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Goals as Determinants of Nonlinear Noncompensatory Judgment Strategies: Leniency vs Strictness

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A distinction is made between information processing variables and goals as determinants of nonlinear noncompensatory judgment strategies. The latter determinants are studied by manipulating judges' goals to be lenient or strict in their judgment and examining the effects of these manipulations on the tendency to use disjunctive, conjunctive, or linear strategies. Implications for decision-making research are discussed. © 1993 Academic Press, Inc.

A central issue in the study of how people integrate information in arriving at an overall judgment has been whether judgment follows a linear compensatory strategy (Einhorn, 1970; Anderson, 1981; Brehmer, 1988). To demonstrate, consider the "policy capturing," experimental paradigm. In a typical study, subjects are presented with profiles consisting of a number of informational cues, each cue representing a value on a certain attribute relevant to the judgment. Subjects are then required to make judgments of each of the profiles on the basis of these cues. Their judgments are modeled by linear and by nonlinear models. A better fit of a nonlinear model is assumed to reflect a nonlinear noncompensatory (NLNC) judgment strategy.

Two types of NLNC models, conjunctive models and disjunctive models, are of special relevance to this paper. These types of models are likely to produce a better fit than a linear model if judges use a disjunctive or a conjunctive strategy. In a disjunctive strategy, evaluations are based primarily on one or few high attributes. In a conjunctive strategy, evaluations are based primarily on one or few low attributes.[1] The results of performance evaluation, for example, may vary substantially as a function of the particular strategy used by the judge. For instance, evaluees

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[1] Disjunctive strategy is a "maximum evaluation" strategy since in the extreme case it implies that an object is evaluated on its best attribute, regardless of its other attributes (Einhorn, 1970, p. 223). Similarly, a conjunctive strategy is a "minimum evaluation" strategy since in the extreme case it implies than an object is evaluated on its worst attribute.

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with large differences between the attributes will gain if a disjunctive strategy is used and lose if a conjunctive strategy is used.

Although many policy-capturing studies have shown the compensatory linear model to be quite successful in modeling judgments (e.g., Slovic & Lichtenstein, 1971; Goldberg, 1971; Dawes & Corrigan, 1974; Dawes, 1979), there are some studies in which a conjunctive model produced a better fit. Einhorn (1971) found that a conjunctive model produces a better fit for judgments relating to the desirability of a job (but not the desirability of a graduate school applicant); Brannick & Brannick (1989) found that judgments relating to the performance of faculty members and nurses are conjunctive. In contrast, studies that compared the disjunctive model with the linear model have consistently shown the fit of the former to be inferior to the fit of the latter (Einhorn, 1970, 1971; Einhorn, Komorita, and Rosen, 1972; Goldberg, 1971; Oglive & Schmitt, 1979). Einhorn's (1972) finding is particularly intriguing in that a conjunctive model was found to give a better fit than both linear and disjunctive models for pathologists' estimation of the survival of Hodgkin's disease patients, although the criteria (actual survival) was best predicted by a disjunctive model.

THE DETERMINANTS OF NONLINEAR NONCOMPENSATORY STRATEGIES

The variables that induce the use of nonlinear noncompensatory (NLNC) strategies in general, and the use of conjunctive and disjunctive strategies in particular, can be classified into two main categories. First, there are information-processing variables. When judgment becomes complex (e.g., the number of cues increases), or when less deliberation is devoted to the judgment, NLNC strategies become more dominant since they serve to simplify the judgment process (e.g., Simon, 1955; Oglive & Schmitt, 1979; Billings & Scherer, 1988). Second, there are variables that influence the goals and intentions of the judge when making the judgment. One dimension on which judges' goals may vary is leniency/strictness. When the goal of the judge is to award high evaluation, he will tend to seek out reasons (Tversky, 1988; Simonson, 1989) to be lenient and, therefore, rely more on positive cues (a disjunctive strategy). When his goal is to be strict, he will rely more on negative cues (a conjunctive strategy). For instance, consider a job applicant with a high score on one cue (e.g., intellectual ability) and a low score on another (e.g., experience). Judges may reason that it is the low score that counts (e.g., intellectual ability won't help without experience) or that it is the high score that counts (if he is smart, he will learn). Since there are arguments for either strategy, the strategy chosen will depend on the judge's goals.

The contingency between the choice of NLNC strategy and variables that influence judges' goals may be compared to other types of contingent decision behavior (Payne, 1982). In particular it can be compared to the contingency between the choice of the thoroughness of the strategy and the variables that influence the motivation to be accurate in the judgment. Various studies have shown that variables such as importance, accountability, and irreversibility lead to more mindful, organized, formal, or thorough decision making (Beach & Mitchell, 1978; Billings & Scherer, 1988; Chaiken, 1980; Gabrenya & Arkin, 1979; Ginosar & Trope, 1987; Hagafors & Brehmer, 1983). Beach and Mitchell's (1978) detailed model accounting for such findings received substantial experimental support (McAllister, Mitchell, & Beach, 1979; Smith, Mitchell, and Beach, 1982; Waller & Mitchell, 1984; Christensen-Szylanski, 1980). According to this model, the decision maker has access to a set of strategies, each differing in degree of formality. A particular strategy is selected on the basis of the costs and benefits associated with the implementation of each strategy in the set. Goals play a major role in the model since they determine the benefits associated with the accuracy of the decision and therefore the selection of a particular strategy.

So far there has been some success in demonstrating the influence of information-processing variables on NLNC judgments (Oglive & Schmitt, 1979; Weldon & Mustari, 1988). Relevant evidence appears also in the process-tracing literature (for a summary see Ford, Schmitt, Schectman, Hults, and Doherty, 1989). However, there has been no systematic attempt to investigate the influence of goals on NLNC judgments. A notable exception is Einhorn (1971) who demonstrated that the judgment strategies used by students in evaluating prospective jobs are different from those used by faculty members in evaluating graduate school applicants. This finding could be interpreted as an indication that variables other than information-processing variables (i.e., content of the task) influence judgment strategies. However, this study does not attempt to identify these variables.

The aim of the four studies reported here is to demonstrate the relationship between judges' goals and deviation from linear judgment strategies, and specifically, to show that when leniency prevails, a disjunctive strategy is used, while when strictness prevails, a conjunctive strategy is used. In each of the studies, two groups of subjects are required to make judgments on the basis of identical information. The groups differ, however, in how the judgment tasks are represented. These manipulations are constructed in order to induce more leniency or strictness in one group and less in the other. The influence of these manipulations on judgment strategies is then examined.

A COMMON MODEL FOR DISJUNCTIVE AND CONJUNCTIVE STRATEGIES

A linear model employs the *elevation* of each profile—a weighted average of the attribute values—to represent judgment. In addition to the elevation of each profile, the common model presented below incorporates also the *scatter* of the profile—the standard deviation of the attribute values around the profile mean (see Cronbach & Gleser, 1953, for treatment of the concepts of elevation and scatter, and Brannick and Brannick, 1989, for the use of this model in investigating NLNC judgment strategies). The influence of the profile scatter on judgment is indicative of reliance on disjunctive or conjunctive strategy. If a disjunctive strategy is used, the scatter will be related positively to judgment, while a conjunctive strategy will result in a negative relation between scatter and judgment. In the case of two profiles with the same elevation, if a disjunctive strategy is being used, the one with the larger scatter will receive a higher evaluation. If a conjunctive strategy is being used, the one with the larger scatter will receive a lower evaluation.

Mathematically the model is expressed as

$$Y = a + \sum_{i=1}^{k} b_i X_i + b_{k+1}\left[\sum_{i=1}^{k} (Z_i - \bar{Z})^2\right]^{1/2}, \qquad (1)$$

where Y is the judgment, the X_i's are the cues (scaled so that higher values of X_i imply more positive judgment), the Z_i's are the standardized values of the cues (across profiles), and $\bar{Z}$ is the mean Z_i within profile. The last term of the equation is the internal standard deviation of the profile and therefore a measure for the profile's scatter. The value of b_{k+1} indicates whether a conjunctive or disjunctive strategy is used. A positive value of b_{k+1} is indicative of a disjunctive strategy, while a negative value is indicative of a conjunctive strategy.

This model has two advantages. First, it treats judgment strategies as located on a continuum ranging from conjunctive through linear to disjunctive. This facilitates aggregation of individual strategies for the purpose of examining hypotheses about the population, by calculating the mean b_{k+1} (computed for each subject individually) over subjects. Second, there are some indications that this model produces a better fit than Einhorn's models when strategies are "purely" disjunctive or conjunctive (Brannick & Brannick, 1989; Ganzach & Benbenisty, in preparation).

STUDIES 1 AND 2: POLICY CAPTURING PARADIGM

Studies 1 and 2 employ judgment tasks that are hypothesized on an a priori base to lead to disjunctive or conjunctive strategies. In Study 1, a

judgment task associated with minimal subjects' involvement is used. In such a task, judgments are influenced by a natural tendency to give lenient evaluations. In Study 2, this tendency is reduced and strictness is induced by using a judgment task associated with more involvement. Furthermore, leniency/strictness is varied not only between studies but also within each study. This is done by varying the objective of the judgment. That is, the relationship between leniency/strictness and judgment strategies is demonstrated between studies (as a function of task's content) and within studies (as a function of task's objective).

Study 1: Positivity Bias

Many studies have identified a "positivity bias," a bias toward positive evaluations, which is presumed to stem from a desire to be surrounded by positive objects (Boucher & Osgood, 1969; Maltin & Stang, 1978). For example, Sears (1983) found that 97% of the professors in UCLA were rated as "above average" by their students. This bias is especially strong when the evaluated object is human, a phenomenon that has been labeled "the person positivity bias," and explained in terms of the tendency to feel empathy toward fellow human beings (Sears, 1983). For example, Sears (1983) reports that 74% of the professors were evaluated more favorably than the courses they taught. Thus, positivity bias exists both for human and nonhuman objects and has been found to be stronger for the former than for the latter.

Positivity bias should result in the use of disjunctive strategy in making multiattribute evaluations. It is quite surprising, therefore, that this has not been borne out by the findings of previous research in policy capturing (e.g., Einhorn, 1971, 1972; Goldberg, 1971). One purpose of this study is to demonstrate that in certain judgment tasks there is a utilization of disjunctive strategy. Another purpose of this study is to examine the prediction (derived from the person positivity bias) that the disjunctive strategy will be more evident when the evaluated object is human than when the evaluated object is nonhuman.

Method

Subjects. Fifty-five undergraduate Business Administration students taking an Introduction to Psychology course participated in the experiment to fulfill a class requirement. They were randomly assigned to experimental conditions.

Procedure. Subjects received a booklet in which they were asked to evaluate 42 objects. For about half of the subjects (the human object condition) the objects were professors, and for the other half (the nonhuman object condition) the objects were courses. Evaluations were made on a 14-point scale, the higher numbers indicating more positive values.

Both the professors and the courses were described in terms of their success on the same three attributes: success in capturing students' interest, in achieving appropriate students participation, and in teaching analytical tools. The scale values of the attributes ranged from 1 to 20, the higher numbers indicating more positive values (this convention will be used throughout the paper both for the attribute scales and for the judgment scales). Scale values were drawn randomly and independently from a uniform distribution over the range of the attributes' scale. The order of the profiles was reversed for half of the subjects in each of the two conditions.

Results

Standardized regression coefficients of Eq. (1) were calculated for each subject. A positive scatter coefficient was obtained for 26 of the 30 subjects who evaluated professors ($p < .0001$ in a sign test). Five of the coefficients were significantly ($p < .05$) positive, while none was significantly negative. A positive scatter coefficient was obtained for 18 of the 25 subjects who evaluated courses ($p < .02$ in a sign test). Three of the coefficients were significantly ($p < .05$) positive, while one was significantly negative. Thus, the values of the scatter coefficients indicate that subjects used a disjunctive strategy in both conditions, and that this tendency was greater when evaluating professors than when evaluating courses.

The mean coefficient of the scatter across subjects was significantly positive both when the evaluated object was a professor [$M = +.098$, $t(29) = 6.25$, $p < .0001$] and when it was a course [$M = +.052$, $t(24) = 2.45$, $p < .02$]. Comparison between the means indicated that the difference in the use of disjunctive strategy between the conditions was only marginally significant ($t(53) = 1.8$, $p < .08$). However, this effect is replicated in Study 4, where it was found to be significant.

Study 2: Involvement

Why, in contrast to previous findings demonstrating the superiority of the conjunctive model, did a disjunctive model produce a better fit than a conjunctive model in Study 1? In my view the reason is that the tasks used in previous research [e.g., evaluating prospective jobs (Einhorn, 1971)] were associated with more involvement and therefore more strictness. The evaluation of a professor or a course in university setting, after participation in the course, is not associated with important consequences for the student judges. On the other hand, the consequences of evaluating a prospective job are of major importance. Therefore, the relationship between involvement and leniency/strictness may explain the apparent contradiction between the results of Study 1 and the results obtained in

Einhorn's (1971) job evaluation task. Indeed, the other judgment analyzed by Einhorn (1971)—the evaluation of prospective graduate students—a task not associated with high involvement,[2] did not show utilization of conjunctive strategy. Thus, the hypothesis examined in this study is that tasks associated with higher involvement will lead to higher reliance on conjunctive strategy.

Method

Subjects. Forty-nine undergraduate Business Administration students taking an Introduction to Psychology course participated in the experiment to fulfill a class requirement. They were randomly assigned to the experimental conditions.

Procedure. Subjects received a booklet in which they were asked to evaluate 42 fellow students. About half of the subjects (in the high-involvement condition) were instructed to imagine that they are looking for a partner to cooperate in home assignments, the grades of which weigh heavily in an important course. The other half of the subjects (in the low-involvement condition) were instructed to imagine that they are teaching assistants and are told by the professor to evaluate the students as partners for preparing home assignments.

Evaluations were made on a 14-point scale. The students were described on three attributes: the intellectual ability of the student, his/her willingness to share in the work, and his/her likability. Scale values were drawn randomly and independently from a uniform distribution over the range of the attributes' scale. The order of the profiles was reversed for half of the subjects in each of the two conditions.

Results

Standardized regression coefficients of Eq. (1) were calculated for each subject. A negative scatter coefficient was obtained for 17 of the 24 subjects in the high-involvement condition ($p < .03$ in a sign test). Six of the coefficients were significantly ($p < .05$) negative, while none of the coefficients was significantly positive. A negative scatter coefficient was obtained for 10 of the 25 subjects in the low-involvement condition ($p > .8$ in a sign test). Two of the coefficients were significantly ($p < .05$) positive, and one was significantly negative. Thus, the values of the scatter coefficients indicate that subjects used a conjunctive strategy in the high-involvement condition, while deviations from linear strategy were minimal in the low-involvement condition.

[2] Furthermore, the evaluated object in this task is human, which is likely to further decrease the tendency for conjunctive strategy as a result of the person positivity bias.

The mean coefficient of the scatter was significantly negative in the high-involvement condition [$M = -.080$, $t(23) = 2.95$, $p < .007$) and close to zero in the low-involvement condition [$M = .012$, $t(24) = .6$, $p > .5$]. The difference between the two means was also significant [$t(47) = 2.75$, $p < .01$]. Thus, involvement appears to make judgments more conjunctive.

Analysis of Mean Evaluations

The purposes of this analysis is to examine whether the four conditions in Studies 1 and 2 did indeed differ in leniency/strictness by analyzing mean evaluations. Under certain conditions (i.e., subjects are not constrained in the use of the scale) the mean evaluation is an indication of leniency/strictness. The higher the mean evaluation, the more lenient the subject. Table 1 presents the average mean evaluations for each condition (computed by first calculating for each subject the mean over the 42 judgments he made and then averaging across subjects in the condition) and their standard deviations. It is clear from these data that the mean evaluations follow the same pattern as the scatter coefficients. The more positive the scatter coefficient, the higher the average mean evaluation. This pattern is consistent with both measures being related to leniency. A test for a linear trend on the mean evaluations in which the weights were determined by the mean scatter coefficients of each of the four conditions revealed a significant judgment task effect [$F(1,100) = 17.2$, $p < .001$)].

If the relationship between mean evaluations and scatter coefficient exists between conditions, it may also exist within condition. The data provide partial support for such a relationship. The correlations between the scatter coefficient and mean evaluations are $+.49$, $-.09$, $+.15$, and $+.41$ for human, nonhuman, and high-involvement and low-involvement

TABLE 1
AVERAGE SCATTER COEFFICIENTS AND MEAN EVALUATIONS BY CONDITION

	Human object	Nonhuman object	Low involvement	High involvement
n	30	25	25	24
Scatter coefficient	.098	.052	.012	−.80
	(.086)[a]	(.107)	(.099)	(.133)
Mean evaluation	.78	.55	0.18	−.30
	(1.06)	(1.11)	(1.41)	(1.32)

[a] Numbers in parentheses are standard deviations.

conditions, respectively (the first correlation is significant on the .005 level and the fourth on the .05 level).[3]

Discussion of Studies 1 and 2

Studies 1 and 2 indicate that task characteristics that alter leniency/strictness influence judgment strategies. Study 1 suggests that the higher the tendency to be lenient (the higher the positivity bias), the stronger the reliance on disjunctive strategy. Study 2 indicates that the higher the tendency to be strict (the higher the involvement), the stronger the reliance on conjunctive strategy.

In addition to the differences between the two conditions in each of the two studies, there is an overall difference between the two studies. Judgments in Study 1 were more disjunctive than judgments in Study 2. While, in general, this difference was expected, note that the human object condition in Study 1 and the low-involvement condition in Study 2 are similar in that, in both, a human object was evaluated under low involvement. Nevertheless, a disjunctive strategy was employed in the former and not in the latter. One explanation for this is that students tend to evaluate fellow students in the low-involvement task of Study 2 by simulating (Kahneman & Tversky, 1982) how they would evaluate them in a more familiar situation, which in this study is the high-involvement situation. A similar argument could also explain why the difference in the evaluation of the courses and the evaluation of the professors in Study 1 is only marginally significant: In evaluating a course students tend to think about the most salient feature of the course—the professor—which results in their judgments being more disjunctive.

STUDIES 3 AND 4: ANOVA PARADIGM

The aim of Studies 3 and 4 is to replicate Studies 1 and 2 using a different experimental paradigm from the policy-capturing paradigm used in the first two studies. The leniency/strictness manipulation is applied in these two studies to judgment tasks derived from the domain of organization behavior.

To introduce the experimental paradigm used in the next two studies, consider two objects, one with values of 1 and 9 on two equally important attributes and the other with values of 4 and 6. Assuming that the scales are interval scales, higher (lower) overall evaluation of the former in

[3] None of the other coefficients of Eq. 1 (the main effect coefficients) was significantly correlated with the mean rating.

comparison to the latter would be indicative of disjunctive (conjunctive) strategy.[4]

The interval scale assumption is somewhat problematic because, if the existence of such scales cannot be demonstrated, it is impossible to know if the results obtained are due to the judgment strategy or to the psychometric properties of the scales. However, when the purpose of the study is to examine the *conditions* that lead to NLNC strategies, this does not constitute a problem since the hypothesis is tested by the interaction rather than the main effect. That is, the hypothesis is whether in one condition, in which it is assumed that people use a NLNC strategy, the difference in the evaluation of the two objects will be larger than in a second condition in which it is assumed that such a strategy is used to a lesser extent.[5]

Study 3: Responsibility

The effects of responsibility on judgment strategies may be similar to the effects of involvement. When a judge bears a responsibility for the consequences of his/her judgment, the tendency toward positive evaluations may be suppressed and the judge may use a strategy in which not only negative indicators are not ignored, but they are even emphasized. For example, in interviewing job applicants, negative information tends to take precedence over positive information (Webster, 1964; Macan & Dipboye, 1988). Thus, the hypothesis examined in this study is that responsibility for the consequences of the judgment increases the use of conjunctive strategy.

Method

Subjects. One hundred and sixty-two undergraduate Business Administration students participated in the experiment during a class session. They were randomly assigned to experimental conditions.

Procedure. Subjects received a description of two candidates for a managerial position. The description was presented on five attributes: maturity, motivation, academic achievement, appearance, and interpersonal communication. The scale values of each attribute ranged from 1 (very low) to 9 (very high). The description of one of the candidates was inconsistent (scale values of 2, 8, 1, 4, and 9 for each of the attributes,

[4] Interval scale implies that for a compensatory rule, overall utility is a linear function of the scale values. For equally important attributes, this implies equal overall evaluations of the two objects.

[5] Note that this analysis implies a disjunctive–conjunctive continuum on which one cannot assert whether a judgment is actually disjunctive or conjunctive, but only whether it is more or less disjunctive (conjunctive) relative to another judgment.

TABLE 2
MEAN EVALUATION AS A FUNCTION OF RESPONSIBILITY AND CONSISTENCY

Consistency	Responsibility	
	High	Low
High	8.04[a]	7.65
	(.28)	(.26)
Low	6.57	8.05
	(.37)	(.35)

[a] Numbers in parentheses are standard errors.

respectively). The description of the other candidate was consistent (scale values of 5, 4, 6, 3, and 5, respectively). The order of the descriptions was reversed for half of the subjects.[6]

In one condition (the high-responsibility condition), subjects were instructed to evaluate the candidates as if they were personnel managers in charge of hiring personnel for managerial positions. In the other condition, (the low-responsibility condition), subjects were simply asked to evaluate the two candidates. Evaluations were made on a 15-point scale. (Unlike the other studies in this paper, higher numbers indicated lower evaluations.) The design is therefore a 2 (responsibility: high vs low) × 2 (consistency of the description: high vs low) mixed design with repeated measures on the second factor.

Results

To maintain the convention used in the paper, responses were transformed by subtracting them from 16, to create a response scale for which higher numbers indicate more positive evaluations. The means and the standard errors of these evaluations are presented in Table 2. The results of the ANOVA indicate a strong interaction between consistency and responsibility [$F(1,160) = 8.4$, $p < .004$]. (The main effects for responsibility and consistency were marginally significant, $p < .08$ and $p < .09$, respectively.) Analysis of simple effects revealed that while in the high-responsibility condition the evaluations of the low-consistency profile are significantly lower than those of the high-consistency profile ($p < .003$), there is no significant difference between these evaluations in the low-

[6] The mean scale values of the attributes are somewhat different. This was done so that subjects in this within-subject design will not encounter two profiles with similar mean. Note that similar mean would be beneficial for the design only if the scales are interval (only under this condition the expected judgment of the two profiles are similar if a compensatory strategy is used). Note also that since the hypothesis examined in this study is an interaction hypothesis, and since it is very unlikely that the mean level of cues interact with the manipulation, this small difference should not be a problem.

responsibility condition ($p < .35$). Thus, the results support the hypothesis that responsibility increases the use of conjunctive strategy.

Study 4: First Impression

In the analysis of the positivity bias above, it was argued that in low-involvement situations, people tend to perceive objects favorably, and, therefore, tend to employ a disjunctive strategy. However, this tendency may depend on prior knowledge about the objects. For example, if subjects had been told that the descriptions in Study 1 pertained to professors in a dictatorship in which, to become a professor one had to collaborate with the regime, subjects might have chosen a strategy in which the evaluations would have been as low as possible, rather than as high as possible, i.e., a conjunctive strategy.

One purpose of this study is to examine the influence of prior knowledge on judgment strategies. Prior knowledge is manipulated by varying subjects' first impression which, in turn, is hypothesized to affect leniency/strictness. A positive first impression is hypothesized to induce leniency and therefore the use of disjunctive strategy. Conversely, a negative first impression is expected to induce strictness and thus a conjunctive strategy. A second purpose of this experiment is to replicate the results of Study 1 concerning the relationship between type of object and judgment strategy. Therefore, a second factor in the experiment is type of object (human vs nonhuman object).

Method

Subjects. One hundred and fifteen undergraduate Business Administration students participated in the experiment during a class session. They were randomly assigned to experimental conditions.

Procedure. Subjects answered a short questionnaire in which they were asked to evaluate two objects on a 10-point scale. For about half of the subjects, the objects were human—applicants to an MBA program—and subjects were told to assume that they are on the acceptance committee. For the other half of the subjects, the objects were nonhuman—neighborhoods—and the subjects were told to assume that they are looking for a place to live for the school year. Subjects were asked to assume a positive first impression about one of the objects and a negative first impression about the other (on the basis of a short talk with the applicant or a brief visit to the neighborhood). In addition to this first impression, they were supplied with two pairs of recommendations about each of the two objects (recommendations by two professors who had taught the student as an undergraduate or two friends acquainted with the neighborhood). The recommendations were presented on a 10-point scale. One of the pairs was consistent (3 and 5 on the scale) and the other was incon-

sistent (1 and 8).[7] For half of the subjects, the consistent pair was coupled with the "positive first impression" object and the inconsistent pair was coupled with the "negative first impression" object. For the other half, the coupling order was reversed. The design consisted, therefore, of one between subjects factor (object: neighborhood vs applicant) and two within-subjects factors (first impression: positive vs negative; consistency of the recommendations: high vs low). Note that the first impression factor and the consistency factor did not create a full 2 × 2 within-subjects design, since each subject evaluated only two objects. Thus, one group of subjects (group 1) evaluated the positive first impression–low consistency and the negative first impression–high consistency objects, while the other group (group 2) evaluated the negative first impression–low consistency and the positive first impression–high consistency objects.

Results

The two main hypotheses of the experiment are interaction hypotheses: (1) evaluations are more disjunctive when first impression is positive than when first impression is negative (2) evaluations are more disjunctive when the evaluated object is human than when it is not human.

Cell means are plotted in the figure. Means and standard errors appear in the figure caption. An ANOVA [see Kirk, 1982, p. 577–583, for an analysis of this design (Randomized Block Completely Confounded Design)] revealed a significant (consistency) × (first impression) interaction [$F(1,167) = 13.8$, $p < .0003$] and a significant (consistency) × (type of object) interaction [$F(1,167) = 8.7$, $p < .005$]. The tests for these interactions are the tests relevant to the first and second hypotheses, respectively.

In addition, the ANOVA revealed a significant main effect for type of object [$F(1,167) = 7.0$, $p < .01$]; a significant main effect for type of object [$F(1,167) = 322.8$, $p < .0001$]; a significant main effect for consistency [$F(1,167) = 4.5$, $p < .05$]; and a significant (type of object) × (first impression) interaction [$F(1,167) = 10.6$, $p < .005$].

Note that the main effect for object type implies that mean evaluations are higher in the human object condition than in the nonhuman object condition, which lends support to the contention that subjects are more lenient in evaluating human objects than in evaluating nonhuman objects. Note also that the relationship between mean evaluation and reliance on NLNC strategies, observed in Studies 1 and 2, exists here as well, both for the type of object factor and the first impression factor. For both

[7] As in Study 3, the mean scale values of the attribute are somewhat different in order that subjects in this within-subject design will not encounter two profiles with similar mean.

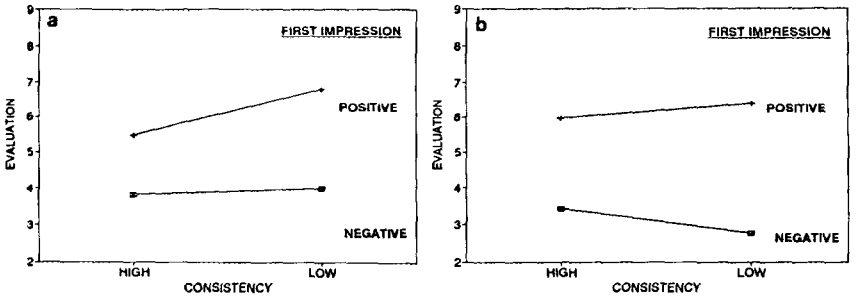

FIG. 1. Evaluations of students (a) and neighborhoods (b) as a function of first impression and consistency of the recommendations. The means (standard errors) for the human object conditions are 6.80 (.27), 5.50 (.16), 4.02 (.19), 3.83 (.16) for the positive first impression–low consistency, positive first impression–high consistency, negative first impression–low consistency, and negative first impression–high consistency, respectively. For the nonhuman object the means (standard errors) are 6.40 (.19), 5.98 (.23), 2.77 (.16) and 3.43 (.22), respectively, as above.

factors the judgments are more disjunctive when mean evaluation is higher.

The interaction between type of object and first impression results from the fact that evaluations of the human object are higher than those of the nonhuman object primarily in the negative first impression condition. This result is consistent with previous findings indicating that leniency occurs primarily in respect to objects that otherwise receive low evaluations (Ganzach & Krantz, 1991).

GENERAL DISCUSSION

The results presented in this paper suggest that various manipulations designed to affect leniency/strictness influence judgment strategies. Tasks that induce leniency lead to disjunctive strategy and tasks that induce strictness lead to conjunctive strategy. Furthermore, it is suggested that leniency–strictness can be seen as a continuum on which judgment tasks can be located, and the coefficient of the scatter term as a measure representing the location of the tasks on this continuum.

The various manipulations employed in the four studies reflect the heterogeneity of conditions that affect people goals in respect to leniency/strictness. In Study 1, judgments of human objects were compared to judgments of nonhuman objects; in Study 2, high-involvement judgments were compared to low-involvement judgments; in Study 3, high-responsibility judgments were compared to low-responsibility judgments; and in Study 4 the human–nonhuman manipulation was crossed with a first impression manipulation. Although a variety of manipulations was employed, they are comparable in that they are all aimed at creating

differences in leniency/strictness between experimental groups. Examination of the mean judgments in the various conditions suggests that differences in leniency/strictness between the experimental conditions were created as expected, since the pattern of the means coincides with the pattern of the hypothesized level of leniency/strictness (as well as the level of the dependent measure for this variable).

The manipulations differ in the extent to which subjects' goal in being lenient/strict is associated with motivational or with cognitive factors (see Nuttin, 1987, for the role of cognitive and motivational factors in goal-oriented behavior). In Studies 2 and 3, the manipulations were primarily cognitive. They involved changing the perception of the goal of the judgment through role playing, which, in turn, led to differences in subjects' tendencies to be lenient or strict. (For other examples of the use of role playing in manipulating goals see McAllister, *et al.*, 1979; Waller & Mitchell, 1984; and Ginosar & Trope, 1987, for the use of role playing in manipulating subjects' goals in judgment.) The experimental manipulations in Studies 1 and 4—based on the person positivity bias—did not involve role playing, but were associated, as suggested by previous research (Sears, 1982), with motivational differences (e.g., empathy) in regard to human and nonhuman objects.

The motivational aspects of the contingency between judgment strategies and goals are even more apparent in preliminary results from a study which is currently in progress. In this study, undergraduate Psychology majors and Business Administration majors were asked to evaluate candidates for an MBA program based on multiattribute profiles of the candidates. The results indicated that the strategy used by the Business Administration majors was far more disjunctive than the strategy used by the Psychology majors [the average scatter coefficient was significantly ($p < .01$) more positive for the Business Administration students]. Most likely, Business Administration undergraduates feel more empathy toward fellow undergraduates seeking acceptance to graduate school, tend to be more lenient, and therefore to more disjunctive judgment strategies.

A distinction central to this paper concerns the difference between the influence of information-processing variables and goals as determinants of judgment. In the studies reported here, the emphasis has been on goals. However, in most judgments, the two types of determinants are likely to operate simultaneously and not necessarily in the same direction. For example, while involvement was shown in Study 2 to increase the utilization of NLNC strategy, it can also lead to reduction in the utilization of NLNC strategies, since it induces more deliberation and, therefore, lessens the tendency to simplify the judgment by resorting to NLNC strategies (Billings & Scherer, 1988). Thus, the effect of involvement on judgment strategies mediated by information processing may operate quite differently from the effect of involvement mediated by goals.

It is sometimes argued (Einhorn, 1971, p. 4) that judges switch from a linear strategy to a conjunctive strategy when the cost of a false positive is high (similarly it could be argued that judges switch from a linear strategy to a disjunctive strategy when the cost of a false negative is high). However, it is important to note that the high cost of a false positive does not constitute a sufficient explanation for a change from linear to conjunctive strategy. For example, consider a situation in which only candidates whose evaluations are above a certain threshold are accepted. Assume that a judge is concerned that his "normal" evaluation method (i.e., linear) might lead to too many acceptees and therefore wishes to make his judgments more strict. This would not require to move from linear to conjunctive strategy. The judge can adhere to his linear strategy and achieve strictness simply by lowering his evaluations by a fixed amount.

Since the high cost of a false positive does not constitute a sufficient explanation for changing from linear to conjunctive strategy when strictness increases, a psychological explanation would seem necessary to account for strictness leading to an increase in reliance on conjunctive strategy. An explanation consistent with the findings of the current studies is that, when there is a discrepancy between cues, people stress cues that correspond with their goals. For instance, in the case of the job applicant in the introduction, while scattered cues allow for latitude in judgment (e.g., it is the low score that really counts), lack of scatter does not allow for such latitude (e.g., when both scores are average, it is very difficult to give an overall evaluation that is not average). This leads to a larger decrease in evaluations for scattered profiles when strictness increases, i.e., to a conjunctive strategy (and to a larger increase or a disjunctive strategy when leniency increases).

A possible direction for future research stemming from this analysis is that judgment strategies may depend on the framing of the judgment task. One example is the framing of the task goal. For example, in evaluating job candidates, a judge may be required to evaluate the candidates according to his tendency to accept them or he may evaluate candidates according to his tendency reject them. If cues corresponding with the judgment goals are stressed, this framing may result in a more conjunctive strategy when the goal of the evaluation is rejection rather than acceptance.[8]

Another example is the framing of the judgment method (e.g., rating vs rank ordering). Consider, for example, a task that induces leniency, such as the task in Study 2, but in which the judge is asked to rank order the profiles rather than rate them individually. In this case, leniency toward

[8] This framework suggests that the distinction between disjunctive and conjunctive strategies may be unnecessary and that judgments are always disjunctive vis a vis the goals of the judge: Judges use one or few extreme attributes to assign an evaluation that corresponds with their goals.

scattered profiles will occur at the expense of strictness toward nonscattered profiles. Thus, it could be expected that the use of disjunctive strategy will be lower when the required response is rank ordering rather than individual rating.

Another direction for future research stems from an alternative explanation for the findings presented in this paper suggesting that judges react to subjective uncertainty in profiles with scattered cues (see Slovic, 1966; Kahneman & Tversky, 1973; for a discussion on the relationship between scatter and subjective uncertainty). Indeed, there is evidence in the literature suggesting that the task-dependent relationship between uncertainty and evaluation is general; that evaluation can—depending on task characteristics—either be raised or lowered by uncertainty other than scatter in the input. Ganzach and Krantz (1991) (and see also Kahneman & Tversky, 1973) found that in predicting academic success, the higher the uncertainty (the lower the validity of the predictor), the higher the level of the prediction (the mean prediction over the entire range of the predictor). On the other hand, in evaluating courses, Yates, Jagacinski, and Faber (1978) found a negative relationship between uncertainty and evaluation: Uncertainty resulting from missing information leads to lower evaluation.

If the relationship between uncertainty and evaluation is general, one would expect that forms of uncertainty other than scatter, missing information, or validity will influence evaluation, and that the manner by which they will influence evaluation will be governed by the same motivational task characteristics discussed in this paper.

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