

## 'Second Guessing' Important Events

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IT HAS often been suggested that after an event occurs individuals tend to overestimate their likelihood of correctly anticipating such an outcome. In *Agricola*, Tacitus (1898) complained 'The men who were yesterday so cautious and prudent, were now, after the event, ready and vainglorious.' At the present time, the existence of such epithets as 'Monday morning quarterback' and 'second-guesser' suggest that individuals still tend to have better hindsight than foresight.

In this paper, we would like to test the proposal that after the consequences of another's decision are known, an individual will tend to exaggerate the extent to which he would have predicted the actual outcome. More specifically, we would like to propose that the more *momentous* an outcome is said to be, the greater will be the individual's tendency to 'second guess'. For example, if a difficult decision is described to a person, the more important a good outcome is said to be, the more confident the observer will feel that he would have anticipated a positive outcome. If, on the other hand, misfortune is said to result from the same decision, the more important a bad outcome is said to be, the more confident the observer will feel that he would have anticipated a negative outcome.

What reasons do we have for proposing this hypothesis? There would seem to be plausible reasons for the behaviour we are proposing: (1) When an outcome event is serious, and one spends very much time thinking about it, one probably becomes especially interested in seeing how the outcome and its antecedents fit together. Once one has observed many of the relevant cause and effect relationships, the important outcome might, in fact, seem more predictable than if one had not thought it through so completely. Such a rationale perhaps explains why the results of so many psychological experiments seem 'obvious' after the experiments are conducted and the data are secured, when before the experiment was conducted the outcome seemed impossible to predict. (2) One undoubtedly feels more secure if the world seems like an orderly and predictable place. Perhaps the more serious the event one considers, the more important it becomes to one's security to convince oneself that the important event was in fact predictable.

If our hypothesis is correct, it perhaps explains two experimental results that have been consistently secured: Firstly, that individuals tend to praise those who have been fortuitously benefited and to blame those who have been harmed by chance (see Lerner, 1965, 1966). Secondly, that subjects are more inclined to blame others for serious outcomes than for trivial ones (see Shaw and Sulzer, 1964, and Walster, 1966). If our hypothesis is true, these results may simply be due to the fact that individuals hold others responsible for foreseeing events that they have convinced themselves that they would have foreseen.

Two experiments, with different subject populations and utilizing different materials, were conducted to test our hypothesis.

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## PROCEDURE

*Experiment I*

One hundred and fifty-three boys and girls from the junior class of St Louis Park High School<sup>2</sup>—served as *Ss* in this experiment.

*E*<sup>3</sup> telephoned *Ss* and arranged for them to come to the high school in groups of five to seven, in order to read some biographical material, to listen to some tapes, and then to give her their first impressions of the person described.

When *Ss* arrived, *E* handed each of them a booklet, and gave them an over-view of what they would be doing during the next hour. *Ss* were told that the booklet they had just been handed contained information about a Mrs Wallace (Mrs W).

Page one was said to contain background material about Mrs W that they would need to know in order to understand clearly a tape-recorded interview that would follow. This interview would be the basis of their evaluation of Mrs W. It was emphasized that we were interested in *Ss*' reactions to the *tape*. We wanted to know what sort of impression they formed of Mrs W from hearing her speak, from what she said and from how she said it. Page two contained a tape-script that they could follow while listening to the tape. The last few pages of the booklet asked questions about the impression that Mrs W had made on them. It was emphasized that *Ss*' answers would be anonymous and that they should be completely honest in expressing their reactions.

We wanted all *Ss* to judge the same taped stimulus. To test our hypothesis, however, we provided all *Ss* in various conditions with different information about the actual consequences of the decision Mrs W would discuss on the tape (the decision concerned whether or not to buy a particular house). The various outcomes described to *Ss* in different conditions varied from extremely good to extremely bad. Different expectations as to the outcome of the decision were produced in the following way: Though all booklets appeared to be identical, seven different versions of page one had been prepared. In all versions, *Ss* were told that they would soon hear an interview conducted one and one-half years ago in Berkeley, California, with Mrs Ruth Wallace. Then *Ss* were given information as to the outcome of Mrs W's decision. This information was ostensibly provided 'just in case the students were interested in what had happened to the Wallaces since the interview'.

In the three *Financial Loss* conditions, *Ss* were told: 'Buying the house resulted in (an extremely large, a somewhat large, or a slight) financial loss for Mrs Wallace.' The information went on to explain that last year after several days of heavy rain, a landslide began in the hills above the Wallace home. The home was partially in the path of the mud, and, depending on the *S*'s experimental condition, the basement, a good portion of the home, or the entire home and contents, was said to have been damaged by the mud. The Wallaces were said to have suffered an extremely large (\$22,000), a somewhat large (\$700), or a slight (\$50) amount of damage to their home. So that all *Ss* would be utilizing the same frame of reference when contemplating the possible extent of damages due to the slide, it was further stated that other houses in the area experienced up to \$26,000 in damages.

2. The assistance of Mr Bertil Johnson, Principal of St Louis Park High School, is greatly appreciated.

3. Jo Anne Husney, a freshman at the University of Minnesota, ran all *Ss* in Experiment I.

In the three *Financial Gain* conditions, *Ss* were told: 'Buying the house resulted in (an extremely large, a somewhat large, or a slight) financial gain for Mrs Wallace.' Once again the same slide described earlier was described, but this time the Wallace home was *not* said to be damaged. Instead, a quantity (one ton) of zealrite, a mineral said to be common in the Berkeley area, 'was exposed' on the edge of the Wallace land, as a consequence of the slide. The Wallaces were said to have gained either \$50, \$700, or \$22,000 on their zealrite find.

So that all *Ss* would be utilizing the same frame of references when contemplating the *possible* gains due to the slide, it was further stated that other houses in the area earned up to \$26,000 from zealrite discoveries.

In the *No Information* condition, *Ss* were *not* told that a slide had occurred, and no information was provided as to whether the Wallaces had gained or lost financially as a result of their decision.

In all conditions, page one ended with a description of several other trivial incidents in the lives of the Wallaces: e.g., a description of their move to Minneapolis six months ago, and an enumeration of the ages and names of their children.

*Ss* then were asked to listen to a tape-recording of Mrs W discussing the factors influencing her decision. Once again, it was stressed that the *S*'s job was to evaluate Mrs W from the clues provided by her voice and mode of self-expression. On the tape, Mrs W discussed at great length how hard it was to decide whether or not to buy the house. First, she mentioned the objective risks and advantages: each year one family of the 400 in the hills had a home severely damaged by mud from a landslide, while two or three families out of the 400 uncovered zealrite and made a fortune. Then she enumerated many personal considerations that moved her first one way, and then another. Finally, she mentioned that she had considered hiring a geologist for advice on whether or not to buy the place, but had decided against doing so because of the expense.

After the tape had ended, *Ss* turned to the last section of the booklet and answered the questions.

Included were questions designed to measure the following things:

1. *S*'s confidence that *he* could have correctly anticipated the kind of consequences said to result from Mrs W's decision was assessed in two questions.

Question one asked: 'Suppose you had been told everything about Mrs W's decision (except, of course, whether she won or lost money as a consequence of her decision). Do you feel you would have been able to guess whether or not the purchase would have had good or bad consequences, just from your knowledge of the situation?' *Ss* could check one of six alternatives ranging from (+3) 'would definitely have guessed she would *gain* money' to (-3) 'would definitely have guessed she would *lose* money.' Question two asked: 'Would you have decided to buy the house if you had had the information Mrs Wallace had at the time she made her decision?' Once again, *Ss* could check one of six alternatives ranging from (+3) 'would definitely have bought the house' to (-3) 'would definitely not have bought the house.'

2. The amount of responsibility assigned to Mrs W for the consequences that resulted from her decision to purchase the house was measured by two questions.

Question 1 asked how responsible Mrs W was for the consequences of the decision to buy the house in the Berkeley hills. (*Ss* could check one of five alternatives ranging from (1) 'She is not at all responsible' to (5) 'She is totally

responsible'.) Question 2 asked *Ss* to indicate to what extent the accidental event was due to 'chance' (and thus, *not* something Mrs Wallace should have anticipated and must be responsible for). Possible answers ranged from (1) 'Was entirely due to chance', to (4) 'Was not at all due to chance.'

Several filler questions were also included in the booklet. These questions concerned the personal characteristics of Mrs W, the place of Mr W in the decision, and the likelihood that a geologist could have given good advice.

### Experiment II

*Ss* were 213 students from an introductory psychology course at the University of Minnesota. They were run in groups of approximately 8–10.

In order to provide a rationale for the experiment, *Ss* were told that *E*<sup>4</sup> wanted them to help her in selecting materials for an experiment she was planning to conduct later in the year at a nearby college. She then described this prospective experiment in some detail. Ostensibly, it was concerned with the way a *S*'s similarity or dissimilarity to another would affect his attitude toward the other. *E* said she planned to give the students at the nearby college a battery of personality tests and then have them evaluate a variety of speakers with a variety of personality traits. Then she could see how personality affected perception. The *E* then explained that she wanted to pre-test several things before she started running at the nearby college. For example, she wished to know how much contact *Ss* had to have with a speaker before they could evaluate him with any confidence; how distinct an impression a given speaker made on others, regardless of the *S*'s own personality; and whether her assessment questions were intelligible. She asked the introductory students to help her by making some pre-test evaluations.

From this point onward, the experiment was similar to that followed in Experiment I. *E* handed *Ss* a booklet, containing some background material and some questions.

Once again, though all booklets appeared to be identical, they were not. The version of the booklet *S* received determined his random assignment to a condition.

In all versions of the booklet, except one, *Ss* were told they would soon hear an interview recorded two years ago with a Minnesota student (Alex Kendler). At the time of the interview, Alex was said to be trying to decide whether or not to accept a job and buy a house in a remote area of Nevada. It was said that Alex was aware that by far the greatest likelihood was that one would break even financially on the house purchase. He was concerned, however, with the reasonable possibility that he would either lose or gain a lot of money on the house, since he knew that the value of the house would be determined almost entirely by the government's decision to award additional research contracts, to maintain present research contracts, or to terminate the research project. (Since the area was inhabited only because of government work, the more government contracts that were awarded, the more house and land in the Nevada area would be worth.)

**Experimental Conditions:** We wanted to convince various groups of *Ss* that Alex had gained \$10,000, \$1,000, \$100, \$10, that he 'broke even,' or that he had lost \$10, \$100, \$1,000, or \$10,000 by his decision to buy.

The background material imparted this information in the following way: All

experimental *Ss* were told that a few days after the interview, Alex had accepted the Nevada offer and had decided to purchase a house near the project. Then, the information described the outcome of this decision. If Alex was to have lost from \$100 to \$10,000 as a consequence of his decision, the background information said that the government had decided to *terminate* the research project of which Alex was a part. 'As it turned out, Alex lost (a fair amount, a great amount) of money by his decision to buy the Nevada house. When his total investment was subtracted from the selling price of the Nevada home, it was clear that Alex had lost approximately \$ — on his house.'

The background information was essentially the same in those conditions where Alex was reported to have gained from \$100 to \$10,000 on his purchase, except of course, that the government was said to have *extended* the project of which Alex was a part, and thus, Alex was said to have gained by his purchase.

When Alex was reported to have gained \$10, 'Broken even', or lost \$10 as a consequence of his purchase, the government was said to have *maintained* the Nevada project, and then the amount gained or lost was specified.

**Control Conditions:** Two control conditions in which *Ss* did not know the outcome of Alex's decision to buy the Nevada house were also run. In the first control condition (After-decision Control) *Ss* were told that Alex had decided two years ago to buy the Nevada house, but they were *not* told what the financial outcome had been. In the second control condition (Before-decision Control) *Ss* were not told the outcome of Alex's decision; in addition, they were told that Alex had not yet decided whether or not to buy the house. Thus, for this group, any questions concerning Alex's 'decision' concerned a hypothetical decision. To insure that *Ss* would believe that the decision had not yet been made, *Ss* were told that the tape had been made *two weeks ago* and that 'at the present time, Alex has decided to accept the Nevada offer, but has not yet decided whether or not to purchase a house near the project'.

After reading the background information, both experimental and control *Ss* listened to a tape-recording in which Alex Kendler discussed many of the problems and decisions he, a college student, was facing. The final problem he discussed was whether or not he should buy a house in the Nevada desert. Possible risks were large, but possible financial gains appeared larger. He explained that a government pamphlet had reported that 90 per cent of the time individuals buying a house in an area like the Nevada research center broke even on their purchases. In spite of this report, Alex said he couldn't help hoping he would earn a lot of money, even though he had some fear of losing everything. Alex then concluded his interview by discussing the occupational opportunities he had anticipated as an engineer and the reasons why he planned to work on the Nevada research project.

After hearing the tape, *Ss* were asked to answer some questions concerning the impression Alex's voice, manner of speaking, and the content of his speech had made on them. In addition, we claimed we wanted to know a little about the *S*'s own attitudes and predispositions so we could take these into account when analysing their judgments of Alex.

As in Experiment I, the questions included in the booklet were designed to measure two things.

- (1) The extent to which *Ss* felt *they* would have anticipated a gain or loss.
- (a) 'Suppose you had been told everything about Alex's decision to buy the

4. Janice Olsen, a junior at the University of Minnesota, ran all the *Ss* in Experiment II.

Nevada house, except of course, whether he gained money, lost money, or broke-even as a consequence of his decision. Do you feel you would have been able to guess whether or not the purchase would have had good or bad consequences just from your knowledge of the situation? Possible answers ranged from +3 ('Would definitely have guessed he would gain money') to -3 ('Would definitely have guessed he would lose money').

(b) 'Would you, yourselves have purchased the house? Possible answers ranged from +3 ('Would definitely have bought the house') to -3 ('Would definitely not have bought the house').

(c) Which alternative would you have picked if you had had to bet on the most probable outcome? Nine alternatives were provided, ranging from +4 ('I would have bet he would gain approximately \$10,000') through 0 ('... he would break even') to -4 ('... he would lose approximately \$10,000').

(d) Would you have guessed that the government would terminate, would maintain, or would extend the Nevada contract? A guess that the contract would be extended was scored +1, that it would be maintained was scored 0, that it would be terminated was scored -1.

(2) How much responsibility was assigned to Alex for the consequences of his decision? Possible answers ranged from 1 ('He is not at all responsible') to 5 ('He is totally responsible').

Several filler questions were also included. These questions asked about Alex's personality and about whether or not a government expert could have predicted the outcome.

## RESULTS AND DISCUSSION

Our hypothesis proposed that as the consequences of an action or decision became more serious, *Ss* would feel increasingly convinced that they would have anticipated a consequence of the type described. Thus, in Experiment I, if they heard that the consequences of Mrs Wallace's decision were extremely unpleasant (she lost \$22,000) we expected *Ss* to feel more sure that they would have anticipated *loss* than they would when they heard her loss was moderate (she lost \$700) or slight (\$50). Similarly, when *Ss* were told that she gained tremendously from her decision (she gained \$22,000), we would expect them to feel more sure they would have anticipated *gain* than they would when her gain was less important (\$700 or \$50). In brief, we expected *Ss'* confidence that they would have anticipated *loss* (or would *not* have anticipated gain) to be a monotonically decreasing function of reported profits on the house. We expected this monotonic function to exist in both Experiment I and Experiment II.

In both experiments, we computed an Index of *S'*s confidence that he would have predicted a positive or a negative outcome, by summing together his answers to relevant questions. On this index, a total of 0 indicates that *S* feels he would have anticipated that buying the house would result in 'breaking even' financially. A positive Index indicates the *S* thinks he would have anticipated a *gain*; the higher the positive number, the more sure the *S* is that he would have a financial gain. A negative Index indicates the *S* thinks he would have anticipated a *loss*; the higher the negative number, the more sure the *S* is that he would have predicted a financial loss.

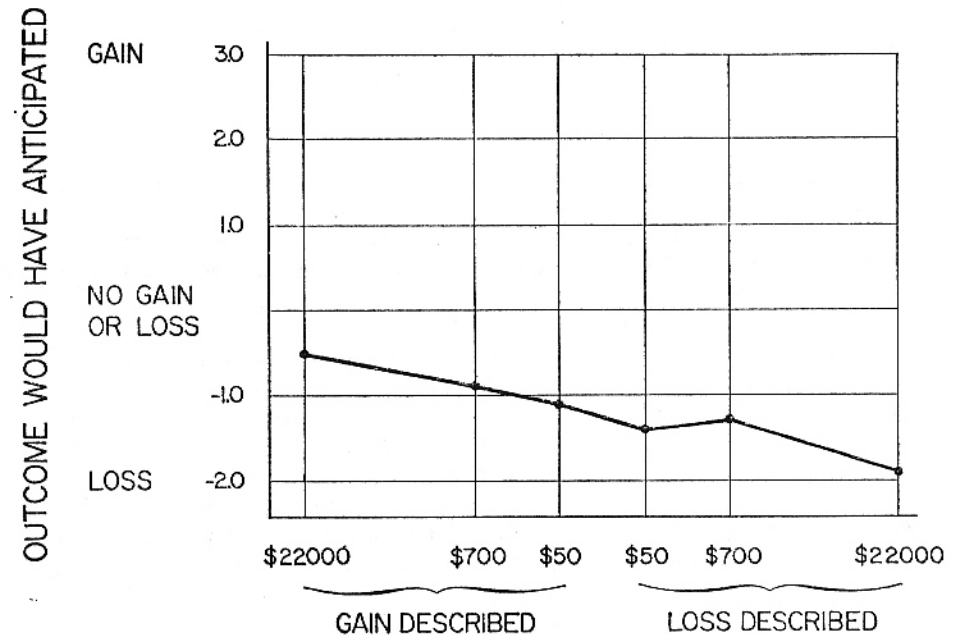


FIGURE 1 SUBJECT'S GUESS AS TO THE OUTCOME HE WOULD HAVE ANTICIPATED (Experiment I)

When we look at *Tables 1* and *2* and *Figures 1* and *2*, we see that our hypothesis is confirmed.

In both Experiment I and II, we see that the less the gain, and the more the loss, the more likely the *S* is to indicate that he would have anticipated loss. In Experiment I, a significant linear trend exists for the index composed of two questions (see *Table 1* and *Figure 1*).  $F=9.89$ , 1 and 123 d.f.,  $p<.01$ . When we examine the

TABLE I SUBJECTS' PERCEPTION OF THE PREDICTABILITY OF CONSEQUENCES (Experiment I)

	<i>Ss</i> told other gained			<i>Ss</i> told other lost			Outcome not revealed
	\$22,000	\$700	\$50	\$50	\$700	\$22,000	
I. <i>Ss'</i> guess as to their own prediction:							
How sure you'd anticipate gain?	.0	-.2	-.5	-.5	-.4	-.7	-.7
How sure you'd have bought?	-.5	-.7	-.7	-.9	-.9	-1.3	-.6
Index (Total)	-.5	-.9	-1.1	-1.5	-1.3	-2.0	-1.3
II. Assignment of Responsibility for Outcome to Other:							
Other's responsibility for outcome	3.6	3.7	4.1	4.1	3.8	3.1	3.4
Other's fortune not due to chance	1.7	1.9	2.3	2.7	2.6	2.2	2.3

TABLE II  
SUBJECTS' PERCEPTION OF THE PREDICTABILITY OF CONSEQUENCES  
(Experiment II)

	S's told he gained		No gain or loss		S's told he lost		Outcome not revealed	
	\$10,000	\$100	\$10		\$100	\$1,000	\$10,000	Outcome has not occurred
I. S's' guess as to their own prediction:								
How sure you'd anticipate gain?	.5	.3	.2	.5	.2	-.1	-.2	.2
How sure you'd have bought?	.6	.6	.5	.5	.8	.5	-.2	.6
How much gain expect?	1.2	.9	1.5	.9	.9	.4	-.2	.5
Would contract be extended?	.3	.5	.4	.3	.3	.1	-.1	.2
Index (Total)	2.7	2.3	2.8	2.3	2.3	.3	-.5	1.6
II. Assignment of Responsibility for Outcome to Other:								
Other's responsibility for outcome	3.4	3.5	3.8	3.4	4.3	3.9	3.7	3.5

two questions individually, we see that the trend is significant for question one at  $p < .01$  ( $F=9.22$ , 1 and 123 d.f.) Question two is significant at  $p < .05$  ( $F=4.91$ , 1 and 123 d.f.) Tests of *curvilinearity* are clearly non-significant.

From Table 2 and Figure 2, we can see that the index in Experiment II also demonstrates a significant linear trend. A test of *linearity* is significant at ( $F=12.32$ , 1 and 205 d.f.,  $p < .001$ ). All tests of *curvilinear* trends are insignificant. In addition, when we test the four individual questions for linear and all possible curvilinear trends, we find in all cases the linear trends are the largest and are in all cases insignificant. The  $F$ s for linear trends for questions one through four are 7.01, 7.75, 7.43, and 7.33 respectively, (1 and 205 d.f.) For two questions, however, there are also significant cubic trends. (Cubic  $F$ s for questions one and four are 4.47 and 5.42 respectively.) These cubic trends made the interpretations of individual questions one and four difficult.

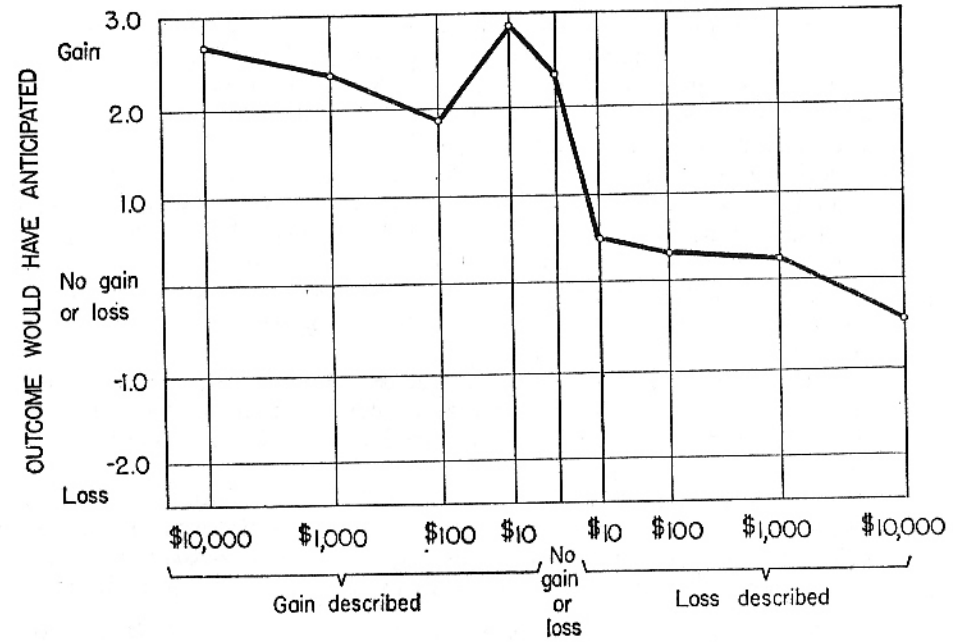


FIGURE 2 SUBJECT'S GUESS AS TO THE OUTCOME HE WOULD HAVE ANTICIPATED  
(Experiment II)

#### Assignment of Responsibility to Others for Serious Events

Previous experiments have demonstrated that individuals have a tendency to find others responsible for the chance events that happen to them (Lerner, 1965, 1966; Shaw & Sulzer, 1964; and Walster, 1966). We proposed in the introduction to this paper that perhaps this phenomenon occurs simply because individuals convince themselves that they would have predicted the serious event and thus judge others more harshly. We, thus, now look at the data to see if S's tendency to assign responsibility for an event to a possibly responsible person seems to vary with his confidence that he could have predicted the event.

When we do this, we discover some very surprising data. The relationship we secured between how important the reported outcome is and how responsible *S* judges the other to be for the outcome, is not a positive one; we do not replicate the findings of the earlier studies. Even more confusing, the relationships we do secure are different in Experiment I and Experiment II.

It was expected on the basis of two of the previous studies, that when conditions were ordered from extreme loss to extreme gain, that there would be curvilinear relationships between how profitable *S*s believed purchasing the house had been, and how much responsibility for the consequences they assigned to the purchaser for the decision's outcome. It was predicted that the more the purchaser gained or lost, the more responsible for the outcome of the decision he would be perceived to be (and the more the outcome would be said to be *not* just merely a matter of chance).

In Experiment I (see *Table 1*) a test for curvilinear trends was extremely significant, but the existing relationship was *opposite* to the relationship we had been led to expect. The greater the consequences of Mrs Wallace's decision, the *less* responsible she was said to be, ( $F=8.27$ , 1 and 123 *d.f.*,  $p<.01$ ) and the more *S*s felt that the outcome *was* just a chance one ( $F=7.93$ , 1 and 123 *d.f.*,  $p<.01$ ). Tests of linearity are in no case significant. In Experiment I, then, *S*s are assigning greater responsibility to a potentially responsible victim when the consequences he receives are slight than when they are severe. In Experiment II, there appears to be no consistent relationship between responsibility assignment and severity of the reported outcome, (see *Table 2*). When we test for linear, quadratic or cubic trends, we see that none of these trends are significant ( $F=1.30$ , 1.05, and .08 respectively).

Thus, it appears that though *S*s manage to become increasingly confident that they would have correctly foreseen an outcome as that outcome increases in importance, there is no consistent evidence that *S*s hold others responsible for similarly foreseeing the consequences.

Our failure to replicate the previous experiments is disturbing to us, especially in view of the fact that the increasing *loss conditions* of Experiments I and II did not differ in any theoretically important way from the *increasing loss conditions* of Walster (1966). We cannot satisfactorily explain this failure to replicate.

*No Information Condition.* The reader will recall that in both Experiments I and II, we ran No Information Control Conditions—conditions in which *S*s were told all about the other's decision without being told the outcome of the decision.

Data from these conditions were used to give the author information as to *S*s' expectations before the outcome was known to them. Data from the control condition are reported in *Tables 1* and *2*, and for the reader's interest are summarized below:

#### EXPERIMENT I

As is apparent in *Table 1*, *S*s who are not told the outcome of Mrs Wallace's decision express an expectation that she will probably break even or probably *lose* from her decision (−.3) and that they would probably *not* have bought the house that she described (−.6). Objectively then, *S*s before any outcome is known, feel that the probable outcome is negative.

#### EXPERIMENT II

In the second experiment, two groups in which *S*s had no information as to the outcome were run. Readers will recall that in the Before-decision Control group, *S*s did not even know if Alex would decide to buy the house, nor did they know the outcome of this decision. From *Table 2*, it was clear that in Experiment II before *S*s have any information as to the actual outcome, they anticipate *gain* from a decision to buy the Nevada home. Index scores for the Before-and After-decision Control groups are +1.6 and +2.9 respectively.

#### SUMMARY

It is a truism that individuals often over-estimate, in retrospect, the likelihood that they would have predicted whatever outcome has occurred. We hypothesized that when the consequences were important, one's tendency to second-guess would be especially pronounced. To test this hypothesis, the same decision was described to and judged by all *S*s. However, when hearing about the decision, different groups of *S*s had different information as to whether the consequences of a decision had been good or bad, and how *serious* these good or bad consequences had been. Two different experiments clearly demonstrated that the better the actual decision outcome was said to be, the more confident *S* was that he would have anticipated a positive outcome; the worse the actual decision outcome was said to be, the more confident *S* was that he would have anticipated a negative outcome.

It was thought that our hypothesis, if demonstrated, could explain the tendency which exists for *S*s to blame others more for the serious accidents than for trivial accidents. Unfortunately, however, our experiments did *not* replicate these earlier studies that we hoped to explain. In fact, Experiment I contradicted earlier studies by demonstrating that *less* responsibility was attributed to *S*s for serious occurrences than for trivial ones.

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#### BIOGRAPHICAL NOTE

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