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REGULAR ARTICLE

Expert Testimony in Capital Sentencing: Juror Responses

John H. Montgomery, DO, J. Richard Ciccone, MD, Stephen P. Garvey, JD, and Theodore Eisenberg, JD

The U.S. Supreme Court, in *Furman v. Georgia* (1972), held that the death penalty is constitutional only when applied on an individualized basis. The resultant changes in the laws in death penalty states fostered the involvement of psychiatric and psychologic expert witnesses at the sentencing phase of the trial, to testify on two major issues: (1) the mitigating factor of a defendant's abnormal mental state and (2) the aggravating factor of a defendant's potential for future violence. This study was an exploration of the responses of capital jurors to psychiatric/psychologic expert testimony during capital sentencing. The Capital Jury Project is a multi-state research effort designed to improve the understanding of the dynamics of juror decision-making in capital cases. South Carolina data ($n = 214$) were used to investigate the impact of expert testimony on the mitigating factor of mental illness and the aggravating factor of future dangerousness. Ordered logit regression analyses revealed significant correlations ($p < .005$) between the presence of a defense psychiatrist or psychologist expert witness during the sentencing phase and jurors' having the impression that the defendant was mentally disturbed. Similar analyses revealed no significant relationship between the presence of state-introduced psychiatric testimony and jurors' having the impression that the defendant, if not executed, would be violent in the future. These findings seem to contradict the view that psychiatric testimony on future dangerousness in death penalty cases has a powerful impact on jurors. The jurors in this study were significantly influenced, however, by psychiatric/psychologic testimony in the area of a defendant's mitigating mental abnormality.

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In the criminal justice arena, psychiatrists' forensic participation often involves evaluating a defendant's competency to stand trial or assessing the criminal responsibility of defendants for their actions, when affirmative defenses such as not guilty by reason of insanity (NGRI) have been introduced. Although the involvement of psychiatrists in other areas, such as sentencing, was thought to be relatively uncommon before the 1970s, changes in the death penalty statutes during that decade provided an incentive for increased psychiatric participation in capital sentencing.[1] Forensic psychiatrists are called on to provide expert witness testimony in death penalty cases.

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In 1972, the United States Supreme Court ruled in *Furman v. Georgia*[2] that the Georgia death penalty statute was unconstitutional because it created a substantial likelihood that the death penalty would be imposed arbitrarily. In response, many states adopted new statutes they hoped would be consistent with *Furman*. To reduce the risk of arbitrariness, states legislated a bifurcation of capital trials into guilt and sentencing phases. The latter phase allowed a jury or judge to consider the evidence offered in mitigation or aggravation and to decide whether to impose a death penalty according to statutory criteria.[3]

In 1976, the Supreme Court decided a series of cases involving some of these post-*Furman* death penalty statutes. In *Gregg v. Georgia*,[4] the Court held that a jury could use its discretion to give a life sentence to any murderer no matter how aggravated the crime, emphasizing that discretionary mercy was not unconstitutional. The Court further clarified constitutional matters surrounding the death penalty by invalidating laws in North Carolina and Louisiana that imposed a mandatory death sentence for certain crimes.[5,6] From *Fur-*

man and its progeny developed the Court's position that the death penalty is constitutional when it is applied on an individual basis, rather than categorically.[7]

By requiring the states to individualize the process, the Supreme Court "virtually assured" the involvement of psychiatrists and other mental health professionals.[3] Two major substantive issues emerged when psychiatric evaluation and testimony would become important in the capital sentencing process. The first of these, an expanded concept of mitigating mental abnormality or diminished responsibility, typically is offered by psychiatric experts testifying on behalf of the defense to militate against a death sentence. The second is the question of future dangerousness, or the likelihood that a defendant will pose a continuing threat to society, which is typically offered by psychiatric experts testifying for the prosecution.

The body of forensic psychiatric literature specifically dealing with psychiatric/psychologic expert testimony in capital trials is relatively small, and we are unaware of any empirical studies on the subject. Similarly lacking in the professional literature are studies on the effect of psychiatric testimony on judges and juries in criminal proceedings.[8]

This article addresses psychiatric/psychologic expert witness testimony in the sentencing phase of capital murder trials, regarding a defendant's dangerousness as an aggravating factor and mental abnormality as a mitigating factor. We hypothesize that psychiatric/psychologic expert testimony during the sentencing phase has an effect on juror impressions in both areas. Using data gathered by the Cornell Death Penalty Project component of the Capital Jury Project,[9] we provide an analysis of the reported responses of capital jurors to psychiatric/psychologic expert witness testimony.

Methods

The Capital Jury Project

The Capital Jury Project (CJP) is a National Science Foundation-funded, multi-state research effort designed to improve understanding of the dynamics of juror decision-making in capital cases.[9] CJP researchers represent several disciplines (primarily law and criminology) and institutions. In 1990, the Capital Jury Project began interviewing jurors in several states who had served on capital cases, some of which resulted in a sentence of death and some a sentence of life imprisonment. The purpose was to conduct interviews with at least four jurors randomly selected from a sample of cases, half of which resulted in a final verdict of death and half of which resulted in a final verdict of life imprisonment.

Each juror responded to a series of questions during interviews lasting between three and four hours. The survey asked questions about the guilt phase of the trial as well as the penalty phase; about the evidence presented; about the demeanor of the defendant, the actions of the victim's family, and the performance of the lawyers and the judge; about the legal instructions given; and about the process of the jury's deliberations, and the verdict reached. Demographic information (e.g., race, sex, age, religion) was also collected, as was information about each juror's attitudes toward the death penalty and the criminal justice system more generally. Each survey yielded data on more than 750 variables.

The Capital Jury Project was reviewed and approved by the University Committee on Human Subjects of Cornell University.

The South Carolina CJP

CJP data for the state of South Carolina, consisting of interviews of more than 200 jurors in 65 capital cases, comprise the largest share of the CJP's total data.[10] Previous studies based on nationwide CJP data suggest that the South Carolina jurors behave much like jurors in other states.[11,12] The South Carolina CJP's published research thus far has yielded several important findings. First, the shorter the time that a capital juror thinks the defendant will be imprisoned, the more likely he or she is to vote for death.[12] Second, capital jurors underestimate how long capital murder defendants not sentenced to death usually stay in prison.[12] One particular study suggested that juror concerns about a defendant's parole eligibility (and subsequent potential for future violence) have "predictable and deadly consequences."[14] Thirdly, future dangerousness plays a prominent role in the jury's discussions during the penalty phase, even when not introduced as an aggravating factor by the prosecution, and often this overshadows evidence presented in mitigation.[14]

The juror interview instrument, used by all CJP states, contains nearly 200 questions, including questions about the case, trial, and respondent's sentencing decision. The South Carolina instrument underwent revisions in 2000 and 2001 to include questions about victim-impact evidence and future dangerous-

ness. Several questions in South Carolina's revised instrument specifically addressed psychiatric expert testimony on dangerousness, making the South Carolina data a relevant focus for this study.

As with all other states, South Carolina capital trials are bifurcated into a guilt stage and sentencing stage.[15] The same jury that determines the defendant's guilt also determines his punishment. During the sentencing trial, the jury may consider 11 statutory aggravating factors and 10 mitigating ones. The jury cannot consider an aggravating circumstance unless the state has proven its existence beyond a reasonable doubt. No standard of proof is attached to statutory mitigating factors. Once the jury finds, beyond a reasonable doubt, the existence of at least one statutory aggravating circumstance, it must then arrive at a sentence based on all the evidence. Although South Carolina does not recognize future dangerousness as a statutory aggravating circumstance, the prosecution is free to emphasize a defendant's potential for future danger once it proves the existence of at least one statutory aggravating circumstance.

To investigate the impact of psychiatric expert testimony on jurors in death penalty cases, we utilized data already obtained from the South Carolina CJP, comprising 214 juror interviews, from 65 capital murder trials, 30 of which resulted in death sentences. Our investigations explored the impact of psychiatric/psychologic expert witness testimony on capital jurors' impression of (1) the mitigating factor of a defendant's mental abnormality and (2) the aggravating factor of a defendant's dangerousness or propensity to commit future violent acts.

Statistical Analysis

In each area, the hypothesis that psychiatric expert testimony during the sentencing trial has an impact on juror impressions was tested by statistical analysis, using Stata[16] software. Three juror impressions are of primary interest. The first juror impression deals with dangerousness. Information about the jurors' impressions of a defendant's dangerousness is derived from one interview question comprising Question IIB1, which reads as follows:

In your mind, how well do the following words describe (DEFENDANT)
1 Not at all 2 Not well 3 Fairly well 4 Very well

_____ Dangerous to other people

The variable for dangerousness, as well as the variables for "crazy" and "unstable," were reordered to reflect the ordering described in the text.

The second and third juror impressions deal with the defendants' mental abnormality. Information about the jurors' impressions of a defendant's mental abnormality is derived from two other questions comprising part of Question IIB1. They read as follows:

In your mind, how well do the following words describe (DEFENDANT)
1 Not at all 2 Not well 3 Fairly well 4 Very well

_____ Emotionally unstable or disturbed
_____ Went crazy when he committed the crime

We are primarily interested in the relation among each of these three juror impressions and the presence of psychiatric expert testimony. Information about the presence of expert psychiatric testimony comes from two questions. Question IIIC3, which relates to the presence of psychiatric testimony for the prosecution, reads as follows:

Did the prosecution witnesses at the punishment stage of the trial include
1 Yes 2 No 3 Not sure

_____ A psychologist or psychiatrist?

Question IIIC6, which relates to the presence of psychiatric testimony for the defense, reads as follows:

Did the defense witnesses at the punishment stage of the trial include
1 Yes 2 No 3 Not sure

_____ A psychologist or psychiatric expert?

For each of the three juror impressions, we first report univariate results describing the relation between the impressions and the presence of psychiatric expert testimony. We then test the robustness of these univariate results by using regression analyses in which we account for other salient facts about the case, the defendant, and the juror. Each regression

analysis includes up to six independent controlling variables in addition to the psychiatric testimony variables of primary interest. These additional variables include criminal history, the crime's seriousness, the defendant's remorse, and the juror's race. These variables have been shown in previous CJP studies to have relevant impact in capital juror decision-making during the punishment phase.[10,12,17] We also include variables reflecting defendant race and victim race. With respect to the seriousness of a capital murder, one study showed two descriptors to correlate significantly with seriousness of a crime: "vicious" and "victim made to suffer." Hence "vicious" is used in this study as a proxy for the seriousness of a defendant's crime.

Ordered logit regression models are used because the dependent variables in all of our regression models are ordinal and take on more than two values.[18] As described elsewhere,[10] the sampling of South Carolina cases in more recent years is less comprehensive than in early years. In addition, life sentences were oversampled relative to death sentences. The regression models we construct account for these different sampling rates. We also account for the fact that not all juror responses are independent of one another; that is, with few exceptions more than one interviewed juror sat on each case.[19]

Results

The ordered logit regression analyses demonstrated that the impact of psychiatric/psychologic testimony on jurors' views of the aggravating factor of dangerousness and mitigating factor of mental abnormality in this study were:

1. Psychiatric expert testimony presented by the prosecution during penalty phases did not significantly correlate with jurors' impressions of a defendant's future dangerousness in any of the models.

2. Psychiatric expert testimony presented by the defense during the penalty phases significantly and positively correlated with jurors' impressions of a defendant's mental abnormality in all models for both variables ("crazy" and "unstable").

Of 176 jurors responding to question IIIC3, 84 indicated that the prosecution introduced expert psychological or psychiatric testimony during the punishment phase of the trial. Of 156 juror responses to question IIIC6, 86 jurors indicated that the defense introduced similar expert testimony. Of the total number of juror responses, there were 22 cases in which only a defense psychiatrist testified and 8 cases in which only a state psychiatrist testified. Of all juror responses, neither a state psychiatrist nor a defense psychiatrist testified in 48 cases. In 56 cases, both a state psychiatrist and a defense psychiatrist testified.

Table 1 Means and Standard Deviations for Key Variables

	Mean	Standard Deviation	*n*
Dangerousness	3.29	0.95	213
Any state psychiatric testimony	3.40	0.85	83
Any defense psychiatric testimony	3.34	0.88	85
Both state and defense psychiatric testimony	3.40	0.85	55
Neither state nor defense psychiatric testimony	3.23	1.02	48
Crazy	2.33	1.20	211
Any state psychiatric testimony	2.63	1.14	81
Any defense psychiatric testimony	2.58	1.20	84
Both state and defense psychiatric testimony	2.70	1.14	54
Neither state nor defense psychiatric testimony	1.73	1.01	48
Unstable	2.33	1.09	212
Any state psychiatric testimony	2.61	1.03	82
Any defense psychiatric testimony	2.67	1.06	85
Both state and defense psychiatric testimony	2.80	0.95	55
Neither state nor defense psychiatric testimony	1.88	0.87	48
Crime seriousness	3.70	0.65	213
Defendant remorse	2.00	1.08	209

In these cases, the expert witnesses (both prosecution and defense) represent a sizable body of psychiatrists and psychologists throughout the state (Blume J, personal communication, February 2003) and prosecutors in South Carolina do not seem to rely on the testimony of just a few favored experts.

Table 1 reports the means and standard deviations for key dependent variables. For the variables of interest ("dangerous," "crazy," and "unstable"), measures of central tendency are additionally expressed with respect to three subgroups: juror responses that indicated the presence of any defense expert psychiatric testimony (opposed or unopposed), juror responses that indicated the presence of any state expert psychiatric testimony, juror responses that indicated the presence of both defense and state expert psychiatric testimony, and juror responses that indicated neither state nor defense testimony. The key dependent variables (dangerous, crazy, and un-

Table 2 Ordered Logit Models of Dangerousness (1 = least dangerous; 4 = most dangerous)

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)
Any state psychiatrist testimony (1 = present)	0.120		0.245		0.222		−0.011	−0.160
	(0.724)		(0.502)		(0.506)		(0.981)	(0.710)
Any defense psychiatrist testimony (1 = present)		0.208		0.336		0.336	0.478	1.296
		(0.589)		(0.441)		(0.404)	(0.368)	(0.300)
Defendant's race (1 = black)			0.509	0.673	0.676	0.673	0.855	0.775
			(0.307)	(0.199)	(0.096)	(0.109)	(0.067)	(0.179)
Juror's race (1 = black)			−0.765	−0.715	−0.715	−0.980	−0.993	−0.803
			(0.097)	(0.153)	(0.024)*	(0.022)*	(0.031)*	(0.140)
Victim's race (1 = black)			1.305	0.446	0.446	0.138	0.443	1.224
			(0.011)*	(0.551)	(0.616)	(0.807)	(0.537)	(0.044)*
Criminal history (1 = yes)			1.344	0.994				1.296
			(0.001)†	(0.022)*				(0.007)†
Crime's seriousness (1 = least serious; 4 = most serious)			0.965	0.810				0.927
			(0.000)†	(0.000)†				(0.000)†
Remorse (1 = least remorseful; 4 = most remorseful)			−0.472	−0.364				−0.476
			(0.024)*	(0.095)				(0.067)
Observations (*n*)	175	155	155	142	174	155	133	123
Prob > F	0.724	0.589	0.000	0.000	0.132	0.051	0.119	0.000

Probabilities are in parentheses.
* Significant at $p < 0.05$;
† Significant at $p < 0.01$.

stable) were ordinal measures, with a higher value representing stronger juror impression that this variable described the defendant. Independent variables for the crime's seriousness and defendant's remorse were also ordinal measures, with maximum values indicating "most remorseful" or "most serious." Mean values for each variable, along with standard deviations are shown in the first and second columns.

The defendant's perceived dangerousness, craziness, and instability on average were less when neither state nor defense psychiatric testimony was presented. This result is not necessarily surprising. Cases in which neither the state nor the defense introduced psychiatric testimony regarding the defendant's future dangerousness are likely to have been cases in which the state chose not to emphasize the defendant's future dangerousness, and thus the defense had no need to reply in kind by emphasizing the defendant's nondangerousness. Conversely, cases in which neither the state nor the defense introduced psychiatric testimony regarding the defendant's craziness or instability are likely to have been cases in which the defense chose not to emphasize the defendant's craziness or instability, and thus the state had no need to reply in kind by emphasizing the defendant's sanity or stability. Consequently, cases in which neither the state nor the defense introduced evidence of the defendant's future dangerousness, craziness, or instability are likely to have been cases in which the defendant was in the judgment of the side most likely to have raised the issue not especially dangerous, crazy, or unstable.

Table 2 reports the regression analyses of dangerousness as a function of the presence of expert psychiatric testimony and combinations of the independent controlling variables just described. A positive sign on the coefficient indicates that an increase in the value of the independent variable is associated with an increase in the value of the dependent variable, and a negative sign on the coefficient indicates that an increase in the value of the independent variable is associated with a decrease in the value of the dependent variable. (For a discussion of the interpretation of coefficients in ordered logit models, see Ref. 20, pp 127–40.) Tests for the significance of each model as a whole (Prob > F) are presented on the bottom row of Tables 2, 3, and 4.

Each model (1–8) in Table 2 models the dependent variable dangerousness as a function of one or more independent variables. Model 1 is a single-variable model of dangerousness as a function of state psychiatric testimony. One cannot reject the hypothesis that there is no significant association between the two variables. Subsequent models include state psychiatric testimony combined with different controlling variables. Again, no significant relationship between state psychiatric testimony and dangerousness is seen in any model.

Table 3 Ordered Logit Models of Crazy (1 = least crazy; 4 = most crazy)

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)
Any state psychiatrist testimony (1 = present)	0.694		0.698		0.639		−0.070	0.223
	(0.034)*		(0.041)*		(0.053)		(0.871)	(0.614)
Any defense psychiatrist testimony (1 = present)		1.260		1.156		1.209	1.579	1.365
		(0.000)†		(0.001)†		(0.000)†	(0.001)†	(0.008)†
Defendant's race (1 = black)			−0.462	−0.520	−0.413	−0.519	−0.718	−0.713
			(0.213)	(0.172)	(0.251)	(0.139)	(0.086)	(0.072)
Juror's race (1 = black)			−0.044	0.143	0.184	0.463	0.361	0.095
			(0.911)	(0.761)	(0.622)	(0.241)	(0.422)	(0.847)
Victim's race (1 = black)			−0.030	0.440	−0.272	0.166	0.487	0.768
			(0.961)	(0.546)	(0.655)	(0.793)	(0.437)	(0.344)
Criminal history (1 = yes)			−0.613	−0.266				−0.599
			(0.079)	(0.552)				(0.201)
Crime's seriousness (1 = least serious; 4 = most serious)			0.411	0.245				0.246
			(0.091)	(0.393)				(0.500)
Remorse (1 = least remorseful; 4 = most remorseful)			0.605	0.635				0.716
			(0.000)†	(0.001)†				(0.001)†
Observations (*n*)	173	154	155	142	172	154	132	123
Prob > F	0.034	0.000	0.008	0.001	0.204	0.006	0.007	0.000

Probabilities are in parentheses.
* Significant at $p < 0.05$;
† Significant at $p < 0.01$.

The independent variables that significantly affected jurors' impression of a defendant's dangerousness (in all models) were a defendant's criminal history and the seriousness of the crime. The victim's race became significant in models 3 and 8, with the presence of a white victim correlating significantly with dangerousness. The juror's race became significant in models 5, 6, and 7, in which white jurors tended to correlate significantly with dangerousness. Defendants who showed little or no remorse correlated significantly with dangerousness in model 1 and reached near significance in model 8. The defendant's race approached significance in two of the models, with jurors rating black defendants as more dangerous. However in regression models where case-characteristic variables (i.e., crime seriousness

Table 4 Ordered Logit Models of Unstable (1 = least unstable; 4 = most unstable)

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)
Any state psychiatrist testimony (1 = present)	0.764		0.811		0.642		0.136	0.341
	(0.031)*		(0.019)*		(0.065)		(0.821)	(0.562)
Any defense psychiatrist testimony (1 = present		1.223		1.256		1.091	1.438	1.517
		(0.000)†		(0.001)†		(0.000)†	(0.011)*	(0.013)*
Defendant's race (1 = black)			−0.739	−0.847	−0.639	−0.663	−0.876	−1.024
			(0.057)	(0.075)	(0.089)	(0.119)	(0.056)	(0.034)*
Juror's race (1 = black)			0.275	0.995	0.367	0.809	0.740	0.938
			(0.620)	(0.126)	(0.415)	(0.114)	(0.175)	(0.159)
Victim's race (1 = black)			−0.532	−0.383	−0.651	−0.469	0.242	0.425
			(0.446)	(0.650)	(0.300)	(0.463)	(0.677)	(0.563)
Criminal history (1 = yes)			0.353	0.304				0.411
			(0.240)	(0.419)				(0.294)
Crime's seriousness (1 = least serious; 4 = most serious)			0.272	0.103				0.021
			(0.292)	(0.701)				(0.940)
Remorse (1 = least remorseful; 4 = most remorseful)			0.115	−0.110				−0.048
			(0.454)	(0.560)				(0.797)
Observations (*n*)	174	155	155	142	173	155	133	123
Prob > F	0.031	0.000	0.014	0.010	0.032	0.001	0.000	0.001

Probabilities are in parentheses.
* Significant at $p < 0.05$;
† Significant at $p < 0.01$.

and remorse) were included as controlling variables, the correlation between black defendant and dangerousness became less significant. In models not reported in this article, we included variables representing the various racial combinations of defendants and victims (black defendant-black victim, black defendant-white victim, white defendant-white victim, and white defendant-black victim). No material changes emerged with respect to our principal results involving the influence of psychiatric testimony on jurors' beliefs about the defendant's future dangerousness, craziness, and instability.

Table 3 reports the regression analyses of "craziness" as a function of the presence of expert psychiatric testimony and combinations of the independent controlling variables. Similar to Table 2, each model (1–8) in the table represents a statistical correlation between one or more independent variables with the dependent variable for ". . .defendant went crazy when he committed the crime." Defense psychiatric testimony was significant in each model. State psychiatric testimony was significant in Models 2 and 4 but lost significance in models in which defense psychiatric testimony was included as a controlling variable. Remorse showed significance whenever it was included in the regression analysis in Table 3.

Table 4 reports the regression analyses of ". . .mentally unstable or disturbed" as a function of the presence of expert psychiatric testimony and combinations of the independent variables. Defense psychiatric testimony was significant in each model. As in Table 4, state psychiatric testimony was significant only in the models where the defense psychiatric testimony was not included as a controlling variable. The defendant's race approached significance in Model 7 and became significant in Model 8, suggesting that white defendants were more likely to be seen by the jurors as ". . .mentally unstable or disturbed." The defendant's remorse was not significant in any model for "unstable."

The juror instrument did not include questions dealing specifically with psychiatric testimony of future dangerousness until May 19, 2000, and unfortunately, the question did not distinguish between defense or prosecution expert. (The question added to the CJP instrument asked, "Did a psychiatrist, psychologist, or other mental health professional testify for the state or the defense about [the defendant's] potential for future dangerousness?" Question Xa22.) Since this revision, 54 jurors have completed the instrument, 25 of whom reported that expert testimony on dangerousness was presented. A subsequent question in the revised instrument asked about the importance of such testimony, if offered in the punishment phase. These results are summarized in Table 5.

Table 5 Question* Regarding Future Dangerousness

	% Reponding	*n*
Not important	44	11
Somewhat important	40	10
Very important	12	3
Most important	1	1

* How important was the psychiatric testimony regarding future dangerousness to your assessment of the defendant's potential future dangerousness?

The results presented in Table 5 are consistent with the regression analysis in Table 2. Table 5 shows that, among the limited number of jurors who were asked directly how important the psychiatric testimony, if any, was to their assessment of future dangerousness, over 80 percent indicated that the testimony was either "not important" or only "somewhat important." Only 3 jurors (of the 25 responding) said such evidence was "very important" to their assessment of future dangerousness, and only one said it was "most important." Overall, Table 5 suggests that when psychiatric testimony specifically addressing dangerousness was presented during the sentencing trial, jurors found this only marginally important.

Discussion

In his dissenting opinion in *Barefoot v. Estelle*,[21] Justice Blackmun described the legal prediction of future dangerousness by psychiatrists as shrouding unreliable scientific evidence in an ". . .aura of scientific infallibility." His primary concern with such testimony was that it had a prejudicial impact on jurors, who were at risk of accepting it, ". . .without critical scrutiny."

Although others have subsequently warned that capital jurors give psychiatric testimony on future dangerousness more weight than it deserves,[3] or accept it uncritically,[22] there have been no empirical studies to date in which the weight of such testimony was measured. A CJP paper looking at California capital jurors found that among the different types of witnesses who testify at a capital trial (professional

experts, lay experts, and family members), the jury is likely to be most skeptical of professional expert witnesses.[23] However, this study used anecdotal and qualitative methodology rather than statistical analysis.

On the aggravating factor of future dangerousness, our results suggest that psychiatric expert testimony does not have significant impact on the jurors' impressions of a defendant's likelihood to engage in future violence. The regression models reported in Table 2 are consistent with an absence of evidence of a significant relation. The presence of a state-appointed psychiatric expert did not correlate significantly with the dependent variable of dangerousness in any of the models in Table 2.

One caveat to consider is that the variable "state psychiatric testimony" contains only the presence or absence of the state's expert witness testimony by a psychiatrist or psychologist during the punishment phase and did not address the content of that testimony. Often, the state utilizes psychiatric experts during this phase to support the aggravating factor of dangerousness,[24] although the possibility exists that such an expert could focus on other areas. A psychiatrist could be called by the prosecution to respond to a defense expert's claim of mitigating mental abnormality. The prosecution could also conceivably call a psychiatrist to present victim impact testimony.[25]

When focusing on the mitigating factor of a defendant's mental abnormality, psychiatric testimony becomes more influential. Tables 3 and 4 explore the influence of psychiatric testimony on jurors' perceptions of mental abnormality, while controlling for other aspects of the cases. The regression models in Table 3 show a strong, statistically significant relation between the presence of defense psychiatric testimony and jurors' increased likelihood of perceiving the defendant as "crazy" at the time of the offense. Models 7 and 8 show that the presence of a defense expert witness during the sentencing phase, while accounting for several other independent variables, including the testimony of a prosecution psychiatric expert during the sentencing phase, has a significant association with the jurors' impression that the defendant ". . .went crazy when he committed the crime." We explored whether the difference between the impact of defense psychiatric testimony and prosecution psychiatric testimony, as suggested by Table 3, is a consequence of jurors' hearing defense psychiatric testimony and not prosecution psychiatric testimony. When such responses were omitted, however, the strong defense-psychiatric testimony effect in the models in Table 3 remains substantial and statistically significant. Table 4 similarly suggests the significance of defense expert testimony on juror's impressions of the defendant as emotionally unstable or disturbed.

In both these analyses (Tables 3, 4), the independent variable "defense psychiatric testimony" reached statistical significance in all models. Of interest, the presence of state psychiatric testimony also correlated positively with both dependent variables of mental abnormality in Models 1 and 3. In Models 7 and 8, however, in which "defense psychiatric testimony" was also included as an explanatory variable, "state psychiatric testimony" lost statistical significance. These results stem from the fact that jurors often heard both defense and state psychiatric testimony during a sentencing hearing. When both sides introduced psychiatric testimony, the state effect disappears. State psychiatric testimony loses significance. Thus, the models/results lend greater support to a robust defense psychiatric effect than a state psychiatric effect. One possible concern is that the significant results displayed in the models could be attributable to the selection of cases in which the defense of the state elected to present psychiatric testimony rather than to the impact of such testimony in cases in which it was presented. Selection models that first account for the decision to offer testimony, and then model the impact of such testimony, could be a fruitful technique for addressing the concern (Ref. 16, p 31).

The perception of a defendant as showing remorse correlated positively to a significant degree with the dependent variable "crazy" in all models. "Remorse" did not reach significance in the analysis of the dependent variable "unstable." The notion of remorse has complex moral implications, and a juror who believed that the defendant showed remorse for his crime might be more inclined to accept that he ". . .went crazy when he committed the murder." A reason for the lack of a similar correlation between remorseful and unstable perhaps lies within the meanings of the variables. "Crazy" addressed only the defendant's mental state at the time of the offense; whereas unstable implied the defendant's present mental state (during the trial). If the juror believed the defendant appeared remorseful, this ap-

pearance might be inconsistent with the juror's notions of how an "unstable or disturbed" person would behave in court.

Conclusion

The results of this study showed that psychiatric/psychologic expert witness testimony did not have a measurable impact on capital jurors' impression of a defendant's future dangerousness. The jurors' views are consistent with arguments made by the American Psychiatric Association and other organizations that psychiatrists/psychologists have limited ability to make predictions of long-term dangerousness.[26] These findings also seem to contradict the view that psychiatric testimony on the aggravating factor of dangerousness has a powerful effect on jurors at the sentencing phase.[3,21,22]

On the other hand, psychiatric/psychologic expert witness testimony significantly influenced the jurors' views of the usually mitigating factor of a defendant's mental abnormality. This is consistent with the view that psychiatrists and psychologists, through years of training and experience, are experts in the clinical detection of mental disorders.

Although we assert that such testimony had a favorable impact on the juror's impression that the defendant was mentally unstable, we did not measure whether this impression actually had a mitigating effect on the jurors' decision-making. It is possible that some jurors actually treat a defendant's mental abnormality as an aggravating factor rather than a mitigating one, as suggested by some.[27,28]

A potential limitation of this study is concern about the power of the statistical analyses, or roughly how large a study's population (n) would have to be for a statistically significant result to be obtained. Such a power calculation would require specifying how large an effect that psychiatric testimony would have to have on a juror's impression of a defendant's dangerousness or mitigating mental abnormality to be socially important. The absence of statistically significant associations between psychiatric testimony and assessments of defendant dangerousness could be a consequence of sample size. Perfectly executed studies may fail to reveal socially important differences "simply because the sample sizes are too small to give the procedure enough power to detect the effect."[29] But we note that the sample proved large enough to detect statistically significant defense expert testimony effects with respect to the two mental abnormality impressions.

Another potential limitation lies in the fact that the CJP instrument was not intended to be a psychological measure. Terminology such as "dangerous," "crazy," "remorse," and "unstable" represent complex concepts, and relying on only a few questions from the juror instrument to define a juror's global impression about a defendant's mental state might be oversimplifying a rather complicated process. Revision of the various states' CJP study questionnaires to address these concepts more specifically and to take into account the role of psychiatric/psychologic expert witnesses in juror decision-making may also be helpful in further analysis of the expert witness's role in these proceedings.

Finally, replication of this study using CJP data from other states may further elucidate or expand on the findings of the index study.

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