

Social Stereotypes and Information-Processing Strategies: The Impact of Task Complexity

Galen V. Bodenhausen and Meryl Lichtenstein
University of Illinois at Urbana-Champaign

Subjects read information about a defendant in a criminal trial with initial instructions to judge either his guilt (guilt judgment objective) or his aggressiveness (trait judgment objective). The defendant was either Hispanic or ethnically nondescript. After considering the evidence, subjects made both guilt and aggressiveness judgments (regardless of which type of judgment they were instructed to make at the time they read the information) and then recalled as much of the information they read as they could. Results favored the hypothesis that when subjects face a complex judgmental situation, they use stereotypes (when available and relevant) as a way of simplifying the judgment. Specifically, they use the stereotype as a central theme around which they organize presented evidence that is consistent with it, and they neglect inconsistent information. Subjects with a (complex) guilt judgment objective judged the defendant to be relatively more guilty and aggressive and recalled more negative information about him if he was Hispanic than if he was ethnically nondescript. In contrast, subjects with a (simple) trait judgment objective did not perceive either the guilt or aggressiveness of the two defendants to be appreciably different, and did not display any significant bias in their recall of the evidence. These and other results are discussed in terms of the information-processing strategies subjects are likely to use when they expect to make different types of judgments.

With the advent of a cognitive perspective on stereotyping (Hamilton & Troler, 1986; Jones, 1982), many new theoretical approaches have emerged. One approach has characterized the influence of stereotypes on judgments of individuals in Bayesian terms (e.g., McCauley, Stitt, & Segal, 1980). From this perspective, stereotypes are considered to be subjective base-rate probabilities. For example, Hispanics may be viewed by many Caucasian Americans as much more likely to be aggressive than the population at large or than members of other subgroups (Marin, 1984). These subjective base rates may be quite unrelated to true base rates, and therefore are of dubious diagnostic value from an objective standpoint, although they may be perceived as diagnostic by the decision maker. An interesting issue that arises is the relative contribution of this stereotypic base-rate information in judgment situations in which members of stereotyped groups are judged individually and truly diagnostic, individuating information is also available. Locksley, Hepburn, and Ortiz (1982) studied such a situation (which involved a trait perception task) and found that individuating information was the primary determinant of judgments whenever it was available, and that stereotypic base-rate information affected judg-

ments only in the absence of individuating information. Locksley et al. interpreted this as an instance of a more general tendency among decision makers to underutilize base-rate information (see Tversky & Kahneman, 1982; Zukier & Pepitone, 1984).

A different conclusion has been reached by other researchers. Some have addressed themselves to methodological issues (e.g., Rasinski, Crocker, & Hastie, 1985), whereas others have simply failed to corroborate the conclusions of Locksley and her colleagues when other decision tasks are used (e.g., Bodenhausen & Wyer, 1985; Darley & Gross, 1983; Kameda, 1986; Klein & Creech, 1982; Ugwuegbu, 1979). For example, Ugwuegbu found that even when diagnostic evidence was available to subjects, the defendant in a simulated rape trial was considered more culpable by white jurors if he was black, and was seen as more blameworthy by black jurors if he was white. Moreover, Bodenhausen and Wyer found that stereotypic information could effectively eliminate the influence of some varieties of nonstereotypic information even though this latter information had a clear impact on judgments when no stereotype was activated. This research suggests that stereotypes can function as judgmental heuristics.

An important gap in the existing literature on stereotyping is a documentation of the reasons why stereotypic concepts have been found to exert considerable influence on perceptions and judgments in some circumstances but to have minimal impact in others. One of the few attempts that has been taken toward a reconciliation of the seemingly discrepant findings in the literature has focused on the ambiguity of the available evidence (e.g., Ginosar & Trope, 1980; Kameda, 1985, 1986). According to this point of view, stereotypes will be influential whenever other evidence fails to provide clear and direct implications for the judgment. Judgments in Locksley's studies may be data driven

This research was supported by Grants BNS83-02105 from the National Science Foundation and R01 MH38585 from the National Institute of Mental Health. We are grateful to Bob Wyer and three anonymous reviewers for their helpful suggestions on a previous draft of this article, and to the members of the University of Illinois Social Cognition Group for the valuable feedback they have provided.

Correspondence concerning this article should be addressed to Galen V. Bodenhausen, Department of Psychology, University of Illinois at Urbana-Champaign, 603 East Daniel Street, Champaign, Illinois 61820.

because the data speak for themselves, whereas in other studies the judgments may be theory driven in the absence of such clear-cut evidence. This is consistent with the traditional argument of the cognitive approach to stereotyping that stereotypes are used as a means of simplifying complex judgment tasks (e.g., Tajfel, 1981). Complexity in this case is a function of the ambiguity of the evidence.

Another approach that may provide some insight into the divergence in the stereotyping literature is the model of schema-triggered affect proposed by Fiske and Pavelchak (1986). In this model a distinction was drawn between piecemeal-based (data-driven) processing and category-based (theory-driven) processing in the generation of evaluative responses to stimuli. If we assume that the stimulus in question is a person whose membership in some social category is salient, then this model is clearly relevant to an understanding of stereotyping, as Fiske and Pavelchak noted. Particularly relevant in the present context is their specification of a number of factors that lead individuals to rely upon category-based processing rather than piecemeal-based processing in circumstances in which both are viable options. Included among these factors is complexity. Thus, this model also provides an argument that is quite consistent with the view that stereotypes are used as a type of simplification strategy.

In a similar vein, Bodenhausen and Wyer speculated that the differences between their own findings and those of Locksley and colleagues (Locksley, Borgida, Brekke, & Hepburn, 1980; Locksley et al., 1982) were due to differences in the judgment situations that made the use of heuristic, or shortcut, strategies more likely in the situations they investigated. Specifically, they claimed that the trait judgments investigated by Locksley were less cognitively demanding than the parole decisions they used, so the use of stereotypes was unnecessary. The present experiment was designed to investigate more directly the possibility that stereotypes will exert greater influence in more complex decision tasks than in simple ones. This hypothesis differs from arguments concerning the role of evidence ambiguity in creating complexity in that it posits that stereotypes will not necessarily always be used when the evidence is ambiguous. If the task is a simple enough one, judgments may remain largely unaffected by stereotypic notions.

In this study, we presented subjects with information about the defendant in a criminal trial. In some cases, the defendant's name identified him as a member of an ethnic group (Hispanics) with which the crime (assault) was stereotypically associated. In other cases the defendant's name was ethnically nondescript. The actual evidence presented varied in terms of its implications for both the defendant's general aggressiveness and the likelihood of his guilt. In every case the presented evidence was ambiguous (i.e., the evidence contained both favorable and unfavorable information). Subjects read the information with one of two objectives in mind: either to determine the defendant's guilt or to judge his aggressiveness. We assumed that judging the guilt of the defendant would require the use of more cognitive resources and effort than would merely judging a person's aggressiveness and hence would constitute a more complex task. Judging a person's guilt in a criminal trial potentially involves the consideration of several different factors (e.g., detecting a motive for the crime, establishing an opportunity to commit it, considering the availability and face validity of alibis,

etc.) and assessing the various, perhaps conflicting implications of these various descriptive factors to arrive at an overall evaluation of the defendant. In comparison, making a trait judgment (i.e., determining a person's aggressiveness) is relatively straightforward and involves simply the interpretation of the person's behavior in terms of a single trait concept. (The assumption that subjects would view the guilt judgment task as more complex than the trait judgment task was empirically validated, as we describe subsequently.) The presented evidence was never unequivocal in its implications, and our design allowed us to test whether task complexity would moderate the impact of stereotypes even when the ambiguity of the evidence is held constant.

Previous research has demonstrated that heuristic judgment strategies are more likely to be used by decision makers when the task confronting them is relatively complex (for discussions of this, see Nisbett & Ross, 1980; Wyer & Carlston, 1979). Given the results of Bodenhausen and Wyer (1985), we posited that subjects may use judgment-relevant ethnic stereotypes as a heuristic in making judgments (when these stereotypes are in fact available). Therefore, the central issue of interest in the present study is whether the use of stereotypes is more likely when the judgments people make are complex (i.e., judgments of guilt) than when they are relatively simple (i.e., trait judgments). If the speculations of Bodenhausen and Wyer are correct, this should in fact be the case.

The above prediction is straightforward. However, assuming for the moment that category-level (stereotypic) information will in fact be used in the processing of information in the pursuit of a relatively complex goal, the question still remains as to precisely how this occurs. It seems unlikely that subjects will use category-level information exclusively in judging the defendant, especially because the presented evidence has clear relevance to the subjects' processing objective. We assume instead that in all cases, subjects who receive information with a particular judgmental goal in mind construct a mental representation on the basis of presented information that will facilitate the attainment of the goal (see Bodenhausen & Wyer, in press; Carlston, 1980). Of central interest in the present context is the manner in which the presence of judgment-relevant stereotypes will affect the nature of the representation that is formed of the evidence.

In a recent review, Miller and Turnbull (1986) concluded that available research evidence points to two possible information processing mechanisms whereby stereotypes enter into the social perception of others. The first is an *encoding bias*. According to this hypothesis, the activation of stereotypic concepts leads to selective attention toward stereotype-consistent information, which can be easily organized around a central stereotypic theme. Inconsistent information, on the other hand, is likely to be overlooked or poorly integrated into the mental representation that is being formed. This hypothesis, then, suggests that the content of the mental representation will be biased toward category-consistent information. When this representation is later used to make judgments, they should reflect this bias. The second mechanism described by Miller and Turnbull is an *attributional bias*. That is, rather than directing processing resources away from inconsistent information, the activation of a stereotype results in additional attributional processing of in-

consistent information in an effort to discount it or reinterpret it in a way that reconciles it with initial stereotypic expectancies (see Kulik, 1983). Consequently, the inconsistent information should be well integrated into the mental representation, especially if it is thought about in relation to other presented information in an effort to construct an evaluatively coherent representation (Wyer & Gordon, 1982).

Both the encoding bias hypothesis and the attributional bias hypothesis can account for the way that stereotypes may affect judgments of individuals. In the former case, the inconsistent information receives relatively little processing and is unimportant in the judgment process for this reason. In the latter case, stereotype-inconsistent information is discounted or construed in a manner that renders it more consistent with initial expectations. Consequently, the stereotype-based evaluative theme of the mental representation should be relatively unaffected by this information, even though it may be an integral part of the mental representation. Although these two hypotheses make quite similar predictions for judgments, they can be differentiated on the basis of subjects' recall performance. If the biased encoding hypothesis is correct, diminished recall of expectancy-inconsistent information would be expected. The previous findings of Zadny and Gerard (1974) support this possibility. On the other hand, if an attributional bias is dominating processing, then stereotype-inconsistent evidence should be well recalled as a consequence of the additional processing it has received. This pattern of results would be consistent with those reported by Hastie (1980), Srull, Lichtenstein, and Rothbart (1985), and Wyer, Bodenhausen, and Srull (1984).

Experiment 1

To summarize the issues of concern in the first experiment, our primary hypothesis is that the availability of relevant, negative ethnic stereotypes will affect judgments to a much greater extent when subjects have a relatively complex guilt judgment objective than when they have a trait judgment objective, even though the evidential basis for these judgments is held constant. Given this assumption, stereotypes could affect subjects' judgments in one of two ways. The biased encoding hypothesis predicts that the influence of stereotypes will derive from a cognitive neglect of evidence that is inconsistent with stereotypic expectations. Consequently, this evidence should be poorly recalled. In contrast, the attributional bias hypothesis asserts that violations of stereotypic expectations trigger additional processing in an effort to reconcile the inconsistencies with existing preconceptions. Even if this inconsistent evidence does not influence judgments (because it has been discounted or reinterpreted), it should nevertheless be relatively well recalled.

Both the biased encoding hypothesis and the attributional bias hypothesis assume that when subjects have a complex goal, the overall evaluative theme used in organizing the mental representation will be provided by stereotypic preconceptions of Hispanics. Each hypothesis makes different predictions about how presented evidence is used to bolster this evaluative theme, as was described earlier. Because the evaluative theme of the mental representation of the defendant and the evidence pertaining to him is likely to provide the basis for subsequent judgments of him (Wyer, Srull, & Gordon, 1984), we expected all

judgments made by subjects with the more complex guilt judgment objective to be biased against the Hispanic defendant (including an unanticipated trait judgment). However, subjects with the simpler trait judgment objective were not expected to rely upon category-level, stereotypic information, so the mental representation they form should not be appreciably affected by the defendant's ethnicity. Consequently, none of the judgments made by these subjects (including an unanticipated guilt judgment) should demonstrate a bias against the Hispanic defendant. The thrust of the argument is that the complexity of the subjects' processing objective at the time of information acquisition is the more crucial determinant of the impact of stereotypes rather than the complexity of judgments that are made later, after the representation of the defendant has already been formed.

One last factor must be considered before we describe the study in greater detail. In conceptualizing the possible effects of judgmental complexity on the impact of stereotypes, we have focused on *qualitative* differences in the complexity of a judgment task and the role these differences may play in moderating the influence of stereotypes on judgments. Judgment tasks may also differ in complexity in a *quantitative* way. That is, differences in the amount of relevant information that must be considered and dealt with may also be crucial in determining the role stereotypes play in a decision situation. For this reason, a second experimental manipulation was introduced as another potential means of influencing the perceived complexity of the decision task and thereby possibly influencing the impact of stereotypes. The manipulation involved the amount of evidence subjects anticipated receiving. Subjects who expect a large amount of evidence may be more likely to resort to the use of a stereotype than are those who expect a small, manageable amount. This possibility was investigated.

Method

Overview. Subjects read booklets containing information extracted from a hypothetical criminal trial. Half of the subjects read the information with the objective of judging the defendant in terms of a single personality trait (aggressiveness). The other half had the objective of judging the defendant's guilt or innocence in a case of criminal assault. The ethnicity of the defendant was manipulated by assigning him a name that was either clearly Hispanic (Carlos Ramirez) or a name that was not particularly associated with any minority group (Robert Johnson). The nature of the evidence contained in the booklets was varied so that for approximately half of the subjects, most of the evidence reflected favorably on the defendant, whereas for the others, the bulk of the evidence was unfavorable. A final manipulation involved the expected amount of evidence to be presented. Approximately half of the participants received a thick booklet described as containing over 100 items of evidence, and the rest received a thin booklet that was said to contain about 20 items.

After reading their booklets (all of which actually contained the same number of items), all subjects made several judgments about the defendant, including both the trait judgment and the guilt judgment (regardless of which judgment they had expected to make). Then, after a brief intervening task, they were asked to recall all of the presented material that they could.

A total of 104 introductory psychology students participated, in fulfillment of a course requirement. Between 6 and 8 subjects were randomly assigned to each of the $2 \times 2 \times 2 \times 2$ combinations of processing

objectives (guilt objective vs. trait objective), defendant ethnicity (Hispanic vs. nondescript), expected processing load (large vs. small), and the nature of the evidence presented (predominantly favorable vs. predominantly unfavorable).

Materials. Each participant received a booklet of information about a hypothetical person. The first section of the booklet consisted of background information that in some cases was expected to activate an ethnic stereotype. Half of the booklets contained a statement on the first page that said, "The material in this booklet pertains to the case of Robert Johnson," born in Dayton, Ohio. In the other half of the booklets, the name was changed to "Carlos Ramirez," born in Albuquerque, New Mexico. This latter name was expected to evoke stereotypic notions of aggressiveness (see Bodenhausen & Wyer, 1985; Marin, 1984). Six pieces of background information were provided, pertaining to the defendant's city of birth, age (23 years), marital status (single), occupation (maintenance worker), religious affiliation (Roman Catholic), and city of current residence (Chicago). Except for the city of birth, this information was identical in all booklets.

On the next page of the booklet there were six crime-descriptive items that stated the criminal charges (assault), the location of the incident (an alley near a bar), the consequences for the victim (hospitalization), the fact that the victim was attacked from behind, the fact that the assailant fled before he could be apprehended by police, and the defendant's plea (not guilty). These items were identical in all booklets. After reading these items, it should be clear to subjects that the defendant's guilt was not an open-and-shut matter, because there were no witnesses who could positively identify the defendant as the assailant.

The remainder of the booklet consisted of 12 items of evidence. Two pools of evidence items were constructed: one that contained 8 positive items and one that contained 8 negative items. These items were selected from a larger pool of possible items by a rating procedure involving three judges. For the 16 selected items, there was universal agreement among the judges as to the evaluative implications of the items. Examples of favorable items include "The defendant had no prior criminal record" and "A witness claimed the defendant was calm and collected just before he left the bar." Examples of unfavorable items include "A patron in the bar claimed he heard the defendant arguing with the victim earlier in the evening" and "The bartender claimed the defendant had quarrelled with him that night." Under *favorable evidence* conditions, the booklet contained all of the positive items and 4 of the negative ones. These 12 items were arranged in the booklet such that 2 of the items in each 3-item block were positive and the other was negative. The overall presentation order was varied over subjects such that the mean serial position of each item was approximately the same. Under *unfavorable evidence* conditions, identical procedures were used in constructing the booklet except that the relative numbers of positive and negative items were reversed. Pooled over booklets, each evidence item was used equally often.

The final manipulation in the booklet concerned the expected processing load. Under *high-expected-load* conditions, the booklet contained several blank pages appended to the end of the actual case material, which gave the appearance of a large amount of information. In the *low-expected-load* conditions, no additional pages were added. After the last evidential item in each booklet, a page was inserted that asked the subject to turn over the booklet and await further instructions.

Procedure. The experiment was introduced to subjects as a study of social judgment. Then, subjects in the *trait judgment objective, low-processing-load* condition were told the following:

We are interested in your judgments about the personality traits of individuals. We will present you with some information about a person and ask you to make some judgments about the person's traits. Today we happen to be using information pertaining to the defendant in a court case. In a minute, I will hand out a booklet to you that contains some information extracted from a court trial. There will be about 20 or so items pertaining to the defendant in

the case. All you need to do is read the information carefully and decide how aggressive the defendant in this case is. We will ask you about this after you read the information.

In the *trait judgment objective, high-processing-load* condition, the number 100 was substituted for 20 in the previous paragraph.

In *guilt judgment objective* conditions, the paragraph was changed as follows:

We are interested in your judgments about the guilt or innocence of defendants in criminal trials, and the punishment (if any) that is appropriate for their offenses. In a minute, I will hand out a booklet that contains some information extracted from a court trial. There will be about 20 [100] or so items pertaining to the defendant in the case. All you need to do is read the information carefully and decide how likely it is that the defendant in the case is guilty and how much (if at all) he should be punished. We will ask you about this after you read the information.

Subjects participated in groups of approximately 12 and were randomly assigned booklets conveying different combinations of defendant ethnicity and favorableness of the evidence. Subjects then read the booklets, and after all had finished, the booklets were collected and a six-item questionnaire was passed out. Specifically, subjects were asked (a) How likely is it that the defendant is guilty of the crime? (b) How likely is it that the defendant would commit this type of crime at some time in the future? (c) How aggressive is the defendant in this case? and (d) How likely is it that he will commit an aggressive act in the near future? Responses were made along an 11-point scale ranging from 0 (*not at all*) to 10 (*extremely*) in each case. The order of the questionnaire items was such that half of the subjects (randomly selected) answered the trait questions first, and the other half answered the guilt questions first. Two other questions requested the number of years (if any) that the defendant in the case should be imprisoned (from 0 to 10) and the number of years of imprisonment if he were, in the future, arrested and convicted of a similar crime (from 0 to 15).

After completing this questionnaire, subjects were given 5 min to complete two other questionnaires (ostensibly unrelated to the main study), namely the Need for Cognition Scale (Cacioppo & Petty, 1982) and the Ethics Position Questionnaire (Forsyth, 1980).¹ Subjects were then given a blank sheet of paper and told the following:

Let's go back to the original study now. We find that in order to understand the dynamics of social information processing it is helpful to see what information people can recall about the case they considered. Therefore, on this sheet of paper, please write down all of the information presented in the case you read that you can remember. Write it down in the order it comes to mind, and try to use as close to the original wording as possible. If you can only remember the main idea but not the exact wording, then write that down.

Subjects were given as much time as they needed to complete the recall task. After they had done so, they were thanked, debriefed, and dismissed.

Scoring. Recall of the information was scored according to a gist criterion: A recalled item was scored as correct if it was equivalent in meaning to a presented item, even if its wording was different. Because extremely high interrater reliability has been obtained in other studies with similar criteria (e.g., Srull, 1981; Wyer & Gordon, 1982), scoring

¹ Collection of these data was intended to provide (a) an interpolated task that would eliminate short-term memory effects in the subsequent recall task and (b) possibly enlightening individual difference measures for use in data analysis. In fact, no meaningful individual differences emerged in analyses using these measures, so they will not be discussed further.

Table 1
 Mean Responses to Questionnaire Items as a Function of Defendant Ethnicity and Subjects' Processing Objective

Judgment type and processing objective	Defendant ethnicity				Difference
	Hispanic		Nondescript		
	M	N	M	N	
Current aggressiveness					
Trait judgment objective	5.09	23	4.73	30	.36
Guilt judgment objective	5.12	26	4.48	25	.64
Likelihood of future aggressiveness					
Trait judgment objective	4.22	23	4.77	30	-.55
Guilt judgment objective	4.19	26	3.28	25	.91*
Likelihood of guilt					
Trait judgment objective	4.70	23	4.97	30	-.27
Guilt judgment objective	5.27	26	3.38	25	1.89**
Likelihood of future criminal assault					
Trait judgment objective	4.22	23	3.67	30	.55
Guilt judgment objective	3.96	26	2.92	25	1.04**

* $p < .10$. ** $p < .05$.

was performed by a single judge who was blind to experimental hypotheses. Recall of the background information, crime-descriptive information, and favorable and unfavorable evidence was scored separately, and the proportion of items recalled of each type was computed for each subject.

Results

Two general classes of dependent measures were assessed. We will first examine the judgment data derived from the questionnaire, then consider the memory data derived from the free-recall task.²

Judgments of guilt and aggressiveness. Our major hypothesis is that stereotypes will have greater impact on judgment tasks that are more complex. In the present context, we expected an Hispanic defendant to be viewed in more negative terms than an ethnically nondescript defendant when subjects had the objective of making guilt judgments. This hypothesis implies that category-level, stereotypic concepts should affect the nature of the mental representation formed of the presented material under guilt judgment objective conditions. To the extent that subjects later use the evaluative theme of this mental representation as a basis for their judgments, the influence of this stereotype-biased theme should be reflected in not only their judgments of the defendant's guilt but also in other, unanticipated judgments as well. In contrast, ethnic labels should have little influence on the representation formed by subjects with a trait-judgment objective. If the theme of this unbiased representation is used in making later judgments, these judgments should parallel those made in the absence of any ethnic group affiliation of the defendant, regardless of whether or not they were anticipated. Data relevant to these hypotheses are shown in Table 1. This table shows the primary judgmental dependent variables as a function of the defendant's ethnicity and subjects' processing goal at the time the evidence was first presented. Inspection of the table reveals that in every case, the impact of ethnicity on these judgments was negligible when subjects had the simple trait judgment objective, but it was substantially greater (in each

case, almost twice as great or more) when they had the more complex guilt judgment objective. These data clearly support our expectations concerning the influence of the complexity of processing objectives on the use of stereotypes.

To evaluate the judgment data statistically, we conducted a multivariate analysis of variance (MANOVA) in which the four central judgments related to guilt and aggressiveness were analyzed simultaneously as a function of the subjects' initial processing objectives, defendant ethnicity, anticipated processing load, and favorableness of the evidence. This analysis revealed one significant main effect. The defendant was seen as less aggressive (3.90 vs. 5.79) and less likely to be guilty (3.52 vs. 5.92) when the evidence was predominantly favorable than when it was predominantly unfavorable, and the pattern was quite similar for the other judgments (Wilks's $\Lambda = .646$, $p < .001$). More relevant to our complexity hypothesis is the interaction of the defendant's ethnicity with subjects' processing objective. This effect was statistically significant (Wilks's $\Lambda = .897$, $p < .05$). That is, as Table 1 indicates, subjects saw the Hispanic defendant as more aggressive, more likely to be aggressive in the future, more likely to be guilty, and more likely to commit criminal assault in the future than a nondescript defendant if they received the information with a complex guilt judgment objective in mind, but this tendency was greatly diminished if they received it with a simple trait judgment objective. No other higher order interaction effects were significant in the MANOVA analysis.

To clarify the nature of the results further, supplementary analyses of each dependent variable were conducted separately.

²In addition, we examined the nature of recall-judgment correlations. Although a few interesting relations were obtained, the number of significant correlations overall was low and the pattern was fairly unsystematic. This is not unusual in judgment situations of this sort. For a review of research relevant to this issue and a consideration of the conditions in which recall-judgment correlations may be expected, see Lichtenstein and Srull (1985, in press).

These univariate analyses yielded a significant interaction of defendant ethnicity and processing objective on judgments of the defendant's guilt, $F(1, 88) = 4.02, p < .05$, and a marginally significant interaction of these variables on judgments of his likelihood of committing an aggressive act in the future, $F(1, 88) = 3.85, p < .06$. Although corresponding analyses on perceptions of the defendant's aggressiveness and the likelihood of his committing criminal assault in the future did not reach significance, an additional analysis in which type of judgment was treated as a repeated measure revealed that the interaction of ethnicity and processing objectives was not contingent upon type of judgment being made ($p > .10$). Moreover, this repeated measures analysis also revealed that the effects of ethnicity per se did not interact with judgment type. This fact is important in that it corroborates our assumption that it is the complexity of subjects' processing objectives at the time of information acquisition that is the critical determinant of the impact of stereotypes rather than the complexity of judgments that are encountered later. Finally, as noted in Table 1, the simple effects of defendant ethnicity were not significant for any of the four judgments under trait judgment objective conditions, but were significant (or very nearly significant) in 3 out of 4 cases under guilt judgment objective conditions. The general consistency of the pattern of results for all of these judgments lends a great deal of credence to our hypothesis that the complexity of initial processing objectives plays an important role in moderating the influence of stereotypes on judgments of individuals.

The impact of stereotypes on judgments was also expected to be influenced by the amount of evidence expected during the presentation phase of the study. It was thought that subjects expecting a great deal of information might resort to heuristic, stereotype-based judgment strategies (when possible) in the face of information overload. In fact, no evidence of this was obtained at all. The interaction of anticipated evidence load and defendant ethnicity was not significant in the MANOVA analysis or in separate analyses of each dependant variable ($ps > .10$) for any of the judgments. Moreover, the evidence load variable was not involved in any significant higher order interactions. The implications of this will be elaborated in the General Discussion.

Subjects also recommended a prison term (should the defendant be convicted). The pattern of results for this judgment is clearly the same as that for the judgments reported in the table. Specifically, prison sentences were not appreciably different for the Hispanic versus the nondescript subject when subjects had a trait judgment objective (5.22 vs. 5.57, respectively), but the difference was almost twice as large when subjects had a guilt judgment objective (4.31 vs. 3.64). The simple main effect of ethnicity was significant in the latter case, but not in the former.

Recall data. Recall data were expected to provide evidence regarding the specific manner in which the activation of category-level, stereotypic conceptions affects the way other presented evidence is used by decision makers. Two possible mechanisms were proposed. The first involves a biased encoding of stereotype-consistent information and predicts diminished recall of stereotype-inconsistent information. The second mechanism involves the additional attributional processing of inconsistent information, which should increase subjects' recall of this type of information.

Table 2
Mean Proportional Recall of Positive and Negative Evidence as a Function of Defendant Ethnicity and Processing Objective

Processing objective and evidence recalled	Defendant ethnicity			
	Hispanic		Nondescript	
	<i>M</i>	<i>N</i>	<i>M</i>	<i>N</i>
Trait judgment objective				
Positive	.61	23	.57	30
Negative	.65	23	.65	30
Guilt judgment objective				
Positive	.64	26	.71	24
Negative	.73	26	.59	24

Three types of information were presented to subjects: (a) *background* information having no direct bearing on the judgments subjects expected to make (e.g., the defendant's age and marital status), (b) *crime-descriptive* information presenting the objective facts available about the assault, and (c) *evidential* information having either favorable or unfavorable implications for the defendant's aggressiveness and guilt. The proportion of each type of information recalled was calculated separately, and in the case of evidential information, separate indexes were computed for recall of favorable and unfavorable items. Virtually no intrusion errors were observed in recall of any of these types of information.

The overall mean proportions of background information, crime-descriptive information, and evidential information recalled were .48, .38, and .64, respectively. Although the Hispanic defendant's name was mentioned in the recall protocols significantly more often than the nondescript defendant's name (.49 vs. .26), $F(1, 87) = 6.02, p < .05$, no other effects of the experimental variables were reliable in analyses of recall of either background or crime-descriptive information. Recall of the evidential information is more relevant to an understanding of the information-processing dynamics involved in the judgment-making process. Data reported in Table 2 show the mean proportion of positive evidence recalled and the mean proportion of negative evidence recalled as a function of the defendant's ethnicity and the subjects' processing objective. These data support the biased encoding hypothesis. Specifically, subjects who expected to make a guilt judgment recalled a greater proportion of negative (stereotype-consistent) evidence than positive evidence when considering a case involving an Hispanic defendant. Moreover, the identical evidence was less well recalled when it was attributed to a nondescript defendant (and thus it was not related to any ethnically based expectations). Correspondingly, subjects with a guilt objective showed diminished recall of positive evidence when the defendant was Hispanic (and it was therefore inconsistent with expectations) than when the defendant was nondescript. In contrast, subjects who expected to make a trait judgment recalled about the same proportion of positive and negative evidence regardless of the defendant's ethnicity. In an analysis of variance treating type of evidence being recalled (positive or negative) as a repeated measure, the interaction of defendant ethnicity, processing objectives, and type of evidence recalled was statistically reliable, $F(1,$

Table 3
*Mean Proportion of Positive and Negative Evidence Recalled
 as a Function of Expected Amount of Evidence
 and its Favorableness*

Expected amount of evidence and evidence recalled	Preponderance of evidence			
	Favorable		Unfavorable	
	<i>M</i>	<i>N</i>	<i>M</i>	<i>N</i>
Small				
Positive evidence	.61	26	.70	27
Negative evidence	.71	26	.69	27
Large				
Positive evidence	.65	26	.55	24
Negative evidence	.72	26	.49	24

87) = 5.06, $p < .05$. Thus, these data support the view that stereotype-based biases arise from greater attention to and organization of stereotype-confirming evidence.

One other effect of experimental variables on subjects' recall of evidence deserves brief mention. This effect involves an interaction of the type of evidence presented (predominantly positive vs. predominantly negative) and the expected amount of evidence to be presented, $F(1, 87) = 8.33, p < .01$. Specifically, when the evidence was predominantly favorable, subjects recalled it equally well regardless of whether they expected a large amount ($M = .68$) or a small amount ($M = .66$). When the evidence presented was predominantly unfavorable, however, subjects recalled much less evidence when they expected to receive a large amount ($M = .52$) than when they expected to receive only a small amount ($M = .70$). As is shown in Table 3, these differences were virtually identical regardless of whether the items being recalled were favorable or unfavorable ones.

Discussion

This experiment provides substantial support for the hypothesis that the complexity of the judgment situation plays an important role in whether or not social stereotypes will influence judgments of individuals. The picture emerging from both judgment and recall data suggests that when confronted with a complex task, subjects with an ethnic stereotype available use it as the central organizing principle in their mental representation of the presented material. Material that is consistent with the stereotype is likely to be encoded and organized into this representation, whereas information that contradicts stereotypic preconceptions is overlooked or poorly integrated into the representation.

Before discussing the implications of these results further, it is desirable first to consider some additional evidence bearing upon assumptions made in the foregoing experiment. These assumptions concern the nature of the complexity embodied in the judgment tasks we used, and they were empirically tested in a second experiment.

Experiment 2

We have argued that the observed differences between judgments made by subjects having a guilt judgment objective and

those with a trait judgment objective are due to differences in the complexity of these judgment tasks. This assumption was based primarily on an intuitive analysis of the processes involved in each type of judgment. If complexity per se were the crucial variable, however, it is surprising that the anticipated processing-load manipulation (another type of complexity) failed to affect the pattern of judgments made by subjects. Experiment 2 was conducted with the joint goals of (a) validating our assumptions about the perceived complexity of the experimental tasks and (b) accounting for the lack of influence of the processing load manipulation of complexity.

Method

Participants and procedure. A total of 40 introductory psychology students (who had not participated in the previous study) served as subjects in fulfillment of a course requirement. Participants were randomly assigned to one of four groups, which replicated the instructional conditions of Experiment 1. This partitioning involved a 2×2 factorial design. Half of the subjects were given a trait judgment objective, and half were given a guilt judgment objective. Crossed orthogonally with this, half of the subjects expected a relatively small amount of evidence and half expected a larger amount. The wording of the instructions was identical to that of the previous experiment, and subjects anticipated completing the same tasks as the original subjects. However, before they received their information booklets, subjects were told that the experimenter needed some preliminary feedback about their perceptions of the task. Then, they were given a questionnaire which requested, among other filler items, the main judgment of how difficult they felt the judgment task they had been given would be. Responses were made on an 11-point scale ranging from 0 (*not at all difficult*) to 10 (*extremely difficult*).

After they had completed this judgment and some other filler items, subjects were asked to make a series of ratings concerning the complexity of several types of judgments, including judgments of aggressiveness, of guilt, of emotional state, causal attributions, and behavioral prediction. The order of these judgments was counterbalanced within conditions such that half of the subjects answered the aggressiveness judgment before the guilt judgment, and half did the reverse. These latter judgments were included because of concerns that the more direct rating of complexity described in the previous paragraph might be affected by anchoring effects (see Schwarz & Wyer, 1985). Of central interest, of course, were differences between aggressiveness and guilt judgment tasks.

After completing this feedback questionnaire, subjects were told that time constraints precluded completion of the task, and they were thanked and dismissed.

Results

The results were quite straightforward. As we had assumed, the two types of processing objectives were in fact perceived as involving different degrees of difficulty. Specifically, subjects rated the anticipated experimental task as more difficult when they were expecting to make a guilt judgment ($M = 6.30$) than when they were expecting to make an aggressiveness judgment ($M = 4.55$), $F(1, 36) = 8.19, p < .01$. However, the anticipated processing-load manipulation did not significantly affect perceptions of task difficulty ($M = 5.00$ for small expected load, $M = 5.85$ for large expected load), $F(1, 36) = 1.93, p > .15$. The interaction between expected processing load and processing objective also failed to reach significance ($p > .15$). In addition, the complexity ratings of the different types of judgment tasks

(subsequently made by all subjects) also revealed a clear expectation for guilt judgments in general to be more complex ($M = 8.15$) than aggressiveness judgments ($M = 5.48$), $t(39) = 8.23$, $p < .001$.

General Discussion

The results of these experiments address two fundamental issues of ongoing concern in the study of stereotyping. The first deals with circumscribing the conditions in which social stereotypes may be expected to influence judgments of individuals who are identified as members of a stereotyped group. The second issue concerns the information-processing dynamics involved when stereotypes are in fact used in judging individuals.

Effects of Complexity on the Use of Stereotypes

On the basis of ideas presented by Bodenhausen and Wyer (1985), we expected the complexity of a judgment task to play a major role in determining whether judgments of individuals will be affected by social stereotypes. Experiment 2 clearly demonstrated that subjects perceived trait judgment tasks and guilt judgment tasks as involving differing degrees of complexity, and Experiment 1 revealed that this difference had a clear impact, just as anticipated. Subjects with the relatively simple goal of judging the defendant's aggressiveness exhibited no appreciable bias attributable to the defendant's ethnicity in their judgments of his aggressiveness, his guilt, or predictions of his future behavior. However, subjects with the relatively complex goal of judging the defendant's guilt consistently showed biases in these judgments. This supports our argument (based on similar claims made by Abelson, 1976 and Wyer & Carlston, 1979) that subjects who have a complex processing objective will be more likely to adopt a heuristic strategy to accomplish their goal. In addition, these findings clearly argue against the "base-rate fallacy" approach of Locksley et al. (1980; 1982) inasmuch as stereotypes did affect judgments under some conditions. We must argue, therefore, that social stereotypes are not always as innocuous in the presence of individuating information as the research of Locksley et al. implies. Stereotypes in fact may exert considerable influence if the task is not relatively simple and straightforward.

The data from Experiments 1 and 2 further reveal that perceived complexity of judgment tasks was not appreciably affected by the sheer amount of information subjects anticipated receiving. Rather, qualitative differences between tasks were crucial in determining whether stereotypes enter into the judgment process. Specifically, the fact that a guilt judgment requires causal reasoning involving several descriptive considerations (e.g., motive, opportunity, alibis, etc.) in addition to a general evaluation of the defendant seems to make it much more subjectively complex than an aggressiveness judgment that involves a single descriptive consideration only. Of course, a guilt judgment could potentially be a very easy matter to decide (for instance, if the accused is caught in flagrante delicto), and one would not expect stereotypes to exert much influence under such circumstances. A psychologically more interesting case is one (like the one we investigated) in which the defendant's guilt is not a foregone conclusion.

Although Experiment 2 demonstrated that guilt and aggressiveness judgments do differ in their subjective complexity, it is reasonable to consider the possibility that other differences between the two judgment conditions may be contributing to the pattern of results obtained in Experiment 1. Specifically, it might be argued that the content of stereotypes about Hispanics is more relevant to a guilt (criminality) judgment than to an aggressiveness judgment. This argument is rendered implausible by two considerations. First, if this really were the case, one would expect to find differences in judgments of Hispanic versus nondescript defendants whenever guilt judgments are reported. In fact, such differences did not emerge when the guilt judgment was unanticipated. Second, Marín (1984) has collected extensive evidence regarding the content of stereotypes held by American college students about Chicanos, and aggressiveness emerged as the most consistently mentioned characteristic in a free-generation task. In fact, it was mentioned by 64% of the respondents, a very large percentage for open-ended tasks of this sort. Because there is little reason to believe that the students in Marín's study hold different stereotypes than those in our study, it seems clear that the content of stereotypes about Hispanics is highly relevant to aggressiveness judgments as well as to guilt judgments. Nevertheless, such stereotypes appeared to be used only in complex anticipated judgment conditions.

Regarding the anticipated processing-load manipulation, we cannot be sure that if subjects actually had received a very extensive amount of evidence that they would not resort to stereotypic notions as bases for their judgments, but the expectancy for a large amount of evidence clearly did not evoke this strategy in and of itself. However, the anticipated processing load did affect recall, as is shown in Table 3. The major pattern in the data was that subjects recalled less evidence (both positive and negative) when they had expected a large amount of evidence and the information they actually received was largely unfavorable. Given that people generally regard unfavorable information as more informative (Kanouse & Hanson, 1972), subjects who expect a large amount of evidence and find a relatively high proportion of unfavorable evidence at the outset may shut down the deliberation process early and merely skim over the later information, having received enough negative evidence to justify a negative evaluation of the defendant. Subjects who do not expect a large amount of evidence or who receive mostly positive evidence may be more likely to sift through all of it. Whatever the case may be, this finding was only of secondary interest.

The Nature of Stereotype-Driven Processing

The patterns of results from both judgment and recall data, when viewed together, favor the assumption that when subjects had a complex information-processing objective and a stereotype was available and relevant, they used this stereotype as a way of organizing presented information into a mental representation of the defendant and his behavior. Evidence that supported stereotypic preconceptions was more likely to be encoded and integrated into this representation than evidence contradicting the stereotype, and, hence, it was better recalled. Evidence was recalled better when it was consistent with a stereotype of the defendant (and less well when it was inconsistent with such a stereotype) than when identical material was pre-

sented, but there was no stereotype available for use as an organizing principle. This pattern of results is quite consistent with the findings of Darley and Gross (1983), who argue that stereotypic expectancies result in a confirmatory hypothesis-testing strategy in social perception and judgment (see also Massad, Hubbard, & Newton, 1979; Snyder, 1981; Snyder & Swann, 1978; Zadny & Gerard, 1974). Because the theme of this stereotype-biased mental representation is likely to be used as a basis for all subsequent judgments (Wyer, Srull, & Gordon, 1984), its influence may be evident regardless of whether the judgment actually made was initially expected or not. However, when the initial processing objective was simple, reliance upon category-level, stereotypic information was unnecessary. Therefore, the mental representation formed of presented evidence, and judgments based on it, were data driven and were similar regardless of the defendant's ethnicity. We emphasize that our results clearly localized the impact of complexity on the use of stereotypes at a relatively early stage in processing. The complexity of initial processing objectives at the time of information acquisition was clearly much more influential than the complexity of judgment tasks that subjects later encountered, after they had formed a mental representation of the evidence. We found no evidence that the complexity of these subsequently encountered judgment tasks had any impact over and above the influence of initial judgmental goals.

There is little reason to believe, on the basis of the present evidence, that subjects in our study were engaging in elaborate attributional processing of inconsistent evidence in an effort to render it compatible with expectations. If they did so, it would seem (at least superficially) to violate the assumption that stereotypes are evoked as a simplification device. A strategy involving additional cognitive work does not seem like an effective heuristic strategy. In contrast, relying on stereotypes as a way of "prescreening" evidence and determining how much processing resources it deserves can reasonably be viewed as a cognitive shortcut. Nevertheless, we certainly do not want to argue that attributional processing of inconsistent evidence never occurs. It could well have occurred to a limited extent in our experiment, but if so, it was not sufficient to produce a recall advantage for the inconsistent information.

The results of these experiments point to several important conclusions. First, it is clearly premature to claim that social stereotypes become impotent in the presence of individuating information. Rather, it appears that the nature of the judgment task must be considered in understanding the impact that stereotypes will exert. Although the trait and guilt judgment tasks investigated in the present study undoubtedly differ in a number of respects, one clear and important difference between them, as Experiment 2 verified, is the anticipated difficulty of these tasks. Consequently, the data we have reported shows consistent support for the predictions of Bodenhausen and Wyer (1985) regarding the role of judgmental complexity in the mediation of stereotype effects. Second, we obtained data from several judgments and from recall performance that converge on a single theoretical interpretation, namely that stereotypes can bias the mental representation that is constructed by subjects, thereby biasing subsequent judgments and recall performance. One might argue that our recall data reflect differences in retrieval strategies rather than selective encoding and organiza-

tion of stereotype-consistent evidence at the time of acquisition. Specifically, negative ethnic stereotypes may serve as retrieval cues at the time of recall, which may lead subjects to remember more of the negative evidence. It may in principle be impossible to distinguish these possibilities. As Bodenhausen and Wyer (in press) noted, however, there is a great deal of research documenting the importance of encoding operations and organizational processes, but there is a relative dearth of evidence provided by social cognition research documenting retrieval effects. The argument that stereotypes bias the content of the mental representation of the evidence can successfully account for both judgment and recall data in our study in manner much more compelling than any well-articulated alternative.

Future research should be directed toward a more precise circumscription of the attributes of judgment tasks that do and do not evoke a tendency on the part of the decision maker to rely on stereotypic notions. This research should involve both a closer examination of the role of judgmental complexity and consideration of other important differences between various tasks. In this regard, careful attention should be paid to the factors proposed by Fiske and Pavelchak (1986) as potential mediators of the use of category-based versus piecemeal-based processing. Complexity is just one factor they propose, and others may be important as well.

References

- Abelson, R. P. (1976). Script processing in attitude formation and decision making. In J. S. Carroll & J. W. Payne (Eds.), *Cognition and social behavior* (pp. 33-45). Hillsdale, NJ: Erlbaum.
- Bodenhausen, G. V., & Wyer, R. S. (1985). Effects of stereotypes on decision making and information-processing strategies. *Journal of Personality and Social Psychology*, *48*, 267-282.
- Bodenhausen, G. V., & Wyer, R. S. (in press). Social cognition and social reality: Information acquisition and use in the laboratory and the real world. In H.-J. Hippler, N. Schwarz, & S. Sudman (Eds.), *Social information processing and survey methodology*. New York: Springer-Verlag.
- Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality and Social Psychology*, *42*, 116-131.
- Carlston, D. E. (1980). The recall and use of traits and events in social inference processes. *Journal of Experimental Social Psychology*, *16*, 303-328.
- Darley, J. M., & Gross, P. H. (1983). A hypothesis-confirming bias in labeling effects. *Journal of Personality and Social Psychology*, *44*, 20-33.
- Fiske, S. T., & Pavelchak, M. A. (1986). Category-based versus piecemeal-based affective responses: Developments in schema-triggered affect. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (pp. 167-202). New York: Guilford Press.
- Forsyth, D. R. (1980). A taxonomy of ethical ideologies. *Journal of Personality and Social Psychology*, *39*, 175-184.
- Ginosar, Z., & Trope, Y. (1980). The effects of base rates and individuating information on judgments about another person. *Journal of Experimental Social Psychology*, *16*, 228-242.
- Hamilton, D. L., & Troler, T. K. (1986). Stereotypes and stereotyping: An overview of the cognitive approach. In J. Dovidio & S. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 127-163). New York: Academic Press.
- Hastie, R. (1980). Memory for behavioral information that confirms or contradicts a personality impression. In R. Hastie, T. Ostrom, E.

- Ebbesen, R. Wyer, & D. Carlston (Eds.), *Person memory: The cognitive basis of social perception* (pp. 155-177). Hillsdale, NJ: Erlbaum.
- Jones, R. A. (1982). Perceiving other people: Stereotyping as a process of social cognition. In A. G. Miller (Ed.), *In the eye of the beholder: Contemporary issues in stereotyping* (pp. 41-91). New York: Praeger.
- Kameda, T. (1985). Stereotype-based expectancy and academic evaluation: The joint influence of prior expectancy and the diagnosticity of current information. *Japanese Psychological Research*, 27, 163-172.
- Kameda, T. (1986). Stereotype-based expectancy and social judgment: Rethinking from a Bayesian perspective. *Japanese Journal of Psychology*, 57, 27-33.
- Kanouse, D. E., & Hanson, L. R., Jr. (1972). Negativity in evaluations. In E. E. Jones, D. E. Kanouse, H. H. Kelley, R. E. Nisbett, S. Valins, & B. Weiner (Eds.), *Attribution: Perceiving the causes of behavior* (pp. 47-62). Morristown, NJ: General Learning Press.
- Klein, K., & Creech, B. (1982). Race, rape, and bias: Distortion of prior odds and meaning changes. *Basic and Applied Social Psychology*, 3, 21-34.
- Kulik, J. A. (1983). Confirmatory attribution and the perpetuation of social beliefs. *Journal of Personality and Social Psychology*, 44, 1171-1181.
- Lichtenstein, M., & Srull, T. K. (1985). Conceptual and methodological issues in examining the relationship between consumer memory and judgment. In L. F. Alwitt & A. A. Mitchell (Eds.), *Psychological processes and advertising effects: Theory, research, application* (pp. 113-128). Hillsdale, NJ: Erlbaum.
- Lichtenstein, M., & Srull, T. K. (in press). Processing objectives as a determinant of the relationship between recall and judgment. *Journal of Experimental Social Psychology*.
- Locksley, A., Borgida, E., Brekke, N., & Hepburn, C. (1980). Sex stereotypes and social judgment. *Journal of Personality and Social Psychology*, 39, 821-831.
- Locksley, A., Hepburn, C., & Ortiz, V. (1982). Social stereotypes and judgments of individuals: An instance of the base-rate fallacy. *Journal of Experimental Social Psychology*, 18, 23-42.
- Marin, G. (1984). Stereotyping Hispanics: The differential impact of research method, label, and degree of contact. *International Journal of Intercultural Relations*, 8, 17-27.
- Massad, C. M., Hubbard, M., & Newton, D. (1979). Selective perception of events. *Journal of Experimental Social Psychology*, 15, 513-532.
- McCauley, C., Stitt, C., & Segal, M. (1980). Stereotyping: From prejudice to prediction. *Psychological Bulletin*, 87, 195-208.
- Miller, D. T., & Turnbull, W. (1986). Expectancies and interpersonal processes. *Annual Review of Psychology*, 37, 233-256.
- Nisbett, R., & Ross, L. (1980). *Human inference: Strategies and shortcomings*. Englewood Cliffs, NJ: Prentice-Hall.
- Rasinski, K. A., Crocker, J., & Hastie, R. (1985). Another look at sex stereotypes and social judgments: An analysis of the social perceiver's use of subjective probabilities. *Journal of Personality and Social Psychology*, 49, 317-326.
- Schwarz, N., & Wyer, R. S. (1985). Effects of rank ordering stimuli on magnitude ratings of these and other stimuli. *Journal of Experimental Social Psychology*, 21, 30-46.
- Snyder, M. (1981). Seek and ye shall find: Testing hypotheses about other people. In E. T. Higgins, C. P. Herman, & M. P. Zanna (Eds.), *Social cognition: The Ontario symposium* (Vol. 1, pp. 277-303). Hillsdale, NJ: Erlbaum.
- Snyder, M., & Swann, W. B., Jr. (1978). Hypothesis testing processes in social interaction. *Journal of Personality and Social Psychology*, 36, 1202-1212.
- Srull, T. K. (1981). Person memory: Some tests of associative storage and retrieval models. *Journal of Experimental Psychology: Human Learning and Memory*, 7, 440-463.
- Srull, T. K., Lichtenstein, M., & Rothbart, M. (1985). Associative storage and retrieval processes in person memory. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 11, 316-345.
- Tajfel, H. (1981). *Human groups and social categories: Studies in social psychology*. New York: Cambridge University Press.
- Tversky, A., & Kahneman, D. (1982). Evidential impact of base rates. In D. Kahneman, P. Slovic, & A. Tversky (Eds.), *Judgment under uncertainty: Heuristics and biases* (pp. 153-160). New York: Cambridge University Press.
- Ugwuegbu, D. C. E. (1979). Racial and evidential factors in juror attribution of legal responsibility. *Journal of Experimental Social Psychology*, 15, 133-146.
- Wyer, R. S., Bodenhausen, G. V., & Srull, T. K. (1984). The cognitive representation of persons and groups and its effects on recall and recognition memory. *Journal of Experimental Social Psychology*, 20, 445-469.
- Wyer, R. S., & Carlston, D. E. (1979). *Social cognition, inference, and attribution*. Hillsdale, NJ: Erlbaum.
- Wyer, R. S., & Gordon, S. E. (1982). The recall of information about persons and groups. *Journal of Experimental Social Psychology*, 18, 128-164.
- Wyer, R. S., Srull, T. K., & Gordon, S. E. (1984). The effects of predicting a person's behavior on subsequent trait judgments. *Journal of Experimental Social Psychology*, 20, 29-46.
- Zadny, J., & Gerard, H. B. (1974). Attributed intentions and informational selectivity. *Journal of Experimental Social Psychology*, 10, 34-52.
- Zukier, H., & Pepitone, A. (1984). Social roles and strategies in prediction: Some determinants of the use of base rate information. *Journal of Personality and Social Psychology*, 47, 349-360.

Received November 7, 1985

Revision received August 20, 1986 ■