly prefer **Urn B**

2.
Urn A: Has exactly 70% red marbles and
Urn B: A *pessimist* estimates 30% red marbles.
Strongly prefer **Urn A** ○ ○ ○ ○ ○ ○ ○ ○ Strongly prefer **Urn B**

Optimist tended to overestimate
Pessimist tended to underestimate

• There were 50 experimental trials
• 5 x 2 x 5 factorial design (3 IV's)
  Actual Percentage of Winning Marbles in Urn A :
  10%, 20%, 30%, 50%, 70%, 90%
  Source's Personality: Optimist, Pessimist
  Source's Estimate of Winning Marbles in Urn B:
  10%, 20%, 30%, 50%, 70%, 90%
• Randomized combination of the factorial design
• DV: Score from 1 through 8 (Likert scale)
• Participants identified themselves as either optimists or pessimists

RESULTS

▪ Participants would rather bet on advice given by the pessimist source for any estimated value.

Mean Judged Preference for Urn B as a Function of Exact Urn A Percentages & Source

Urn A	Optimist					Pessimist				
	10	30	50	70	90	10	30	50	70	90
10	2.82	4.43	4.93	5.27	5.42	4.71	5.36	5.66	5.77	6.09
30	2.50	2.85	4.28	4.93	5.35	3.00	4.85	5.60	5.71	6.06
50	2.35	2.40	2.92	4.21	5.05	2.36	3.01	4.80	5.54	5.86
70	2.33	2.26	2.36	2.73	4.10	2.27	2.60	3.06	4.87	5.77
90	2.10	1.99	2.23	2.33	2.56	2.08	2.19	2.35	2.82	4.76

Urn A Percentage: $F(4, 1028) = 351.12$, $p < .001$
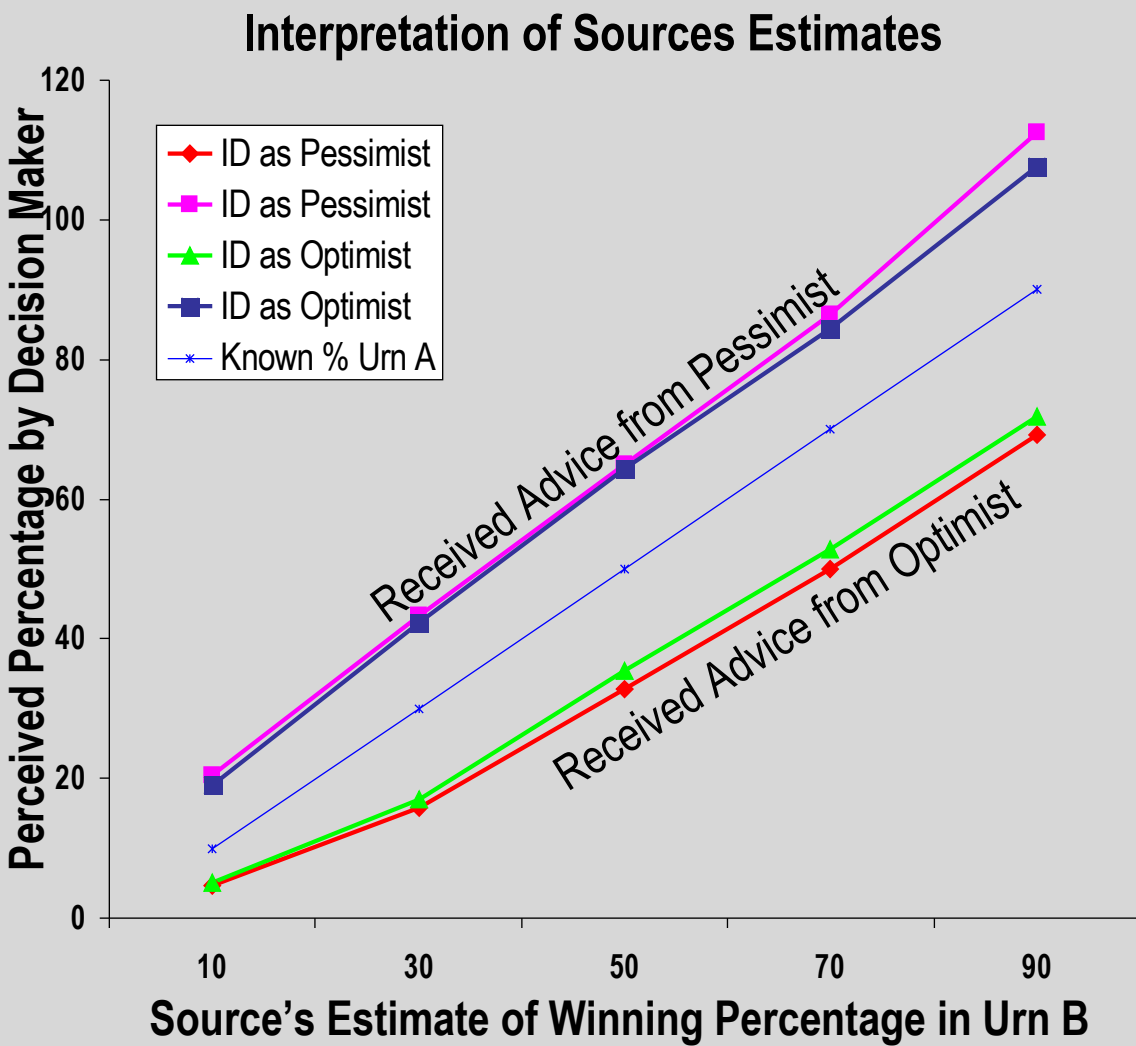Source: $F(1, 257) = 113.56$, $p < .001$
Urn B Percentage: $F(4, 1028) = 389.45$, $p < .001$
Urn A Percentage*Source: $F(4, 1018) = 16.98$, $p < .001$
Urn A Percentage*Urn B Percentage: $F(16, 4187) = 69.48$, $p < .001$
Interaction of all 3 factors: $F(16, 4162) = 52.61$, $p < .001$

• Pessimists tended to be more pessimistic than optimists when receiving advice from an optimist source, and less pessimistic when the source was a pessimist.

• Pessimism of the participant thus tended to amplify the effect of advisor's optimism or pessimism

Interpretation of Sources Estimates

Legend:
- ID as Pessimist
- ID as Pessimist
- ID as Optimist
- ID as Optimist
- Known % Urn A

Y-axis: Perceived Percentage by Decision Maker
X-axis: Source's Estimate of Winning Percentage in Urn B
Received Advice from Pessimist
Received Advice from Optimist

DISCUSSION

• The data revealed support for our first hypothesis:
  ➢ When an optimist source estimated 50% of red marbles in urn B, the participants interpreted it as 33.42%.
  ➢ When a pessimist source estimated 50% of red marbles in urn B, the participants interpreted it as 62.61%.
• The data did not reveal support for our second hypothesis:
  ➢ Optimists tend to be more optimistic when receiving advice from an optimist source, and less optimistic when the source is a pessimist
  ➢ Pessimists tend to be more pessimistic when receiving advice from an optimist source, and less pessimistic when the source is a pessimist.
• Participants gave more value to the advice given by the pessimist source across all percentages.
• Contrary to the theory that the Ellsberg (1961) paradox is caused by aversion to ambiguity, we found that people are willing to bet on an urn whose probability to win has been estimated by a pessimist.
• This experiment supports the scale adjustment model developed by Birnbaum and Stegner (1979).
• Including the expertise of the sources in future research would help test the theory by Birnbaum and Stegner (1979) which states that there should be a magnification of the effect of optimism or pessimism depending on the level of expertise.
• Findings from this research may prove to be useful in court settings, where judges constantly take advice from expert witnesses.

CONCLUSION

• Personality characteristics such as optimism and pessimism do influence decision makers.

• People seem to value more the advice from pessimist sources.

• Optimists and pessimists process information differently even when it comes from the same source.

REFERENCES

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