CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

THE ATtribution OF RESPONSIBILITY FOR NEGATIVE EVENTS:
A CONTRAST OF THE DEFENSIVE ATTRIBUTION HYPOTHESIS WITH A MODEL
POSITING AN UNBIASED PROCESSING OF INFORMATION AND ATTRIBUTION

A thesis submitted in partial satisfaction of the requirements for the degree of Master of Arts in
Psychology
by
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ABSTRACT

THE ATTRIBUTION OF RESPONSIBILITY FOR NEGATIVE EVENTS:
A CONTRAST OF THE DEFENSIVE ATTRIBUTION HYPOTHESIS WITH A MODEL
POSITING AN UNBIASED PROCESSING OF INFORMATION AND ATTRIBUTION

by

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The following is an inquiry into the cognitive process underlying the attribution of responsibility (AR) for negative events. Two models of this process were examined and tested. The first of these models was the defensive attribution hypothesis (DAH). Originally proposed by Walster (1966) and later modified by Shaver (1970) and Shaw and McMartin (1973), the DAH describes a process in which attributors would attempt to avoid the unpleasant thought that they might possibly be held responsible for negative events similar to those generated by another individual. It is suggested that this avoidance could be accomplished through assignments of responsibility which reflect defensive distortions of causal relationships. In its most recent form, the DAH predicts high order interactions among negative outcome severity, situational relevance and personal relevance. An examination of the results generated in previous tests of the DAH suggested that this hypothesis was not a sufficiently inclusive explanation of the AR elicited by negative events. The second of the two models tested in
this inquiry posited an unbiased processing of information and attribution of responsibility. The formulations of Harold Kelley (1967, 1971, 1973) formed the basis for suggesting that attributors would invoke "cognitive schemata" reflecting the unusual probabilities of association between negative events and their potential causal antecedents. It was generally hypothesized that attributors would make "normative assumptions" and/or probable inferences about the prevailing causal relationships. It was further hypothesized that attributors would base their attributions of responsibility on these unbiased inferences.

It was expected that the results of this inquiry would not support the hypotheses following from the DAH. This expectation was confirmed. In a situation which was highly relevant for attributors, personal relevance was not systematically related to AR and, concomitantly, did not interact with negative outcome severity. In contrast, the data strongly supported the contention that the responsibility attributed for negative events would reflect an unbiased processing of information and attribution. Where the conditional probability of a proportional causal contribution was nonmonotonically related to negative outcome severity, AR was also nonmonotonically related to negative outcome severity. As hypothesized, AR increased with negative outcome severity up to the point where the severity of the event became improbable for any causal contribution the stimulus person could be inferred to have made; thereafter, AR decreased with negative outcome severity. Also, in accordance with the contention that the nature of an actor's behavior would act as a constraint on an attributor's probable causal
inferences by acting as the primary determinant of AR, the data showed an interaction between the availability and type of direct information about the nature of an actor's behavior and negative outcome severity. This contention implied that information about behavior would take priority over information about the severity of a negative event. When attributors had direct information to the effect that an actor's behavior had been normative and/or had been that which was most frequently associated with mild negative events, as expected, AR paralleled the probable contribution of the actor and both were inversely related to negative outcome severity. Also, the data showed that, when the actor's behavior was deviant and/or that which was most frequently associated with severe negative events, AR was undiminished by the association of the deviant behavior with negative events which were unusually mild for that behavior. In addition, AR reflected the attributors' probable causal inferences when they assigned responsibility to a stimulus person generating negative events in a context in which potential behaviors were most distinctively and consistently associated with the occurrence of negative events. The single exception to the generally strong support lent to the unbiased model of the attribution process was the failure of the perceived ability of the stimulus person to be systematically related to AR. The failure of perceived ability (the frequency with which different actors are normally associated with negative events) to be related to AR was explained by the greater salience of the stimulus person's "effort" and the potential equivalence of perceived effort and the extent of normative adherence represented by the stimulus person's behavior.
INTRODUCTION

The initial form of the DAR appeared in a 1966 study conducted by Elaine Walster. In that study, Walster reasoned that attributors would tend to avoid the disagreeable thought of possibly being held responsible for a negative event. Moreover, she felt that the thought of possibly being responsible for a negative event would become increasingly disagreeable as the negative event became increasingly severe. Walster then suggested that attributors could avoid this unpleasant cognition by disassociating themselves from the stimulus person (SP) connected with the event. She suggested that the disassociation could be achieved through the perception that the SP was uniquely responsible for the occurrence of the negative event. Following this line of reasoning Walster hypothesized that assigned responsibility would be directly related to negative outcome severity.¹ She asked subjects to attribute responsibility to a young man, who parks his recently purchased used car on a hill and leaves. After the young man is out of the area, the car rolls down hill and hits a tree stump (mild negative event) or crashes into a store front (severe negative event). The results of this study supported Walster's predictions.

In two subsequent experiments, Walster (1967) attempted and failed

¹Walster and subsequent investigators have suggested that the DAR would apply to the "accidental" occurrence of negative events. This suggestion does not appear to be consistent with the remainder of the DAR. This issue will be taken up on page 17 of this inquiry.
to conceptually replicate her original results. The first attempt at replication resulted in a negative rather than a positive relationship between negative outcome severity and AR. The second attempt at replication resulted in no systematic relationship between AR and negative outcome severity.

The next step in the evolution of the DAH was taken by Shaver (1970). He proposed that the diverse results generated in Walster's tests of the DAH could be explained and the viability of the DAH could thus be demonstrated, if the relevance (personal) of a negative effect for the attributor were taken into account. Shaver suggested that a negative effect would have to be relevant in order for the attributor to be uncomfortable with the thought of possibly being held responsible for a similar negative effect. Conceptually, relevance appears to be defined in terms of an attributor's perception of the likelihood that, at some point in the future, he or she might cause and therefore be responsible for the negative event. Operationally, relevance was taken to be directly related to the similarity between an SP and the attributor. Shaver's modification of the DAH preserves Walster's predictions when the SP is dissimilar to the attributor (low personal relevance). In this case the attributor is permitted to exaggerate the difference between himself and the SP by perceiving the SP to be increasingly responsible as negative outcome severity increases. In contrast, when the similarity between the attributor and the SP is great (high personal relevance), it is difficult for the attributor to exaggerate

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2 Shaver later made a distinction between "personal" and "situational" relevance. Page 5 of this inquiry.
whatever little dissimilarity there may be between himself and the SP. In this later circumstance, the thought of possibly being responsible for a similarly severe negative outcome is avoided by perceiving the negative effect to have been caused by factors environmental to the SP, and correspondingly, by attributing a relatively smaller proportion of responsibility to the SP. Thus, while low (personal) relevance is thought to lead to a positive relationship between AR and negative outcome severity, Shaver's modification of the DAR also leads to the prediction of an inverse relationship between AR and negative outcome severity when (personal) relevance is high.

Shaver (1970) conducted several experiments in an attempt to test this modification of the DAR. The first of these experiments incorporated controls for differential (personal) relevance. Shaver manipulated the age of the SP (younger, older and the same age as his subjects) and negative outcome severity in a written version of Walster's original study. In spite of the control which was exercised over (personal) relevance, Shaver did not find a systematic relationship between AR and negative outcome severity. This result not only represents the third failure to replicate Walster's original findings, but also provides no support for Shaver's modification of the DAR.

One portion of the data generated in this study was interpreted by Shaver as supporting his modification of the DAR. While attributed responsibility was directly related to the age of the SP—which argues against the validity of the DAR—a leniency index was nonmonotonically related to age. It was argued that the greater judgmental leniency associated with the similar SP—as opposed to the older or younger SP—
was congruent with defensive attribution. The fact that AR was not directly related to judgmental leniency was explained as having resulted from an overriding tendency to attribute responsibility on the basis of "legal and moral tradition."

In another of Shaver's experiments male and female subjects were presented with a description of a male demonstrating a mechanical device. The male demonstrator is called to the phone. While he is absent, something goes amiss and metal fragments are ejected from the device. Consequently a young child, accompanied by his mother, is struck either in the eye (the severe negative outcome) or near the eye (the mild negative outcome). Shaver's modification of the DAR predicts that males, for whom (personal) relevance is high, should attribute more responsibility for the mild than for the severe negative outcome. The modified form of the DAR also predicts that female subjects will attribute more responsibility for the severe negative outcome than for the mild negative outcome because (personal) relevance is hypothetically lower for female subjects. In contrast to Shaver's prediction, both male and female subjects attributed slightly less responsibility in the case of the more severe negative outcome (p < 0.15).

In a study conducted before the publication of Shaver (1970), Shaw and Skolnick (1971) tested Walster's original hypothesis: AR will be directly related to negative outcome severity. Both male and female subjects were presented with a male college student who entered a chemistry laboratory early in the morning in order to work on an assigned experiment. The completion of this assignment would permit the student to leave early on his Christmas vacation. During the experiment either
a mild (offensive odor) or a severe (explosion) negative outcome occurs. The combined AR of both male and female subjects was not consistent—in the case of negative events—with either Walster's original hypothesis or the predictions stemming from Shaver's modification of the DAH. Some support for Walster's original, unqualified hypothesis was evidenced when the data for males only was analyzed, and the predicted positive relationship emerged (p<0.10). But, as this should be a high (personal) relevance condition for male attributors, this later result is inconsistent with Shaver's modification of the DAH. Lastly and in further contrast with Shaver's modification of the DAH, the attribution of female subjects did not evidence the positive relationship predicted for this low (personal) relevance condition.

After reviewing the results of his experimentation, Shaver suggested that it might be necessary to differentiate between "personal" and "situational" relevance. The next and to date most rigorous attempt to test the DAH was undertaken by Shaw and McMartin (1973). They incorporated steps to insure that situational and personal relevance would not be confounded. Personal relevance was again operationally defined in terms of the similarity between the attributor and the SP. Situational relevance appears to pertain to the attributor's perception of the context as one that he is more or less likely to find himself in. Consequently, situational relevance, like personal relevance, also seems to bear on the likelihood that the attributor might be held responsible for an outcome similar to that generated by the SP. Their high situational relevance treatment involved male subjects considering outcomes generated in a chemistry laboratory and female
subjects considering outcomes generated in a nutrition laboratory. High personal relevance treatments involved attributors and stimulus persons of the same sex. Negative outcome severity treatments involved a mild negative effect (an offensive odor) and a severe negative effect (explosion).

The DAH, modified by the distinction between personal and situational relevance, predicts a high order interaction involving both types of relevance and negative outcome severity. When situational relevance is low, differential responsibility should not be attributed across either personal relevance and/or negative outcome severity. When situational relevance is high and personal relevance is low, a positive relationship between negative outcome severity and AR is predicted. On the other hand, when both situational relevance and personal relevance are high, a negative relationship should emerge. The results supported these predictions at p < 0.07 and reflect the strongest evidence yet developed for the viability of the DAH.

In spite of the support for the DAH which is reflected in the Shaw and McMartin study, there remain unanswered questions concerning the viability of this hypothesis. Shaw and Skolnick (1971) used treatments which appear to conform to the requirements for both high personal and high situational relevance for males, and yet, male subjects responded with a marginally significant, positive relationship between negative outcome severity and AR (p < 0.10). It is in just these conditions which the modified DAH predicts a negative relationship between those variables; as did result (p < 0.07), under nearly identical manipulations, in the study conducted by Shaw and McMartin (1973).
Moreover, the results of one of Shaver's studies evidenced only a marginally significant (p < 0.15) negative relationship between AR and negative outcome severity. Because this result may be interpreted as reflecting either a negative relationship or the absence of a systematic relationship and, in particular, because this result was the same for both male and female attributors, it is inconsistent with any current modification of the DAH. Also, in his initial attempt to replicate Walster's original results, Shaver failed to find that AR was related to perceived similarity in the fashion predicted by the DAH. And lastly, Walster (1967) generated a negative relationship—as well as the nonsignificant relationship predicted by the most recent modification of the DAH—in conditions interpreted as conforming to the requirements for both low personal relevance and low situational relevance.

While these results, if taken at face value, raise serious questions about the viability of the DAH, there is also the possibility that this data may be inadequate as a basis for judging the viability of the DAH. That is, the mode of AR measurement utilized in tests of the DAH may not be capable of registering the proportional attributions of responsibility required by Heider's general equation—Effect = f(person + environment). In tests of the DAH the causal contribution of each potential antecedent has been measured independently and on a scale ranging from what is essentially no causal contribution to the only and sufficient causal contribution. In the Shaw and McMartin study, for example, the scale values of the responsibility attributed to the SP and the causal contribution attributed to chance sum to a
value which is most often either less than or greater than the highest value on the scale of any single independent measure. This occurs where the highest value on the scale of any single independent measure should represent the total of the proportional causal contributions that could be attributed for a single outcome. Further indication that independent scales do not faithfully reflect proportional attributions emerged in an exploratory study conducted by this author. In this study three independent responsibility scales measured the responsibility attributed to a primary SP (a chemistry student conducting a laboratory experiment that goes awry), a second individual (the chemistry professor), and third, all other unspecified factors which might have contributed to the occurrence of the effect. When the responsibility attributed on all three scales was summed, the total AR evidenced an interaction effect for negative outcome severity and the implied deviance of the stimulus person's behavior. This result may have stemmed from the subjects' belief that severe negative events and/or more deviant behaviors call for a greater overall degree of accountability. But, because all current attribution theories hold perceptions of causality and attributions to be proportional, the interpretation of this and the other results based on independent measures of responsibility is as yet unclear.

Although the present examination of the DAH will be expanded as this inquiry proceeds, at this juncture it would appear that either one of two conclusions could be drawn regarding the results generated in tests of the DAH. One, the levels of significance and conflicting nature of these results could suggest that this hypothesis is not
sufficiently inclusive to explain the AR elicited by negative events. Or alternatively, these results may not reflect the proportional attributions required by Heider's general equation—\( \text{Effect} = f(\text{person} + \text{environment}) \)—and thus, there may simply be no evidence which bears directly on the viability of the DAH. In either case the appropriate response would be a further inquiry into the nature of the process underlying the attribution of responsibility for negative events.

Ideally, such an inquiry would incorporate tests permitting "strong inferences" to be made. That is, this inquiry should include tests which contrast the predictions of the DAH with those stemming from an alternative model of the process underlying the attribution of responsibility for negative events. The obvious alternative to the DAH is a model positing a fundamentally unbiased processing of information. This follows in part from the fact that evidence for a defensive bias is usually sought in comparisons with unbiased attributions of responsibility. A logical consequence of this construction is that, if a defensive bias does not influence attribution, AR should conform entirely to predictions based on an unbiased model. Shaw and McMartin (1973) appear to have reached the same conclusion. They identified two distinct attributional tendencies—"blame-avoidance" and "harm-avoidance." Blame-avoidance was to characterize the defensive bias evoked by high situational relevance and severe negative events. In contrast, harm-avoidance was to characterize the attributional tendency which would act as: (1) the background against which the defensive bias would be evidenced; (2) the tendency which would prevail in the absence of the special conditions that could evoke a defensive bias; and (3)
the tendency which countervails and thereby mitigates the influence of a defensive bias.

The selection of an attributional model which reflects an unbiased processing of information as the primary alternative to the DAH is also suggested by the diametrically opposed functions that unbiased and defensively biased attributions could serve for those attributing responsibility. On one hand, Kelley (1973) has suggested that the establishment of stable perceptions facilitate an attributor's exercise of control over his or her environment. Kelley has also indicated that in order to establish these stable perceptions an individual will endeavor to achieve a veridical understanding of the cause and effect relationships characterizing his or her environment. And lastly, he suggests that attributions that individuals make will to a great extent reflect their stable and veridical perceptions of causal relationships because such attributions function to enhance their control over their environments. In contrast, Walster has suggested that attributions governed by a defensive bias would serve the attributor by allowing him to avoid unpleasant cognitions. In this, she has suggested that certain circumstances will lead to attributions which reflect inaccurate interpretations of cause and effect relationships. Or in other words, Walster has suggested that the elicitation of a defensive bias would foster attributions of responsibility which would be dysfunctional with regard to the attributor's exercise of control over his or her environment. As unbiased attributions should predominate in each attributor's attempt to adapt to his or her environment, if a defensive bias is evoked, it would appear that it must operate within limits stemming
from the attributor's proclivity toward a functionally efficacious and unbiased processing of information. Further, if, as the results generated in tests of the DAH may indicate, a defensive bias is not being elicited by the occurrence of negative events, it would appear that attributions of responsibility could best be interpreted in terms of an unbiased attribution process.

The model best suited to predict the attributions stemming from an unbiased processing of information is the formulation suggested by Harold Kelley (1967, 1971, 1973). Kelley has proposed that information is processed in reference to "cognitive schemata." Cognitive schemata are conceptual frameworks which allow attributors to relate past observations, and/or the information received from other individuals, to causal inferences based on the current observation of a single event. For Kelley, cognitive schemata serve much the same function as the "normative assumptions" discussed by Kanouse (1971). To quote Kelley (1971), "Kanouse assumes that, when forced to make attributions from limited information, attributors "fill in missing cells in the data matrix with reasonable guesses ... in the absence of information about the generality of a given relation over persons or objects, individuals make normative assumptions about generality, and ... these assumptions in turn allow them to form attributions." (page 154)

Kelley's conceptualization of the attribution process fosters the view that the elements of an attributor's environment may be differentiated into at least three categories: (1) relatively unvarying aspects of the environment which, as distant causal antecedents, serve to define differing situational contexts, (2) potential immediate
causal antecedents, which have a more direct influence on the occurrence of an effect, and (3) states of the environment which are effects. Kelley seems to imply that each distinctive situation may elicit a unique cognitive schema. Further, he implies that each cognitive schema will reflect a unique form of probabilistic association among immediate causal antecedents and effects.

The view that cognitive schemata constitute a probabilistic ordering of the relationships among potential causal antecedents and effects follows from the nature of a "naive analysis of variance." The naive analysis of variance is, of course, the mode of information processing which Kelley suggests is utilized by attributors in developing cognitive schemata. Kelley proposed that the relationships among causal factors and effects are ordered in terms of the distinctiveness of their association, the consistency with which they are associated over time, and the consistency with which they are associated over persons. Which is to say, a causal factor may be viewed as antecedent to an effect to the degree that: (1) it is present when the effect is present, (2) it is absent when the effect is absent, and (3) these associations are consistent over time and persons.

Given that environmental events are usually neither perfectly correlated nor randomly ordered, it appears to follow that relationships between causal antecedents and outcome events may be phenomenally categorized in terms of their relative frequency of association. Further, Kelley seems to be implying that attributions will be directly related to the relative probabilities of each potential causal antecedent leading to the occurrence of an effect. Significantly, this later
implication is consistent with Fritz Heider's (1958) contention that personal and environmental contributions to the occurrence of an effect are proportionally attributed—Effect = f(person + environment).

The principles and processes incorporated in Kelley's formulation are reflected in the several cognitive schemata which he suggests may be utilized by attributors in drawing causal inferences. The "multiple sufficient" causal schema (figure 1) is thought to be evoked in situations where the occurrence of an effect may be explained by the influence of one or more of a number of potential causal antecedents, operating either independently or simultaneously. On the other hand, the "multiple necessary" causal schema (figure 2) is thought to be evoked in situations where the occurrence of an effect can only be explained by the combined operation of two or more causal antecedents. The "compensatory schema" (figure 3) is an extension of the basic multiple sufficient schema. While still restricted to explaining the occurrence of a single type of effect, the compensatory schema encompasses differing states, as opposed to the simple presence or absence, of potential causal antecedents. The compensatory schema covering graded effects (figure 4) further extends the application of schematic models to differing effects or differing grades of a single type of effect. The incorporation of graded effects within the compensatory schema also results in the principle reflected in the multiple necessary schema being applicable where the known states of potential causal antecedents are insufficient to account for the extremity of an effect.

These four cognitive schemata represent the application of Kelley's formulation to some of the least complex cause and effect
Figure 1. Multiple sufficient causal schema.

Figure 2. Multiple necessary causal schema.
Figure 3. Compensatory causal schema.

Figure 4. Compensatory causal schema with graded effects.
relationships. Cognitive schemata which more fully reflect the assumption that environmental events are neither randomly ordered nor perfectly correlated might also encompass: (1) more than two categories of potential causal antecedents, (2) causal antecedent states which have unequal probabilities of occurrence, (3) combinations of causal antecedents that are associated—with unequal frequency—with more than one grade of effect, (4) causal antecedents with a dissimilar frequency of association with each and every grade of effect, and naturally (5) grades of effect which occur with unequal frequency.

In a few words, if the full implications of Kelley's formulation have been correctly interpreted and the information available to an attributor is pertinent to a distinctive and consistent causal relationship, the attribution process should operate in the following manner. One, a unique cognitive schema will be elicited. Two, specific information, bearing on one effect and on the current states of potential causal antecedents to that effect, should act to set the conditional probabilities constraining an attributor's inferences. Attributors might then make the most probable inference. Or alternatively, they might make an inference which is only probable; it depends on how rigorous one wishes to be in extrapolating on Kelley's basic formulations. And lastly, along with the information already available to the attributor, his or her causal inferences should serve as the basis for attributions.

In the following discussion and in subsequent tests, it is expected that a strict interpretation of the DAR will be found to be inadequate as an explanation of the AR elicited by negative events.
Further, in light of the countervailing character of the relationship between the biased and unbiased aspects of AR, it could be expected that an unbiased model of the attribution process will be found to be adequate to predict the AR elicited by negative events. It should be noted that neither of these general predictions preclude the possibility that some evidence for a defensive bias in AR might emerge. At present there are no results or arguments which would entirely preclude this possibility. But, in accordance with the preceding predictions, if a defensive bias were to be evoked, it would be expected to evidence itself within the limits of causal assumptions which were predominantly normative.

The first specific hypothesis that will be considered is Walster's original suggestion that the results predicted by the DAH will, and perhaps only should, emerge where the occurrence of a negative event is accidental. The exact meaning of the term "accidental" is unclear, but it would appear that the occurrence of a negative event can be taken to be accidental, if, when objectively viewed, it would be perceived to have been caused largely or wholly by causal factors other than the SP. Alternatively stated, an accident might be said to have occurred when negative events would lead to normative assumptions which, in the absence of a defensive bias, would preclude the perception that the SP had caused the event.

If Walster is correct in this suggestion, it would be absolutely necessary for any test of the DAH to insure that the occurrence of all negative events could be objectively perceived as being accidental. Discussion of this potentially important issue has been delayed until
this point because there is a serious question about whether or not this suggestion is logically consistent with the remainder of the DAR. On the one hand, Walster felt that for a defensive bias to be evoked, an attributor must be threatened by the unpleasant thought of possibly being held responsible for a similar negative event. But at the same time, for a negative event to be accidental, it would be necessary for the event to be perceptible as having been caused either largely or wholly by factors other than the person to whom responsibility is being attributed. In short then, the contradiction is this: If there is little or no possibility that an SP could be objectively viewed as having made a causal contribution to the occurrence of a negative event, it is difficult to see why an attributor should be troubled by the thought of perhaps being held responsible for generating a similar event.

In the tests which follow, attributors will be presented with two situations that differ in the extent to which they are accidental. The more accidental of these two contexts will be characterized by a less distinctive and consistent association between the potential causal contributions of an SP and the occurrence of negative effects. Or stated alternatively, in the more accidental context the occurrence of negative effects will be, if objectively viewed, more dependent on factors environmental to the SP. Given the contradiction inherent in Walster's postulation of the DAR, the relationships predicted by the DAR are not expected to emerge in the more accidental context. This should be the case even if a defensive bias is operating in the attribution of responsibility. Further, even granting that the DAR would
be more likely to be applicable where there was some question about the extent of an actor's contribution to the occurrence of a negative event, it is not expected that the specific results predicted by the DAH will emerge in the less accidental context. Rather, the assignments of responsibility which are made in both contexts are expected to be governed largely, if not entirely, by the attributor's normative assumptions. The limitation, in the relatively accidental context, on the attributor's ability to infer that an SP has generated a negative effect is expected to lead to a diminution in the extent to which the responsibility attributed to the SP will vary with negative outcome severity. Concomitantly, the relative responsibility attributed to the SP, as compared to factors environmental to the SP, should be lower in the accidental context.

Putting aside the question of whether or not negative events must be objectively accidental in order for the effects predicted by the DAH to emerge, the pivotal issue with regard to the viability of the DAH concerns the basis on which one can predict a systematic relationship between AR and negative outcome severity. A strict interpretation of the most recent modification of the DAH—Shaw and McMartin (1973)—suggests that the form of the variations in AR which are associated with differential negative outcome severity are entirely dependent on the personal relevance of the SP for the attributor. Once again, low personal relevance is predicted to lead to an inverse relationship.

3This modification of the DAH also requires that situational relevance be high in order for variations in negative outcome severity to produce variations in AR. This issue is taken up on page of this inquiry.
between negative outcome severity and AR. High personal relevance is predicted to lead to a positive relationship between these variables. In contrast, where AR is based on an attributor's normative assumptions, the form, if any, of the systematic variations that can be expected to emerge between AR and negative outcome severity should depend on the particular probabilistic relationship characterizing combinations of causal antecedents and the various negative effects in question. Or alternatively, the form these systematic variations assume should depend on what an attributor knows about the state and relative contribution of each potential causal antecedent, the severity of each negative effect and the normative assumptions the attributor can make given what he or she knows. Further, the emergence of a systematic relationship between AR and severity and the form that relationship assumes should be independent of a stimulus person's characteristics, unless variations in some characteristic fosters differing normative assumptions.

At one extreme, AR should not be expected to vary with negative outcome severity where an attributor does not perceive a distinctive and consistent causal relationship between these events and the SP in question. Where there is a distinctive and consistent causal

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The modified form of the DAH suggests that there can be no systematic relationship between AR and negative outcome severity when situational relevance is low. The predictions of the DAH and the alternative model presented here may be equivalent where low situational relevance is synonymous with the absence of a distinctive and consistent causal association between the SP and the occurrence of negative effects. Predictions would differ if an attributor is still cognizant of a distinctive and consistent causal association even though the situation is not relevant. In essence, the presence or absence of a systematic relationship
relationship, Kelley's model suggests that a variety of cognitive schemata may be elicited across differing situations. The form of cognitive schemata which may have the broadest application to the occurrence of negative effects of differing severity might reflect the following parameters: (1) there are two, and most likely more than two, independent causal antecedents; (2) the differing states of these antecedents occur with unequal frequencies; and (3) the frequency with which causal antecedent states occur is, generally, inversely related to negative outcome severity. An attributor who is faced with a range of negative effects and who is operating within the preceding cognitive parameters might make inferences which take the following form.

If the causal antecedent is an actor, his inferred contribution would be expected to increase with negative outcome severity up to the point where the severity of the effect becomes improbable for any contribution the actor could be inferred to have made, given the status of the remaining potential causal antecedents. Thereafter, the relative contribution of an actor would be expected to decrease.

In more specific terms, a nonmonotonic relationship would be expected to emerge between AR and negative outcome severity because mild and, in accordance with the preceding qualifications, frequently occurring negative events would be associated most often with frequently occurring (near normal) causal antecedent states and/or relatively

between AR and negative outcome severity would be expected to be entirely dependent on whether or not an attributor perceives a distinctive and consistent causal relationship to exist. No further reference will be made to situational relevance. All the situations common to the tests included in this inquiry will be of high relevance to the subjects.
probable combinations of these causal antecedent states. Given this provision, in terms of either their general frequency of occurrence or their frequency of association with mild negative events, there would be relatively little distinction among the causal antecedents to mild negative events. Then, if the relative causal contribution perceived to have been made by an antecedent and the relative responsibility attributed to that antecedent varies directly with the relative probability of the antecedent leading to the occurrence of a negative event, the difference between the proportion of responsibility attributed to that antecedent and the responsibility attributed to the remaining potential causal antecedents, either individually or collectively, should be least for mild negative events.

Again in accordance with the preceding qualifications, the conditional probabilities of combinations of causal antecedent states, given severe negative events, would require that at least one infrequently occurring antecedent state (e.g. the behavior of an actor) be inferred by an attributor making a probable inference. The inference that other causal antecedents have simultaneously tended to assume their most frequent (near normal) state, given the prevailing conditional probabilities, would also be required, if an attributor were to make a probable inference regarding the entire combination of causal antecedents to a severe negative event. Where the proportional responsibility attributed to an antecedent varies directly with the relative probability of a state of that causal antecedent leading to the occurrence of a negative event, the inferred, proportional contribution of that causal antecedent would then be expected to increase initially as
negative outcome severity increases. Finally, when the severity of an effect becomes improbable for the contribution that can be inferred to have been made by a causal antecedent, a greater contribution on the part of one or more of the potential causal antecedents (e.g. a second actor and/or an improbable combination of causal antecedents—chance) would be required to explain the occurrence of the effect and/or would be required if a probable inference is to be made given the prevailing conditional probabilities.

One of the more obvious conditions that is assumed in this description of the process underlying the emergence of a nonmonotonic relationship is that the attributor's inferences regarding the states and relative causal contributions of each potential causal antecedent, including the SP, would be free to vary with negative outcome severity. It was assumed that the severity of the negative effect was essentially the only specific information available concerning the state and relative causal contribution of each potential causal factor. Under these conditions, it might be easy to lose sight of the proposition that it is the attributor's conclusions about the state and relative contribution of each potential causal factor which governs his or her attributions. Similarly, it is easy to overlook the fact that the type of effect which has actually occurred provides only indirect information concerning the circumstances leading to its occurrence. Should information be available which bears directly on the state of one or more potential causal antecedents, that information would determine the conditional probabilities upon which the attributor would base his or her inferences about the other potential causal antecedents to the
occurrence of any negative event. Providing an attributor with direct
information about the state of one or more potential causal antecedents would thereby act to constrain the manner and extent to which an attributor's inferences can vary with negative outcome severity. If such direct information constitutes a sufficient constraint, the emergence of a nonmonotonic relationship between AR and negative outcome severity could be entirely precluded. If such direct information constitutes a somewhat lesser constraint, it might simply mitigate the prominence of the nonmonotonic relationship and/or modify the range of negative outcome severity over which that relationship might be expected to emerge.

One example of the constraint following from the availability of direct information about the state and causal contribution of a factor other than the SP has already been discussed. Walster described an accident as the occurrence of a negative event which, if objectively viewed, would be perceived to have been caused either largely or wholly by factors environmental to the SP. In an extreme case, Walster is suggesting that the probability of a negative event given the specified states of factors other than the SP is sufficiently great that the conditional probability of a causal contribution by the SP should be objectively perceived to be both low and unvarying with regard to negative outcome severity. If the direct information given to two groups of similar attributors is sufficiently different in its description of the state of factors environmental to an SP, a comparison of their attributions should evidence an interaction between this information and negative outcome severity.
To continue the above line of reasoning, a constraint and an interaction effect should also follow from the availability of direct information about the relative causal contribution of the SP. Of particular significance in the attribution of responsibility is the constraint which may arise when an attributor has direct information which strongly implies that the behavior which has been enacted by the SP is not that which is normally (most frequently) associated with the severity of the negative outcome which is known to have actually occurred. This constraint assumes that the nature of an actor's behavior, rather than the effect associated with the actor, is the primary basis upon which events can be controlled by the attributor. In specific terms, if the severity of a negative effect is less than the severity of the negative effect which the attributor believes is most frequently associated with a behavior, one should not expect that the responsibility attributed to the actor would be any less than that elicited by the more usual behavior-effect combination. The attributor would be expected to infer that an unusual combination of potential causal antecedents, perhaps phenomenally categorized as luck, had prefaced the occurrence of the improbably mild negative effect. On the other hand, when an actor's behavior is strongly implied to be normative and/or that which is most frequently enacted in a situation, there would be a distinct tendency for AR to be inversely related to negative outcome severity over the entire range of severity. In this case, the necessity to explain the occurrence of negative events which are improbably

5This emphasis on the nature of an actor's behavior requires some explanation. This rather lengthy discussion has been incorporated in Appendix A to this inquiry.
severe would foster the inference that a factor which is environmental to the SP had assumed a state which is more frequently associated with those events.

The last issue to be taken up in this inquiry is the question of how differences among stimulus persons might be related to variations in AR. As noted above, a strict interpretation of the modified form of the DAH stipulates that the variations in AR which are occasioned by differential negative outcome severity will be entirely dependent on personal and situational relevance. While this prediction is not expected to be confirmed, there are still two ways in which personal relevance might influence AR. First, a less literal interpretation of the DAH might simply stipulate that personal relevance and/or a defensive bias will act to qualify an attributor's predominately normative assumptions. That is, a less literal interpretation of the DAH might simply stipulate that a defensive bias elicited by personal relevance will act to qualify the normative assumptions and attributions which are elicited independently by negative outcome severity, the presence or absence of information concerning the nature of an actor's behavior, and any other form of information which influences an attributor's unbiased inferences. The fact that attributions founded on a defensive bias would be dysfunctional with regard to an attributor's long term control over the occurrence of negative events argues against this first possibility. Second, there would also seem to be little likelihood that personal relevance, operationally defined in terms of perceived similarity, will elicit differing normative assumptions and in this manner lead to systematic differences in AR. There would be a
multitude of stimulus persons who would be of low relevance for each
type of attributor. Or in other words, it is difficult to see how the
attribute of dissimilarity could be distinctively and consistently
related to the occurrence of negative events of differing severity.

While personal relevance is not expected to influence AR, the
tests incorporated in this inquiry will provide an opportunity for
either of the two aforementioned possibilities to be evidenced. These
tests will also provide grounds for drawing a strong inference. This,
in turn, will require that the effects which are predicted to stem from
variations in personal relevance be contrasted with predictions based
on variations in another attribute of the stimulus person. If only
because of the attention it has received, relative ability appears to
be an individual attribute which will lead to variations in AR which
are fostered by differing normative assumptions. But the most compell-
ing reason for focusing on this variable is its definition in terms of
the relative frequency with which a SP is normally associated with the
occurrence of various effects. Or stated somewhat differently, an
actor's ability has been construed to be directly related to the extent
to which the actor has been able to exert control over his environment
(task difficulty) in order to generate a particular goal. (Weiner, 1971;
Heider, 1958)

In spite of a lack of direct evidence, some superficial conclu-
sions can still be drawn regarding the general nature of the relation-
ship between difficulty and ability which characterized tests of the
DAH. The contexts characterizing most tests of the DAH would appear to
be unlikely to foster the perception that the avoidance of negative
events is in general beyond the power of the stimulus persons utilized in these tests. Also, it may be that the manipulations used in tests of the DAH led to the perception that, while all stimulus persons were generally able to avoid generating negative events, stimulus persons also differed in their relative, learned capacity to preclude the occurrence of negative events.

In her initial study, Walster portrayed a young man who had parked his car on a hill and then left the area prior to the car rolling down hill to result in either a severe or mild negative effect. In her instructions to her subjects, Walster plainly viewed the young man's extent of control over the subsequent events to be a matter of whether or not the young man might have taken adequate precautions and not as a matter of whether or not persons parking cars on hills were able to take adequate precautions. Shaver (1970) described an SP demonstrating a device which was fully manageable. Shaw and Skolnick (1971) and Shaw and McMartin (1973) portrayed students conducting experiments which were regular class assignments and which are usually designed to be well within the capacities of all but a small minority of students. That the avoidance of negative effects was assumed by the subjects in these tests to be generally within the capacity of the stimulus persons seems to be confirmed by the results discussed on page (Appendix A). These results indicated that the stimulus persons were viewed as potential causal antecedents. Or alternatively, the "carelessness" of the stimulus persons' behavior was inferred to be directly related to the severity of the negative effect with which the SP was associated.
In both the Walster and Shaver studies the stimulus persons were automobile drivers. It may not be unreasonable to suggest that the age of the SP was perceived to be positively correlated with both driving experience and the relative power each SP was perceived to have had over the occurrence of negative events. Which is to say, the inexperienced actors may have been perceived as lacking the ability to avoid careless actions and the responsibility for avoiding the occurrence of negative events may have been perceived as residing with some other agency or person. This could be reflected in Shaver's contention that the positive relationship between age and AR was due to the overriding influence of "moral and legal tradition." A similar re-interpretation may also be possible in the case of the Shaw and McMartin (1973) study. In that study both male and female stimulus persons were described as generating effects in both chemistry and nutrition laboratories. Although there is no evidence bearing directly on the possibility, the out-of-role stimulus persons—a male in a nutrition laboratory and a female in a chemistry laboratory—could have been perceived as novices. Further, the in-role stimulus persons may have been perceived to have been more experienced and therefore to have had a greater power of control over the occurrence of negative effects than the out-of-role actors.

If subjects were to be presented with stimulus persons whose perceived abilities and/or frequency of association with negative events did not parallel their personal relevance (perceived similarity), figure 5 would be a graphic representation of the predicted relationship among personal relevance, negative outcome severity and AR which
Figure 5. Attributed Responsibility as a Function of Perceived Similarity and Negative Outcome Severity: The Defensive Attribution Hypothesis.
would follow from the modified form of the DAH. The two types of SP represented in figure 5 are characterized by: (1) low ability—high frequency of association with negative events—and low similarity or personal relevance and (2) high ability—low frequency of association with negative events—and high similarity or personal relevance.

Unlike the predictions stemming from the modified form of the DAH, those based on differential ability are less obvious. The first case to be examined requires that the relative differences in perceived ability be undifferentiated with respect to severity. It also requires that attributors have such complete information that they do not need to draw inferences about the actor's behavior. In this case attributions of responsibility should be inversely related to perceived ability and no interaction should emerge between severity and ability. On the other hand, if differences in perceived ability do vary with respect to severity and attributors have complete information, then AR should evidence an interaction between severity and ability. Where differences in perceived ability diminish as severity increases, AR should be inversely related to ability, if the negative effect is of low severity. Similarly, AR should be undifferentiated where negative events are severe.

In the absence of complete information, the problem of predicting AR becomes even more complex. This complexity derives from the identification of relative abilities in terms of an actor's normal frequency of association with negative events and, in the absence of complete information, from the necessity for the attributor to make inferences about the relative contribution of several causal factors. If two
actors of differing abilities enact equivalent behaviors, their respective causal contribution might be perceived to differ only in that, for the actor of lesser ability, the environment would be perceived to have been relatively more responsible for the effect. This is the circumstance that would preface the prediction, made where subjects had complete information, of an inverse relationship between AR and ability. On the other hand, an attributor may also find it necessary to infer the nature of an actor's behavior. Where the actor of lesser ability is perceived to be more frequently associated with negative effects, an attributor may have a tendency to more readily infer that this actor had enacted the type of behavior required to produce the negative effect. Conversely, if an actor is perceived to have relatively greater ability and/or is perceived to infrequently enact the types of behaviors which normally lead to negative effects, there may be a greater tendency, than in the case of the actor of low ability, to infer that factors other than the actor had assumed the necessarily unusual state and thus had caused the negative effect. Therefore, in the absence of complete information there might be a direct relationship between perceived ability and the likelihood of inferring that an actor had enacted the behavior necessary to produce a negative effect. All other things being equal, these later circumstances might be expected to lead to a direct relationship between perceived ability and AR. The conclusion that could be drawn from the foregoing speculation is that when attributors lack complete information a greater readiness to infer that a low ability actor had enacted the behavior necessary to produce the negative effect may mitigate the emergence of a negative relationship
between perceived ability and attributed responsibility. Also, should this be the case, any interaction between perceived ability and negative outcome severity would be less distinctive. The questions raised by these speculations require empirical answers; some of which will hopefully emerge from the following experiment.
METHOD

Subjects were 120 freshman and sophomore psychology students (ages 18 to 22) attending California State University, Northridge. Four independent variables were manipulated in this experiment. One, subjects were presented with four levels of negative outcome severity. Two, the experiment manipulated the presence or absence of information concerning the nature of the stimulus persons' behavior prior to the occurrence of each negative effect. Further, when information concerning the stimulus persons' behavior was made available, the extent to which that behavior represented adherence to a normative standard and/or the frequency with which that behavior was normally associated with each negative effect was also manipulated. Three, subjects were presented with two levels of the stimulus persons' perceived ability and personal similarity. Fourth, subjects were presented with two sets of circumstances which were meant to generate differing perceptions about the extent to which a set of negative events had occurred accidentally. Each subject was exposed to all four variations of negative outcome severity. The three remaining independent variables were sorted into treatment conditions reflecting a completely crossed design and the distinct treatment conditions were randomly assigned to subjects.

Negative outcome severity was manipulated by presenting subjects with differing levels of the damage and injury resulting from an incident and/or traffic collision.

(1) "When the police arrived some 25 minutes later, they found
that one person had received a slight concussion and a second person had suffered minor cuts and abrasions."

(2) "When the police arrived some 15 minutes later, they found that one person had received a severe concussion. Another person suffered a broken arm and three broken ribs. Two others received cuts and abrasions that were moderately severe."

(3) "When the police arrived, they found that three people had been killed. One of these persons was a five year old child who died when his skull was crushed. A second person had her head nearly severed from her body. And the third death resulted when the individual was disemboweled. Two other persons were critically injured, but did not die."

(4) "When the officers who wrote the police report arrived some 30 minutes later, they found twisted metal, bodies and parts of bodies had been hurled hundreds of yards from the point of impact. They found that in all 178 persons had been killed and two city blocks had been laid waste. When they started looking, it took them the better part of an hour to find AUTO N and they never found more than a few pieces of AUTO W."

Earlier, it was suggested that AR should reflect an attributor's perception of the normal frequency of association between negative effects and the various states of antecedents to those effects. Given this suggestion, it was necessary to establish a prior knowledge of the normal frequency of association between the negative effects utilized
in this inquiry and the behaviors that an SP could have enacted prior to the occurrence of these effects. In order to acquire this prior knowledge several survey type studies were conducted with the experimental population. These studies established that the severity of the negative effects resulting from a collision would be expected to be directly related to the speed at which an actor had been driving prior to the traffic accident. For the four negative effects listed above, this relationship holds at least up to the level of severity represented by the third of these negative effects. In anticipation of generating a nonmonotonic relationship between AR and negative outcome severity, it was also necessary to include a negative effect which the survey studies indicated would be improbable for the greatest speed at which an actor might be inferred to have been travelling prior to the collision. This severity of negative effect is represented by the fourth negative effect listed above.

Subjects were led to believe that the four negative events had been selected from among several thousand events. They were told that the four negative effects in question had been found during a study which involved the examination of the police reports filed during a twenty year period, in several large metropolitan areas. They were given this information in order to foster the belief that the four events had actually occurred. Subjects were also given this information in order to lend some credibility to the contention that all four negative events had occurred under a similar set of circumstances. Specifically, subjects were presented with a list of characteristics which were said to be common to the occurrence of all four negative
effects. It was through changes in this list of common characteristics that the independent variables other than negative outcome severity were manipulated. Below is one of these lists of common characteristics.

"Each event occurred at the intersection of two major boulevards. Each intersection was in a large metropolitan area. Each intersection was within 300 yards of the take-off and landing path of a major airport. The posted speed limit on each boulevard was 35 miles per hour. At the time of each incident and/or collision the traffic signal at that intersection was not working correctly. Drivers approaching from any direction would have seen a green light. That is, all four green lights were on and all the red and yellow lights were off. Each incident occurred on either a Saturday or Sunday afternoon. During these periods, at least one aircraft flew over or near these intersections every two to five minutes. In each case, one of the two automobiles, AUTO W, involved in the incident and/or collision had entered the intersection from the west at 10 MPH. In addition, in every case the second automobile, AUTO N, had entered the intersection from the north at 10 MPH and it was always driven by a male college student. While the driver of AUTO N was obviously a different person in each case, all these male college students were between 19 and 21 years of age. Counting the drivers and their passengers, there were always a total of either 2 or 3 individuals occupying each of these two cars."
The amount of information available to the subjects concerning the nature of the stimulus persons' behavior was manipulated by either specifying or failing to specify the speed at which the driver of AUTO N had been travelling prior to each incident. When the driving speed was specified, the driver of AUTO N was said to have been travelling at either 10 or 50 miles per hour prior to each incident. The survey studies conducted prior to this experiment showed that the first negative effect listed above was perceived to be more frequently associated with a driving speed of 10 miles per hour than any of the three remaining effects. For the effects included in this experiment, the probability of a negative effect occurring, given a driving speed of 10 miles per hour, was inversely related to the severity of the negative effect. These survey studies also showed that the third negative effect listed above (the second to the most severe effect) was perceived to be more frequently associated with a driving speed of 50 miles per hour than any of the three remaining effects. Which is to say, the first and second negative effects were unlikely, given a driving speed of 50 miles per hour, because they were unusually mild. Further, the fourth negative effect was unlikely for this and any other driving speed because it was so severe.

The subjects' perception of the context within which negative effects were said to occur was manipulated by varying the operating condition of the traffic signal governing the intersection in which all four negative effects occurred. Subjects were told one of two things.

1. "The traffic signal at the intersection was not working correctly. Drivers approaching from any direction would
have seen a green light. That is, all four green lights were on and all the red and yellow lights were off."

(2) "The traffic signal at each intersection was completely out of order. The red, green and yellow lights were all off."

Pre-test survey studies indicated that subjects would expect most drivers to enter the intersection at between 25 and 25 miles per hour when all four green lights were on. Most drivers would be expected to enter the intersection at approximately 10 miles per hour when the traffic signal was completely out of order. Pre-test subjects also indicated that drivers entering the intersection which was controlled by a traffic signal showing all green lights would not be expected to have as great a degree of control over the occurrence or nonoccurrence of negative effects as the drivers approaching the intersection governed by the traffic signal showing no lights at all. Stated in other terms, where the traffic signal showed green lights in all four directions, the actions of the stimulus person was not as distinctively and consistently associated with the occurrence of negative effects.

The last independent variable to be manipulated was the perceived ability and, concomitantly, the perceived personal similarity of the stimulus person. Relative ability was operationally defined in terms of the pre-test subjects' perceptions of a stimulus person's ability to avoid causing or avoid becoming involved in traffic collisions. This ability, in turn, proved to be directly related to the age of a driver. Subjects were presented with two levels of perceived ability.
(1) The low ability SP was represented by a 15\(\frac{1}{2}\) to 16 year old high school student, who had a provisional driving permit.

(2) The high ability SP was represented by a 19 to 21 year old college student.

Pre-test subjects also believed that a driver's awareness of the likelihood of becoming involved in a traffic collision would be directly related to the driver's age. In addition, pre-test subjects found the 19 to 21 year old college student to be significantly more similar to themselves than the 15\(\frac{1}{2}\) to 16 year old high school student. This manipulation confounds perceived ability and perceived similarity. While the confound limits the information which can be generated, this manipulation is sufficient to evidence the emergence or nonemergence of the relationships predicted by the DAH. The manipulation is also adequate, but just adequate, for the limited objective of testing the diametrically opposing predictions of the DAH and the model posited here as its alternative.

The dependent measures to which subjects were required to respond are listed below.

(1) A measure of attributed responsibility which asked subjects to indicate the size of a "pie" slice (figure 6) that would correspond to the extent to which each of three factors had been responsible for the occurrence of the negative event in question. The three factors were the driver of AUTO N, the driver of AUTO W, and all other unspecified factors that might have caused the negative effect. This particular mode
Pie slice selected by subject to represent the responsibility of "all other potential causal antecedents."

Pie slice selected by subject to represent the responsibility of the driver of AUTO N.

Pie slice selected by subject to represent the responsibility of the driver of AUTO W.

Figure 6. "PIE MEASURE" utilized in registering Attributions of Responsibility.
of measuring responsibility was utilized in order to reflect the proportional character of these attributions. The measure was designed to conform to Heider's view that attributions are made in accordance with the equation: \( \text{Effect} = f((\text{Driver of AUTO N}) + (\text{Driver of AUTO W} + \text{All other unspecified factors})). \)

(2) Measures asking the subjects to guess the driving speed of the driver of AUTO N. This measure was used where subjects were not given information about the stimulus person's behavior.

(3) 11-point scales (0-10) measuring the extent to which the subjects believed the speed at which AUTO N was travelling was different from the speed at which it should have been travelling.

(4) 21-point scales measuring the perceived severity of each negative effect.

(5) Scales ranging from 0% to 100% measuring the chance of each negative effect occurring, given the speed at which AUTO N had been travelling.

(6) 11-point scales measuring the extent to which each driver had acted carefully prior to each negative effect.

(7) 11-point scales (0-10) measuring the extent to which each negative effect should have been foreseeable to each driver.

(8) Scales ranging from 0% to 100% measuring the general likelihood of each negative effect occurring.

(9) 11-point scales (0-10) measuring the perceived similarity of
the driver of AUTO N.

(10) 11-point scales (0-10) measuring the perceived ability of the driver of AUTO N.

(11) 11-point scales (0-10) measuring the subjects' certainty about the responsibility assignments they had made for the occurrence of each negative effect.
RESULTS AND DISCUSSION

The crucial dependent measure was the proportion of responsibility attributed to the driver of AUTO N. An analysis of variance was performed on the responsibility attributed to this primary SP. The results are presented in Table 1.

Table 1 shows that there was neither a main effect nor an interaction involving the age of the SP. Thus, personal relevance—operationally defined in terms of differential age and pre-test measures of perceived similarity—had no effect on AR. Because the DAH specifies an interaction between personal relevance and negative outcome severity, this model has not proved to be an adequate explanation of the AR elicited by negative events.

As an alternative to the DAH, this inquiry tested a model of the attribution process which relied heavily on the formulations of Harold Kelley (1967, 1971, 1973) and stressed an unbiased processing of information and attribution of responsibility. It was expected that AR would reflect the attributors' unbiased and/or probable causal inferences. In other words, it was suggested that the subjects' inferences and attributions would reflect their perceptions of the distinctive and consistent associations between negative events and the states of the potential causal antecedents to those events. The specific hypotheses utilized in testing this general assumption were promulgated under the assumption that: (1) the severity of negative event would be inversely related to its general frequency of occurrence, (2) the
### TABLE 1

Analysis of Variance on the Responsibility Attributed to the Primary Stimulus Person

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<th>MS</th>
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** P < 0.01  ***** P < 0.00001
general frequency of occurrence of a causal antecedent state (driving speed) would be inversely related to the severity of the negative event with which it was distinctively and consistently associated, and (3) there would be negative events (extents of damage and injury) which were severe enough to be improbable for any state (driving speed) that could be assumed by the primary causal antecedent (the driver of AUTO N). In this context, it was expected that the relatively infrequent occurrence of a severe negative event (e.g. collision) would require that at least one causal antecedent (e.g. driver) be inferred to have assumed an infrequent state (e.g. relatively high driving speed). It was also suggested that, in making probable causal inferences, attributors would tend to infer that the remaining less salient or anchored, potential causal antecedents had assumed states which were both more frequent in their general occurrence and more distinctively and consistently associated with mild, rather severe, negative events. Which is to say, the conditional probability of increasingly large causal contributions on the part of one causal antecedent, and/or the conditional probability of the inference that the driver of AUTO N had been travelling at a relatively high rate of speed, was expected to increase with negative outcome severity. It was suggested that this would continue until the negative effect became so severe that it would be improbable for any state the single causal antecedent could be inferred to have assumed. When the negative effect became this severe, it was argued that in order to make a probable inference, given the then prevailing conditional probabilities, an attributor would have to infer that a second causal antecedent has also assumed a relatively infrequent state.
Finally, the proportion of responsibility attributed to each causal antecedent (e.g. a driver) was expected to be directly related to the relative extent to which each of the states (e.g. driving speeds)—assumed by the various causal antecedents—was distinctively and consistently associated with the severity of the negative event in question. This process was expected to foster a nonmonotonic relationship between negative outcome severity and AR, when it was necessary for the attributor to infer the prior behavior of the SP. Specifically, it was predicted that the responsibility attributed to the primary SP would increase with negative outcome severity up to the point where the severity of the outcome becomes so great as to be improbable for any contribution this SP could be inferred to have made. Thereafter, AR was expected to decrease. This prediction was confirmed.

It was also suggested that the availability of direct information concerning the stimulus person's behavior would act as a constraint on the attributors' inferences. This constraint was expected to lead to an interaction effect between negative outcome severity and the nature of the stimulus person's behavior. The prediction was based on the assumption that the nature of an actor's behavior, rather than the outcome event which has actually occurred, would be viewed by attributors as the best predictor of the effects an actor would be disposed to generate on future occasions. Table 1 shows that this predicted interaction emerged. \( F = 3.61; \text{df} = 6/324, p < 0.01 \) Figure 7 illustrates the form of this interaction. As noted above, when attributors had no direct information about the stimulus person's behavior, the predicted nonmonotonic relationship emerged between AR and negative outcome.
Figure 7. Predicted Interaction between Negative Outcome Severity and the Nature of an Actor's Behavior: An Unbiased Model of the Attribution Process.
severity. As would be predicted if this relationship were to emerge, the extent to which the stimulus person's driving speed was perceived to differ from the speed at which he or she "should" have been driving and, in addition, the extent to which the SP was perceived to have been driving "carefully" were both nonmonotonically related to negative outcome severity, when it was necessary to infer the stimulus person's driving speed. Of course the relationship between carefulness and severity was a mirror image of the relationship between AR and severity. Further, when attributors were told that the SP had been driving at 10 miles per hour and, concomitantly, when negative effects were improbable for this behavior in direct relation to their severity, the expected inverse relationship appeared between AR and negative outcome severity. When the subjects were told that the SP had been driving at 50 miles per hour, the proportion of responsibility attributed to the SP was essentially unchanged in the case of three of the four negative effects. The association of unusually mild negative effects with this demonstrably deviant behavior did not lead to a diminution in AR. Attributed responsibility diminished only when the severity of the fourth negative event proved to be unlikely for a driving speed of 50 miles per hour.

The attributions of responsibility made to the primary SP constitute a strong argument in support of the suggestion that these attributions would reflect the subject's probable causal inferences. In addition, these attributions, several results which will be discussed shortly, and the two following and nearly identical interaction patterns serve to support the logically congruent suggestion that the
proportion of responsibility assigned to each causal antecedent will parallel the relative extent to which each of the states (e.g. driving speeds) assumed by these causal antecedents is distinctively and consistently associated with the severity of the negative effect in question. These two highly similar interactions between negative outcome severity and the type and availability of direct information about an actor's behavior emerged in: (1) the difference between the proportion of responsibility attributed to the driver of AUTO N and the proportion of responsibility attributed to the driver of AUTO W, and (2) the difference between the known driving speed of AUTO W and the known or inferred driving speed of AUTO N.

Table 1 also shows that both negative outcome severity and the manipulation of the type and availability of direct information about the stimulus person's behavior evidenced main effects. The main effect involving the behavior of the SP was expected. On the other hand, while a main effect for negative outcome severity was believed to be possible, it was not explicitly predicted. It was not known whether or not negative outcome severity would have an effect over and above the inferential constraints following from the availability of information of direct information about the actor's behavior, AR was nonmonotonically related to negative outcome severity. \( (F = 34.61; \text{df} = 3/324, p < 0.0001) \) The form of this relationship was similar, but less pronounced than the nonmonotonic relationship that emerged when no direct information was available about the actor's behavior. The main effect due to the type and availability of direct information about the actor's behavior took the predicted form. \( (F = 28.94; \text{df} = 2/108, \)
Across all severities of negative effect, the least responsibility was attributed when the SP had been driving at 10 miles per hour. The greatest proportion of responsibility was attributed when the SP had been driving at 50 miles per hour. The proportion of responsibility that was attributed when there was no direct information about the stimulus person's behavior was intermediate between that attributed when the SP was driving at 10 miles per hour and that attributed when the SP was driving at 50 miles per hour.

As expected these preceeding relationships appear to have been preaced by the main effects—due to negative outcome severity and information concerning the actor's behavior—which emerged when subjects were asked how different the stimulus person's driving speed was from the speed at which the SP should have been driving. These main effects also emerged when subjects were asked how carefully the driver of AUTO N had been driving prior to each event. The extent to which the stimulus person's driving speed was different from the speed at which the SP should have been driving was nonmonotonically related to negative outcome severity. \( F = 33.07; \text{df} = 3/324, p < 0.0001 \) The perceived difference increased initially with negative outcome severity and then decreased when the severity of the effect became improbable for the speeds at which the driver was known to have been travelling or could be inferred to have been travelling. The perceived difference was also directly related to the stimulus person's known or inferred driving speed. \( F = 21.30; \text{df} = 2/108, p < 0.0005 \) When subjects were asked how carefully the primary SP had been driving, the main effect due to negative outcome severity was the mirror image of the
nonmonotonic relationship this variable generated on the measures of
AR and the extent to which the stimulus person's behavior differed
from the behavior the SP should have enacted. (F = 63.58; df = 3/324,
p < 0.0001) The perceived carefulness of the stimulus person's behav-
ior was inversely related to his or her known or inferred driving
speed, across all severities of negative effect. (F = 32.55; df =
2/108, p < 0.0005)

Once again, the attributions of responsibility made to the pri-
mary SP constitute a strong argument in support of the suggestion that
these attributions were reflections of the subject's probable causal
inferences. This argument is further strengthened by the character of
the attributions of responsibility made to the driver of AUTO W and
"all other factors." The following are main effects. As expected the
responsibility attributed to the driver of AUTO W (always driving at
10 MPH) was inversely related to negative outcome severity. (F = 28.16;
df = 3/324, p < 0.0001) Further, the responsibility attributed to "all
other factors" did not vary greatly with negative outcome severity
until the severity of the effect became so great that it was improbable
for any contribution the primary SP could be inferred to have made.
And, rather than decreasing when the severity of the outcome became
improbable for any causal contribution the primary SP could be infer-
red to have made, as occurred when responsibility was assigned to the
primary SP, the proportion of responsibility assigned to "all other
factors" increased. (F = 44.91; df = 3/324, p < 0.0001) As well as
suggesting that AR will reflect an attributor's probable causal infer-
ences, these later main effects serve as additional support for the
logically congruent suggestion that the proportion of responsibility assigned to each causal antecedent will parallel the relative extent to which each of their assumed states are distinctively and consistently associated with the severity of the negative effect in question.

Subjects had also been presented with two versions of the context in which negative effects were said to have occurred. These two contexts were assumed to differ in the extent to which the stimulus person's actions would be perceived to be distinctively and consistently associated with the occurrence of negative events. As predicted, less responsibility was attributed to the driver of AUTO N in the "accidental" context. \( F = 6.996; \text{df} = 1/108, p < 0.01 \) Further, the responsibility attributed to "all other factors" was greater in the "accidental" context. \( F = 12.24; \text{df} = 1/108, p < 0.001 \)

Finally, it was noted above that the age of the driver of AUTO N had no effect on the responsibility attributed to this SP. An effect due to this variable was crucial in the predictions of the DAR, and the absence of an effect strongly suggests that the DAR is not an adequate explanation of the AR elicited by negative events. Concomitant with the expectation that the age of the SP and/or personal relevance would not have the precise effect predicted by the DAR was the suggestion that this variable might still influence AR by eliciting differing unbiased causal inferences. It was argued that the ability of the SP to control the occurrence of negative events would be systematically related to AR. This expected variation between age and AR did not occur. This result was surprising in light of the evident adequacy of Kelley's formulations in predicting the AR elicited by context, behavior and
negative outcome severity. This result is also unexpected, at first view, because Weiner et al (1971) have clearly demonstrated the influence of relative ability on causal inferences. But, a second look at Weiner's results and Heider's model suggested a resolution of this apparent contradiction. It seems that in the present study, sufficient care had not been taken in analyzing the relationship between an actor's ability and the "effort" the actor puts forth in generating or avoiding events. Weiner made a distinction between "stable" and "unstable" causal factors. Ability was characterized as a stable factor which was not readily susceptible to either the actor's or the attributor's control. In contrast, the extent of an actor's effort was thought to be more susceptible to control. In Appendix A to this inquiry, it is noted that Kelley proposed that attributors will focus on those causal antecedents which are more readily controllable. In this same appendix it is suggested that the factor Heider conceptualizes as effort might be equated with the extent to which an actor's behavior represents normative adherence. That is, the normative adherence represented by an actor's behavior might be equated with the amount of effort an actor has made in attempting to avoid the occurrence of negative events. Viewed against this background, the close parallel between perceptions of the extent to which the primary stimulus person's known or inferred behavior was different from the behavior the SP "should" have enacted and the responsibility assigned to this SP would seem to have a bearing on the failure of relative ability to influence AR. In essence, if attributors had focused on effort, rather than ability, the abundance of information about and the emphasis on the
extent of normative adherence represented by the actor's behavior may explain why AR did not vary with relative ability.
REFERENCES


APPENDIX A

The alternative to the DAH suggested here assumes that variations in negative outcome severity will lead to systematically related variations in AR by eliciting differential inferences concerning potential causal antecedents. In more specific terms, it has been implied that variations in negative outcome severity will lead to systematically related variations in AR by eliciting differential inferences concerning the nature of the actor's behavior. Proponents of the DAH have made a dissimilar assumption; they have considered the inferred nature of an actor's behavior to be of little value in understanding AR.

These dissimilar assumptions regarding the pertinence of an actor's behavior parallel dissimilarities in two major models of the attribution process. The alternative to the DAH suggested here has relied heavily on Harold Kelley's formulation. Kelley allows for the possibility that the nature of an actor's behavior may be a primary subject of an attributor's inferences and thereafter may serve as a basis for determining the causal contribution of an actor. This possibility is largely precluded by the Heiderian model. Heider's view of the readiness with which behaviors may be phenomenally categorized has led him to postulate a form of cognitive schema which relies on effects and all but excludes behaviors as indicators of an actor's causal contribution.

An initial reason to suspect that the nature of an actor's behavior
may serve as a determinant of AR is that an attributor could effect control over environmental events by attending to and exercising control over the environmental states antecedent to those events. In this view, Kelley (1971) argues that attributors tend to focus on those aspects of their environment which are both variable and susceptible to their control. For Kelley this focus leads to the relative predominance, if not unwarranted predominance, of person attributions as opposed to attributions to factors environmental to the person. Parallelizing, to a degree, Kelley's finding regarding persons as an object of an attributor's efforts to exercise control, Weiner (1971) found that the extent of an actor's effort, as opposed to his inherent ability or the effect he had actually generated, had the greatest influence on the amount of prescribed positive sanction. Weiner's findings might be interpreted as indicating that the attributors are utilizing the nature of the stimulus person's actions as evidence of the stable but unobservable dispositions of the SP and/or as evidence of the type of effect that would be repeatedly generated by the SP. Also, several results will be discussed below (pages 66-70) which in effect indicate that both negative sanctions and attributions of responsibility are systematically related to the nature of an actor's behavior and largely unrelated to the nature of outcome events where these two forms of information are conflicting. These later results, in particular, would, in contrast to Heider's view, appear to suggest that the nature of an actor's behavior may serve as a reliable indicator of the likelihood of negative events. It might then follow that the nature of an actor's behavior should also be the subject of inferences concerning the
relative causal contribution of an actor. In addition, such results would appear to suggest that greater weight may be given to an inferential perspective which holds the nature of an actor's behavior, rather than outcome events, to be the primary indicator of the actor's causal contribution.

Underlying Heider's contention that behaviors would be unreliable indicators of the effects actors will repeatedly generate was the view that the many forms of behavior which may preface the occurrence of a single effect are, by their number and variability, not readily allotted to stable phenomenal categories. Specifically, Heider suggests that "means-actions" (behaviors) vary as the actor endeavors to control environmental fluctuations so as to repeatedly generate the identical effect. In not being readily subject to categorization, behaviors may not then be systematically associated with effects. Further, Heider suggests that a cognitive schema which emphasizes effects and de-emphasizes behaviors actually reflects the ordering of events in an attributor's environment. Thus, for Heider, there is little or no function to be served in attending to the nature of an actor's behavior.

If, as has been suggested here, the nature of an actor's behavior may serve as an indicator of the effect the actor will repeatedly generate and thereby become a primary subject of an attributor's causal inferences, there must be some basis on which behaviors may be allotted to stable phenomenal categories and, concomitantly, systematically associated with negative effects. An analogy drawn by Kanouse and Hanson (1971) hints at the nature of a possible basis for such a categorization. In discussing possible explanations for the "negativity
"effect" in attribution—the greater influence of negative attributes in impression formation—they make analogy to an otherwise excellent soup that may be rendered unpalatable if any one of its many ingredients is present in the wrong proportion. This analogy is meant to provide a concrete illustration of the effect of many potentially positive elements being cancelled through their inclusion in a combination including a single negative element. The analogy implies that all elements are potentially, functionally equivalent in that they may assume the wrong proportion or state and produce a negative effect. Further, the effect alluded to by Kanouse and Hanson implies a systematic relationship among the elements which make up the soup.

In understanding the phenomenal categorization of behaviors, the systematic nature of the relationship among the several elements necessary to generate an effect is of pre-eminent importance. In making this point, it will be useful to also draw an analogy between social and physical systems. The study of physical systems has led to the observation that a systematic relationship among elements constitutes an improbable state of affairs which, in the absence of constraints that act to maintain an orderly relationship, will tend to evolve toward an unsystematic or a random association among those elements. Within such systems, if the deviation of any one element from its required status fails to be counteracted and thus is allowed to approach and then exceed given limits, the systematic relationship of its elements becomes progressively more difficult and then finally impossible to maintain. As in the case of the soup alluded to by Kanouse and Hanson, each element can be conceptualized as being functionally
equivalent in the sense that the maintenance of a systematic relationship (system) is more or less equally dependent on each element playing its required role. Harold Kelley (1959, 1967), in discussing the process through which a group achieves the solution to a task, describes the evolution and maintenance of a system of interactional relationships which represent a social analogue of an open physical system. Kelley suggested that individuals evolve and maintain distributions of behaviors (the ordered and/or sequential enactment of behaviors). These distributions of behaviors are thought to evolve among a set of individuals where a problem requires solution and/or where their behaviors are constrained by a proclivity toward maximizing individual outcomes.

If the preceding analogies and Kelley's analysis are applicable, it might be argued that the enactment of any behavior not consistent with a stable distribution of behaviors has the result of increasing the probability of negative outcomes for the remaining members of the group and/or has the result of threatening the stable system of relations among the members of the group. This circumstance, in turn, may constitute the basis for a reinterpretation of both Heider's observation that a number of various actions may lead to the same effect and Heider's conclusion that behavior can not therefore be a reliable indicator of the effect an actor would repeatedly generate. Simply stated, a number of distinct types of behaviors might be categorized as equivalent in terms of the probability with which they lead to various negative effects. Or alternatively, having become functionally equivalent as regards the maintenance of a distribution of behaviors and/or
effects, categories of otherwise distinct types of behavior may become functionally equivalent in respect to perceptions of causality and attributions of responsibility. Phenomenally, perceptions of causality and attributions of responsibility may be directly related to the extent to which an actor is known or inferred to have deviated from a normative behavioral standard.

While Heider placed little reliance on the nature of an actor's behavior as an indicator of the actor's causal contribution and underlying disposition, he did not ignore the influence of norms on attribution. A central theme of the Heiderian and other models of the attribution process is that, all other things being equal, perceptions of personal causality increase as the outcome intended by an actor differs from the outcome intended by most actors. The increase in perceptions of personal causality accompanying inferences that an actor's intended goal is more positive (and less probable) than the effects generated by most actors is explained by the proposition that most actors are constrained to generate one type of effect by some combination of environmental forces which normally characterize the situation. And collaterally, an extraordinary personal force corresponding to an individual wish and/or disposition is necessary to countervail the prevailing environmental constraints and generate (intend) an effect that most actors would not generate.

In dispensing with the nature of an actor's behavior as an indicator of the actor's causal contribution, Heider appears to have substituted the concept of exertion or effort. The basis on which effort would be directly inferred was not clearly defined. Heider left the
question of whether or not an actor had exerted the requisite degree of effort to be inferred on the indirect basis of the prevailing extent of environmental difficulty, the relative power of the actor and the type of effect actually generated. If an effect other than that generated by most persons occurs and it is assumed that the degree of environmental difficulty and the ability of the actor are not unusual, Heider might offer the explanation that the actor had failed to exert the effort required to insure the generation of the effect which most actors produce and/or has exerted an unusual degree of effort with the intention of generating an effect other than that most actors would produce. This explanation would seem to be particularly pertinent where a negative event has been generated. It would also seem that a failure in effort might be equated with a deviation from a normative behavioral standard.

In more specific terms, Heider took up the direct question of the influence of norms in his conceptualization of ought requirements. For Heider, oughts constitute dispositional forces in an actors environment which serve to induce an intention and thereby dictate the actors goal. The actor's causal contribution is thought to increase as the effect generated by the actor differs from the effect required by an ought. To quote Heider, "Personal responsibility · · · varies with the relative contribution of environmental factors to the action outcome; in general, the more they are felt to influence the action, the less the person is held responsible." (page 113) Heider further describes an ought requirement as a "supra-individual reality (and) a phenomenon which has to do with the exclusion of individual wants and likes, and
which brings with it new constant functions, new perceptions and new possibilities of action." (page 228) "Obedience to the supra-individual norms insures invariance of behavior and stabilizes it against shifting impulses and wants of the moment." (page 229)

In positing the operation of cognitive schemata which reflect a naïve analysis of variance and function as parameters for attribution, Kelley has perhaps provided a model which with some extrapolation may add to an understanding of Heider's view that ought requirements are "emergent social phenomenon." Concomitantly, the following extrapolation on Kelley's model may contribute to an understanding of the function which seems to be served by attributions of responsibility and the pertinence an actor's behavior has to these attributions. The interfacing personal and social system which seems to be suggested in Kelley's discussion of the process characterizing attribution assumes that: (1) the causal relationships characterizing an attributor's environment are in general veridically reflected in his cognitive schemata, (2) the cognitive schemata serve as parameters governing attributions of responsibility, and (3) attributions of responsibility—representing an attributor's attempt to control his or her environment—function to maintain the form of causal relationships which both characterize the attributor's environment and simultaneously are reflected in his cognitive schemata. Where Kelley suggests that an attributor may act not only in his own interests but also as an "agent of moral control," it might be further suggested that: (1) the causal relationships characterizing an attributor's environment are shaped by the attempts of a number of individuals to control their own immediate
environments, and (2) where a single attributor's cognitive schemata reflect the results of the control exercised by a set of individuals, attributions of responsibility function to maintain the causal relationships reflecting the combined interests of a group of individuals. Lastly, where a normative standard corresponds to a particular distribution of behaviors—a particular set of causal relationships between behaviors and effects evolving from the interaction of a group of individuals—an inverse relationship between responsibility attributions and normative adherence might then be viewed as following from a process which functions to insure the enactment of normative behaviors.

The experimental evidence bearing directly on the viability of this view of the attribution process is not abundant. But while the evidence is not by any means conclusive, it is highly suggestive. A survey study conducted by this author inquired into the subjects' perceptions of the causal relationships characterizing automobile collisions and found that the perceived deviance of a behavior (driving speed) was inversely related to the expected frequency of its enactment. Subjects perceived the likelihood of an actor's violation of other traffic regulations and/or other deviant behaviors to be directly related to the likelihood of a behavior leading to traffic collisions of all severities. Further, the perceived deviance of an actor's behavior was positively correlated with the severity of the negative effect most frequently associated with the behavior. When subjects were presented with one SP driving at a specified speed and traffic accidents of differing severities, they inferred the driving speed of a second SP, who was also involved in the collision, to be both higher
and increasingly deviant as the severity of the traffic accident increased. Conversely, when the SP driving at a specified speed was described as travelling at a speed sufficient to explain the severity of the collision, the inferred driving speed of the second SP was inversely related to the driving speed of the first driver. The subjects in these studies were not asked to attribute responsibility.

There is also the previously mentioned evidence stemming from tests of the DAH. These subjects were of course asked to make attributions of responsibility. The results showed the inferred extent of normative adherence represented by an actor's imagined behavior to be inversely related to negative outcome severity. Walster (1966) found an index measuring the adequacy of the stimulus person's precautions to be inversely related to negative outcome severity. Shaver (1970), in two separate studies, found an index of "conscientiousness" to be inversely related to negative outcome severity. Shaw and McMartin (1973) also found a measure of "carefulness" to be inversely related to negative outcome severity. Similarly, they found a measure of "adequate precautions" to be inversely related to negative outcome severity.

In addition to the survey study mentioned above, there have been several studies conducted by this author in which subjects were asked to make attributions of responsibility based on both complete and incomplete information concerning the nature of an actor's behavior. One of these studies gave subjects complete information concerning the speeds at which two stimulus persons had been driving just prior to a collision. These subjects were asked to indicate the portion of responsibility that could be attributed to these two drivers in terms of the
amount of money damages that would be awarded to each in a possible
court suit. The total amount of damages expected to be awarded to
both drivers was directly related to the combined driving speeds of
both drivers. Further, the proportion of the total damages that each
driver was expected to pay was directly related to his relative driv-
ing speed. In an earlier experimental study both AR and perceived
deviance were taken as dependent measures. Subjects were presented
with a young man who generates either a spilage of caustic chemicals
or an explosion, while conducting an assigned experiment in a chemistry
laboratory. Both dependent measures were positively and highly correl-
ated. In a third experimental study subjects were asked to attribute
responsibility to two drivers involved in a traffic accident. In this
study attributed responsibility was measured in a way that allowed the
proportion of responsibility attributed to each driver and all other
potential causal antecedents to be registered. The driving speed of
one driver was specified and the driving speed of the other driver was
unspecified. The responsibility attributed to the driver travelling at
a specified speed was directly related to his driving speed at \(p < 0.00001\). Which is to say, AR was directly related to the perceived
deviance of the actor's behavior and/or inversely related to the number
of persons who would be expected to enact a similar behavior. The fact
that there was neither a main effect nor an interaction effect due to
negative outcome severity suggests that, when the behavior of an actor
is known, the relative influence of information bearing on the severity
of negative effects is low compared with that bearing on normative ad-
herence. On the other hand, the responsibility attributed to the SP
whose driving speed prior to the collision was unspecified showed both a main effect due to negative outcome severity \( (p < 0.02) \) and a main effect due to the known speed of the first driver \( (p < 0.00001) \). Unfortunately only two levels of negative outcome severity were involved; thus, it is not possible to test for a nonmonotonic relationship between negative outcome severity and AR using these results. The monotonic relationship due to negative outcome severity appeared to emerge as a result of the driving speed and/or deviance of the second driver being inferred to be greater for the more severe negative outcome. The main effect due to the known speed of the first driver appeared to emerge as a result of the second driver's behavior being inferred to be inversely related to the specified speed and/or deviance of the first driver.

Finally, there is some evidence suggesting that attributions of responsibility may preface the application of sanctions to an actor generating negative effects. Further, it appears that the severity of these sanctions are directly related to the responsibility attributed to the actor. Shaw and Reitan (1969) have generated evidence which supports this later relationship. In addition, the author found the amount of punishment that subjects suggest should accrue to a young man generating either a spilage of caustic chemicals or an explosion, while conducting an assigned experiment, was both positively and highly correlated with the responsibility attributed to the young man.

An intriguing result of this later study was that, when given the choice of indicating the amount of punishment that would be expected from several agencies—the subject, the actor's classmates or the
school authorities—it was the amount of punishment expected from the school authorities that most closely paralleled AR. Moreover, stronger sanctions were expected from classmates than from the subjects themselves. This result, if only in the most minimal fashion, may indicate that the attributor himself need not be the source of the sanctions in order for perceptions of causality and AR to preface (legitimize) the application of sanctions and facilitate the exercise of control over the occurrence of negative events.