

VIDEOTAPE AND THE ATTRIBUTION PROCESS: REVERSING ACTORS' AND OBSERVERS' POINTS OF VIEW¹

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Two actor subjects at a time engaged in a brief, unstructured conversation while two observer subjects looked on. Later a questionnaire measured the actors' attributions of their own behavior in the conversation either to dispositional, internal causes or to situational, external causes. Similarly, each observer attributed his matched actor's behavior. Videotapes of the conversation, replayed to subjects before the attribution questionnaire, provided an experimental manipulation of visual orientation. Some actors and observers saw no videotape replay, while other subjects saw a tape that merely repeated their original visual orientations. As predicted for both of these conditions, the actors attributed relatively more to the situation than the observers. A third set of subjects saw a videotape taken from a new perspective—some actors saw a tape of themselves, while some observers saw the other participant with whom their matched actor had been conversing. With this reorientation, self-viewing actors attributed relatively more to their own dispositions than observers. The results indicated the importance of visual orientation in determining attributional differences between actors and observers. Pragmatically, the theoretical framework and results of the study had relevance to the use of videotape self-observation in therapy and T groups.

When an individual observes a behavior and attempts to understand its causes, he is concerned with the relative importance of personal dispositions of the actor and the surrounding social and environmental context. Both an observer who wishes to explain another's behavior and an actor who tries to understand his own behavior attempt to make the appropriate causal attributions. There is reason to believe, however, that actors and observers do not always arrive at the same explanation of the actor's behavior. Jones and Nisbett (1971) have argued that when actors seek to explain their own behavior, they are inclined to give considerable weight to external, environmental (i.e., situational) causes. Observers, on the other hand, place considerably more emphasis on internal, personal (i.e., dispositional) causes of the actor's behavior.

Several studies (Jones & Harris, 1967; Jones, Rock, Shaver, Goethals, & Ward, 1968; McArthur, 1970, 1972; Nisbett, Caputo, Legant, & Marecek, 1973) have been cited in support of this general proposition, and Jones and Nisbett have discussed a variety of factors which might lead to such attributional differences between actors and observers. These factors include (a) differences in information about the event, behavior, and context which is *available* to actors and observers and (b) differences in how information is *processed* by actors and observers. Actors may have private information about some aspects of the event, including their own feelings and the historical context in which the event transpires, while observers may have more complete information about the behavior itself. Furthermore, in the interests of controlling events and predicting the future, actors may attend more to situational variables in an event, and observers may attend more to variations in the actor's behavior.

The present study examines a fundamental difference between actors and observers which may lead, in turn, to some of the information differences postulated by Jones and Nisbett (1971). Perhaps the most obvious difference

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between actors and observers is that they have, quite literally, different points of view. Actors cannot see themselves act; physically they cannot observe much of their own behavior. They may watch the antecedents of their own behavior, or its consequences, or both. But they do not normally view the behavior itself. In addition to the physical difficulty of watching oneself, there are temporal restrictions which contribute to a lack of self-observation. There may not be enough time or mental capacity to contemplate past behavior, monitor present behavior, and plan future behavior all at once. Finally, there are motivational reasons for avoiding an excess of self-observation. In the interest of acting unself-consciously and maintaining control over the immediate events taking place, the actor may learn that it is dysfunctional to be overly concerned with his own present and past behavior. Instead, it is reasonable to assume that most actors focus on the situation in which they find themselves. They look at, attend to, and think about various changing aspects of the environment in which and to which they must respond.

While the actor is watching the situation in which he finds himself, the observer is probably watching the actor. It is usually interesting and often important to watch the behavior of other people. Consequently, observers are often visually oriented toward the actor. Although an observer can take his eyes off the actor and view other aspects of the situation, he probably sees less of the situation than the actor does. As with actors, the observer's scope is also limited by time. Observers cannot simultaneously watch the actor and observe as much of the situation as the actor can. Moreover, observers may find it more efficient in terms of controlling and predicting the ongoing event to concentrate on the actor's behavior rather than on the actor's situation. Finally, the actor is, after all, part of the observer's situation. For the same reasons that an actor focuses on his own situation, the observer focuses on the behavior of the actor, which is part of his (the observer's) situation.

Thus, we postulate that there is a simple difference between actors and observers. Actors watch their environment (which in-

cludes the behavior of other people) more than they watch their own behavior. Observers watch the behavior of the actor more than they watch the actor's situation.

If it is true that attributions are largely influenced by point of view, it should be possible to change the way actors and observers interpret a behavior by changing their visual orientations.

A test of this hypothesis requires some means of changing actors' and observers' orientations. Fortunately, modern technology provides a simple and interesting means to accomplish this change—namely, the use of videotape. Videotapes of an event, taken from various camera angles, can be replayed to actors and observers to redirect their attention to other aspects of the event. Of particular interest is the case in which videotape presents a new visual orientation, that is, when actors are shown a tape of their own behavior from the observer's perspective and when observers are shown a tape of some key aspect of the actor's situation from the actor's perspective. Such reorientation should affect actors and observers so as to weaken (or even reverse) their original attributional biases. Actors who see themselves should make more dispositional attributions about their own behavior. Observers who see another aspect of the actor's situation should become more situational in attributing the actor's behavior.

Thus, the question to be answered by this study is whether actors' and observers' attributions can be significantly influenced, perhaps even reversed, by changing their visual orientation toward an event. The implications of such a question may go beyond immediate theoretical concerns. Discrepancies between actors' and observers' perceptions and interpretations of behavior are of paramount concern to therapists, group relations consultants, and T group trainers. Often such practitioners must attempt to bridge the interpretational gap between actor and observer, patient and therapist, and individual and group.

METHOD

Overview

The hypothesis was tested in an experiment that featured a simple interpersonal event, namely a

brief getting-acquainted conversation between two strangers (actors). In addition, two other subjects (observers) were told to watch the conversation but not to participate in it.

Videotape replays of the conversation provided the experimental manipulation. The design made it possible to compare the effects of three orientation conditions: (a) one in which no visual reorientation was attempted (no videotape), (b) one in which videotape was used simply to repeat the subject's original orientations (same orientation), and (c) one in which videotape reversed the orientation of actor and observer (new orientation). In one set of conditions, actors and observers saw a videotape from essentially the same orientation as they had had in "real life." Actors saw a videotape replay of the other participant with whom they were conversing (actor—same orientation), and observers saw a videotape of the same actor they had been observing and about whom they would later answer questions (observer—same orientation). In another set of conditions, actors and observers received an entirely new orientation on videotape. Actors saw a videotape of themselves in the conversation (actor—new orientation), and observers saw a videotape of the other participant with whom their target actor had been conversing (observer—new orientation). In addition, a set of actors and observers were run with no videotape replay.

Subjects

One hundred and twenty Yale undergraduate male volunteers participated in 30 groups of 4. Subjects were solicited by sign-up sheets which specified that people who volunteered for the same session should not be previously acquainted.

Procedure

When each group of four subjects arrived at the experiment, they were told,

This is a study in an area of social psychology called "interpersonal dynamics." More specifically, I'm interested in what I call "getting acquainted"—that is, what happens when two strangers meet for the first time and initiate their first conversation. Two of you in this study will be having a short, first conversation with each other. In addition, this study calls for two observers.

Subjects were randomly assigned to the role of actor (actually referred to as participant in the script) or observer. Two subjects were assigned to be actors and to have a getting-acquainted conversation together. Each of the remaining two observer subjects was assigned to observe his matched actor during the conversation.

The experimenter then mentioned,

There is one thing I would like to add to the procedure today. I've gotten hold of some videotape equipment and I will be taping your con-

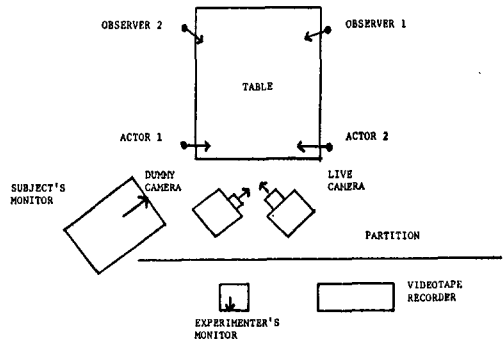


FIG. 1. Setup of the experimental room.

versation. My thought was that it might be useful to you in answering the questionnaires to see the conversation replayed on tape.

Subjects were then seated in the experimental room as shown in Figure 1. Actors sat at one end of the table, across from each other, with one camera focused on each. Observers sat at the other end of the table, diagonally across from and facing their matched actors. The experimenter reiterated that the conversation would last about 5 minutes, that the actors could talk about anything they wished, perhaps starting with their names and where they lived, and that observers should silently watch their matched actors.

After adjusting the equipment, the experimenter signaled to the participants to begin their conversation. Five minutes later, he asked them to stop and wait silently while the tapes were rewound. At this point, the experimental manipulation was performed. A random number table was consulted to determine whether the session would be a control session, in which case the subject would not see any tape, or an experimental session. If an experimental session was indicated, the experimenter continued, "I'm afraid only one camera was working very well and the other one is just too poor to see anything. So we'll only be able to see one of you on the videotape." Experimental subjects were always shown the tape of Actor 1.

Thus one actor, Actor 2, saw a tape of the same participant he had just seen in real life (Actor 1) and was the actor—same orientation subject. The other actor, Actor 1, viewed the tape of himself and was the actor—new orientation subject. Similarly, one observer, Observer 1, saw a tape of the same actor he had been observing in the conversation (Actor 1) and was the observer—same orientation subject. The other observer, Observer 2, saw a tape of the participant whom he had not been observing previously (Actor 1) and was the observer—new orientation subject. Thus each experimental session yielded one subject in each of the four experimental cells.

If a control session was indicated, the experimenter said the following instead: "I'm afraid this is lousy equipment. It just didn't take a good enough picture to be worth our while looking at it. So we'll just

have to skip the tapes and go on to the questionnaire." These no-videotape control sessions produced two actor-no-videotape subjects and two observer-no-videotape subjects.

At this point, for control subjects, and after the videotape replay for experimental subjects, the experimenter introduced the questionnaire, stressing that it was confidential and that the subjects would not see each other's responses. When the subjects completed the questions, they were debriefed. At this time, the experimenter raised the issue of experimental deception, but no subject indicated suspicion that the videotape had been a deliberate manipulation or even an essential part of the experiment.

Measures

On the postexperimental questionnaire, actor subjects answered mostly questions about themselves, and observer subjects answered questions about their matched actor. After a few introductory filler items, a page of instructions and the key dependent measures of attribution were presented. The instructions informed subjects that in the next part of the questionnaire they would be asked to describe their own (their matched actor's) behavior along four standard dimensions: friendliness, talkativeness, nervousness, and dominance. Then, for each of the four behaviors, subjects were to indicate how much influence they thought the following two factors had in causing that behavior:

(A) Personal characteristics about yourself (your matched participant): How important were your (his) personality, traits, character, personal style, attitudes, mood, and so on in causing you (him) to behave the way you (he) did?

(B) Characteristics of the situation: How important were such factors as being in an experiment, the "getting acquainted" situation, the topic of conversation, the way the other participant behaved and so on in causing you (him) to behave the way you (he) did?

Thus, on each of the next four pages, three questions were presented. The first asked about the perceived level of behavior on one of the four dimensions, for example, "To what extent did you (your matched participant) behave in a friendly, warm manner?" The question was followed by a 9-point scale labeled extremely friendly (9) to extremely unfriendly (1). Presented next were the two attribution questions: "How important were personal characteristics about you (your matched participant) in causing you (him) to behave that way?" and "How important were characteristics of the situation in causing you (him) to behave that way?" Each of these questions was followed by a 9-point scale labeled extremely important (9) to extremely unimportant (1).

These last two questions, repeated over the four behavioral dimensions, provided the principal and most direct measure of subjects' attributions. These four dimensions were not selected on the basis of

any particular theoretical or empirical considerations, but simply because it was anticipated that subjects would manifest behaviors along each of these dimensions and that subjects would be able to make judgments about them. Since the hypothesis was concerned with the relative strength of dispositional versus situational attributions and made no distinctions among the four behavioral dimensions, the appropriate measure was the difference between perceived importance of personal characteristics and perceived importance of situational characteristics in causing the actor's behavior, summed over all four behaviors. This difference score was referred to as the dispositional-situational index. A higher value on this index indicated that a subjects' attributions were relatively more dispositional and less situational. It is important to note this dual meaning of the dispositional-situational index. When an effect is described as "relatively more dispositional," it is equally valid to say "relatively less situational."

A second, less direct measure of the subjects' attributions appeared later in the questionnaire. The subjects were asked to report their estimates of the actor's level of behavior in *general* on each of the four behavioral dimensions, for example, "How friendly a person are you (is your matched participant) in general?" Responses were made on a scale from very friendly (9) to very unfriendly (1). It was then possible to compare these answers to the subjects' previous answers about the actor's level of behavior in the conversation. If a subject had perceived that the actor's behavior in the conversation was due to a stable personal disposition, then the subject would likely have predicted that the actor behaved the same way in general. Thus, dispositional attributions would lead to a low discrepancy between the subject's perception of the actor's behavior in the conversation and his behavior in general. On the other hand, if the subject had thought that the actor's behavior was caused by the situation, he would more likely have reported that the actor behaved differently in general. Thus, situational attributions would lead to greater discrepancy between the subjects' perceptions of the actor's present and general levels of behavior. The simplest measure of this discrepancy was the absolute value of the difference between the present level-of-behavior scores and the general level-of-behavior scores, summed over all four behaviors. This measure was referred to as the present-behavior-general-behavior index. The higher the value of this discrepancy index, the more a subject made situational (or the less he made dispositional) attributions.

The remainder of the questionnaire contained items not directly related to present concerns.

RESULTS

Dispositional versus Situational Attributions for Behavior

The main hypothesis of the present study concerns the effects of videotape reorientation

TABLE 1

DISPOSITIONAL, SITUATIONAL, AND DISPOSITIONAL MINUS SITUATIONAL ATTRIBUTION SCORES TOTALED OVER ALL FOUR BEHAVIORS

Attribution	Same orientation	No videotape	New orientation
Actors' attributions of own behavior			
Dispositional	26.10	27.35	27.50
Situational	25.95	25.10	20.70
Dispositional-situational	.15 ^a	2.25 ^{ab}	6.80 ^e
Observers' attributions of matched actor's behavior			
Dispositional	27.10	27.30	25.75
Situational	22.20	22.50	24.15
Dispositional-situational	4.90 ^{ba}	4.80 ^{bc}	1.60 ^{ab}

Note. Dispositional-situational means not sharing the same superscript are significantly different at the .05 level or beyond by Newman-Keuls tests.

on actors' and observers' causal attributions of the actor's behavior. Before considering the effects of reorientation, however, it is helpful to examine the evidence pertinent to the original Jones and Nisbett (1971) hypothesis that actors are characteristically inclined to attribute causality to aspects of the situation, while observers tend to attribute causality to the actor's disposition. Evidence for this proposition is found in two conditions of the present experiment: the no-videotape cells in which the subjects did not receive any videotape replay, and the same-orientation cells in which the videotape merely repeated the subjects' original visual perspectives.

The relevant data are presented in Table 1. The key dependent measure, the total dispositional-situational index, reflects the relative strength of dispositional and situational attributions; a higher value on this index indicates relatively more dispositional (less situational) attributing. A comparison of the dispositional-situational means for actors and observers in the no-videotape and same-orientation cells reveals that, in both of these conditions, actors attributed relatively more to situational causes than did observers ($p < .12$, $p < .05$, respectively).³ It is further noted from these data that a videotape which merely repeated the subjects' original orientation had little effect on either actors or observers. Dispositional-situational scores for actors in the same-orientation condition did not differ from those for actors in the no-videotape condition ($q = 1.79$, *ns*), and scores for observers in the two conditions were also similar ($q = 1$, *ns*). Thus, under conditions of no videotape and under conditions of repeated videotape orientation, the subject's role as actor or observer was an important determinant of attributions. Actors attributed their own behavior relatively more to situational causes, and observers attributed the behavior relatively more to dispositional causes.

³ These comparisons, and all two cell comparisons in the present study, are based on the *q* statistic from the Newman-Keuls procedure for testing differences among several means (see Winer, 1962). The degrees of freedom, taken from the overall analysis of variance, equal 114; *n* equals 20 per cell. The Newman-Keuls is a more stringent test than the usual two-tailed *t* test.

The main hypothesis of the present study can be examined with the data presented in the last column of Table 1. It was anticipated that actors who saw themselves on videotape would become relatively less situational (more dispositional) in attributions of their own behavior, while observers who saw a videotape of the other participant with whom the actor had been conversing would become relatively more situational (less dispositional) in their attributions of the actor's behavior. Since opposite effects of videotape reorientation were predicted for actors and observers, the hypothesis was properly tested by the interaction between subjects' roles (actor or observer) and videotape orientation. The predicted Role \times Videotape Orientation interaction was obtained at beyond the .001 level of confidence ($F = 9.72$, $df = 2/114$, $p < .001$). Neither the main effect for role, nor the main effect for videotape orientation was significant. The interaction reflected a complete reversal of the relative perspectives of actor and observer in the new-orientation condition. In the same-orientation and no-videotape conditions, the actors' attributions were more situational than the observers'. In the new-orientation condition, in contrast, the actors were relatively more dispositional than the observers. This reversed effect was significant in itself ($p < .05$).

Examining the simple dispositional and situational scores also presented in Table 1,

it is apparent that reorientation had a stronger influence on the subjects' evaluation of situational factors than on their evaluation of dispositional factors. The array of means for attributions to dispositional causes was in the direction of the predicted interaction, but the effect did not reach significance ($F=1.38$, $df=2/114$, ns). The situational attribution scores showed the expected reverse pattern, and the interaction was significant ($F=5.78$, $df=2/114$, $p < .005$).

The hypothesis is thus strongly supported. Visual orientation has a powerful influence on the attributions of actors and observers. Indeed, the data in Table 1 suggest the strongest possible conclusion: Under some circumstances actual role as actor or observer is unimportant, and visual orientation is totally determinative of attributions.

Two other aspects of the dispositional-situational data are noteworthy. (a) Repetition on videotape of essentially the same information which had been presented in real life had little effect on either the actors or the observers. Actors in the same-orientation condition were only slightly and nonsignificantly more situational than no-videotape actors, and same-orientation observers were only slightly and nonsignificantly more dispositional than no-videotape observers. (b) The predicted experimental effects were not obtained with equal strength for all four of the behaviors on which the total dispositional-situational index was based.

The fact that videotape in the same-orientation cells had little effect on the subject's attributions suggests that mere repetition of information and the addition of time to review the event did not affect the subject's perceptions of the event. The subjects appear to have absorbed all relevant data about the event during its real-life occurrence. Of course, one would not necessarily expect this to be true of all events. If the episode were more complex or of longer duration, subjects could easily miss important information in vivo. A videotape replay would fill in these informational gaps and could, quite possibly, produce different attributions.

The most noteworthy difference among the four behavioral dimensions was the failure of the dominance dimension to contribute to the

experimental effects. Considering each behavioral dimension separately, the Role \times Videotape Orientation interaction was significant for friendliness, talkativeness, and nervousness, each at the .025 level of confidence, but was trivial for dominance ($F < 1$). Comments by subjects during the debriefing suggest a possible reason for the failure of dominance to contribute to the experimental effects. Subjects complained that dominance was a difficult dimension on which to judge people in the context of a simple, 5-minute getting-acquainted conversation. While friendliness, talkativeness, and nervousness are dimensions with concrete behavioral counterparts (such as smiling, talking, and fidgeting), apparently dominance is a more abstract dimension and requires a higher order of inference.

When the dominance question was excluded from the analysis, each of the experimental effects was strengthened. Across the remaining three dimensions, the interaction test of videotape reorientation was strengthened from an F of 9.72 to an F of 13.89 ($df=2/114$, $p < .001$). Tests for the Jones and Nisbett (1971) hypothesis were also strengthened; the contrast between actors and observers in the no-videotape condition was significant at the .05 level, and the contrast between actors and observers in the same-orientation conditions was significant at the .01 level.

Perceived Level of Behavior and Perceived Discrepancy from General Behavior

In addition to the two attribution questions, the subjects also answered questions about the perceived level of behavior on each dimension. Past experiments in this area have typically created a specific, standardized behavior for subjects to attribute. The present experiment, with its unstructured conversations, did not furnish all subjects with the same behavior. This flexibility was desirable, in that it provided a more general test of the attribution hypotheses over several, naturally occurring behaviors. But it also created the possibility that perceptions of the perceived level or intensity of behavior could differ among experimental conditions and thus account for the different attributions. This does not appear to have been the case, however.

There were two ways of calculating perceived level of behavior: (a) by taking the direct value from the 9-point scale for each level-of-behavior response and (b) since the scales were bipolar (for example, 9 = very friendly to 1 = very unfriendly), by taking the deviation of the subject's response from the midpoint of the scale (5). Neither of these measures yielded significant comparisons between any cells in the experiment, either for each behavior considered separately or for all four behaviors totaled. Furthermore, the overall correlations between the total dispositional-situational measure of attributions and the two measures of perceived level of behavior were trivial and nonsignificant ($r = -.049$, for the direct score; $r = -.021$, for the score of deviation from midpoint). Thus, it is apparent that differences in perceived level of behavior could not account for the attribution differences.

Since there were no significant differences in perceived level of behavior, it is meaningful to examine the second measure of subjects' attributions, the present-behavior-general-behavior discrepancy scores. This index reflected the absolute difference between the subjects' perceptions of the actor's *present behavior* (in the conversation) and the actor's *general behavior*, summed over all four behaviors. A small discrepancy would indicate that a subject expected the actor's present behavior to generalize and was thus making a dispositional attribution. A greater discrepancy would indicate less generalization of the actor's behavior and thus a situational attribution.

The results of the present-behavior-general-behavior discrepancy measure, presented in Table 2, corroborated the findings on the dispositional-situational measure of attributions. The effects of videotape reorientation, as tested in the Role \times Videotape Orientation interaction, reached significance at $p < .05$, ($F = 3.38$, $df = 2/114$). Again, neither the main effect for role nor the main effect for orientation was significant. Although the direction of differences between the actors and observers in the various conditions was as expected, none of the individual comparisons between cells reached significance on the present-behavior-general-behavior mea-

TABLE 2
PRESENT BEHAVIOR MINUS GENERAL BEHAVIOR
DISCREPANCY SCORES SUMMED OVER
ALL FOUR BEHAVIORS

Subjects	Same orientation	No videotape	New orientation
Actors	7.15	5.00	4.25
Observers	5.45	4.90	5.90

sure, even with the exclusion of the dominance dimension. It appears that the results for the present-behavior-general behavior measure followed the same pattern as, but were generally weaker than, the results for the dispositional-situational measure. The two measures were, incidentally, significantly correlated (overall $r = .361$, $p < .01$).

DISCUSSION

The present study demonstrates that visual orientation has a powerful influence on the inferences made by actors and observers about the causes of the actor's behavior. When videotape was not presented and subjects were left to assume their own orientations, or when videotape reproduced subjects' original orientations, actors attributed their behavior relatively more to situational causes than did observers. This finding supports the Jones and Nisbett (1971) hypothesis that actors' attributions are typically more situational than observers'. But under conditions of reorientation, when subjects saw a new point of view on videotape, the attributional differences between actors and observers were exactly reversed. Reoriented, self-viewing actors attributed their behaviors relatively less to situational causes than did observers. This effect was obtained on two very different measures of attribution across a variety of behavioral dimensions in an unstructured situation.

Mechanisms of Videotape Reorientation

Two important issues arise concerning the possible mechanisms by which video orientation affected attributions. The first issue, one crucial to any laboratory social psychology experiment, concerns experimenter demand characteristics. Demand characteristics could have influenced the results of the pres-

ent study if the hypotheses had been communicated to subjects either by the experimenter's behavior or by the fact the subjects viewed only one videotape. Both of these possibilities depend on subjects' developing the expectation that videotape had importance for how they should respond. The possibility of communicating the hypotheses was avoided by leading subjects to believe that videotape was not an essential part of the experiment and that the experimenter had wanted to show both tapes but could not, due to circumstances beyond his control. During debriefing, subjects were questioned on their reactions to this hoax; they reported no suspicion that the videotape breakdown had been intentional or important. Moreover, if subjects had been responding to the attribution questions out of desire to support the experimenter's hypotheses, it is unlikely they could have produced the results of the indirect present-behavior-general-behavior measure. This index was derived from the absolute value of the difference between the four level-of-behavior questions and the four general-behavior questions. These questions were widely separated in the questionnaire, and subjects would have had to perform a rather elaborate calculus to produce these results deliberately. Thus, it does not seem likely that the reorientation effects can be accounted for by experimenter demand characteristics.

The second issue involves the possible mechanisms by which videotape caused the predicted attributions. This study was designed to demonstrate that a global manipulation (visual orientation) affects actors' and observers' attributions of the actor's behavior. The study was not designed to separate out the many possible mechanisms by which this might occur. However, some informed speculation is possible.

Jones and Nisbett (1971) proposed several factors that contribute to attributional differences between actors and observers, including differences in the information available about an event and differences in how that information is processed. These two categories are *not* mutually exclusive, and videotape orientation may have affected aspects of both information availability and information

processing. When actors or observers saw a videotape of an event from a different point of view, they may have received some totally new information. The actor may have realized, for the first time, some new aspects of his own behavior; the observer may have seen new aspects of the situation or of the other participant. These new facts could have contributed to changes in subjects' inferences about the cause of behavior. Second, the salience of already available information may have changed for reoriented subjects. Changes in the salience of information have been shown to affect people's perceptions of the reasons for their behavior. For example, Kiesler, Nisbett, and Zanna (1969) found that subjects tended to adopt as explanations of their own behavior motives that were made salient by a confederate. Similarly, subjects in the present study might have formulated their attributions about the actor's behavior on the basis of potential causes which had just been made salient by the videotape. Finally, videotape reorientation may have produced new response sets for subjects. Actors who viewed themselves on tape may have been put into a "self-discovery" frame of mind and thus led to think about their own personality as revealed in their behavior. Similarly, observers who saw a videotape from the actor's point of view may have developed an "empathic" set, imagining themselves to be in the actor's shoes.

It is also of interest to consider the exact nature of the attributional changes evoked by videotape. Changes on the key dependent variable, the dispositional-situational index, were accounted for mostly by changed evaluations of situational causes. Actors assigned a great deal of causality to the situation unless videotape forced them to look away from the situation and toward their own behavior. Observers originally assigned less causality to the situation unless videotape impressed situational factors on them. Differences in attribution to dispositional causes, although in the expected direction, were much weaker than these differences in attribution to situational causes. It may be that the relatively greater amount of change on the situational dimension reflects people's general way of viewing the role of dispositions in causing behavior.

People may characteristically assign fixed and fairly high importance to personal responsibility for behavior. Consequently, they may be left with only one means of modifying their relative assignment of causality and responsibility, namely by varying their evaluations of the situation. In line with this possibility, there may have been a ceiling effect for dispositional attributions in the present study; the overall mean importance assigned to dispositional causes equaled nearly 7 out of a possible 9 scale points. Subjects were thus left with little room to express enhanced dispositional influences.

Up to this point, discussion has been limited to information-related variables which may be modified by video exposure and may in turn affect attributions. Undoubtedly, motivational variables, such as the need to maintain self-esteem and particular self-concepts, could also be affected by videotape observations. One might expect the self-viewing actors in particular to be influenced by such motivations. It is important to note, however, that the present findings were obtained in a situation which was, in many respects, low-key. The behaviors elicited in the getting-acquainted conversations were routine and probably not highly relevant to actors' self-concepts, the interaction between subjects was fairly unemotional, and actors and observers did not have the opportunity to discuss their potentially opposing views of the actor's behavior. It is therefore important to consider whether the present findings would generalize to situations where actors and observers are more emotionally involved, such as in psychotherapy and T groups. There is reason to believe that the present findings have some applicability to the use of videotape even in such emotionally charged settings.

Videotape in Therapy and T Groups

There has been a recent and dramatic increase in the application of videotape feedback in therapy and human relations training. Alger and Hogan (1966a) asserted that "videotape recording represents a technological breakthrough with the kind of significance for psychiatry that the microscope has had for biology [p. 1]." In clinical practice,

videotape is frequently used to increase a patient's knowledge of his own behavior (cf. Bailey & Sowder, 1970; Holzman, 1969), and this apparently leads to therapeutic gain. Reivich and Geertsma (1968) reported increased accuracy in patients' knowledge of their own behavior after videotape self-observation. They measured the disparity between a patient's self-ratings on clinical scales and the ratings given him by psychiatric nurses. After videotape self-observation, the ratings of the actor patient came to agree more with the ratings of the observer nurses. Alderfer and Lodahl (1971) found that videotape playback in T groups increased subjects' "openness." Openness was defined as willingness to explore the internal meaning of and accept personal responsibility for an attitude or behavior. Finally, case studies in marital therapy (Alger & Hogan, 1966a; Kagan, Krathwohl, & Miller, 1963) have reported that one or both marriage partners are more willing to assume the blame for a poor relationship after seeing themselves on videotape.

On the other hand, some negative consequences of self-observation have also been reported. For instance, Carrere (1954) used videotape to show alcoholics how they behaved when intoxicated, but he found it necessary to edit the more shocking scenes. The full presentation of their behavior when drunk was too stressful for many of his patients. Parades, Ludwig, Hassenfeld, and Cornelison (1969) similarly reported the lowering of alcoholic patients' self-esteem after viewing their own drunken behavior on tape. Leitenberg, Agras, Thompson, and Wright (1968) gave behavioral feedback (although not video) to phobic patients undergoing behavior modification. These authors found that feedback to patients about successful progress speeds their cure, but information about temporary setbacks interferes with the therapy. Finally, Geertsma and Reivich (1965) reported that some self-viewing depressive patients become more depressed, some schizophrenic patients engage in more bizarre behavior, and some neurotics show an increase in the symptoms characteristic of their particular disorder.

Research to date on the use of videotape in therapy is insufficient to indicate how and

with whom it is a beneficial therapy adjunct. It may be possible, however, to apply the findings and the theoretical framework of the present study to the issue of videotape use in therapy. The present study demonstrates that self-observation can change the causal interpretation a person gives to his own behavior. The self-viewing actor (and possibly the self-viewing patient) is more likely to accept personal, dispositional responsibility for his behavior and is less likely to deflect responsibility to the situation.

This attributional consequence of self-observation may help to account for some of the effects of videotape in therapy. For example, the increased openness of T group participants after self-observation may reflect a tendency for each group member to assume more personal, dispositional responsibility for his behavior in the group. Similarly, in marital therapy, the husband or wife who sees himself or herself on videotape may realize for the first time his or her own behavioral contribution to the marital conflict and may be more willing to place a dispositional blame on himself or herself. Finally, the reported increase in agreement between a patient's clinical self-ratings after videotape self-observation and the ratings of observing psychiatric nurses closely parallels the present findings. Self-observation increases an individual's dispositional attributions, thus bringing him more in agreement with the observer's built-in bias for dispositional attributions.

It seems likely that this increase in dispositionality of a patient's attributions would prove to be sometimes therapeutic and sometimes ditherapeutic. Successful therapy no doubt usually involves making a patient aware of his own behavior and convincing him to accept personal responsibility for that behavior. Self-observation apparently aids this process and, to that extent, should be therapeutic. However, two potentially negative outcomes of this process might be suggested. First, in becoming more dispositional about their own behavior, individuals who see themselves on videotape may actually underestimate real and viable situational explanations for their behavior. Actors in the present study who saw their own behavior on

videotape had a higher mean for dispositional attributions and a lower mean for situational attributions than any other group of subjects. This suggests the possibility that self-viewing actors may have been "undersituational" in attributing their own behavior. That is, videotape may have reoriented these actors so much that they perceived situational causes for their behavior to be even less important than did others who viewed them. And if, as Jones and Nisbett (1971) have suggested, observers are themselves inclined to underattribute to the situation, this poses a disturbing possibility for therapy. Ironically, the therapist and the self-viewing patient could reach complete agreement about the patient's behavior, yet this agreement could result from a mutual underestimation of the importance of the patient's situation in causing his behavior. This collaborative illusion between patient and therapist could be especially harmful if the patient blames himself for behavior that is in fact due to some aspect of his environment.

Past research on attribution processes has uncovered another area where attributions to the self can have ditherapeutic results. Storms and Nisbett (1970) and Valins and Nisbett (1971) have suggested that negative self-labeling which results from attributing uncomplimentary behaviors to dispositions within oneself often lead to a loss of self-esteem and an actual increase in the pathological behavior. For example, insomniacs who attribute their sleeplessness to some negative state within themselves may increase their anxiety and thus aggravate their original condition. Storms and Nisbett proposed that such exacerbation may result whenever self-attributions of a negative disposition increase the individual's anxiety and when anxiety is an irritant to the pathology, such as in impotence, stuttering, and other neurotic conditions. This exacerbation phenomenon may be occurring in some of the therapy cases where negative results have followed the use of videotapes. The finding that self-observation lowers the self-esteem of alcoholic patients might be an instance of this. An alcoholic patient who sees a tape of his own drunken behavior may become quite upset and de-

pressed about himself. Such a traumatic experience may only increase the likelihood that the patient will drink to excess. Whenever a pathology is caused or influenced by a poor self-concept, self-observation of extremely uncomplimentary behavior may serve to retard therapeutic progress.

Research on attribution processes may help to create a theoretical framework for the area of videotape self-observation in therapy settings. The present study suggests that self-observation increases an individual's dispositional attributions of his own behavior and that this brings interpretation of his behavior more in line with an observer's interpretation. In most cases, this should be advantageous to the therapy process, but in certain cases self-attributions could lead to an exacerbation of the original pathology. Therapists would therefore be well advised to look critically at the potential consequences of self-observation. It seems especially important to consider whether a personal, dispositional attribution of the pathological behavior aids the patient to become aware of his problem and to deal with it, or whether self-attribution increases the patient's anxiety to the point of exacerbating his problem.

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