

Heuristic Model of Synthetic Behavior: Rationale, Validation, and Implications

Sandra L. Tunis and Ralph L. Rosnow
Temple University

Synthetic behavior refers to actions that are not what they appear or purport to be, that is, social episodes where there is a discrepancy between the outward appearance of behavior and the underlying intent. A heuristic model of such behavior, intuitively derived, was validated using multidimensional scaling procedures to examine how adult subjects perceived various combinations of actions and intentions in relation to one another. Plausible implications of the model for explicating the moral judgments of individuals, particularly in terms of the cognitive displacement of antecedents and consequences of behavior, are discussed.

The study of behavior that is not what it appears to be, including synthetic or sham or feigned behavior, cuts through a number of interdisciplinary research areas. Social scientists have investigated the way in which a person's public identity is sometimes a cover meant to gain favor by pretense or impression management (Goffman, 1959; Jones, 1964). Feigned or deceptive behavior has also been specifically identified in instances of rumormongering; the validity of these rumors was seen to depend on whether recipients were privy to information that those spreading the rumors sought to conceal (Rosnow and Fine, 1976). Clinical and anthropological studies of synthetic behavior have included discussions of the conduct frequently labeled "self-deception" as well as the persistent or predominant cultural delusions that serve to maintain feelings of reality and identity (Sarbin, 1981). Other researchers, in studies of social desirability bias, have taken note of situations in which subjects actively misrepresented themselves in a bid for positive evaluation; there are also cases reported in which subjects believed themselves to be responding truthfully when in fact they were practicing self-deception. Interestingly, ethologists and comparative psychologists have identified what may be corresponding non-human analogues of sham behavior, such as the intraspecific deception practiced by female-mimicking male scorpion flies and the sham aggression of mammals of different species (Baenninger, 1974; Thornhill, 1979).

We wish to thank James Arbuckle and John Cooper for their assistance and helpful comments. Requests for reprints should be sent to either author: Sandra Tunis, Ph.D., Thomas Jefferson University Hospital, Family Center Program, Suite 6105, 111 South 11th Street, Philadelphia, Pennsylvania 19107; or Ralph L. Rosnow, Ph.D., Department of Psychology, Temple University, Philadelphia, Pennsylvania 19122.

This paper discusses the initial investigation in a projected series of studies of aspects of what henceforth is referred to as *synthetic behavior*, the collective term for actions that are not what they appear or purport to be. How are we to classify synthetic behaviors? Requisite to pooling this literature in order to adduce a general conceptualization, it was felt necessary to develop a proper taxonomy. In the search for a general framework there were several possible ways to proceed, for instance, the arrangement of categories of behavior into classificatory systems to describe underlying lexical domains, as in certain anthropological research (e.g., Durrenberger and Morrison, 1977). By way of simplifying the search, the approach described in this article began by focusing on a common element characterizing synthetic behaviors and then, using multidimensional scaling procedures, sought to validate the general model. The article concludes with a brief discussion of plausible implications of the model using graphics to represent hypothesized patterns of behavior, some of which are currently under investigation.

A General Model of Behavior

An assumption that served as the focal point of this investigation was the realization that in every example of synthetic behavior, the critical characteristic was a discrepancy between the actor's behavior and the underlying intent. This discrepancy could be the result of a premeditated act, or it could be a fortuitous occurrence that lent a deceptive cast to an innocent, unconsciously motivated, or even unmotivated action. What was critical in each episode was that the actor did or said one thing (or did or said nothing) yet meant something else.

One convenient way to represent this discrepancy, at the same time to narrow the search for a general model, is shown in Figure 1. The figure takes a central component of particular social episodes, viz. the benevolent-malevolent dimension, and represents the alternative possibilities in the form of generic categories (cf. Forgas, 1976; Wish, 1976; Wish, Deutsch, and Kaplan, 1976). *Benevolence* is defined here as an action or intention of a positive or prosocial nature; *malevolence* is defined as a negative or antisocial action or intention. Underlying this model of behavior is the further assumption that it is parsimonious to reduce a complex activity, in which there may be multiple motives or beliefs operating, to some modal or primary actions and intentions without destroying or oversimplifying the meaning of social behavior. The matrix shown in this figure, which was conceptualized to represent general combinations of benevolent, neutral, and malevolent actions and intentions, is thus presented as a heuristic model to point out generic categories of particular social episodes.

One such category (cell 7) might be termed "synthetic benevolence," in that the action is positive but the intention is not. The "Judas kiss," so called

		ACTION		
		BENEVOLENT	NEUTRAL	MALEVOLENT
INTENTION	BENEVOLENT	TRUE BENEVOLENCE 1	 2	 3
	NEUTRAL	 4	TRUE INDIFFERENCE 5	 6
	MALEVOLENT	 7	 8	TRUE MALEVOLENCE 9

Figure 1. The intuitively-derived model of general behavior.

because the intent is to betray with a kiss (Tiefer, 1978), illustrates a form of synthetic benevolence in which the action and intention are opposites. Another form of this phenomenon occurs when a positive action is conducted unconsciously, unintentionally, or from habit and there is a lack of feeling or interest behind the action (cell 4). Examples would be the waitress who routinely admonishes, "Enjoy your meal," and the ubiquitous "Have a nice day!" Also in this category are cases where the underlying intent of a positive act is associated with feelings of indifference; for example, the ostentatious almsgiver might feign a piety greater than his or her own faith (Sklar, 1979).

A second category, in which the action is negative but the intention is not, is "synthetic malevolence." The need to punish a child for the child's own good would be synthetic malevolence (cell 3), in that the act is ostensibly negative but the positive intent is to coerce and guide in order to protect and serve the

child's best interests (Bok, 1978). Also illustrative are pseudo-aggressive acts that may cause harm but are not intended to do so (cell 6); for instance, in Zen Buddhist sword fighting the master does not harbor the wish to injure, nor has the master any hate, and if the opponent is killed it is because the latter "stood in the wrong place" (Fromm, 1973).

A third category of behavior, "synthetic indifference," is distinguished by the fact that the overt action is neutral to all outward appearances yet is motivated by either benevolent or malevolent intentions, feelings, or beliefs. A particularly forceful example occurs when there is a deep-seated disposition to injure which is completely concealed behind an innocent countenance (cell 8). A pickpocket uses synthetic indifference while waiting for the right moment to rob the victim. At the other extreme, positive feelings are hidden behind a facade of indifference (cell 2), for example, the "strong silent type" may choose not to express feelings of affection.

In contrast to these three categories of synthetic behavior are those interactions of a sincere nature, as represented by the principal diagonal in Figure 1. Cells 1, 5, and 9 denote interactions in which there is a true correspondence between the modal or primary action and intention, that is, the actor does or says exactly what is intended, felt, or believed. This is not to say that the perceiver's inference of the actor's intent must necessarily be veridical with the true intent, for it is possible that the perceiver may incorrectly interpret the nature of the interaction (a point to which we return later).

Design of the Validation Study

In this study, stimuli were developed to represent each of these broad categories of social episodes. The validation study was aimed at constructing a reliable representation of the psychological structure of this set of stimuli on the basis of paired measures of similarity-dissimilarity. In this way it was thought possible to compare the intuitively-derived typology with an empirically-generated model showing each stimulus as a point in space.

Development of Stimuli

A sample of graduate students was recruited to rate 18 hypothetical episodes on a 9-point bipolar scale in terms of the degree of benevolence or malevolence of both the action and the intention of the actor in each situation. The episodes were constructed to symbolize the combinations of actions and intentions shown in Figure 1, there being two such episodes for each category. For those situations in which pronouns were necessary for clarity, an equal number of masculine and feminine pronouns was used in order to counter-balance for possible sex-role biases. Specific role interactions were left unspecified, on the assumption that explicit authority or friendship roles

could be a source of confounding for raters. On the basis of these preliminary ratings it was then possible to select one episode from each pair which seemed to represent that cell best. The stimuli that were finally chosen are numbered 1 through 9 in Table 1, corresponding to the cell numbers in Figure 1.

Table 1

Stimuli Employed in the Multidimensional Scaling Study

-
1. A kisses B to show true concern.
 2. A remains expressionless so B won't know A is planning a surprise dinner for B.
 3. A insults B so that B will change her bad habits and improve her behavior.
 4. A gives B a ride for lack of anything better to do.
 5. A and B don't know each other so A passes B without speaking.
 6. A always offends B with his remarks though he doesn't mean to.
 7. A helps B fix his TV set so that A can show B up.
 8. A is planning to spread a lie about B but doesn't react as B walks into the room.
 9. A likes to show her disrespect for B by embarrassing B in public.
 - X. A commits a bank robbery in which B is a victim.
 - Y. A donates to a charity that gives aid to B.
 - Z. A conducts a psychological experiment in which B is a subject.
-

Three additional episodes were employed to serve as reference points in the multidimensional scaling procedure, designated as X, Y, and Z in Table 1. Stimuli X and Y constituted intentionally extreme, hedonic reference points, in that X is blatantly malevolent or anti-social and Y is obviously benevolent or prosocial. Stimulus Z was included because there were data available to suggest that research participants make mildly benevolent associations towards human subjects research (Rosenthal and Rosnow, 1975); the inclusion of this episode provided an opportunity to compare the earlier findings with current perceptions.

Pairwise Ratings and Judges

For the scaling study a questionnaire was developed in which each of the 12 stimuli was paired with every other stimulus and listed in random order. As a means of determining respondent reliability, 10 of these paired items were repeated at the end of the questionnaire. The final 76 items were each

accompanied by a 9-point scale, and the instructions to the judges began as follows:

There are many everyday situations in which we observe one person interacting with another. Often, we make evaluations of these situations based on one person's action or on his or her apparent intention. Also, we can compare two different situations and judge their degree of similarity because we view either the action or the intention of the actor in each situation to be similar or dissimilar. For example, you may evaluate a person who slaps an unconscious man or woman quite differently than a person who slaps someone who is arguing with him or her. The intentions seem to be very dissimilar. On the other hand, you may judge the two situations to be quite similar because, in both cases, someone is slapped, and you may feel that the reason is unimportant. Or you may choose to compromise and make your judgment somewhere between the two extremes, i.e., judge them to be only somewhat similar.

The instructions continued to point out that, just as any action might involve one or several different motives or intentions, two individuals can perform the same or a different act for the same or for different reasons. The judges were then instructed to compare each pair of situations and to rate them in terms of their similarity or dissimilarity using a scale which ranged from 1, very similar, to 9, very dissimilar. The judges were nonvolunteers, undergraduate students in three sections of an advanced organizational management course. There were 52 men and 25 women in the original sample.

As in various techniques of attitude scale construction (cf. Edwards, 1957), some subjects in making judgments may undertake the task carelessly and with little interest. Others may misunderstand the instructions and thus not be aware of the nature of the judgments required. Those subjects who are apparently careless in their judging or who misunderstood the instructions, as well as those who might have had difficulty discerning among the rather complex stimuli, were eliminated from the study. The criterion used to achieve this (or to eliminate them) was a minimum reliability coefficient of .55 computed between the 10 reliability items and the corresponding original items. According to the confidence interval corresponding to an item n of 10, if a judge answered randomly he or she would have a 5 percent chance of obtaining a correlation as high as .55. On the basis of this criterion, a total of 24 judges (6 women and 18 men) was retained from the original sample. Even with the elimination of so many judges, the "effective reliability" (R) for $n = 24$ judges having an average reliability of .55 would be equivalent to .97 (Rosenthal, 1973; Rosenthal and Rosnow, 1984).¹

¹Effective reliability refers to the reliability of the mean of two or more judges, computed as

$$R = \frac{n\bar{r}}{1 + (n - 1)\bar{r}}$$

Multidimensional Scaling Procedures

For the multidimensional scaling procedure, the mean dissimilarity ratings were calculated and analyzed. The KYST analytic procedure, developed by Kruskal, Young, and Seery (Kruskal and Wish, 1978), was used for the data analysis. In the original multidimensional scaling analysis, mean rated distances between the stimuli were used as the measures of observed dissimilarity to be related to Euclidean distances. For each of the 10 pairs of reliability items, the average of the two means was used as the observed dissimilarity. The proximities data (observed dissimilarities) were arranged into a matrix as input for the nonmetric KYST program. The KYST program derives a matrix of distances based on n dimensions and makes a comparison between the derived matrix and the matrix of observed data values in an attempt at optimal fit. One-through-five-dimensional solutions were derived.

Following a procedure used by Rosenberg, Nelson, and Vivekananthan (1968) and by Friendly and Glucksberg (1970), a second multidimensional scaling analysis was done in which the data matrix of observed dissimilarities was pre-processed before being entered into the KYST program. This pre-processing was undertaken in an attempt at eliminating some possible error in the data and thereby revealing the dimensionality more clearly. The pre-processing involved taking the sum of the squared distances between the rows in the original proximities matrix. These new values (profile dissimilarities) were then analyzed just as the mean dissimilarities had been analyzed. To help us decide whether the dimensions that the judges were using in their ratings were realistically represented by our statistical model of their ratings, we examined all the variation in the other dimensions that the judges were using in their ratings which was not reflected in our model. The term for this measure of "badness of fit" is stress, and it is essentially an indicator of the failure of the k -dimensional space in question to account for the pattern of distances in the distance matrix (Kruskal and Wish, 1978). In deciding on the best-fitting dimensionality for a set of stimuli, it is customary to inspect the rate at which stress decreases with increasing dimensionality. The solution after which there is little improvement of fit is usually chosen as the optimal dimensionality. Because stress was considerably lower for all solutions when the profile dissimilarities were used, it appears that the pre-processing procedure was successful in reducing error. The stress values resulting from the one-through-five-dimensional solutions were .264, .077, .035, .023, and .010. The largest improvement in stress evidently came with the two-dimensional solution.

Results

Figure 2 depicts the configuration for this two-dimensional solution, in which the solid lines show the location of the axes best fit by linear regression.

The regression weights for Dimension 1 are $-.341$ and $-.089$ and for Dimension 2, $.249$ and $-.432$. Several stimuli are labeled to serve as reference points in the interpretation.

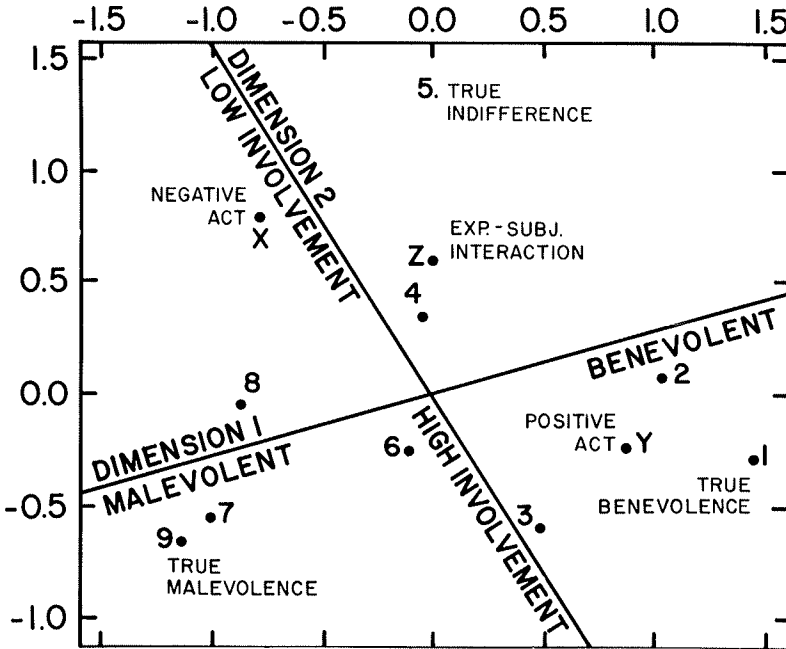


Figure 2. Two-dimensional configuration of 12 stimulus situations revealing the dimensions of (1) benevolence-malevolence and (2) level of personal involvement.

One dimension can be interpreted as benevolence-malevolence, with stimulus 1 (true benevolence) at one extreme and stimulus 9 (true malevolence) at the other extreme. The second dimension can be interpreted as the level of personal involvement between persons A and B, with stimuli 1 and 3 falling at the high end of the continuum and stimulus 5 (true indifference) at the low end. As would be expected, the extreme hedonic stimuli, X and Y, fell in the quadrants associated with a negative and a positive act respectively.

Linear regression analysis was performed to provide empirical support for the interpretation of the dimensionality. A multiple correlation was obtained which indexed how well the optimally weighted coordinates of the obtained configuration were able to predict independently obtained mean ratings of the stimuli on each of the interpreted dimensions. For this aspect of the study, another group of management students served as subjects. The multiple correlations between the set of coordinates of the two-dimensional solution and the mean ratings of the situations by subjects were both .90. Because the

multiple correlations were large, confidence can be placed in the interpretation of the multiple scaling configuration.

Discussion and Implication

A comparison of Figures 1 and 2 reveals a relatively close theoretical correspondence between the proto-taxonomy and the empirically-generated model. Those interactions of a sincere nature (1, 5, and 9) were located in the expected quadrants and, as shown in Figure 2, fell at extreme points. Those situations representing an indifferent action and a benevolent (2) or a malevolent (8) intent were evaluated according to the positive or the negative intent associated with each of them. In contrast, those positive or negative actions having an indifferent intent associated with them (4 and 6) were located in the appropriate positive or negative quadrants but close to the zero points on both dimensions. In this case the ratings were somewhat in the direction of the action, which makes sense psychologically. That is, the intention was the most salient factor in terms of the benevolent-malevolent dimension, but the action was not ignored. Additional evidence for the salience of intent in the evaluation of these situations is provided by the malevolent rating given the situation characterized as overtly benevolent but malevolent in intent (7). The only item that was not evaluated according to this pattern is 3, in which person A engages in a malevolent act for a benevolent reason. It would appear from Figure 2 that both the action and the intention were considered and a kind of compromise solution was reached corresponding to the average of the two (cf. Pepitone and Sherberg, 1957). The benevolent intent did not, it appears, justify the malevolent action.

It is interesting to note where item Z (A conducts a psychological experiment in which B is a subject) is located in Figure 2. The perception of the psychological research situation appears to be that of benign indifference on the part of the experimenter towards the subject, perhaps not unlike the traditional stereotype of the disinterested but curious scientist who is presumably motivated by a pure love of truth. While this perception is not inconsistent with other recent findings that suggest there is a benign, altruistic aura associated with participating in behavioral and social research (Rosenthal and Rosnow, 1975, p. 168), it may also be a fleeting perception. Challenges in recent years to the historical embeddedness of human subjects research may have prepared the way so that this perception, which may be transient, is also perhaps transitional (cf. Gergen, 1982; Georgoudi, 1983; Rosnow, 1981).

Theoretical Implications

The objective of this investigation was to assess an intuitively-derived model of synthetic behavior focusing on one of several plausible components,

viz. the benevolent-malevolent dimension. However, it is not difficult to imagine how the model might be suitably modified to represent other bipolar components besides the benevolent-malevolent dimension (cf. Forgas, 1976; Wish, 1976; Wish, Deutsch, and Kaplan, 1976). It remains to be seen whether the same dynamics operating in the present investigation will apply in the case of other components where other actions and intentions are translated into discrete social episodes. The scaling procedure, which resulted in the ordering of situations along a benevolent-malevolent continuum, revealed that combinations of action and intention were evaluated by judges primarily in regard to the intent underlying the overt behavior (e.g., a benevolent act performed for a malevolent reason was evaluated negatively). That judges evaluated a malevolent act performed for a benevolent reason as moderately benevolent implies that if an actor engages in a negative act for a positive reason, then the intent must be extremely positive in order for it to justify or overshadow the negative behavior. There is already some other evidence to imply a similar conclusion (cf. Pepitone and Sherberg, 1957), but the generalizability of this observation over subjects and situations remains to be demonstrated.

The nature of the model is in keeping with recent arguments in favor of a more contextualistic orientation in the social sciences, since it encourages taking into consideration both the social situation (the context) as well as the mechanics (the content) of social interactions (cf. Argyle, Furnham, and Graham, 1981; Rosnow, 1981). Examine the example previously noted in the instructions: the evaluation of someone who slaps an unconscious person. Clearly the moral evaluation of this incident ought to depend not only on its explicit content but also on a priori and a posteriori assumptions that the perceiver brings to the situation, that is, the historical and teleological context. What are the perceiver's beliefs, for example, concerning relevant events prior to the incident and other a priori assumptions based on reasoning from experience or past history, and what are the perceiver's relevant expectations or a posteriori assumptions concerning the actor's ultimate aims? A priori and a posteriori assumptions frame the perceiver's moral evaluation by concretizing or objectifying what is experienced within a context of representational antecedents and consequences.

Returning to Figure 1, consider another example involving international rather than interpersonal dynamics. Country A sends a military force into Country B and justifies the invasion on the a posteriori grounds that this ostensibly belligerent move is in actuality a benevolent police action to contain a possible fomentation or rebellion. Whether we accept A's claim that the invasion is an act of synthetic malevolence (cell 3) will depend on our willingness to displace inferences of the overt action in the direction of the expressed intent. Suppose that there are a priori reasons to assume that A's statement is calculated to deceive. There might be a tendency to displace inferences of the expressed intent in the direction of the overt action and to

conclude that the invasion is, contrary to A's assertion, a truly malevolent move towards B (cell 9).

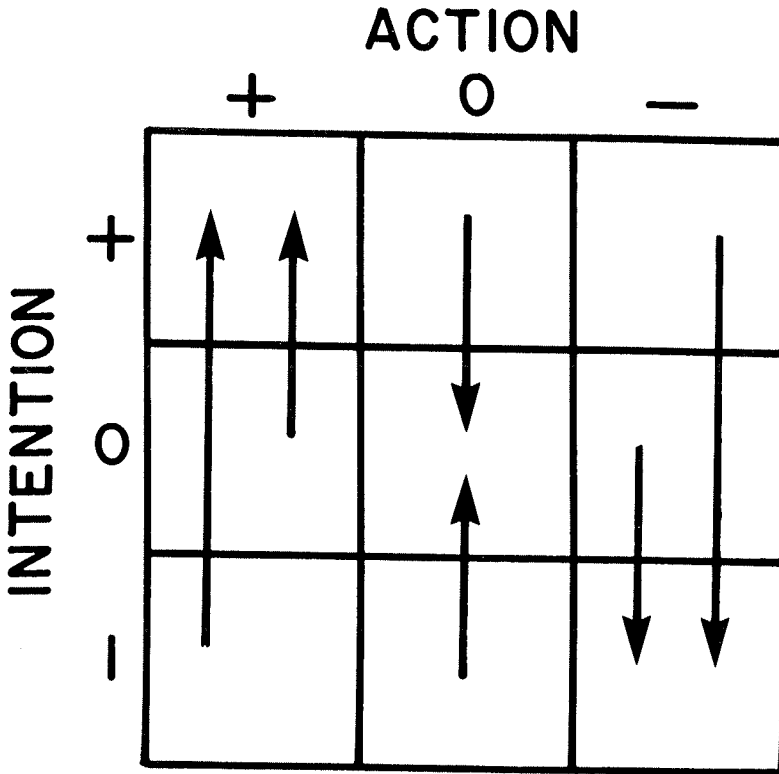


Figure 3. Arrangement of arrows shows the displacement of inferences of intention in the direction of the overt behavior.

One benefit of the model is in conceptualizing inferences and evaluations such as these. For example, Figure 3 depicts all possible arrangements in which the displacement of inferences of intention are in the direction of the overt behavior. In this case the model may have theoretical implications for conceptualizing the inferences and evaluations of children. It is possible that because young children may be less differentiated than adults in their attributions of responsibility (Heider, 1958), they are more likely, as the figure suggests, to displace their inferences towards the diagonal of the matrix. Because of this possible tendency to displace, their evaluations may thus be interpreted as evidence for the notion that young children simply do not consider intent when making evaluations (cf. Piaget, 1965). Young children may be considering intent but making erroneous inferences because of their tendencies to hold

actors responsible for their actions under a wider variety of circumstances (Heider, 1958; Shaw and Sulzer, 1964). For example, children have been shown to assign responsibility for the actions of others even when those actions were accidental. On the other hand, once the reasons for such actions are made clear to the children, their evaluations are often surprisingly astute (cf. Rule and Duker, 1973; Rule, Nesdale, and McAra, 1974).

Other plausible hypotheses and principles may be derived from attribution theory, which is concerned with how individuals explain behavior by inferring the existence of intentions from their observations. The vast growing literature in this area reveals that inferences regarding an actor's underlying intention are influenced by several factors, among which are those associated with the personality of the perceiver, with the nature of the situation, and with the characteristics of the stimulus person (cf. Heider, 1958; Jones and Davis, 1965; Maselli and Altrocchi, 1969; Shrauger and Altrocchi, 1964). For example, a perceiver is likely to displace his or her inferences towards the diagonal of the matrix if the act is relevant to the perceiver (Jones and Davis, 1965) or if the act is congruent with the perceiver's self-concept (Stroebe, Eagly, and Stroebe, 1975). The tendency to displace inferences may be based upon either a correct or an incorrect interpretation of the nature of the actor's behavior. This particular process of displacing inferences of intent towards the quality of the action is conceptualized with reference to the theoretical model in Figure 3.

Another important influence upon the perceiver's categorization of the action and intention of the actor, and therefore upon his or her evaluation of the actor, is the degree to which the perceiver holds the actor causally responsible for the action. If the perceiver believes that a malevolent act can be attributed to an external factor such as chance or coercion, he or she is not likely to hold the actor responsible and the behavior will be classified as synthetic malevolence with a neutral intent. The present findings demonstrate that a malevolent act with a neutral intent is evaluated only slightly negatively.

Conceptualizing people's evaluations of specific action-intention combinations helps illuminate the criteria used by perceivers in judging acceptable and unacceptable behavior. Viewing evaluations as logical and predictable applications of a social standard of judgment helps clarify the nature of one individual's cognitive responses to the synthetic or the nonsynthetic behavior of another. These and other possibilities might be fruitfully explored using the present model as a theoretical point of embarkation.

References

- Argyle, M., Furnham, A., and Graham, J.A. *Social situations*. Cambridge, England: Cambridge University Press, 1981.
- Baenninger, R. Some consequences of aggressive behavior: A selective review. *Aggressive Behavior*, 1974, 1, 17-37.

- Bok, S. *Lying: Moral choice in public and private life*. New York: Pantheon, 1978.
- Durrenberger, P., and Morrison, J.W. A theory of analogy. *Journal of Anthropological Research*, 1977, 33, 372-387.
- Edwards, A.L. *Techniques of attitude scale construction*. New York: Appleton-Century-Crofts, 1957.
- Forgas, J.P. The perception of social episodes: Categorical and dimensional representations in two different social milieus. *Journal of Personality and Social Psychology*, 1976, 34, 199-209.
- Friendly, M.L., and Glucksberg, S. On the description of subcultural lexicons: A multidimensional approach. *Journal of Personality and Social Psychology*, 1970, 14, 55-65.
- Fromm, E. *The anatomy of human destructiveness*. New York: Holt, Rinehart and Winston, 1973.
- Gergen, K.J. *Toward transformation in social knowledge*. New York: Springer-Verlag, 1982.
- Georgoudi, M. Modern dialectics in social psychology: A reappraisal. *European Journal of Social Psychology*, 1983, 13, 77-93.
- Goffman, E. *The presentation of self in everyday life*. Garden City, New York: Doubleday Anchor, 1959.
- Heider, F. *The psychology of interpersonal relations*. New York: Wiley, 1958.
- Jones, E.E. *Ingratiation*. New York: Appleton-Century-Crofts, 1964.
- Jones, E.E., and Davis, K.E. From acts to dispositions. In L. Berkowitz (Ed.), *Advances in experimental social psychology*, Vol. 2. New York: Academic Press, 1965.
- Kruskal, J.B., and Wish, M. *Multidimensional scaling*. Beverly Hills, California: Sage Press, 1978.
- Maselli, M., and Altrocchi, J. Attribution of intent. *Psychological Bulletin*, 1969, 71, 445-454.
- Pepitone, A., and Sherberg, J. Intentionality, responsibility, and interpersonal attraction. *Journal of Personality*, 1957, 25, 757-766.
- Piaget, J. *The moral judgment of the child*. New York: Free Press, 1965.
- Rosenberg, S., Nelson, C., and Vivekananthan, P.S. A multidimensional approach to the structure of personality impressions. *Journal of Personality and Social Psychology*, 1968, 9, 283-294.
- Rosenthal, R. Estimating effective reliabilities in studies that employ judges' ratings. *Journal of Clinical Psychology*, 1973, 29, 342-345.
- Rosenthal, R., and Rosnow, R.L. *The volunteer subject*. New York: Wiley-Interscience, 1975.
- Rosenthal, R., and Rosnow, R.L. *Essentials of behavioral research: Methods and data analysis*. New York: McGraw-Hill, 1984.
- Rosnow, R.L. *Paradigms in transition: The methodology of social inquiry*. New York: Oxford University Press, 1981.
- Rosnow, R.L., and Fine, G.A. *Rumor and gossip: The social psychology of hearsay*. New York: Elsevier, 1976.
- Rule, B.G., and Duker, P. Effects of intentions and consequences on children's evaluations of aggressors. *Journal of Personality and Social Psychology*, 1973, 27, 184-189.
- Rule, B.G., Nesdale, A.R., and McAra, M.J. Children's reactions to information about the intentions underlying an aggressive act. *Child Development*, 1974, 45, 794-798.
- Sarbin, T.R. On self-deception. *Annals of the New York Academy of Sciences*, 1981, 364, 220-235.
- Shaw, M.E., and Sulzer, J.L. An empirical test of Heider's levels in attribution of responsibility. *Journal of Abnormal and Social Psychology*, 1964, 69, 39-46.
- Sklar, J. Let us not be hypocritical. *Daedalus*, 1979, 108(3), 1-25.
- Shrauger, S., and Altrocchi, J. The personality of the perceiver as a factor in person perception. *Psychological Bulletin*, 1964, 62, 289-308.
- Stroebe, W., Eagly, A.H., and Stroebe, M.S. Self-esteem and the perceived cause of friendly and unfriendly acts. *Personality and Social Psychology Bulletin*, 1975, 1, 387-389.
- Thornhill, R. Adaptive female-mimicking behavior in a scorpion fly. *Science*, 1979, 205, 412-414.
- Tiefer, L. The kiss. *Human Nature*, 1978, 1(7), 28-37.
- Wish, M. Comparisons among multidimensional structures of interpersonal relations. *Multivariate Behavioral Research*, 1976, 11, 297-324.
- Wish, M., Deutsch, M., and Kaplan, S. Perceived dimensions of interpersonal relations. *Journal of Personality and Social Psychology*, 1976, 33, 409-420.