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# THE EMERGENCE OF EXTRALEGAL BIAS DURING JURY DELIBERATION

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Does deliberation attenuate extralegal biases in jury verdicts, or does it exaggerate them? Consistent with an information-integration theory analysis, Kaplan and Miller in 1978 found that deliberation can eliminate such biases. However, in the present study, the physical attractiveness of a criminal defendant only influenced *postdeliberation* mock juror and jury judgments. When the defendant was attractive, there was a shift in judgments toward acquittal, but when the defendant was unattractive, there was no such shift. As a result, mock juries were more likely to acquit the attractive defendant than the unattractive defendant. Because a shift toward acquittal is the modal pattern during deliberation in close criminal cases, the results suggest that the unattractive defendant did not receive the benefit of the doubt that is usually granted to criminal defendants. The results of this and other studies are discussed in terms of social influence patterns in jury deliberation.

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**I**n recent decades, researchers have used the mock jury experimental paradigm (see MacCoun, 1989) to demonstrate that a variety of characteristics of trial participants (e.g., race, gender, and physical attractiveness) can prejudice jurors' judgments (Dane & Wrightsman, 1982). These prejudicial effects are typically labeled *extralegal biases*; they are extralegal in the sense that they are based on factors which are logically irrelevant to the determination of guilt in the cases in which they are manipulated.<sup>1</sup> Unfortunately, much of the experi-

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mental evidence for such biases comes from studies of individual mock jurors who did not deliberate in groups. This article examines the moderating effects of deliberation on extralegal biases. Three theoretical perspectives on jury bias—a social decision scheme analysis, an information integration analysis, and the liberation hypothesis—are discussed, and empirical results are presented which indicate that deliberation can either exaggerate or attenuate the effects of extralegal variables.

A *social decision scheme* approach to analyzing jury bias (e.g., Davis, Spitzer, Nagao, & Stasser, 1978; Kramer, Kerr, & Carroll, in press; MacCoun & Kerr, 1988) examines the relationship between the initial distribution of juror preferences prior to deliberation and the final group decision. A reliable finding is that mock juries tend to reach the verdict favored by a majority at the onset of deliberation—an implicit “majority rule” decision scheme. One consequence is that an initially weak preference in the group will be exaggerated by discussion, producing *group polarization*—an amplification of prediscussion leanings. This analysis suggests that jury deliberation might actually *amplify* any extralegal biases observed in individual juror preferences.

A more optimistic prediction is suggested by the *information integration model* of jury decision making (Kaplan & Miller, 1978; Ostrom, Werner, & Saks, 1978). In this model, a juror’s evaluation of the likelihood of guilt ( $J$ ) is hypothesized to be a weighted average of the juror’s initial opinion ( $w_0s_0$ ) and the perceived probative value of each item of evidence introduced at trial ( $w_i s_i$ ), where the weights reflect each item’s perceived relevance or credibility. Specifically,

$$J = \frac{w_0 s_0}{\sum w_i + w_0} + \frac{\sum w_i s_i}{\sum w_i + w_0}$$

Kaplan and Miller (1978) argued that extralegal biases are reflected in the initial opinion—the  $w_0s_0$  term.<sup>2</sup> One implication of the model is that anything that increases the impact of the  $\sum w_i s_i$  term of the equation should reduce the impact of the  $w_0s_0$  term. Thus Kaplan and Miller argued that biases should be reduced as evidence favoring a verdict becomes more salient, more plentiful, or more plausible. They suggested that if the body of evidence tends to support a given verdict,

that evidence will come to have a greater impact on juror judgments as it is recalled and discussed in group deliberation. As a result, biases that are found in predeliberation judgments will be attenuated in postdeliberation judgments, and judgments should polarize in the direction favored by the evidence.

This argument was supported in a mock jury experiment (Kaplan & Miller, 1978, Experiment 3) in which the degree of obnoxiousness of various trial participants—what Kaplan and Miller called a *situational* or *state bias*—and the relative strength of the evidence were manipulated. While the obnoxiousness manipulations significantly influenced predeliberation guilt ratings, postdeliberation ratings shifted in the direction of the initial strength of the evidence and were no longer influenced by the extralegal variables. This is an important finding; it suggests that previous studies, which tended to examine mock juror judgments in the absence of group deliberation, might have exaggerated the impact of extralegal bias in actual jury verdicts.

However, other studies indicate that juror biases can be sustained or even enhanced by deliberation (Bray & Noble, 1978; Davis et al., 1978; Hans & Doob, 1976). Bray and Noble (1978) and Davis et al. (1978) found that mock jurors' personal predispositions to vote for conviction or acquittal in the abstract influenced their verdict preferences in specific cases both before and after deliberation. And Hans and Doob (1978) found that inadmissible evidence regarding the defendant's prior criminal record influenced the verdicts of deliberating groups, but not individual mock jurors.

There are at least two aspects of these studies that distinguish them from the Kaplan and Miller (1978) experiment. First, Bray and Noble (1978) and Davis et al. (1978) examined what Kaplan and Miller (1978) called *trait biases*, chronic dispositional characteristics of the jurors, whereas the Kaplan and Miller study examined the biasing effects of situational aspects of the trial. Like Kaplan and Miller, Hans and Doob (1976) also examined a situational variable: testimony regarding the defendant's prior record. But the defendant's prior record, although legally inadmissible, is not *logically* irrelevant in the same way that most extralegal variables are (see Note 1); one could reasonably argue that a truly guilty defendant is more likely to have a prior record than a truly innocent defendant. The present study exam-

ined whether deliberation moderated the effects of two variables that were situational from the jury's point of view and clearly extralegal in the trial context examined here: the physical attractiveness of the victim and the defendant.

A second distinction is that Kaplan and Miller (1978) presented mock jurors with imbalanced trial evidence favoring either the prosecution or the defense, whereas other studies used extremely close cases, with pre-deliberation conviction rates ranging from 40% to 63%. In such circumstances, the information integration model makes no clear prediction. However, the *liberation hypothesis* of Kalven and Zeisel (1966) predicts that it is in such close cases that juror biases are likely to be most influential: "The closeness of the evidence makes it possible for the jury to respond to sentiment by liberating it from the discipline of the evidence" (p. 165). The hypothesis that extralegal biases will be strongest when the evidence is ambiguous has received support in studies of individual mock jurors (e.g., Baumeister & Darley, 1982; Sue, Smith, & Caldwell, 1973; Ugwuegbu, 1979) and in post-trial interviews with actual jurors (Reskin & Visser, 1986). The trial simulation used in the present study was constructed to be very close in order to be more sensitive to extralegal biases.

Social decision scheme research has also identified a pattern of "bias" in close cases, although a bias that is desirable from the perspective of our common law tradition. Specifically, during deliberation in close cases, factions favoring acquittal tend to be significantly more influential than equally large factions favoring conviction, resulting in a general shift toward leniency (see MacCoun & Kerr, 1988, for a review). For example, mock juries that start deliberation with a 50-50 split tend to acquit the defendant well over half of the time. Recent research (MacCoun & Kerr, 1988) has indicated that this pattern of asymmetric influence reflects our society's greater aversion to the risk of convicting the innocent than the risk of acquitting the guilty.

Interestingly, one can interpret the effect of inadmissible evidence in the Hans and Doob (1976) study as a breakdown of this defendant-protection process. Specifically, Hans and Doob found that in the control condition, the group verdicts were more lenient than the individual verdicts, which is consistent with the typical shift toward

leniency described earlier. However, there were no differences between the verdicts of individual and group verdicts in the inadmissible evidence condition. Thus it does not appear that deliberation exaggerated the effects of inadmissible evidence; instead, the inadmissible evidence apparently interfered with the defendant-protection norms that typically emerge during deliberation in close cases. This is one avenue through which deliberation might actually enhance subtle biases.

Unfortunately, since Hans and Doob (1976) compared the verdicts of mock jurors in an individual condition to the verdicts of mock juries in a group condition, it is not possible to examine changes in verdict that might have taken place during the deliberation process. Thus, in the present study, participants provided individual predeliberation verdict preferences, deliberated to a group verdict, and then provided individual postdeliberation verdict preferences. The major objective of the study was to examine how deliberation moderated the extralegal influence of victim and defendant attractiveness.

## METHOD

Subjects were 321 introductory psychology students who received extra course credit for their participation. A 2 (Victim Attractiveness: High vs. Low)  $\times$  2 (Defendant Attractiveness: High vs. Low) between-subjects factorial design was employed.<sup>3</sup>

An audio taped trial simulation was created using a modification of a auto theft trial transcript used in previous mock jury research (Kerr, Bull, MacCoun, & Rathborn, 1985). In pilot testing, the transcript was modified to produce a close case that would avoid both floor and ceiling effects on verdicts. The trial included opening and closing arguments, direct and cross-examination of witnesses, and the judge's instructions to jurors. Colleagues of the author performed the roles of the judge, victim, defendant, attorneys, and witnesses. The trial lasted about 40 minutes.

The victim and defendant attractiveness variables were manipulated through the use of black-and-white facial photographs. Photographs of two attractive females, two unattractive females, two attrac-

tive males, and two unattractive males were selected from a larger pool of photographs based on pilot ratings by 12 male and 14 female undergraduate volunteers.<sup>4</sup>

A maximum of 16 subjects participated in any given experimental session. Experimenters attempted to compose up to four different 4-person mock juries, which were seated in separate rooms. Ultimately, 59 4-person groups, 11 3-person groups, and 17 dyads were composed; 18 other subjects did not participate in the deliberation and postdeliberation phase of the experiment. When all the subjects were seated, they received trial transcripts and were asked to read along with the audio simulation. At the conclusion of the trial, subjects were asked to complete a brief predeliberation questionnaire. They were then asked to deliberate to a unanimous verdict; juries that were unable to reach a unanimous verdict within the 30 to 40 minutes remaining in the experimental session were declared hung juries. After deliberation, subjects were asked to complete a postdeliberation questionnaire. They were then debriefed and dismissed.

## RESULTS

### PREDELIBERATION RATINGS

An analysis of predeliberation ratings of victim and defendant attractiveness indicated that the attractiveness manipulations were successful. The attractive victim received significantly higher ratings than the unattractive victim (5.29 vs. 3.11 on a 7-point scale),  $F(1, 301) = 219.63, p < .001$ . Similarly, the attractive defendant received significantly higher ratings than the unattractive defendant (4.47 vs. 2.40),  $F(1, 301) = 303.74, p < .001$ .

As intended, the case was quite close, with an overall predeliberation conviction rate of 52.6%. Log-linear analyses failed to detect reliable effects for either victim attractiveness or defendant attractiveness,  $G^2s < 1$ . Since these dichotomous verdicts might be insensitive to subtle influences on jurors' judgments, the dichotomous verdicts were combined with subjects' responses to an 11-point confidence-in-verdict scale. This resulted in a 22-point guilt scale, ranging from 1 =

**TABLE 1: Effects of Defendant Attractiveness on Individual and Group Verdicts**

	Predeliberation Individual Verdict		Postdeliberation Group Verdict		
	Guilty	Not Guilty	Guilty	Not Guilty	Hung
Attractive defendant	57 (49%)	59 (51%)	9 (21%)	26 (61%)	8 (19%)
Unattractive defendant	73 (61%)	47 (39%)	17 (39%)	15 (34%)	12 (27%)

complete confidence in a not guilty verdict, to 22 = complete confidence in a guilty verdict. An analysis of variance (ANOVA) on these guilt scale ratings also failed to detect reliable attractiveness effects.

#### POSTDELIBERATION RATINGS

Overall, 30% of the juries voted for conviction, 47% voted for acquittal, and 23% were unable to reach a unanimous verdict in the allotted time.<sup>5</sup> Log-linear analyses revealed no reliable effects of the victim attractiveness manipulation, but there was a reliable defendant attractiveness effect,  $G^2(2) = 7.25, p < .01$ , phi correlation = .27. This effect is shown on the right-hand side of Table 1; the distribution of individual predeliberation verdicts is shown on the left-hand side of the table for comparison. Juries who viewed an attractive defendant were considerably more likely to acquit that person than were juries who viewed an unattractive defendant.

Individuals' pre- and postdeliberation guilt ratings were each averaged within groups to control for the nonindependence of group members due to deliberation (Anderson & Ager, 1978). These ratings were then analyzed in a repeated-measures ANOVA. This analysis revealed two reliable effects. First, there was a main effect for deliberation,  $F(1, 71) = 14.44, p < .001, f = .39$ .<sup>6</sup> On average, subjects leaned toward conviction prior to deliberation ( $M = 12.23$ ), but shifted toward a preference for acquittal ( $M = 10.66$ ) afterwards. This is another example of the leniency shift described earlier here (MacCoun & Kerr, 1988). Consistent with the pattern for group verdicts, there was also a significant Deliberation  $\times$  Defendant Attractiveness interaction,  $F(1,$

**TABLE 2: Effects of Deliberation and Defendant Attractiveness on Individual Guilt Scores**

	Rating	
	Pre-deliberation	Postdeliberation
Attractive defendant	12.19	9.47
Unattractive defendant	12.28	11.82

**TABLE 3: Social Decision Scheme Matrices for Each Defendant Attractiveness Condition**

	Initial Split (G, NG)	Group Outcome			Row Total
		Guilty	Not Guilty	Hung	
Attractive defendant	(4, 0)	1.00	.00	.00	2
	(3, 1)	.27	.18	.55	11
	(2, 2)	.00	1.00	.00	4
	(1, 3)	.12	.62	.25	8
	(0, 4)	.00	1.00	.00	4
Unattractive defendant	(4, 0)	1.00	.00	.00	1
	(3, 1)	.47	.13	.40	15
	(2, 2)	.30	.30	.40	10
	(1, 3)	.25	.75	.00	4
	(0, 4)	—	—	—	0

NOTE: The table entries are proportions and sum to approximately 1.00 for each row, within rounding error.

71) = 7.48,  $p < .01$ ,  $f = .27$ . As seen in Table 2, there was a shift toward greater leniency when the defendant was attractive (Tukey post hoc contrast,  $p < .01$ ), but no change in ratings when the defendant was unattractive.

Social decision scheme matrices were estimated for 4-person juries in the attractive and unattractive defendant conditions and are presented in Table 3. These matrices suggest that the defendant attractiveness bias emerged in group verdicts through two different processes. First, an examination of the final column of Table 3 indicates that there were significantly more juries with an initial majority favoring acquittal in the attractive defendant condition (41%) than in the unattractive defendant condition (13%),  $\chi^2(1) = 5.88$ ,  $p < .05$ . As

described earlier, majority influence processes during deliberation tend to amplify such weak patterns.

Second, Table 3 indicates that when the defendant was attractive, jurors favoring acquittal tended to be more influential than jurors favoring conviction; for example, initially split 2:2 groups always acquitted, and 1:3 juries were more likely to acquit than 3:1 juries were to convict. Again, this asymmetric influence is a reliable pattern in criminal jury research (MacCoun & Kerr, 1988). However, when the defendant was unattractive, initially split 2:2 juries were as likely to convict as to acquit; this symmetric pattern, while seemingly predictable, is actually unusual for a criminal mock jury.

## DISCUSSION

The pattern of results in this experiment is a complete reversal of the pattern reported by Kaplan and Miller (1978, Experiment 3). Whereas they found that pre-deliberation extralegal biases were eliminated by group deliberation, the present study found an extralegal bias that only emerged during the deliberation process. As a result, mock juries were significantly more likely to acquit the defendant if that person was physically attractive than if the defendant was physically unattractive.

Because this case was so close, there was no clear body of evidence that could dilute the extralegal information in the manner predicted by the information integration model (Kaplan & Miller, 1978). However, these results are quite similar to the pattern reported by Hans and Doob (1976) and support the interpretation of that study presented earlier here. Subjects became more lenient in their evaluation of the attractive defendant during deliberation, while ratings of the unattractive defendant did not shift.

Taken at face value, the results appear to indicate favoritism toward the physically attractive defendant, but an understanding of the dynamics of criminal jury deliberation suggests a different interpretation. As noted earlier, the leniency shift in the attractive defendant condition is actually the modal pattern among criminal mock juries in close cases; it appears to be a consequence of our society's aversion to false

convictions, as reflected in the reasonable doubt standard (MacCoun & Kerr, 1988). Apparently, mock jurors were less motivated to give the unattractive defendant the benefit of the doubt. Thus it is the *lack* of a leniency shift for the unattractive defendant that is cause for concern in this experiment.

Two recent studies that reported similar patterns can be interpreted in a similar fashion. Kramer et al. (in press) found a significant leniency shift for mock jurors exposed to relatively neutral pretrial publicity but no such shift among jurors exposed to particularly heinous publicity regarding the offender and the crime. Schumann and Thompson (1989) found that a fallacious statistical argument by the prosecutor influenced postdeliberation, but not predeliberation, judgments. An examination of their data reveals a leniency shift in the absence of the fallacious argument, but not when it was made.

As predicted by Kalven and Zeisel's (1966) liberation hypothesis, each of the studies finding an extralegal group bias used a very close case, whereas Kaplan and Miller (1978) found no extralegal group bias using evidence clearly favoring one verdict. But the present analysis suggests a somewhat different interpretation. Rather than ignoring ambiguous evidence and giving free reign to their sentiments, jurors appeared to allow their sentiments to influence their application of the reasonable doubt standard (see Kerr et al., 1985; MacCoun, 1989). This should only influence verdicts at the margin in close cases. Future studies might assess whether such a process is explicit in the content of deliberation or whether it occurs implicitly through a failure to vigorously consider potentially reasonable doubts. A better understanding of the dynamics of bias in deliberation might suggest procedural remedies for use in jury trials.

## NOTES

1. From a Bayesian perspective, an item of evidence ( $E_i$ ) is logically irrelevant to the determination of guilt to the extent that the *likelihood ratio*,  $p(E_i|\text{Guilty})/p(E_i|\text{Not Guilty})$ , does not differ from 1.00 (see Lempert, 1977). If a defendant accused of auto theft is as likely to be attractive if guilty as he or she is if innocent, then the defendant's attractiveness is irrelevant and any systematic influence on verdicts is an extralegal bias. In mock jury research, a bias is operationally defined by a statistically significant effect of an extralegal factor in a controlled experiment. In actual trials, of course, such prejudicial effects are more difficult to establish.

2. Other mechanisms for extralegal bias have been suggested. For example, biases might operate through the weights ( $w_i$ ) or scale values ( $s_i$ ) given to the trial evidence (Ostrom et al., 1978), or through the amount of evidence that a juror requires to vote for a guilty verdict "beyond a reasonable doubt" (see MacCoun, 1989).

3. An additional variable, the assigned standard of proof, was also manipulated in order to examine other theoretical issues that are not discussed here (see MacCoun, 1984; MacCoun & Kerr, 1988). As expected, jurors were more likely to convict the defendant in the preponderance of evidence condition (59.5%) than in the reasonable doubt condition (44.6%),  $G^2(1) = 7.10$ ,  $p < .01$  (cf. Kagehiro & Stanton, 1985). This manipulation did not interact with either attractiveness manipulation, so it does not qualify any of the results described later.

4. To ensure that the attractiveness variables were not confounded with specific stimuli, two different photographs were used at each level of victim and defendant attractiveness. Manipulation checks indicated that the manipulations were successful for each of the separate photographs used, and no qualifying effects of specific photographs were found in preliminary analyses of individual guilt ratings. In subsequent analyses, these nested factors were collapsed to simplify the design.

5. An analysis comparing the 4-person groups to the 3-person groups and dyads indicated that the larger groups were significantly less likely to reach a unanimous verdict (69.5% vs. 92.9%),  $G^2(2) = 7.88$ ,  $p < .01$ . This finding conceptually replicates a similar finding reported by Kerr and MacCoun (1985).

6. The  $f$  value is an index of the magnitude of the effect; Cohen (1977) suggests that in the behavioral sciences,  $f$ s of .10, .25, and .40 correspond to "small," "medium," and "large" effects, respectively.

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