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THE HOW AND WHAT OF WHY: SOME DETERMINANTS AND CONSEQUENCES OF CAUSAL ATTRIBUTION [1]

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Kelley's attribution theory is investigated. Subjects filled out a questionnaire that reported 16 different responses ostensibly made by other people. These responses represented four verb categories—emotions, accomplishments, opinions, and actions—and, for experimental subjects, each was accompanied by high or low consensus information, high or low distinctiveness information, and high or low consistency information. Control subjects were not given any information regarding the response. All subjects were asked to attribute each response to characteristics of the person (i.e., the actor), the stimulus, the circumstances, or to some combination of these three factors. In addition, the subjects' expectancies for future response and stimulus generalization on the part of the actor were measured. The three information variables and verb category each had a significant effect on causal attribution and on expectancy for behavioral generalization.

Identifying the cause of an event gives it "meaning," since causal knowledge carries with it a wide scope of connotations regarding an event and makes possible a more or less stable, predictable, and controllable world. What an individual expects from his environment and what he does to influence it will undoubtedly depend on his beliefs about causality. Hence, the psychologist who searches for the causes of man's behavior may do well to consider man's belief about causality. This is the focus of attribution theory, which represents an attempt to determine the antecedents and consequences of some of man's causal beliefs. More specifically, it concerns the processes through which an individual assigns causes to various responses he makes or observes and the consequences of his resulting beliefs about causality. While there is no monolithic theory of attribution, several of the current conceptualizations have their roots in perceptual phenomena.

Brunswik (1952) conceived of the perceptual process as an arc encompassing two end points—the entity represented or the distal stimulus and the local representation or the proximal stimulus. While proximal stimuli serve as cues to the underlying distal stimuli, Brunswik noted that there is no one-to-one connection between them, and he proposed that the organism must venture hypotheses as to what type of entity has most probably caused the given cues. Heider's (1958) attribution theory derives directly from Brunswik's treatment of perception. Just as the perceiving organism must integrate the highly variable cues given in proximal stimulation in order to "infer" the relatively unchanging object that gave rise to them, the attributing organism, according to Heider, must integrate the cues given in responses in order to infer the more stable factors that gave rise to them. Kelley's (1967) conceptualization, which is derived directly from Heider, details the cognitive processes that might be engaged in by the individual during this "inference." He proposed that the individual interprets a given response in the context of the information gleaned from experimentlike variations of conditions. The conditions varied are (*a*)

[1] This article is based on a dissertation submitted to the Department of Psychology of Yale University in 1970 in partial fulfillment of the requirements for the PhD degree. The author would like to express appreciation to Robert P. Abelson for continued guidance and assistance as dissertation advisor. In addition, the assistance of Kenneth Keniston and Richard E. Nisbett, who served on the dissertation committee, and Wendell Garner and David Hamilton, who served on the readers committee, is gratefully acknowledged.

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entities [3] from which *distinctiveness* information is obtained (i.e., whether or not the response occurs when other entities are present); (*b*) *persons* from whom *consensus* information is obtained (i.e., whether or not the same response is produced by other people in the presence of the entity); and (*c*) *time/modalities* from which *consistency* information is obtained (i.e., whether or not the response occurs whenever the entity is presented and in whatever way it is presented).

Kelley presented these three sources of information in an analysis of variance model for which entities, persons, and time/modalities are orthogonal dimensions. For the simple case in which information can take on one of two values (i.e., high or low distinctiveness, high or low consensus, high or low consistency), eight information configurations can be generated from this model. Only a few of these are discussed by Kelley (1967), whose major prediction is that "external attribution is made when evidence exists as to the (high) distinctiveness, consistency, and consensus of the appropriate effects [p. 196]."

The primary goal of the present study was to investigate the following aspects of Kelley's model: (*a*) What causal attributions are facilitated by various combinations of consensus, distinctiveness, and consistency information? (*b*) Do *each* of these sources of information independently affect causal attributions? (*c*) How do these sources of information interact with one another? (*d*) What is the relative importance of these variables?

In an attempt to answer these questions, consensus, distinctiveness, and consistency information were manipulated orthogonally: the subjects were told of the occurrence of a response by another person; they were given one of the eight possible combinations of consensus, distinctiveness, and consistency information regarding that response; and they were asked to indicate whether they thought something about the person, something about the stimulus entity, something about the circumstances, or some combination of these three factors probably caused the response to occur. To provide a satisfactory means of answering Question *a* above, a group of control subjects was given no information about the responses to be attributed. Comparisons between the pattern of attributions to various causes obtained for these no-information controls and the patterns obtained for experimental subjects under each of the eight information combinations would reveal what effect, if any, each configuration was having on causal attributions. Although it was expected that the information variables would have many effects on attribution, only the following predictions could be explicitly derived from Kelley's theory:

1. Stimulus attribution will be more frequent when a response is characterized by high consensus, high distinctiveness, *and* high consistency than when no information is given regarding that response.
2. Person attribution will be more frequent when a response is characterized by low consensus, low distinctiveness, *and* high consistency than when no information is given regarding that response.

From these predictions regarding the *combined* effects of consensus, distinctiveness, and consistency information, the following predictions regarding their independent effects were derived:

3. Stimulus attribution will be more frequent when there is high consensus, high distinctiveness, *or* high consistency than when there is low consensus, low distinctiveness, *or* low consistency.
4. Person attribution will be more frequent when there is low consensus, low distinctiveness, *or* high consistency than when there is high consensus, high distinctiveness, *or* low consistency.
5. Circumstance attribution will be more frequent when there is low consistency than when there is high consistency.

Differences in causal attribution as a function of the nature of the response were also investigated in this study. Each subject made causal attributions for 16 different responses representing four verb categories—emotions, accomplishments, opinions, and actions. Although no clear predictions can be derived from existing theory, differences in attribu-

[3] "Entities" are objects or stimuli toward which the response is directed.

tion as a function of the nature of the response would certainly not be surprising. For example, Heider (1958) suggested that the attribution of *pleasure* tends to be leveled at the environment (p. 156); and Jones, Rock, Shaver, Goethals, and Ward (1968) found that *performance* tended to be attributed to the person's ability rather than to the difficulty of the task. Hence, one might expect stimulus attribution to predominate for items reporting a person's pleasurable emotions (perhaps for unpleasurable emotions as well), while person attribution might be predominant for items reporting a person's accomplishments.

In addition to investigating the *antecedents* of causal attributions, an attempt was made in the present study to determine some of the *consequences* (or concomitants) of different attributions. Heider (1958) suggested that an attribution may affect an individual's expectations of events given certain conditions, and this is borne out in several empirical studies (James & Rotter, 1958; Phares, 1957; Rotter, Liverant, & Crowne, 1961). While these studies concerned expectancies for future *reinforcement* as a function of attributing prior reinforcement to one or another cause, it is certainly reasonable to assume that expectancies for future *behavior* would similarly vary with the cause to which prior behavior is attributed. Taking three helpings of dessert, if attributed to a person's "gourmandism" would certainly produce an expectancy regarding that *person's consumption of other foods*—at least to a greater extent than would attribution of the same behavior to the succulence of the dessert. This latter attribution might, on the other hand, produce an expectancy for the person to manifest *other behaviors toward that particular dessert*—such as asking for the recipe. Let us call an expectancy regarding the person's consumption of other foods an *expectancy for stimulus generlization* inasmuch as it represents an expectancy that the person will make the same response (consumption) to other stimuli (other foods). Similarly, let us call an expectancy regarding the person's other behaviors toward that particular dessert an *expectancy for response generalization* inasmuch as it represents an expectancy that the person will make other responses to the same stimulus. Bearing these definitions in mind, the following two predictions seem quite reasonable:

1. Those variables that produce stimulus attribution will also produce a greater expectancy for the actor to show response generalization than for him to show stimulus generalization.
2. Those variables that produce person attribution will also produce a greater expectancy for the actor to show stimulus generalization than for him to show response generalization.

Since there are many reasonable methods for investigating the various aspects of causal attribution that have been detailed above, a word about the questionnaire methodology that was chosen is in order. This method involved presenting the subjects with a written description of a number of responses ostensibly made by other people. For control subjects, no additional information was given; for experimental subjects some combination of consensus, distinctiveness, and consistency information regarding each response was presented. All subjects were asked to indicate what they thought probably caused the response to occur—something about the person, the stimulus, the circumstances, or any combination thereof.

This method is limited in at least two notable respects: (*a*) It will not reveal whether individuals who are attempting to find an appropriate attribution will seek out or utilize consensus, distinctiveness, or consistency information of their own accord; and (*b*) the results may be generalized only to causal attributions made for *another person's* behavior; they may or may not apply to causal attributions for one's own behavior. With respect to this second limitation, it should be noted that Kelley indicated that his model should apply to attributions made for another person's behavior as well as for one's own—and the former is certainly worthy of investigation in its own right. With respect to the first limitation, I can only say that once it has been demonstrated that individuals *can* use these information variables systematically, it will certainly be important to investigate whether or when they *will* spontaneously use the information.

The questionnaire methodology does have certain advantages as well. A much broader scope of investigation is possible, since each subject can be asked to make attributions for a number of behaviors. The presentation of information is also facilitated by the questionnaire format: the time span necessary to "act out" consensus, distinctiveness, and consistency information would preclude investigation of all possible combinations of these variables in a single study. It should be pointed out that the questionnaire method does not completely sacrifice realism to breadth of inquiry. Although both the event description and the information presentation are symbolic and brief rather than live and lengthy, this state of affairs is not uncommon in everyday life. Someone will often tell you what so and so did, and he will feel quite justified in asking you why you think he did it. And, you would probably be quite willing to give your "causal opinion" with even the scantiest information. It seems then that the methodology necessary to study causal attributions need not *create* a particular psychological state in the subject. It need only *tap into* a readily available psychological process, and the questionnaire method seems adequate for this purpose.

METHOD

Subjects

Ninety-five Yale male undergraduates volunteered to participate in the present study as partial fulfillment of an introductory psychology course requirement. Sixty-four subjects completed one of eight experimental questionnaires, and 23 subjects completed the control questionnaire. Eight additional subjects (5 experimental and 3 control) were not included in the statistical analyses due to incomplete data from them.

Questionnaires

All subjects completed a 16-item questionnaire. Each item reported the occurrence of some response by another person (e.g., John laughs at the comedian). In addition to this, the 64 experimental subjects were presented with three statements representing one of eight possible combinations of consensus, distinctiveness, and consistency information regarding that response. Consensus information took the form:

a. *Almost everyone who* (hears the comedian laughs at him)—high.
or b. *Hardly anyone who* (hears the comedian laughs at him)—low.

Distinctiveness information took the form:

a. (John) *does not* (laugh at) *almost any other* (comedian)—high.
or b. (John) *also* (laughs at) *almost every other* (comedian)—low.

Consistency information took the form:

a. *In the past* (John) *has almost always* (laughed at the same comedian)—high.
or b. *In the past* (John) *has almost never* (laughed at the same comedian)—low.

Four verb categories—emotions, accomplishments, opinions, and actions—were represented by four items apiece. Some typical items were: "Sue is afraid of the dog" (emotion); "George translates the sentence incorrectly" (accomplishment); "Bill thinks his teacher is unfair" (opinion); and "Jack contributes a large sum of money to an automobile-safety fund." (action).[4] Each of the 16 items was paired with each of the eight possible information combinations in the following manner: Items 1–8 were paired with each of the information combinations to form an 8×8 Latin square design; this design was duplicated by yoking Items 9–16 to Items 1–8. Hence, within any given questionnaire (i.e., within any column of the duplicated 8×8 Latin square), Item 9 was paired with the same information combination as Item 1, Item 10, with the same information as Item 2, and so on. For each of the eight resultant questionnaire forms, five random orders of items were constructed. Each form was completed by eight subjects.

Instructions to Subjects

The following written instructions for completing the questionnaire were presented to experimental subjects along with a sample item:

> This questionnaire contains a number of statements which report the occurrence of some event. Following each statement you will find three items of information, all of which apply to the event reported. Your task is to decide, on the basis of the information given, what probably caused the event to occur. You will be asked to choose among four alternative causes and to indicate your choice by circling the letter next to the cause which you think is most probable.
>
> Having clarified what you feel to be the cause of some event, you will be asked to estimate the probability of occurrence of related events and to

[4] A complete presentation of the questionnaire items as well as the response and stimulus generalization questions, analyses of variance, and means and proportions are tabled in Appendices A, B, and C (pp. 104–128) of the PhD dissertation on which this article is based (McArthur, 1970).

indicate your estimate by placing an "X" between the vertical lines on the scale provided.

Instructions to control subjects omitted any reference to "information," but were otherwise identical to the above instructions for experimental subjects.

Dependent Measures

The dependent measures consisted of the cause that the subjects assigned to each response event and the probability that they assigned to the occurrence of related events. The four alternative causes that the subjects were asked to choose among took the following form:

a. Something about *the person* (e.g., John) probably caused him to make Response X (e.g., laugh) to Stimulus X (e.g., the comedian).
b. Something about *Stimulus X* probably caused the person to make Response X to it.
c. Something about the *particular circumstances* probably caused the person to make Response X to Stimulus X.
d. Some combination of a, b, and c above probably caused the person to make Response X to Stimulus X.

Subjects were asked when they chose "d" to specify the particular combination of factors that they thought caused the event (i.e., a and b, a and c, b and c, or a, b, and c). The frequency of attribution to the three latter combinations was very low. Hence, for statistical analyses, they were summed and called "other" attributions. Attribution to one joint cause—the person *and* the stimulus—was quite frequent. It was, therefore, treated as a separate locus of causality in the statistical analyses.

The events whose likelihood the subjects were asked to estimate consisted of one instance of stimulus generalization and one instance of response generalization for each item. The general format was as follows: *Response generalization*—How likely do you think the person (e.g., John) would be to make Response Y (e.g., tell a friend to see) to Stimulus X (e.g., the comedian)? *Stimulus generalization*—How likely do you think the person would be to make Response X (e.g., to laugh) to Stimulus Y (e.g., at a friend's joke)?

Some typical generalization questions were: "How likely do you think Sue would be to warn a mailman about that dog?" (response generalization for emotion item reported above); "How likely do you think Sue would be to be afraid of a cat?" (stimulus generalization); "How likely do you think Jack would be to volunteer to spend five hours a week working on a committee to promote automotive safety?" (response generalization for action item reported above); "How likely do you think Jack would be to contribute a large sum of money to a community public library?" (stimulus generalization). Subjects indicated their estimates on a 9-point Likert-type scale with end points labeled "very unlikely" and "very likely."

RESULTS AND DISCUSSION

Since neither a 5×8 (Locus of Attribution $\times$ Questionnaire Form) nor a 5×5 (Locus of Attribution $\times$ Random Order of Items) chi-square analysis performed on the 1,024 causal attributions proved significant (both $ps > .25$), analyses of variance were performed on these data without regard to the questionnaire from which they were obtained. Analyses of variance rather than chi-square analyses were used on these frequency data both because they are less cumbersome to perform and also because they permit better description of the data. Because the items that were sampled contributed much more variance than did the subjects sampled, the subjects were not included as a way of the design in these analyses, and item-within-verb-category effects were employed as error terms.[5] (Although items contributed more variance than subjects, it should be noted that there was both remarkable consistency of the information effects *across* items and considerable similarity of attributions and expectancies for generalization *among* items within a given verb category.)

An overall analysis of variance performed on the experimental subjects' attributions to *all* five causes revealed that each of the independent variables had marked effects on causal attribution. Separate $4(4) \times 2 \times 2 \times 2$ (Item within Verb Category $\times$ Consensus $\times$ Distinctiveness $\times$ Consistency) analyses of variance were, therefore, performed on the following dependent variables: person attribution, stimulus attribution, circumstance attribution, person–stimulus attribution, other attribution, expectancy for response generalization, and expectancy for stimulus gen-

[5] The particular error terms used in these analyses were the appropriate higher order interactions. Although the frequencies being analyzed were correlated, these error terms are acceptable for the following reason: the appropriate contrasts revealed that the causal attributions obtained for items completed by the *same* subjects were not significantly more similar than those obtained for items completed by *different* subjects; that is, the item made much more difference than who was responding to it. This was also true for the data on expectancies for generalization. Hence, the correlation between items introduced as a function of their being completed by the same subject was negligible.

eralization. Both information effects and verb category effects are reported for each of these analyses.[6] Similar analyses were performed on the data from control subjects. An overall analysis of variance on the control subjects' attributions to *all* five causes revealed that the one independent variable—verb category—had marked effects on causal attribution, and 4(4) (item-within-verb-category) analyses were therefore performed on each of the seven dependent variables. Only verb category effects are reported for these no-information control subjects.

To facilitate readability, higher order interactions that are weak or inexplicable and exact *F* and *p* values are generally omitted from the text. All effects that are reported are significant at the .05 level or better (two-tailed).

In addition to the analyses of variance, chi-square analyses were performed contrasting the proportion of person, stimulus, circumstance, person-stimulus, and other attributions given no information with that given each of the eight information combinations. Because these proportions are correlated (each subject made *two* attributions within a given information combination), the chi-square analyses are not strictly appropriate, and magnitude of the effects may be somewhat inflated. To compensate for this, a more stringent criterion for rejecting the null hypothesis was adopted.[7]

CAUSAL ATTRIBUTIONS

Overall Effects: Results and Discussion

The analysis of variance performed on the experimental subjects' attributions to *all* five causes yielded an attribution main effect which reflected the following descending order of attribution frequency: person > circumstance > other > stimulus > person-stimulus (see Table 1). Comparisons between the mean frequencies, using the studentized range statistic, showed that, with one exception, the frequency of attribution to each cause differed significantly from the frequency of attribution to all others. (The frequency of stimulus attribution did not differ significantly from that of person-stimulus attribution.)

TABLE 1

PROPORTION OF ATTRIBUTIONS MADE TO EACH CAUSAL LOCUS AMONG EXPERIMENTAL AND NO-INFORMATION CONTROL SUBJECTS

Attribution locus	Treatment	
	Experimental	Control
Person	.29	.24
Stimulus	.14	.18
Circumstance	.24	.10
Person stimulus	.14	.23
Other	.19	.25

The analysis of variance performed on control subjects' attributions to *all* five causes also yielded an attribution main effect. The following descending order of attribution frequency was obtained: other > person > person-stimulus > stimulus > circumstance (see Table 1). Comparisons between the mean frequencies, using the studentized range statistic, revealed that the frequency of circumstance attribution was significantly smaller than that of person-stimulus, person, or other attribution.

Although differences in the overall frequency of attribution to the five possible causes obtained in the present study are unrelated to Kelley's model, they are nevertheless quite interesting. For both experimental and control subjects the frequency of person attribution exceeds that of stimulus attribution. This relationship obtains for 16/16 items among experimental subjects and for 10/16 items among control subjects. Although the magnitude of this effect is small, its relative consistency makes it noteworthy; in all other respects the pattern of causal attributions among experimental subjects differs quite markedly from that of the control subjects. These differences may be roughly summarized as a tendency for subjects to make more complex—that is, qualified—attributions when they are given no information about the response. For example, simple circumstance attribution is low among control subjects, while

[6] The effects of these independent variables on "other" attribution are *not* reported. Inasmuch as this is a residual category, comprised of three different causal attributions, it is difficult to interpret these effects. However, the interested reader will find the data reported in McArthur (1970) (see Footnote 4).

[7] Seven of the 11 effects reported are significant at the .001 level, 2 are significant at the .01 level, and 2 at the .02 level.

more complicated circumstantial attribution, that is, "other" attribution—circumstances *together with* characteristics of the person or characteristics of the stimulus, or both—is high. The reverse holds true for experimental subjects. Also, person-stimulus attribution is considerably higher among control subjects, reflecting their apparent hesitancy to make an unqualified attribution. But, despite this preference for the complex and qualified cause, when control subjects do make a unilateral attribution, it is more often to the person than to the stimulus. This fact really becomes intriguing only on closer consideration of the behaviors that the subjects were asked to attribute.

One is not particularly surprised to find that events such as "Linda receives three invitations to the church picnic," "Henry gets a birdie on the fifth hole," "Jack contributes a large sum of money to an auto-safety fund," and "Diane pledges to participate in a week-long hunger strike protesting inadequate auto-safety features" were overwhelmingly attributed to characteristics of Linda, Henry, Jack, and Diane (a total of 37 person attributions) rather than to the picnic, the fifth hole, or inadequate auto-safety features (a total of one stimulus attribution).[8] These events are clearly rather unusual, and one assumes without being told that *few people* receive three invitations to the picnic, get a birdie on the fifth hole, contribute large sums of money to an auto-safety fund, or pledge to participate in a week-long hunger strike. It seems apparent that characteristics of the people involved are responsible for these events, *unless* information to the contrary is provided. But, why are mundane events such as "Sue is afraid of the dog," "George translates the sentence incorrectly," "Ralph trips over Joan's feet while dancing," and "Steve puts a bumper sticker advocating improved auto safety on his car" overwhelmingly attributed to characteristics of Sue, George, Ralph, and Steve (a total of 35 person attributions) rather than to the ferocity of the dog, the difficulty of the sentence, the clumsiness of Joan, or the attractiveness of the bumper sticker (a total of three stimulus attributions)? One is hard pressed to come up with any logical explanation of this proclivity for person attribution. Certainly the real-world incidence of fearful people, dumb people, clumsy Ralphs, and bumper sticker buffs does not exceed the incidence of ferocious dogs, difficult sentences, clumsy Joans, and beautiful bumper stickers! One can only conclude that there exists a bias in favor of attributing behavior to characteristics of the person rather than to the stimulus properties of his environment. In other words, people are not naïve stimulus–response theorists," but, rather, they are naïve "black-box theorists," looking inside the organism for the causes of behavior rather than to external stimuli. Perhaps I am too, for I have just attributed a high incidence of person attribution to the characteristics of my subjects rather than to characteristics of my items. However, there is some further data which bolsters this "black-box" conclusion.

Cohen (1969) conducted a questionnaire study in which subjects were presented with 64 items representing the occurrence of responses made by other persons. The subjects were asked to divide up 10 "causal points" between three possible loci: the person, the stimulus, and the circumstances. Across this relatively wide sample af items, the mean allocation of causality to the person (5.34) was significantly greater than the mean allocation to the stimulus (3.70). Using another sample of 64 items, Paquette[9] similarly found that a greater proportion of the total attributions were made to the person than to the stimulus (.67 versus .21).

Information Effects: Results

Person attribution. The analysis of variance performed on the frequency of person attribution revealed significant main effects for all three information variables. As predicted, the frequency of person attribution was greater with low than with high consensus information, with low than with high distinctiveness

[8] The frequencies of person and stimulus attribution reported here are taken from the control data, which are a purer measure of the relative preference for person attribution. The experimental data are in the same direction, but they are weaker since each item is paired with each information combination, which, of course, has an equalizing effect on attributions.

[9] P. Paquette. Unpublished research, Yale University, 1970.

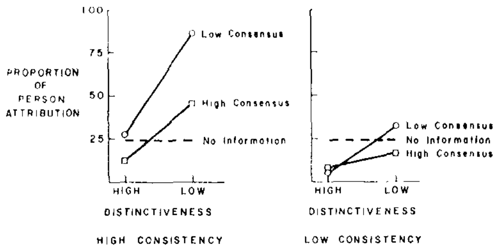

FIG. 1. Proportion of total attributions made to the person as a function of no information and consensus, distinctiveness, and consistency information.

information, and with high than with low consistency information (see Figure 1). Distinctiveness information had the greatest effect on person attribution, accounting for 21.72% of the total variance.[10] Second was consistency information, which accounted for 15.76% of the variance. Consensus information had the smallest effect, accounting for only 6.25% of the total variance in person attribution.

Significant second-order interactions between the three sources of information somewhat qualify the above-mentioned main effects. The consensus and distinctiveness effects were markedly diminished under low consistency. Furthermore, a significant Consensus × Distinctiveness interaction revealed that low consensus information significantly increased the probability of a person attribution only when it was paired with low distinctiveness information (see Figure 1). A closer look at the interactions between the three sources of information in person attribution suggests a multiplicative relationship: each variable acts to amplify the effects of the other two.

Two information combinations yielded a significantly higher proportion of person attribution than did no information. As predicted, there was a significantly higher proportion of person attribution obtained with low consensus, low distinctiveness, and high consistency (.86) than with no information (.24, $p < .001$). In addition, there was a higher proportion of person attribution obtained with high consensus, low distinctiveness, and high consistency information (.45) than with no information (.24, $p < .001$; see Figure 1).

Stimulus attribution. The analysis of variance performed on the frequency of stimulus attribution revealed significant main effects for all three information variables. As predicted, the frequency of stimulus attribution was greater with high than with low consensus information, with high than with low distinctiveness information, and with high than with low consistency information (see Figure 2). As in the case of person attribution, distinctiveness information accounted for the most variance (12.12%), followed by consistency (5.88%) and consensus (5.17%) information.

Significant second-order interactions between the three sources of information revealed that, just as for person attribution, the consensus and distinctiveness effects were greater under high than under low consistency information (see Figure 2). Moreover, comparisons between the means revealed that the distinctiveness effect was not significant under low consistency ($p > .30$). Also similar to person attribution was the significant Consensus × Distinctiveness interaction, which revealed that high consensus information significantly increased the probability of a stimulus attribution only when it was paired with high distinctiveness information.

Only one information combination—high consensus, high distinctiveness, and high consistency—yielded a significantly higher pro-

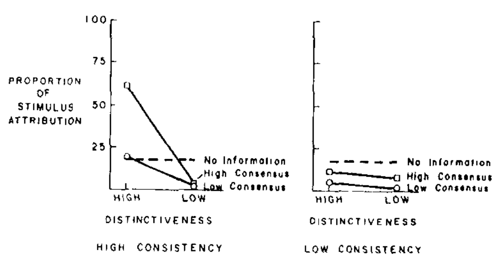

FIG. 2. Proportion of total attributions made to the stimulus as a function of no information and consensus, distinctiveness, and consistency information.

[10] Expected values of the mean square for each independent variable were computed from the obtained mean squares; each of these estimated variance components was divided by the total variance to obtain the percentage of variance accounted for by a particular variable. The same procedure was used for each dependent variable. The percentage of variance in causal attributions accounted for by each of the independent variables is summarized in Table 2.

portion of stimulus attribution than did no information ($P = .61$ versus .18, $p < .001$; see Figure 2).

Circumstance attribution. The analysis of variance on the frequency of circumstance attribution revealed a significant main effect for two information variables. The frequency of circumstance attribution was greater with high than with low distinctiveness information and, as predicted, with low than with high consistency information. Consensus information did not have a significant effect on the frequency of circumstance attribution (see Figure 3). By far the most variance in circumstance attribution was accounted for by consistency information (41.36%), while distinctiveness and consensus information accounted for 7.58% and .30%, respectively.

Significant second-order interactions between the three sources of information revealed that the distinctiveness effect was significant under low consistency ($p < .002$), but not under high consistency ($p > .20$).

All four information combinations that contained low consistency information yielded a significantly higher proportion of circumstance attribution than no information did (all ps $< .001$; see Figure 3).

Person-stimulus attribution. The analysis of variance performed on the frequency of person-stimulus attribution revealed significant main effects for two information variables. The frequency of attribution to person-stimulus was greater with high than with low consensus information and with high than with low consistency information. Distinctiveness information did not have a significant effect on the frequency of person-stimulus attribution (see Figure 4). As in the case of circumstance attribution, consistency information accounted for the most variance in person-stimulus attribution (16.04%) followed by consensus and distinctiveness information which accounted for .64% and 0%, respectively.

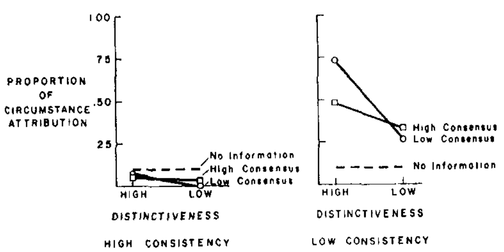

FIG. 3. Proportion of total attributions made to the circumstances as a function of no information and consensus, distinctiveness, and consistency information.

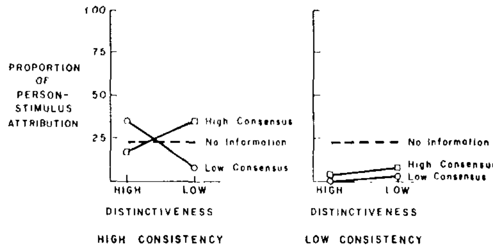

FIG. 4. Proportion of total attributions made to the person *and* the stimulus as a function of no information and consensus, distinctiveness, and consistency information.

A significant Consensus × Distinctiveness second-order interaction markedly qualifies the above-mentioned consensus effect. Person-stimulus attribution was more frequent under low consensus–high distinctiveness than under low consensus–low distinctiveness ($p < .01$) or high consensus–high distinctiveness ($p < .10$). Similarly, person-stimulus attribution was more frequent under high consensus–low distinctiveness than high consensus–high distinctiveness ($p < .01$) or low consensus–low distinctiveness ($p < .002$). A significant Consensus × Distinctiveness × Consistency triple-order interaction for person-stimulus attribution revealed that the above Consensus × Distinctiveness interaction occurred only under high consistency (see Figure 4).

Two information combinations—high consensus, low distinctiveness, and high consistency *and* low consensus, high distinctiveness, and high consistency—yielded a significantly higher proportion of person-stimulus attribution than no information did ($P = .35$ versus .23, $p < .01$).

Information Effects: Discussion

The results of this study both support and go beyond the predictions made regarding the effects of consensus, distinctiveness, and consistency information on causal attributions. As predicted, high consensus, high distinctiveness, and high consistency information in combination produced significantly more stimulus attribution than did no information. Also as predicted, low consensus, low distinctiveness, and high consistency information in combination produced significantly more person attribution than did no information. The derivative predictions concerning the independent effects of the three information variables were also confirmed. Low consistency produced more frequent circumstance attribution than high consistency; high consensus, high distinctiveness, and high consistency *each* produced more frequent stimulus attribution than low consensus, low distinctiveness, and low consistency, respectively; and low consensus, low distinctiveness, and high consistency *each* produced more frequent person attribution than high consensus, high distinctiveness, and low consistency, respectively.

The above consensus and distinctiveness effects were somewhat qualified by interactions with consistency information. The tendency for high consensus and high distinctiveness information to increase the frequency of stimulus attribution and the complementary tendency for low consensus and low distinctiveness information to increase the frequency of person attrbiution were substantially diminished in the presence of low consistency information (see Figures 1 and 2). A parallel effect was obtained for attributions to the *combined* cause of the person *and* the stimulus. The tendency for "mixed" combinations of consensus and distinctiveness information (i.e., one "high" and the other "low") to increase the frequency of person-stimulus attribution held true only when these information combinations were coupled with high consistency (see Figure 4).

Although these interactions were not explicitly predicted, they are anticipated by Kelley (1967), who stated that "The attribution he makes on any given occasion depends on some sampling of the information available to him . . . the more consistent this information is, the more stable will his attribution be [p. 198]." Inasmuch as causal attribution to characteristics of the person, the stimulus, or both are inherently stable attributions, one would expect low consistency information to preclude such attribution. For example, while the information that almost everyone else made the same response to this stimulus (high consensus) or that this person does not respond in the same fashion to most other stimuli (high distinctiveness) both strongly suggest that this particular stimulus is the cause of the event, the additional information that "in the past this person almost *never* responded in the same fashion to this stimulus" (low consistency) seems to demand attribution of the event to particular circumstances, and to preclude causal attribution to stable properties of the stimulus. Similarly, the information that hardly anyone else made the same response to this stimulus (low consensus) or that this person also responds in the same fashion to most other stimuli (low distinctiveness) both strongly suggest that this person's disposition is the cause of the event. But the additional information that "in the past this person almost *never* responded in the same fashion to this stimulus" (low consistency) challenges that conclusion and calls for attribution to a transient circumstantial cause rather than to stable properties of the person. Indeed, it is surprising that the effects of consensus and distinctiveness information on person and stimulus attribution are often merely diminished in the presence of low consistency information rather than obliterated. It was found that a simple multiplicative model fits the person attribution data quite well. That is to say, the separate effects cumulate such that the frequency of person attribution for any given information combination can be derived from multiplication of the marginal effects. It appears then that low consistency information does not deter subjects from making attributions to stable properties of the person or the stimulus as much as one might "logically" expect.

In addition to their interaction with consistency information, consensus and distinctiveness information interacted with one another. The tendency for low consensus to produce a greater frequency of person attribution than high consensus was diminished in the presence of *high* distinctiveness information (see Figure 1). Similarly, the tendency for high consensus information to produce a greater frequency of stimulus attribution than low consensus was diminished in the presence of *low* distinctiveness information (see Figure 2). In short, consensus and distinctiveness information had a substantial effect on person attribution and stimulus attribution only when these information variables were working in the same direction (i.e., when they were both "high" or both "low"). When they were working at "cross-purposes" (i.e., one "high" and the other "low"), *person-stimulus* attribution was more frequent than either person attribution or stimulus attribution (see Figure 4).

A consideration of the "meaning" of these information combinations suggests why this occurred. As discussed above, low consensus and low distinctiveness information seem to imply that a dispositional property of the person caused the event to occur. One might expect that substituting high consensus for low consensus information or high distinctiveness for low distinctiveness information would simply weaken this implication. But a closer look at these "mixed" information combinations suggests that they are *qualitatively*, rather than quantitatively, different from the low-consensus–low-distinctiveness combination.

The information that hardly anyone else makes the same response to this stimulus (low consensus) together with the information that this person does not make the same response to other stimuli (high distinctiveness) suggests attribution to a cause qualitatively different from a dispositional property of the person. This information suggests that the cause of the event is not a generalized response tendency but rather a more specific habit or attitude characterizing the interaction of the person with this particular stimulus. In line with this reasoning is the finding that the information combination of low consensus, high distinctiveness (and high consistency) produced significantly more *person-stimulus* attribution than did no information, while it did not produce significantly more person attribution.

Just as low-consensus–high-distinctiveness information seems to differ qualitatively from low consensus–low distinctiveness, so does high consensus–low distinctiveness. The information that almost everyone makes the same response to this stimulus (high consensus) together with the information that this person makes the same response to many other stimuli (low distinctiveness) suggests *two* equally plausible causes for the event. From the high consensus information one may infer that the stimulus has particular characteristics that caused the event to occur; from the low distinctiveness information, one may infer that the person has particular characteristics that caused the event to occur. So, for this information combination, a person-stimulus attribution seems most appropriate. And, in fact, the information combination of high consensus, low distinctiveness (and high consistency) produced significantly more person-stimulus attribution than did no information.

It should be pointed out that the "meaning" of a person-stimulus attribution given low-consensus–high-distinctiveness information differs from that given high-consensus–low-distinctiveness information. As mentioned above, the former suggests that a true interaction between the person and the stimulus is the most probable cause of the event. The latter, on the other hand, suggests that the person and the stimulus are *each* sufficient causes for the event. An example might help to clarify this distinction. If Ralph trips over Joan's feet while dancing and

a. Hardly anyone else who dances with Joan trips over her feet (low consensus)
b. Ralph does not trip over almost any other partner's feet (high distinctiveness)
c. In the past Ralph has almost always tripped over Joan's feet (high consistency),

then what seems to have caused the event to occur is that Ralph and Joan do not groove together very well on the dance floor. The cause is an interaction between the person and the stimulus. On the other hand, if

a. Almost everyone else who dances with Joan trips over her feet (high consensus)
b. Ralph also trips over almost every other partner's feet (low distinctiveness)
c. In the past Ralph has almost always tripped over Joan's feet (high consistency),

then what seems to have caused the event to occur is that (*a*) Ralph is a clod, and (*b*) Joan is a clod. The cause is both the person and the stimulus. The *dual*—as opposed to *shared*—causality that this latter information combination implies may be responsible for the finding that high consensus, low distinctiveness, and high consistency information not

TABLE 2

PERCENTAGE OF THE TOTAL VARIANCE IN CAUSAL ATTRIBUTIONS ACCOUNTED FOR BY EACH OF THE INDEPENDENT VARIABLES

Variable	Causal attribution				
	Overall	Person	Stimulus	Circumstance	Person-stimulus
Consensus information	2.90%	6.25%	5.17%	.30%	.64%
Distinctiveness information	10.16%	21.72%	12.12%	7.58%	.00%
Consistency information	20.03%	15.76%	5.88%	41.36%	16.04%
Verb category (experimental subjects)	1.02%	.97%	2.85%	.17%	.24%
Verb category (control subjects)	45.03%	57.46%	51.02%	68.68%	48.31%

only increased the frequency of person-stimulus attribution over that produced given no information, but it also increased the frequency of person attribution.

The relative importance of the three information variables varied somewhat among attribution loci. The percentage of total variance in the various causal attributions that is accounted for by each of the independent variables is reported in Table 2. It should be noted that the data in this table can be quite useful if one wishes to know what kind of information is likely to have the greatest impact on a given causal belief. For example, the finding that consistency information accounts for most of the variance in attribution to circumstance suggests that if one wishes to produce a circumstantial attribution, the most efficient way to do so is to alter the consistency information input—that is, to provide low consistency information. Similarly, the provision of high consistency information is the best means of eliminating a circumstance attribution. What it will be replaced with depends primarily on distinctiveness information—the single informational input that is most likely to influence a person or stimulus attribution. An input of low distinctiveness information will facilitate the former, while an input of high distinctiveness information will facilitate the latter.

The finding that *consistency* information accounted for more of the total variance than consensus information gives some support to a suggestion offered by Kelley (1967):

> It has been postulated . . . that physical reality takes precedence over social reality information . . . The implication is that the consistency criteria may be more important to the individual than the consensus criterion [p. 207].

Kelley further suggests that a partial explanation for predominance of the consistency criteria—if such predominance were found—may be that consensus information involves further attributional tests and is highly dependent on attributions regarding the source of this information.

The finding that *distinctiveness* information accounted for more of the total variance than did consensus information is not so easily explained. While consistency information may be taken at face value, distinctiveness information, like consensus, involves further attributional tests. Just as the "meaning" of the information that *many persons* make the same response to a given stimulus depends on *who* those persons are, so does the "meaning" of the information that a given person makes the same response to *many stimuli* depend on *what* those stimuli are. However, the subjects' more liberal use of the distinctiveness information suggests that they were not as concerned about the nature of the stimuli to which it pertained as they were about the nature of the persons to which the consensus information pertained. This is consistent with Gilson and Abelson's (1965) finding that individuals are more prone to generalize from evidence specific to a particular object to other objects than they are to generalize from evidence specific to a particular subject to other subjects.[11] Since consensus information and subject-specific evidence both pertain to *persons* who are *actors*, while distinctiveness information and object-specific evidence both

[11] "Subject" refers to the subject of the verb, that is, the person who produces the response. "Object" refers to the object of the verb, that is, the stimulus entity toward which the response is directed.

pertain to *nonpersons* that are *recipients of action,* Gilson and Abelson's finding and the present results may be due *either* to a difference in willingness to generalize across actors versus recipients of action *or* to a difference in willingness to generalize across persons versus nonpersons. Gilson and Abelson (1965) suggested that the latter difference may be the crucial one: "objects may be seen as much more readily interchangeable (than persons) [p. 308]." This line of reasoning implies that distinctiveness information should be more similar in its effectiveness to consensus information if the actor and the recipient of the action (i.e., the "stimulus") are either *both persons* or *both nonpersons.* (Similarly, subject-specific evidence should produce as much generalization as object-specific evidence if the subject and the object of the verb are both persons or both nonpersons.)

The experimental data do not permit a good test of the above prediction since no item employed a nonperson as the actor, and only three of the items used persons as "stimuli." However, an examination of these is strongly suggestive. For the items in which the stimulus was a person, the effects of distinctiveness and consensus information on stimulus attribution were virtually identical. For both high distinctiveness and high consensus, the proportion of stimulus attribution was .26, while for low consensus and low distinctiveness, it was .08. For those items in which the stimulus was a nonperson, the relative effectiveness of distinctiveness and consensus information was quite different. The proportion of stimulus attribution given high distinctiveness was .35, while that given low distinctiveness was .03. In contrast to this difference of .32, the difference between high and low *consensus* information in the proportion of stimulus attribution was only .12; the proportion given high consensus was .19, while that given low consensus was .07 (see Table 3).

These data not only suggest that consensus and distinctiveness information are equally powerful when the stimulus is a person, but they also suggest that distinctiveness information per se is more powerful when the stimulus is a nonperson: the difference between high and low distinctiveness in the proportion of a stimulus attribution was .32 when the

TABLE 3

PROPORTION OF STIMULUS ATTRIBUTION AS A FUNCTION OF CONSENSUS AND DISTINCTIVENESS INFORMATION AND THE NATURE OF THE STIMULUS OBJECT

Stimulus object	Information			
	Distinctiveness		Consensus	
	High	Low	High	Low
Person	.26	.08	.26	.08
Nonperson	.35	.03	.19	.07

stimulus was a nonperson and only .18 when the stimulus was a person. Hence, it seems that the differential effectiveness of consensus and distinctiveness information that were observed in the present study—and the related difference in generalization across subjects and objects observed by Gilson and Abelson (1965)—lies not in a reference to actors versus recipients of action, but rather in a reference to persons versus nonpersons. For some reason that is intuitively, but not logically, compelling, people are more willing to regard a stimulus or group of stimuli as representative of an entire class than to so regard a person or group of persons. Their relative reluctance to generalize across persons is especially intriguing in view of the fact that, in the present study, consensus information was presented in about the strongest possible form. "Almost everyone" constituted high consensus information, and "hardly anyone else" constituted low consensus information.

Although it may be limited to situations in which the stimulus is a nonperson, the finding that distinctiveness information was a more potent determinant of person and stimulus attributions than consensus information has many interesting implications. For example, let us assume that you, a journal editor, have rejected a manuscript, and the author has concluded that you are a scoundrel (person attribution). If you want him to believe instead that you rejected the manuscript because it was of poor quality (stimulus attribution), the results of this study suggest you would do better to point out that you do *not* reject many other manuscripts (high distinctiveness) than to point out that many other editors have rejected this manuscript (high consensus). Similarly, let us assume that you have accepted a manuscript, and the author has concluded that is of exceptional quality (stimulus attribution). If you want him to believe instead that you accepted it because you are a good samaritan (person attribution), the results of this study suggest you would do better to point out that you accept many other manuscripts (low distinctiveness) than to point out that others have not accepted this manuscript (low consensus).

The relative weakness of consensus information in the present investigation raises at least two interesting research questions: (*a*) Is the weakness of consensus information a product of learning, an effect that would show development changes? (*b*) Would consensus information be as insignificant a factor in the causal attributions made by people for their own behavior?

Intuitively, one might suspect that the answer to the second question would be "no." An individual who is attempting to determine the cause of *another* person's behavior already has one bit of consensus information—what (he thinks) his own behavior would be in that situation. Hence, telling him how people other than the actor in question responded does not add quite as much information as does telling him how the actor responds toward other entities. In short, distinctiveness information is more informative than consensus information. On the other hand, an individual who is attempting to determine the cause of his *own* behavior probably has several bits of distinctiveness information—he knows how he responds toward some other entities. Hence, providing additional distinctiveness information may not have as great an impact as providing consensus information about which he may have no knowledge at all. In addition to these "information-value" differences, there are "motivational" factors that might make the impact of consensus information on someone who is searching for an explanation of his own behavior quite different from its impact on someone who is attempting to explain another person's behavior. Indeed, inasmuch as all the conformity literature has demonstrated that consensus information often has a very substantial effect on people's *behavior*, it would be ironic if it did not also have a noteworthy effect on peoples' *explanations* for their behavior. (See Jones & Nisbett, 1971, for a more extensive discussion of differences in self- versus other-observation).

Although the present study clearly demonstrates that individuals *can use* consensus, distinctiveness, and consistency information systematically, the methodology that was employed does not reveal whether individuals who are attempting to find an appropriate attribution *will use* or seek out this information of their own accord. There is, however, some evidence that indicates that they will. In two studies by McArthur (1969, 1970, Appendix D, pp. 130–144), the subjects were not explicitly told to utilize the consensus and distinctiveness information when they were asked for a causal attribution. Rather, this information was embedded in a fairly lengthy written—or spoken—paragraph. Moreover, the distinctiveness information was substantially weaker than in the present questionnaire study, and there was no consistency information provided. Despite this manner of presentation, the results revealed that the information was utilized systematically.

Verb Category Effects: Results

Person attribution. The analysis of variance performed on the frequency of person attributions among experimental subjects did not yield a significant verb category main effect. However, a one-degree-of-freedom test contrasting emotions and opinions with accomplishments and actions was significant and reflected a greater frequency of person attribution for accomplishments and actions than

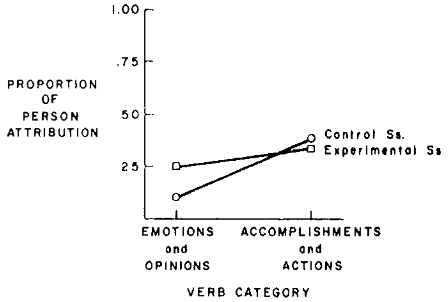

FIG. 5. Proportion of total attributions made to the person among experimental and control subjects as a function of verb category: emotions and opinions versus accomplishments and actions.

for emotions and opinions (see Figure 5). Only .97% of the variance in person attribution was accounted for by verb category.

The analysis of variance performed on the frequency of person attributions among no-information control subjects did yield a significant verb category main effect that reflected the following descending order of person attribution frequency: accomplishments > actions > opinions > emotions. Just as for the experimental subjects, a one-degree-of-freedom test contrasting emotions and opinions with accomplishments and actions was highly significant, while the residual effect was not (see Figure 5). Verb category accounted for 57.46% of the variance in person attribution among these no-information controls.

Stimulus attribution. The analysis of variance performed on the frequency of stimulus attributions among experimental subjects yielded a significant verb category main effect that reflected the following descending order of stimulus attribution frequency: emotions > opinions > acomplishments > actions. Just as in the case of person attribution, a one-degree-of-freedom test contrasting emotions and opinions with accomplishments and actions proved highly significant. However, unlike person attribution, stimulus attribution was more frequent for emotions and opinions than for accomplishments and actions (see Figure 6). Also, the residual effect was significant. Verb category accounted for 2.85% of the total variance in stimulus attribution.

The analysis of variance performed on the frequency of stimulus attribution among no-information control subjects also yielded a significant verb category main effect that reflected the following descending order of stimulus attribution frequency: opinions > emotions > accomplishments > actions. Just as for the experimental subjects, a one-degree-of-freedom test contrasting emotions and opinions with accomplishments and actions was highly significant (see Figure 6). The residual effect was not significant. Verb category accounted for 51.02% of the total variance in stimulus attribution among the controls.

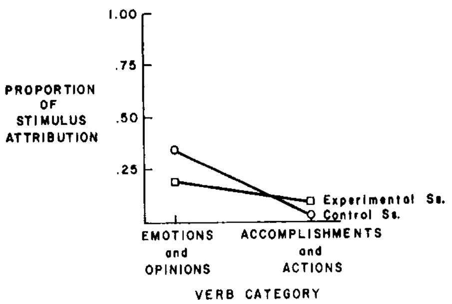

FIG. 6. Proportion of total attributions made to the stimulus among experimental and control subjects as a function of verb category: emotions and opinions versus accomplishments and actions.

Circumstance and person-stimulus attributions. The analyses of variance performed on the frequency of circumstance and person-stimulus attributions among experimental subjects yielded no significant verb category main effects or second-order interactions.

The analysis of variance performed on the frequency of circumstance attribution among no-information control subjects did yield a significant verb category main effect that reflected the following descending order of circumstance attribution frequency: actions > accomplishments > opinions > emotions. A one-degree-of-freedom test contrasting emotions and opinions with accomplishments and actions revealed that the latter yielded significantly more circumstance attribution than the former. Verb category accounted for 68.68% of the variance in circumstance attribution among control subjects.

Although the analysis of variance performed on the frequency of person-stimulus attribution among no-information control subjects also yielded a significant verb category main-effect, the data were not grouped into accomplishments and actions versus emotions and opinions as they were for the other attribution loci. Rather, the following descending order of person-stimulus attribution frequency was obtained: emotions > accomplishments > actions > opinions. Verb category accounted for 48.31% of the variance in person-stimulus attribution among control subjects.

Verb Category Effects: Discussion

The present investigation clearly demonstrated that the nature of the response affects its causal attribution. Moreover, the verb category effects that were obtained fall into a remarkably consistent pattern. Accomplishments and actions repeatedly produced similar effects, and these effects differ from those produced by emotions and opinions; for both experimental and control subjects, accomplishments and actions yielded significantly *more person* attributions and significantly *less stimulus* attributions than did emotions and opinions. This empirical division of verb types falls neatly into a categorization of verbs first proposed by Gilson and Abelson (1965). The accomplishments and actions generally represent acts performed by the subject that are "directly observable and relatively delimited in time," and may therefore be classified as "manifest" verbs. The emotions and opinions, on the other hand, generally represent mental states of the subjects that are "relatively enduring and not directly observable," and may therefore be classified as "subjective" verbs (Kanouse & Abelson, 1967, p. 159).

In addition to their isomorphism with a more or less well-established manifest–subjective verb distinction, the verb category effects obtained in the present study do make intuitive sense. As mentioned earlier, Heider (1958) suggested that there is a tendency to attribute *enjoyment* to the object rather than to the person. This suggestion is confirmed—at least relative to other types of responses—and may be generalized to other emotions as well. It also appears to apply to opinions. Emotions and opinions are commonly regarded as being *elicited* by stimuli, as opposed to being emitted by persons. An opinion is necessarily *of* something, and, by this token alone, it is caused at least in part by the properties of that stimulus. Similarly, with the exception perhaps of psychotic reactions, it is difficult to conceive of any emotion that originates within the person and is unprovoked by an outside force. One is afraid *of*, pleased *with*, angered *by*, sad *over* some *thing*. The emotion necessitates the inclusion of an object—that is, an external cause—to be meaningful. This argument, and the data, tie in nicely with Schachter's (1964) theory of emotions. His assertion that internal physiological arousal is not sufficient to induce emotions; that, in order to *experience* a particular emotion, an individual must "label" his arousal in terms of cognitions available to him from external stimuli, is quite consistent with the present study's finding that people *believe* emotions to be caused by external stimuli.

Unlike emotions and opinions, accomplishments and actions are at least as easily conceived of as being emitted by persons as being elicited by stimuli. As Heider (1958) pointed out, the dispositional property "can" or "able" is a joint function of the power or ability of the person and the difficulty of environmental factors. He further noted that an effect (i.e., an accomplishment) may be attributed to the ability of the person, the difficulty of environmental factors, or both. Jones et al. (1968) demonstrated that, in point of fact, another person's accomplishment tends to be attributed to his ability—the person—rather than the task difficulty—the stimulus. This is consistent with the results of the present study in which observers tended to attribute accomplishments to the person more than to the stimulus. Like accomplishments, actions can also be readily attributed to the person. Indeed, for some actions, stimulus attribution is almost inconceivable. Unfortunately, this may have been more true of the action items employed in this study than is typical since they were all instances of "activism"—doing something about auto safety—and two were quite extreme. But, even when one considers very mundane acts such as washing dishes or crossing the street, it becomes apparent that these manifest behaviors are most easily conceived of as being "emitted" by the person; intuitively, they do not seem to be "elicited" by a stimulus as the corresponding opinions "The dishes are dirty" and "The street is safe for crossing" appear to be. Cohen (1969) provides more substantial evidence that the observed tendency for actions to be attributed to the person rather than to the stimulus is not limited to the biased sample of actions used in the present study. Using a sample of 64 verbs—32 manifest and 32 subjective—he found the mean person attribution to be significantly greater for manifest than subjective verbs, while the mean stimulus attribution was significantly greater for subjective than for manifest verbs. Similarly, Paquette (see Footnote 9), using still another sample of 64 verbs, found that the proportion of total attributions made to the person was greater for manifest than subjective verbs (.72 versus .62), while the proportion of total attributions made to the stimulus was greater for subjective than for manifest verbs (.25 versus .17).

To say that a subjective behavior is readily perceived as being elicited by some stimulus entity is to say that that stimulus is perceived to be a *sufficient* condition for the behavior. This suggests that one would expect all people to respond similarly to the stimulus; and, indeed, this seems to be the case. Despite the adage "everyone is entitled to his own opinion," people tend to regard opinions as appropriate or inappropriate, correct or incorrect. When someone holds an opinion different from our own, we try to convince him that he is mistaken, that the stimulus calls for our belief and not his. Similarly, when someone experiences an emotion different from our own, we regard it as inappropriate and may try to "talk him out of it" by pointing out that the stimulus situation does not call for such an emotion. Such behavior suggests that our need for a stable definition of reality is threatened when other people's emotions or opinions differ from our own (see Festinger, 1954). We firmly believe that consensual validation of our subjective responses should be the rule because we believe these responses to be caused by external stimuli.

Accomplishments and actions, that is, manifest responses, are regarded quite differently. To say that a manifest behavior is not readily perceived as being elicited by some stimulus entity is to say that the stimulus is *not* perceived to be a sufficient condition for the behavior. This suggests that one would not expect all people to respond similarly to the stimulus. This appears to be the case. We have no quarrel with an individual whose performance is different from our own: there is a question of better or worse performance, but rarely of correct or incorrect performance. Similarly, with the exception of very deviant or counternormative behavior, one's need for a stable definition of reality is generally *not* threatened when other people's *actions* differ from our own. We do *not* expect consensual validation of our manifest responses because we do not believe these responses to be caused by external stimuli. "Do your own thing" is, by this token, a more honest overture than "You're entitled to your own opinion."

Naturally, research is needed to confirm the argument that more consensual validation is assumed for subjective than for manifest responses. But, given that one finds evidence for this assertion, the question may be raised as to why this occurs. Some interesting data pertinent to this question were obtained in a ministudy by McArthur.[12] A random sample of 20 pages drawn from *Roget's International Thesaurus* contained significantly more manifest than subjective verbs (238 versus 75; $\chi^2 = 84.89$, $p < .01$).[13] Hence, if there do exist real differences in expectancy for consensual validation of manifest and subjective responses, they may well be due to the fact that there are significantly *more possible* manifest than subjective responses: holding all else constant, it logically follows from this simple difference in numbers that any given subjective response has a higher probability of consensual validation than does any given manifest response. The following postulate is suggested: All other things being equal, when the set of alternative responses is small, then the response that is made has high probability; when the set of alternative responses is large, then the response that is made has low probability. A response characterized by high probability will tend to be attributed to the stimulus, while a response characterized by low probability will tend to be attributed to the person who makes it or to particular circumstances.[14]

Although these predictions seem intuitively compelling, it should be noted that they are

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[12] L. A. McArthur. Unpublished research, 1970.

[13] This particular comparison may inflate the difference in the frequency of manifest versus subjective responses, since predicate adjectives, which often communicate subjective responses (e.g., He is *upset* about the event), are not included.

[14] The suggestion that the probability of a response is a determinant of its causal attribution was first made by Jones and Davis (1965). These authors proposed that a behavior that has *low* probability (either because the actor has high choice, there are many alternative responses, or because the act has low social desirability), will be attributed to high probability will *not*. The present postulate is virtually identical, although, unlike the Jones and Davis prediction, it makes an assertion about *stimulus* attribution: if a response has relatively *high* probability—because there are relatively few alternative responses—it will be attributed to characteristics of the stimulus.

not logical. A high probability response is not only very likely to be produced by many people (high consensus), but it is also very likely to occur in the presence of many stimuli (low distinctiveness). Hence, high probability "logically" implies both high consensus *and* low distinctiveness. Although the former tends to produce stimulus attribution, the latter tends to produce person attribution, and, for this reason, the prediction that a highly probable response will tend to be attributed to the stimulus is illogical. Similar reasoning demonstrates that the prediction that a low probability response will tend to be attributed to the person is also illogical. However, the argument can be made that response probability *psychologically* implies consensus information more strongly than it does distinctiveness information, in which case the predictions *would* follow.[15]

EXPECTANCIES FOR BEHAVIORAL GENERALIZATION

Information Effects: Results

The analysis of variance performed on the subjects' expectancies for response and stimulus generalization indicated that more *overall* generalization was expected under low than high distinctiveness and under high than low consistency. Consensus information did not have a significant effect on expectancy for overall generalization.

A significant Consensus × Generalization interaction reflected a greater expectancy for the actor to make other responses to the same stimulus (response generalization) under high consensus than for him to make the same response to other stimuli (stimulus generalization), while the reverse occurred under low consensus. Although comparisons between the means revealed that the difference in expectancy for response and stimulus generalization was not significant under *low* consensus ($p >$ .10), the obtained interaction does support the prediction that those independent variables that tend to produce stimulus attribution will also produce a greater expectancy for response than stimulus generalization, while those which tend to produce person attribution will produce a greater expectancy for stimulus than response generalization.

Also supporting this prediction was a significant Distinctiveness × Generalization interaction that reflected a greater expectancy for the actor to make other responses to the same stimulus (response generalization) under high distinctiveness than for him to make the same response to other stimuli (stimulus generalization), while the reverse occurred under low distinctiveness. The difference in expectancy for response and stimulus generalization was significant under both high and low distinctiveness information ($p < .002$ in both cases). However, it should be noted that the effect of distinctiveness information on expectancy for *stimulus* generalization is relatively trivial inasmuch as this information was essentially a statement about the actor's behavior vis-à-vis certain other stimuli.

Analyses within generalization categories revealed that low consensus, low distinctiveness, and high consistency *each* produced a significantly greater expectancy for the actor to make the same response to other stimuli (stimulus generalization) than did high consensus high distinctiveness, and low consistency, respectively. On the other hand, high distinctiveness and high consistency each produced a significantly greater expectancy for the actor to make other responses to the same stimulus (response generalization) than did low distinctiveness and low consistency, respectively. Consensus information did not have a significant effect on expectancy for

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[15] When one contemplates the likelihood that some response will occur, one tends to think of the probability of any given *person* producing that response; one does not generally consider the probability of any given *stimulus* receiving that response. For example, in order to arrive at a subjective estimate of the probability of the event, "children eat sweets," one tends to think of instances of children rather than instances of sweets. Similarly, if one is told that the event "children eat sweets" is very probable, one tends to infer that *many children* eat sweets rather than inferring that children eat *many sweets*. If this phenomenon is general, then the probability of a given response "psycho-logically" implies consensus information more strongly than it does distinctiveness information—at least when the former pertains to persons and the latter pertains to nonpersons. This is consistent with the finding that individuals tend to generalize more across nonperson stimuli than across persons. "A sweet is a sweet, but a child by any other name might not eat." Probability information is therefore assumed to refer to children rather than to sweets.

TABLE 4

MEAN EXPECTANCY FOR RESPONSE AND STIMULUS GENERALIZATION AS A FUNCTION OF CONSENSUS, DISTINCTIVENESS, AND CONSISTENCY INFORMATION

Behavorial generalization	High consensus				Low consensus			
	High distinctiveness		Low distinctiveness		High distinctiveness		Low distinctiveness	
	High consistency	Low consistency	High consistency	Low consistency	High consistency	Low consistency	High consistency	Low consistency
Response	6.44	4.93	5.52	4.47	6.20	4.43	5.23	4.30
Stimulus	3.56	3.09	6.65	6.21	3.84	3.61	7.13	6.44

response generalization. (The mean expectancy for response and stimulus generalization obtained for each of the information configurations is presented in Table 4.)

The percentage of total variance in expectancy for behavioral generalization that is accounted for by each of the independent variables is presented in Table 5. Distinctiveness information accounted for 63.40% of the variance in expectancy for the actor to make the same response to other stimuli (stimulus generalization), while consistency and consensus information accounted for only 1.31% and .93%, respectively. In contrast to this, distinctiveness information accounted for only 2.63% of the variance in expectancy for the actor to make other responses to the same stimulus (response generalization), while consistency information accounted for 13.62%. Consensus information again accounted for only a small part of the variance (.36%).

Information Effects: Discussion

The predictions made regarding expectancy for stimulus and response generalization are clearly supported by the results of this study. Both low consensus and low distinctiveness information each produced a greater expectancy for the person to make the same response to other stimuli than for him to make other responses to the same stimulus (i.e., the expectancy for stimulus generalization was greater than the expectancy for response generalization). Moreover, the expectancy for stimulus generalization per se was greater given low consensus or low distinctiveness than given high consensus or high distinctiveness. As mentioned above, it is quite logical that distinctiveness information would have this effect. But, the tendency for low *consensus* to produce a greater expectancy for stimulus generalization than high consensus cannot be so simply explained. Whether or not other people exhibit a response has *no logical* implications for whether or not the actor will exhibit the same response to other stimuli. The fact that no one but me likes Martians does not, in and of itself, make me any more likely to like Venutians than I would be if everyone liked Martians. A two-step process seems necessary to explain the effect of consensus information on expectancy for stimulus generalization: (*a*) Low consensus suggests that the cause of the response is located in the actor. (*b*) The cause being located in the actor means that he is "an emittor of that response," which suggests that he will emit it in the presence of other stimuli as well.

High consensus and high distinctiveness information each produced a significantly greater expectancy for the person to make other responses to the same stimulus than for him to make the same response to other stimuli (i.e., the expectancy for response general-

TABLE 5

PERCENTAGE OF THE TOTAL VARIANCE IN EXPECTANCY FOR BEHAVORIAL GENERALIZATION ACCOUNTED FOR BY EACH OF THE INDEPENDENT VARIABLES

Variable	Behavioral generalization	
	Response	Stimulus
Consensus information	.36%	.93%
Distinctiveness information	2.63%	63.40%
Consistency information	13.62%	1.31%
Verb category (experimental subjects)	17.43%	0%
Verb category (control subjects)	54.06%	0%

ization was greater than the expectancy for stimulus generalization). In addition, the expectancy for response generalization per se was greater with high than with low distinctiveness information. Like the effect of consensus information on expectancy for stimulus generalization, this effect is not strictly logical. Whether or not the actor also makes the same response to other stimuli (distinctiveness information) has no direct implications for whether or not he will make other responses to a particular stimulus. The fact that I like Martians, but do not like almost any other outerspacemen, does not, in and of itself, make me any more likely to kiss Martians than I would be if I also liked most other outerspacemen. Again, a two-step process seems necessary to explain the results: (*a*) High distinctiveness suggests that the cause of the response is in the stimulus. (*b*) The cause of the response being located in the stimulus means that it is "an elicitor of the response," which suggests that it may elicit other related responses as well.

Although it was not explicitly predicted, the finding that high as compared with low consistency information yielded a greater expectancy for both stimulus and response generalization is certainly reasonable. Overall expectancy for generalization should be lower when a response is not reliable—low consistency—since such behavior cannot logically be used as a valid predictor of other responses.

Verb Category Effects: Results and Discussion

The analysis of variance performed on the experimental subjects' expectancies for response and stimulus generalization did not yield a significant verb category main effect. Neither did the analysis of variance performed on expectancies for response and stimulus generalization among no-information controls.

While there was not significantly more overall generalization expected for one verb category than another, there was a significant Verb Category × Generalization interaction for both experimental and control subjects. These interactions revealed that for emotions and opinions there was a greater expectancy for the actor to make other responses to the same stimulus (response generalization) than for him to make the same response to other stimuli (stimulus generalization), while the reverse was true for accomplishments and actions. Like the Information × Generalization interactions, this interaction supports the prediction that those independent variables that tend to produce stimulus attribution will also produce a greater expectancy for response than for stimulus generalization, while the reverse will occur for those variables that tend to produce person attribution.

Analyses within generalization categories revealed a significant verb-category main effect on expectancy for response generalization among both experimental and no-information control subjects. These simple effects reflected the following descending order of expectancies for the actor to make other responses to the same stimulus: emotions > opinions > actions > accomplishments. One-degree-of-freedom comparisons contrasting emotions and opinions with accomplishments and actions revealed that the former produced a significantly greater expectancy for response generalization than the latter among both experimental and control subjects. The residual effect was not significant in either case. Expectancy for stimulus generalization was not significantly affected by verb category among experimental or control subjects.

Expectancies for behavioral generalization were clearly affected by verb category as well as by the information variables. Emotions and opinions produced a greater expectancy for the person to make the same response to other stimuli than for him to make other responses to the same stimulus. Like some of the information effects, these verb category effects may be most easily explained in terms of a two-step process: (*a*) emotions and opinions produce attribution to the stimulus which, in turn, yields (*b*) a greater expectancy for response than stimulus generalization; and (*a*) accomplishments and action produce attribution to the person which, in turn, yields (*b*) a greater expectancy for stimulus than response generalization.

Whatever the explanation for these verb category effects, they are quite provocative.

To give a very speculative example, they suggest that if you *give* someone—for example, a child—many nice things (manifest response), his expectancy for you to also give nice things to other people (stimulus generalization) will be *greater than* his expectancy for you to praise him or to protect him (response generalization). But, if you *love* someone (subjective response), his expectancy for you to praise him or to protect him (response generalization) will be greater than his expectancy for you to also love other people (stimulus generalization). If this application were accurate, then it might not be surprising that the "poor little rich kid" feels deprived. Not only is he given no love, but, moreover, the material goods that he is given have little meaning: he expects that his parents would give these things to many other people—or at least that they would be more likely to do that than to make other positive responses to him. The "rich little poor kid," on the other hand, not only has love, but, moreover, he feels that he is special in this regard: he expects that his parents would not give their love to many others—or at least that they would be less likely to do that than to make other positive responses to him.

Although the finding that distinctiveness information accounted for most of the variance in expectancy for stimulus generalization is not particularly exciting, the finding that *verb category* accounted for most of the variance in expectancy for response generalization is quite fascinating (see Table 5). Having observed someone's behavior, one's expectancy for him to make other responses to the same stimulus depends *primarily* on the nature of the initial behavior; this expectancy is significantly greater when the initial response is subjective—for example, an emotion or an opinion—than when it is manifest.[16] To take the example cited above, this suggests that a child's expectation that he will receive protection or praise will be greater if you love him (subjective response) than if you give him many nice things (manifest response). Or, to give another example, if you pity someone who is in trouble (subjective response), his expectation that you will also protect and support him (response generalization) will be *greater than* it would be if you helped him (manifest response). The moral of this story for the bystander who is wary of commitment to future benevolence, is: Don't just pity someone. Help him!

It should be noted that the specific manifest and subjective verbs used in the above illustrations were not contained in the experimental questionnaire. However, since Cohen (1969) and Paquette (see Footnote 9) both demonstrated that the manifest versus subjective verb *attribution* effects obtained in this study generalize to other manifest and subjective verbs, it seems warranted to generalize the obtained expectancy for generalization effects to other manifest and subjective verbs. Nevertheless, there is a need to explicitly test the predictions in these examples by asking the *target person* of a response to give his expectancy for the actor to show response and stimulus generalization, since the possibility exists that target-person observers and "any old" observers do not respond in a like fashion.

RELATIONSHIP BETWEEN ATTRIBUTIONS AND EXPECTANCIES FOR BEHAVIORAL GENERALIZATION

It was found that, as predicted, person attribution and expectancy for stimulus generalization were similarly affected by the information variables, as were stimulus attribution and expectancy for response generalization (see Figure 7). High consensus and high distinctiveness information each produced more stimulus attribution and a greater expectancy for response generalization than did low consensus and low distinctiveness information, respectively. Conversely, low consensus and low distinctiveness each produced more person attribution and a greater expectancy for stimulus generalization than did high consensus and high distinctiveness information.

Not only did the information variables have these predicted parallel effects on attributions and expectancies for generalization, but there

[16] It should be noted that all of the response generalization items involved manifest responses. Hence, a more conservative statement of the finding would be that one's expectancy for other *manifest* responses to be directed to the same stimulus is greater when the initial response is subjective than when it is manifest.

also were striking similarities in the effects of verb category on attributions and expected generalization. Manifest verbs—accomplishments and actions—produced both more person attribution and a greater expectancy for stimulus generalization than did subjective verbs. Conversely, subjective verbs—emotions and opinions—produced both more stimulus attribution and a greater expectancy for response generalization than did manifest verbs (see Figure 7).

These parallel findings suggest that causal attribution serves as an intervening variable that mediates expectancies for behavioral generalization. However, the overall correlation between stimulus attribution and expectancy for response generalization was only .20 for experimental subjects and .10 for no-information controls, and the correlation between person attribution and expectancy for stimulus generalization was only .28 for experimental subjects and .25 for controls. As would be expected, negative correlations obtained between person attribution and expectancy for response generalization ($r = -.05$ for experimental subjects, and $r = -.16$ for controls) and between stimulus attribution and expectancy for stimulus generalization ($r = -.20$ for experimental subjects, and $r = -.12$ for controls). Although almost all of these correlations were significant at the .05 level or better, this was largely due to the many degrees of freedom, and the size of the correlations is far from impressive.

In view of the relatively low correlations between intervening attributions and expect-

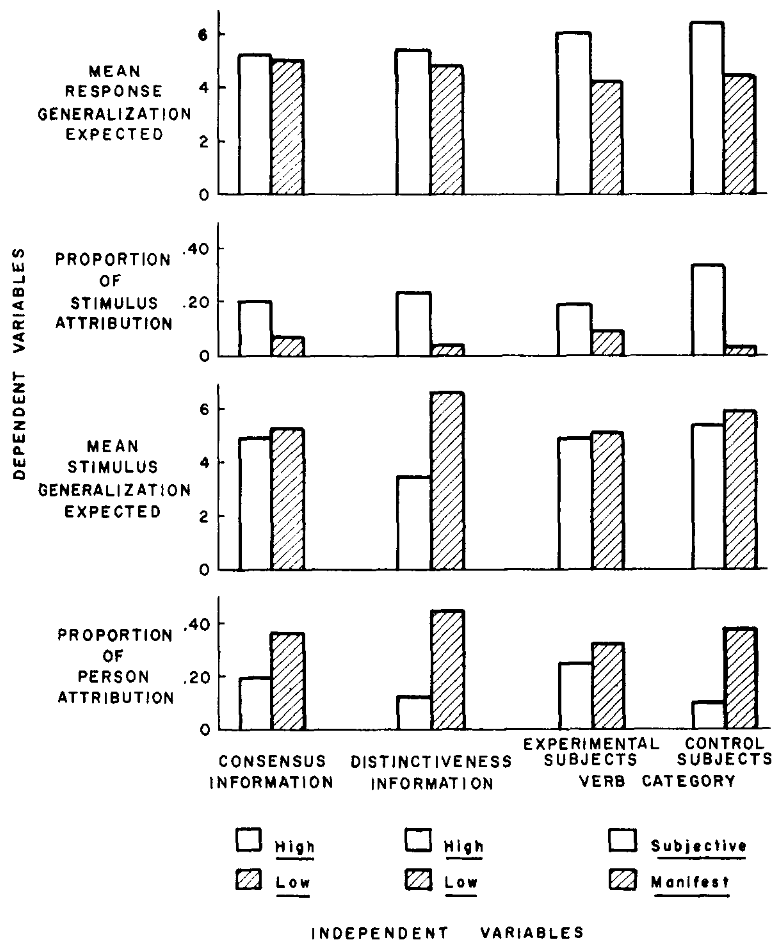

FIG. 7. Parallel effects of three independent variables on causal attributions and expectancies for behavioral generalization.

ancies for behavioral generalization, the relationship between the *independent* variables and the experimental subjects' expectancies for generalization was investigated. For computational covenience, only one attributional index (person attribution *minus* stimulus attribution) and one generalization index (expectancy for stimulus generalization *minus* expectancy for response generalization) were utilized. A covariance analysis performed on these two difference scores revealed a very high correlation between them as a function of information ($r = .87$, $df = 6$, $p < .01$) and a correlation of only .16 ($df = 44$, $p < .10$) when both independent variables (information and verb category) were partialed out.

The finding that there was a stronger correlation between the *independent* variables and expectancies for generalization than between the *intervening* attribution variables and these dependent measures may indicate that attributions do *not* mediate generalization expectancies; that information and verb category each affect both the causal attribution and the expectancy for behavioral generalization. On the other hand, these differences in the magnitude of the correlation may simply reflect the extremely small between-subject variance within conditions that imposes limitations on the correlation as well as the loss of precision when one correlates relatively fuzzy intervening variables with a dependent measure. This likelihood, together with the fact that a two-step process seems logically necessary to explain some of the information effects on expected generalization and all of the verb category effects, certainly leaves open the possibility that causal attributions do indeed mediate expectancies for behavioral generalization. Although further research is needed to specifically test the mediation hypothesis, the present study has clearly contributed to our understanding of peoples' beliefs about the causes of another person's behavior: *how* they decide *why* someone behaved as he did and *what* expectations for his future behavior accompany these causal beliefs.

REFERENCES

BRUNSWIK, E. *The conceptual framework of psychology.* Chicago: University of Chicago Press, 1952.

COHEN, B. Attribution processes in interpersonal attraction. Unpublished manuscript, Yale University, 1969.

FESTINGER, L. A theory of social comparison processes. *Human Relations,* 1954, **7**, 117–140.

GILSON, C., & ABELSON, R. P. The subjective use of inductive evidence. *Journal of Personality and Social Psychology,* 1965, **2**, 301–310.

HEIDER, F. *The psychology of interpersonal relations.* New York: Wiley, 1958.

JAMES, W. H., & ROTTER, J. B. Partial and 100% reinforcement under chance and skill conditions. *Journal of Experimental Psychology,* 1958, **55**, 397–403.

JONES, E. E., & DAVIS, K. E. From acts to dispositions: The attribution process in person perception. In L. Berkowitz (Ed.), *Advances in experimental social psychology.* Vol. 2. New York: Academic Press, 1965.

JONES, E. E., & NISBETT, R. E. The actor and the observer: Divergent perceptions of the causes of behavior. In E. E. Jones, D. Kanouse, H. H. Kelley, R. E. Nisbett, S. Valins, & B. Weiner (Eds.), *Attribution: Perceiving the cause of behavior.* New York: General Learning Press, 1971.

JONES, E. E., ROCK, L., SHAVER, K. G., GOETHALS, G. R., & WARD, L. M. Pattern of performance and ability attribution: An unexpected primacy effect. *Journal of Personality and Social Psychology,* 1968, **10**, 317–340.

KANOUSE, D. E., & ABELSON, R. P. Language variables affecting the persuasiveness of simple communications. *Journal of Personality and Social Psychology,* 1967, **7**, 158–163.

KELLEY, H. H. Attribution theory in social psychology. *Nebraska Symposium on Motivation,* 1967, **15**, 192–238.

MCARTHUR, L. A. Perceiving the cause of one's own behavior: Housewives' attributions for their participation in a survey as a function of consensus and distinctiveness information. Unpublished manuscript, Yale University, 1969.

MCARTHUR, L. A. *The how and what of why: Some determinants and consequences of causal attribution.* (Doctoral dissertation, Yale University) Ann Arbor, Mich.: University Microfilms, 1970, No. 71-17,028.

PHARES, E. J. Expectancy changes in skill and chance situations. *Journal of Abnormal and Social Psychology,* 1957, **54**, 339–342.

ROTTER, J. B., LIVERANT, S., & CROWNE, D. P. The growth and extinction of expectancies in chance controlled and skilled tests. *Journal of Psychology,* 1961, **52**, 161–177.

SCHACHTER, S. The interaction of cognitive and physiological determinants of emotional state. In L. Berkowitz (Ed.), *Advances in experimental social psychology.* Vol. 1. New York: Academic Press, 1964.

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