
The Role of Death Qualification and Need for Cognition in Venirepersons' Evaluations of Expert Scientific Testimony in Capital Trials[‡]

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The purpose of this study was to investigate the role of death qualification in venirepersons' evaluations of expert scientific testimony in capital trials. 200 venirepersons from the 12th Judicial Circuit in Bradenton, FL completed a booklet that contained the following: one question that measured their attitudes toward the death penalty; one question that categorized their death-qualification status; the Need for Cognition (NFC) scale (Cacioppo, Petty & Kao, 1984); a summary of the guilt phase of a capital case (which included the cross-examination of the state's expert witness); verdict preference; five questions concerning participants' evaluations of the expert's testimony; the penalty phase of a capital case; sentence preference; and standard demographic questions. Results indicated that death-qualified venirepersons were more likely to demonstrate a low need for cognition and view ambiguous expert scientific testimony as valid, important in their decision-making processes, unbiased, and of high quality. Finally, death-qualified participants were more conviction- and death-prone than their excludable counterparts. Surprisingly, death-qualified and excludable jurors did not differ with respect to whether or not they felt that the expert followed correct procedures. Legal implications and applications are discussed. Copyright © 2007 John Wiley & Sons, Ltd.

INTRODUCTION

Capital jurors are extraordinarily unique in that they are responsible for determining both the guilt and the sentence of the defendant. Consequently, capital trials consist of two parts: a guilt phase and a penalty phase. If a conviction occurs in a capital case,

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the jury then determines the penalty by weighing the aggravating circumstances (i.e. arguments for death) against the mitigating circumstances (i.e. arguments for life). If the aggravators outweigh the mitigators, the jury is to recommend the death sentence; if the mitigators outweigh the aggravators, then the jury is to recommend life in prison without the possibility of parole (i.e. LWOP). In Florida, the judge has the ultimate opinion in capital cases. However, the recommendation of the jury is rarely overturned (*Ring v. Arizona*, 2002).

All capital jurors must undergo an extremely controversial process called death qualification. During death qualification, venirepersons are questioned regarding their beliefs about the death penalty. Potential jurors are then excluded from capital jury service if the court finds that they feel so strongly about the death penalty that their belief would prevent or substantially impair the performance of their duties as a juror in a death-penalty case (*Wainwright v. Witt*, 1985).

Although the Court sought to enhance the fairness and impartiality of capital juries by utilizing the *Witt* standard, the data indicate that this modification did not have the intended effect. In fact, research has suggested that the adoption of the *Witt* standard has had significant consequences. For example, Dillehay and Sandys (1996) found that 28% of participants who met the *Witt* standard would, contrary to law, automatically impose the death penalty. In fact, 36% of all venirepersons exhibited attitudes toward the death penalty that were so vehement that they prevented them from being impartial in a capital case.

Death-qualification status is more frequent in certain demographic and attitudinal subgroups than others (Fitzgerald & Ellsworth, 1984; Dillehay & Sandys, 1996; Moran & Comfort, 1982, 1986). In fact, jurors who pass the *Witt* standard tend to be demographically distinguishable: They are more likely to be male, Caucasian, financially secure, politically conservative, and Catholic or Protestant (Butler, 2007; Butler & Moran, 2002). Death-qualified jurors are more likely to trust prosecutors and view prosecution witnesses as more believable, credible, and helpful. They are more likely to consider inadmissible evidence even if a judge has instructed them to ignore it and infer guilt from a defendant's failure to take the witness stand (Hans, 1986). Death-qualified jurors are more hostile to psychological defenses and more receptive to pretrial publicity (Butler, 2007; Butler & Wasserman, 2006; Cutler, Moran, & Narby, 1992). In addition, death-qualified jurors are more likely to have a high belief in a just world, espouse legal authoritarian beliefs, and exhibit an internal locus of control (Butler & Moran, 2007). Finally, death-qualified jurors are more likely to believe in the infallibility of the criminal justice process and less likely to agree that even the worst criminals should be considered for mercy (Butler & Moran, 2002; Butler & Moran, 2007; Butler & Wasserman, 2006; Cowan, Thompson, & Ellsworth, 1984; Fitzgerald & Ellsworth, 1984; Haney, 1984a, 1984b; Haney, Hurtado, & Vega, 1994; Hans, 1986; Moran & Comfort, 1986; Robinson, 1993; Thompson, Cowan, Ellsworth, & Harrington, 1984).

Previous research has also suggested that level of support for the death penalty is related to instructional comprehension in capital cases. Specifically, Smith, Haney, and Benson (unpublished manuscript) found that death-qualified jurors who favored the death penalty were more likely to do the following: (1) exhibit lower levels of instructional comprehension; (2) inaccurately recall closing arguments made by the prosecution and defense; and (3) inaccurately recall crime-oriented

closing argument themes. Since both death-penalty attitudes and death-qualification status appear to be related to the ability and/or motivation to engage in effortful cognitive processing, it logically follows that the aforementioned variables would be similarly predictive in capital cases that hinge on scientific evidence. However, the relationship between death-qualification status and evaluations of expert scientific testimony is yet to be determined.

In spite of the aforementioned findings, the Supreme Court ruled that there were “serious flaws in the evidence upon which the courts below had concluded that ‘death qualification’ produces ‘conviction-prone’ juries” and declared the process of death qualification to be constitutional (*Lockhart v. McCree*, 1986, p. 1764). However, it appears that the issue of death qualification is not moot in social science. In fact, data concerning the biasing effects of death qualification have only grown more conclusive in the 20 years since *Lockhart*. Perhaps even more important is the fact that the Supreme Court is beginning to listen. In 2005, Supreme Court Justice John Paul Stevens brought the issue of death qualification to the forefront of the American legal consciousness. In an address to the American Bar Association, he said that “...two aspects of the process of selecting juries in capital cases are troublesome. In case after case, many days are spent conducting voir dire examinations in which prosecutors engage in prolonged questioning to determine whether the venire person has moral or religious scruples that would impair her ability to impose the death penalty. Preoccupation with that issue creates an atmosphere in which jurors are likely to assume that their primary task is to determine the penalty for a presumptively guilty defendant. More significantly, because the prosecutor can challenge jurors with qualms about the death penalty, the process creates a risk that a fair cross-section of the community will not be represented on the jury” (Stevens, 2005).

One issue that is often prevalent in capital cases concerns the impact that expert scientific testimony has on juror decision-making processes (Brekke, Enko, Clavet, & Seelau, 1999; Fox & Walters, 1986; Kovera, Gresham, Borgida, Gray, & Regan, 1997). Prior research has repeatedly demonstrated that jurors tend to place great weight on expert scientific testimony (Kovera et al., 1997). However, earlier findings have also suggested that jurors may not have the ability and/or the motivation to effectively evaluate such evidence (Kovera et al., 1997; Kovera, Russano, & McAuliff, 2002).

One variable that affects people’s motivation to evaluate expert scientific testimony is their need for cognition (Cacioppo, Petty, & Kao, 1984; Kassin, Reddy, & Tulloch, 1990; Leippe, Eisenstadt, Rauch, & Seib, 2004; McAuliff & Kovera, manuscript submitted for publication; Sargent, 2004; Shestowsky & Horowitz, 2004). The need for cognition is defined as “the tendency to engage in and enjoy effortful cognitive activity” (Cacioppo et al., 1984). In essence, people with a high need for cognition enjoy engaging in activities that require effortful thought; participants with a low need for cognition do not. Although participants with a low need for cognition are no less capable of engaging in such contemplation, they tend not to do so unless they are extrinsically motivated. Consequently, it has been suggested that people with a high need for cognition may be more likely to systematically process complex concepts (e.g. the methodology that an expert has utilized), whereas people with a low need for cognition may be more likely to rely on superficial heuristics (e.g. a graduate degree; a witness’s title as an “expert”) in order

to make decisions in situations that require deliberate thought. However, all prior research correlates the need for cognition to verdicts in either non-capital criminal trials or civil trials. Since most capital trials involve some type of expert scientific testimony, it is imperative that the relationship between need for cognition and decision-making processes in capital trials be empirically examined.

The purpose of the current study is to correlate death qualification and need for cognition with venirepersons' evaluations of expert scientific testimony in capital trials. Based on the findings of similar studies, it is hypothesized that death-qualified venirepersons, when compared with excludables, will be more likely to exhibit a low need for cognition. It is also hypothesized that death-qualified participants will be more likely to view flawed expert scientific testimony as valid, important, procedurally correct, unbiased, and of high quality.

METHOD

Participants

Participants consisted of 200 venirepersons who had been called for jury duty (via a random selection of driver's licenses and voter's registrations) at the Twelfth Judicial Circuit in Bradenton, FL. Fifty-five percent of participants were women; 45% were men. The median age was 52; the median income was \$50,000.

The ethnic origin of the sample was as follows: 5% were African-American; 0% was Asian; 91% were Caucasian; 2% were Hispanic; and 2% were of an ethnic origin other than what was specified on the questionnaire. Although a disproportionately large percentage of the sample was Caucasian, participants were comprised of actual venirepersons. Therefore, the venirepersons in this sample are, by definition, representative of this venue.

Three percent of respondents had no high school education; 14% had some high school; 32% had completed high school; 30% had some college or junior college; 21% had a college degree; and 15% had a post-graduate or professional degree. Twenty percent of the jurors had served on a jury before.

Stimulus Case

Venirepersons read the summary of testimony presented during the guilt phase of a capital trial involving the murder of an elderly woman. In order to avoid ceiling or floor effects, the case scenario was deliberately designed to be ambiguous with respect to the guilt of the defendant. Specifically, the only evidence that tied the defendant to the crime was the fact that a forensic odontologist had matched his teeth to the bitemarks taken from the victim's body.

A transcript of the cross-examination of the prosecution's expert witness, a forensic odontologist, who matched the bitemarks on the victim's body to the bite impressions taken from the defendant was included in the summary of the guilt phase. During the cross-examination, the expert witness disclosed that, while he followed standard procedures, he did not utilize extra precautions in order to ensure a valid match. The cross-examination was designed with the assistance of an attorney who specializes in capital cases (please see Appendix A).

If venirepersons decided to convict the defendant, they were then asked to read a summary of the penalty phase of the aforementioned capital trial and select the sentence they found most appropriate (either death or life in prison without the possibility of parole). If participants elected to acquit the defendant, they were asked to skip the penalty phase altogether.

Attitudes Toward the Death Penalty

Venirepersons' specified their level of support for the death penalty by circling the statement they agreed with most: (1) the death penalty is never an appropriate punishment for the crime of first-degree murder; (2) I am opposed to the death penalty, but would consider it under certain circumstances for the crime of first-degree murder; (3) I favor the death penalty, but would not consider it under certain circumstances for the crime of first-degree murder; and (4) the death penalty is the only appropriate punishment for the crime of first-degree murder.

Death-Qualification Status

Venirepersons were asked to indicate whether they felt so strongly about the death penalty (either for or against it) that their views would prevent or substantially impair the performance of their duties as a juror in a capital case. Participants who answered "No" to the aforementioned question were classified as death qualified; those who answered "Yes" were classified as excludable.

Need for Cognition Scale

The Need for Cognition (NFC) scale by Cacioppo, Petty, and Kao (1984) was used to measure participants' need for cognition (please see Appendix B). This scale is comprised of 18 items measured on a Likert scale ranging from 0 = "extremely uncharacteristic of you" to 5 = "extremely characteristic of you." Previous research has found that the NFC scale has acceptable levels of validity and reliability with respect to measuring need for cognition (Leippe, Eisenstadt, Rauch, & Seib, 2004).

Dependent Measure

Five items were constructed to assess participants' evaluations of the expert scientific testimony. Venirepersons were asked to read each item and indicate their opinion on a six-point Likert scale, ranging from strong disagreement to strong agreement. Specifically, participants were asked (1) how valid they thought the expert's testimony was; (2) how important the expert's testimony was in their decision-making processes; (3) whether they thought the expert followed correct procedures; (4) how biased they thought the expert was and (5) how they would rate the overall quality of the expert's testimony.

Procedure

Volunteers were solicited from an area designated for prospective venirepersons who were waiting to be called randomly and assigned to particular cases. Prior to their participation, venirepersons read an informed consent form, which described the nature of the study, ensured that their participation was completely voluntary and anonymous and reiterated that they would not receive compensation for their participation. Venirepersons were also given a contact number in case they were interested in the final results of the study once the data were collected and analyzed.

Venirepersons were first asked to complete one question that measured their attitudes toward the death penalty and another question that categorized their death-qualification status. Venirepersons were then asked to complete the Need for Cognition scale (Cacioppo, Petty, & Kao, 1984), read a summary of the guilt phase of a capital case, render a verdict, and answer five questions about the expert's scientific testimony. If participants found the defendant guilty, they were asked to read a summary of the sentencing phase and select a sentence. Finally, they answered standard demographic questions.

RESULTS

Twenty percent of participants felt so strongly about the death penalty that they said their views would prevent or substantially impair the performance of their duties as a juror in a capital case. Consequently, these venirepersons were classified as *Witt* excludables.

Death qualification was significantly related to need for cognition ($F(1, 198) = 7.26, p = .01$). Specifically, death-qualified participants were more likely to exhibit a low need for cognition. Death qualification was also significantly related to evaluations of expert scientific testimony ($F(5, 194) = 2.87, p = .02$). Specifically, death-qualified participants were more likely to believe the ambiguous expert scientific testimony to be valid ($F(1, 198) = 9.70, p = .002$), important in their decision-making processes ($F(1, 198) = 5.94, p = .02$), unbiased ($F(1, 198) = 4.07, p = .05$), and of high quality ($F(1, 198) = 7.97, p = .005$). Finally, death qualification was significantly related to guilt ($\chi^2(1) = 5.32, p = .02$) and sentence ($\chi^2(1) = 41.88, p < .001$). Specifically, death-qualified venirepersons were more likely to find the defendant guilty and sentence him to death.

Death-qualified participants were more likely to be middle aged ($\chi^2(5) = 21.59, p = .001$) and employed as managers or salespeople ($\chi^2(10) = 20.93, p = .02$). Death-qualified venirepersons were more likely to have had prior jury service ($\chi^2(3) = 9.01, p = .03$).

Level of support for the death penalty was significantly related to evaluations of expert scientific testimony ($F(15, 582) = 1.78, p = .03$). Specifically, participants who favored the death penalty but would not consider it in certain circumstances were more likely to rate the expert scientific testimony as valid ($F(3, 196) = 2.73, p = .05$). In addition, participants who could never vote for the death penalty under any circumstances were more likely to view the expert scientific testimony as important ($F(3, 196) = 5.64, p = .02$).

Need for cognition was significantly related to educational level ($F(4, 195) = 5.17, p = .001$). Specifically, the higher the need for cognition, the higher the educational level. Need for cognition was also significantly related to occupation ($F(10, 189) = 1.97, p = .04$). Specifically, teachers, students, professionals, or venirepersons who were self-employed had the highest need for cognition. Need for cognition was significantly related to income ($F(5, 194) = 5.04, p < .001$). Specifically, as need for cognition increased, income increased as well. Finally, need for cognition was significantly related to verdict ($F(1, 198) = 4.57, p = .03$) and sentence ($F(1, 131) = 5.40, p = .02$). Specifically, participants with a low need for cognition were more likely to find the defendant guilty and sentence him to death.

Age was significantly related to evaluations of expert scientific testimony ($F(25, 970) = 1.52, p = .05$). Specifically, participants between the ages of 18 and 24 were more likely to view the expert's testimony as biased ($F(5, 194) = 3.93, p = .002$).

Ethnic background was significantly related to evaluations of expert scientific testimony ($F(15, 582) = 2.40, p = .002$). Specifically, African-American, Caucasian, and Hispanic participants were more likely to view the expert's testimony as valid ($F(3, 196) = 5.48, p = .05$), Hispanic participants were more likely to think that the expert followed correct procedures ($F(3, 196) = 9.58, p = .008$), and African-American and Caucasian participants were more likely to view the expert's testimony as of high quality ($F(3, 196) = 2.97, p = .03$).

Educational level was significantly related to venirepersons' evaluations of expert scientific testimony ($F(20, 776) = 2.29, p = .001$). Specifically, participants with some college education were more likely to view the expert's testimony as valid ($F(4, 195) = 2.76, p = .03$), venirepersons with either some college or a post-graduate/professional degree were more likely to view the expert's testimony as important in their decision-making processes ($F(4, 195) = 5.94, p < .001$), and participants with some college education were more likely to think that the expert followed correct procedures ($F(4, 195) = 3.74, p = .006$).

Occupation was significantly related to evaluations of expert scientific testimony ($F(50, 945) = 1.55, p = .01$). Specifically, teachers were more likely to think that the expert's testimony was important ($F(10, 189) = 1.94, p = .04$) and self-employed venirepersons were more likely to think that the expert's testimony was biased ($F(10, 189) = 2.09, p = .03$).

Political views were significantly related to evaluations of expert scientific testimony ($F(5, 194) = 3.10, p = .01$). Specifically, venirepersons who categorized their political beliefs as "slightly conservative" were more likely to think that the expert's testimony was biased ($F(3, 196) = 4.22, p = .006$).

Income was significantly related to evaluations of expert scientific testimony ($F(25, 970) = 1.94, p = .03$). Specifically, participants making between \$45,000 and \$60,000 were more likely to report that the expert's testimony was important in their decision-making procedures ($F(5, 194) = 4.67, p < .001$) and venirepersons whose salary was between \$60,000 and \$75,000 were more likely to think that the expert's testimony was biased ($F(5, 194) = 2.61, p = .03$).

Prior jury service was significantly related to evaluations of expert scientific testimony ($F(15, 582) = 1.91, p = .02$). Specifically, participants who had served on both criminal and civil juries were more likely to think that the expert followed correct procedures ($F(3, 196) = 3.08, p = .03$) as well as believe that the expert's testimony was of high quality ($F(3, 196) = 4.23, p = .006$).

Income was significantly related to sentence ($\chi^2(5) = 15.61, p = .008$). Specifically, participants who made between \$45,000 and \$60,000 were more likely to give the defendant a life sentence.

DISCUSSION

The results of this study may have broad legal implications. The present findings replicate an earlier body of research that concluded that the process of death qualification results in the seating of differentially partial jurors (Butler & Moran, 2002; Butler & Wasserman, 2006; Diamond, 1993; Luginbuhl, 1992; Lynch & Haney, 2000; Wiener, Prichard, & Weston, 1995). In addition, the current study extends previous findings by demonstrating that simply selecting a jury for a capital case systematically excludes people who have the ability and/or motivation to effectively evaluate expert scientific testimony. To specify, both death-qualified and excludable jurors appear to realize when incorrect scientific procedures are used. However, death-qualified jurors are less likely to take this into account when evaluating the validity, importance, bias, and quality of such evidence. Since the vast majority of capital cases involve some sort of expert scientific testimony, this oversight can have devastating effects. Consequently, capital defendants appear to be at a significant disadvantage: They are having their fate determined by a homogenous, unrepresentative subgroup of the population that is prone to basing life and death decisions on flawed science.

It should be noted that the stimulus case in this study involved relatively simplistic expert scientific testimony (i.e. bitemark evidence). Future research should explore whether the observed effects can be generalized to cases that involve more complex expert scientific testimony (e.g. DNA evidence).

Almost 20 years ago, the United States Supreme Court ruled the death-qualification process to be constitutional (*Lockhart v. McCree*, 1986). However, psycholegal research continues to suggest otherwise. Given the court's historical ambivalence with respect to the death penalty, a reversal of *Lockhart* is well within reach. It is only after the process of death qualification is declared unconstitutional that we will be able to move toward truly protecting capital defendant's Sixth Amendment rights (*Grigsby v. Mabry*, 1985).

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APPENDIX A

Cross-Examination of Dr. Peter L. Allen

Defense Attorney:	Dr. Allen, a “reasonable degree of medical certainty” does not mean that you are 100% certain that the bitemarks were caused by Mr. Jones. Correct?
Dr. Allen:	That is correct.
Defense Attorney:	“A reasonable degree of medical certainty” leaves room for error. Correct?
Dr. Allen:	A small amount of error, yes.
Defense Attorney:	Dr. Allen, what would you say is the rate of error in matching a bite overlay taken from a suspect to bitemark impressions taken from a victim?
Dr. Allen:	That is impossible to determine.
Defense Attorney:	Why?
Dr. Allen:	Because, as I stated in my previous testimony, correct identification is dependent on many things.
Defense Attorney:	Yes... but even in the most ideal of circumstances, a forensic odontologist can never be 100% accurate, correct?
Dr. Allen:	Yes. That would be impossible.
Defense Attorney:	How important is the procedure used by the forensic odontologist in making her/his identification?
Dr. Allen:	Extremely important.
Defense Attorney:	This is because forensic odontology is relatively subjective, correct?
Dr. Allen:	I wouldn’t say that, no.
Defense Attorney:	Dr. Allen, skin is malleable, correct? It can change shape... even after death, is this correct?
Dr. Allen:	Yes.
Defense Attorney:	So, impressions of a bitemark may be different... depending on when they were taken from the victim. Is this correct?
Dr. Allen:	There may be slight variation, correct.
Defense Attorney:	Dr. Allen, how many sets of photographs and bite overlays did you compare to the bite impressions taken from the victim?
Dr. Allen:	Just one.
Defense Attorney:	Did you know that the bite overlay and photographs were from the primary suspect in the case?
Dr. Allen:	Yes, I did.
Defense Attorney:	You don’t think that this would bias you in making a “match” so to speak?
Dr. Allen:	That is improbable.
Defense Attorney:	Improbable, but not impossible, correct?
Dr. Allen:	I suppose.
Defense Attorney:	Did any other forensic odontologists, who were unfamiliar with this specific case, “check your work,” so to speak?
Dr. Allen:	Excuse me?
Defense Attorney:	Did any other dentists duplicate your findings? Like a kind of “check and balance” type of system?
Dr. Allen:	No.
Defense Attorney:	Do you not think it would have enhanced your objectivity to either (1) have a forensic odontologist who did not know who the suspect was make the match or (2) include other bite overlays in your own identification as a kind of “bite lineup”?
Dr. Allen:	I followed standard procedures.
Defense Attorney:	Please answer the question, Dr. Allen.
Dr. Allen:	Yes, that would have increased the validity of the match.
Defense Attorney:	But you didn’t do that, did you?
Dr. Allen:	I followed the procedures set forth by the American Board of Forensic Odontology.
Defense Attorney:	That wasn’t my question.
Dr. Allen:	No, I didn’t do that.
Defense Attorney:	No further questions, Your Honor.

APPENDIX B

Need for Cognition Scale, 1 = Extremely uncharacteristic of you (i.e. not at all like you), 2 = Somewhat uncharacteristic of you, 3 = Uncertain, 4 = Somewhat characteristic of you, 5 = Extremely characteristic of you (i.e. very much like you)

-
- ___ 1. I would prefer complex to simple problems.
 - ___ 2. I like to have the responsibility of handling a situation that requires a lot of thinking.
 - ___ 3. Thinking is not my idea of fun.
 - ___ 4. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.
 - ___ 5. I try to anticipate and avoid situations where there is likely chance I will have to think in depth about something.
 - ___ 6. I find satisfaction in deliberating hard and for long hours.
 - ___ 7. I only think as hard as I have to.
 - ___ 8. I prefer to think about small, daily projects to long-term ones.
 - ___ 9. I like tasks that require little thought once I've learned them.
 - ___ 10. The idea of relying on thought to make my way to the top appeals to me.
 - ___ 11. I really enjoy a task that involves coming up with new solutions to problems.
 - ___ 12. Learning new ways to think doesn't excite me very much.
 - ___ 13. I prefer my life to be filled with puzzles that I must solve.
 - ___ 14. The notion of thinking abstractly is appealing to me.
 - ___ 15. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.
 - ___ 16. I feel relief rather than satisfaction after completing a task that required a lot of mental effort.
 - ___ 17. It's enough for me that something gets the job done; I don't care how or why it works.
 - ___ 18. I usually end up deliberating about issues even when they do not affect me personally.
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