

IN THE SUPREME COURT OF THE STATE OF WASHINGTON

STATE OF WASHINGTON ,

Respondent,

v.

ALLEN EUGENE GREGORY,

Appellant.

NO. 88086-7

COMMISSIONER'S
INTERROGATORIES TO
PARTIES' EXPERTS

The appellant Allen Eugene Gregory has proffered an updated version of a report in support of his contentions entitled, *The Role of Race in Washington State Capital Sentencing, 1981 - 2014 (Updated Report)*, authored by Katherine Beckett, Professor, Law, Societies and Justice Program of the Department of Sociology at the University of Washington, and Heather Evans, M.A., Ph.D. Candidate, Department of Sociology, University of Washington. At oral argument, the State requested an opportunity to challenge the *Updated Report*. A majority of the court granted the State's request and ordered that a hearing should be held before me. The parties were directed to file memoranda addressing the conduct of the hearing, the manner of submitting testimony or other evidence, and whether the court should appoint an expert pursuant to ER 706 or alternatively, the appropriateness of appointment of a technical advisor to assist the court in understanding the evidence. Each party filed a memorandum that included suggested procedures for the State to obtain information relating to the *Updated Report's* method of analysis and conclusions, submission of additional information and evidence, and the State's presentation of the bases for its

challenge to the *Updated Report* and Mr. Gregory's response. Upon consideration of these memoranda, this court issued an order that included a provision directing the parties' attorneys to confer and determine whether agreement may be reached on the steps and timing of procedures for the following: (a) the State to obtain information relating to the *Updated Report's* method of analysis and conclusions; (b) the submission of additional information and evidence; and (c) the State's presentation of the bases for its challenge to the *Updated Report* and Mr. Gregory's responses. The parties were directed to report to me any areas where they agreed and any areas where they disagreed as to the steps and timing of such procedures.

On May 19, 2016, the parties jointly submitted their "Agreed Proposal Regarding Court's Orders of March 16, 2016 and May 3, 2016." This agreed proposal consisted of the following procedures:

1. Mr. Gregory will provide the coding manual and data file for the study on the role of race in capital sentencing in Washington to the State and the Court by May 27, 2016, or within 5 days of the Commissioner's ruling detailing procedures, whichever is later.
2. By July 11, 2016, or within 45 days of receiving the data and codebook (whichever is later), the State will submit its expert report stating its conclusions about the methodology used and the reliability of the study's conclusions.
3. By August 25, 2016, or within 45 days of receiving the State's report (whichever is later), Mr. Gregory will provide the response of Professor Beckett and Ms. Evans to the State's report.

The parties did not report any areas where they disagreed as to the steps and timing of procedures. Accordingly, I accepted the parties' agreed proposal and ordered the parties to serve on the other party and file in this court the identified documents on the dates established in the agreed proposal. I also noted that I would issue a ruling detailing whether and how a technical advisor will be appointed and used.

Mr. Gregory provided the coding manual and data file to the State. The State filed the report of its expert, Nicholas Scurich, Ph.D., dated July 7, 2016, entitled *Evaluation of "The Role of Race in Washington State Capital Sentencing, 1981-2014."* Mr. Gregory then submitted the response by Professor Beckett and

Ms. Evans, dated August 25, 2016, entitled *Response to Evaluation of 'The Role of Race in Washington State Capital Sentencing, 1981-2014'* by Nicholas Scurich.¹

I reviewed these documents to determine if the assistance of a neutral technical advisor with specialized skills would be beneficial. After close study of the information and explanations contained in these reports, supplemented by the Federal Judicial Center's *Reference Manual on Scientific Evidence*, (3d ed. 2011) (hereinafter *Reference Manual*),² I concluded that the information available allows for the understanding of the concepts necessary to give full consideration to the experts' respective positions. However, mindful that the potential exists for a judicial officer to be confused about the technical concepts and the relationships of the technical concepts to legal principles, I stated that I determined it would be useful to appoint a neutral technical advisor to review my proposed report to the court for the limited purpose of identifying any areas where the proposed report reflects misunderstanding of the multiple regression methodology or interpretation of the results of multiple regression analyses. Additionally, I noted that Dr. Scurich indicates there were several reported findings in the *Updated Report* of Professor Beckett and Ms. Evans that he was unable to replicate. In response, Professor Beckett and Ms. Evans concluded that Dr. Scurich's inability to replicate their reported findings was due to his failure to include their logarithmic transformation of variables or his omission of relevant cases. I determined it would be useful for a neutral technical advisor to review those portions of Dr. Scurich's *Evaluation of the Updated Report* relating to his inability to replicate the results and opine whether Professor Beckett and Ms. Evans have sufficiently addressed his inability to replicate their results.

However, on further reflection and study, I concluded these issues may best be addressed by specific interrogatories to the parties' experts. Accordingly, I set forth

¹ In this preliminary report, I will refer to the *Updated Report*, the *Evaluation of the Updated Report*, and the *Response to Evaluation*.

² See <https://www.fjc.gov/sites/default/files/materials/2017/SciMan3D01.pdf>

below specific questions in interrogatory form, with background as necessary to illumine the bases of the questions. These interrogatories relate to the following areas:

I. ACCURACY OF DATASET AND DATA CODING

- A. Inclusion of All Trial Reports
- B. Consistency in Data Coding
- C. Data Coding Entry Errors
- D. Inclusion or Exclusion of Non-Jury Sentencing Proceedings

II. BASIC NUMBERS AND COMPARISONS OF PERCENTAGES

- A. Table 1: Proportion of Aggravated Murder Cases with Death-Eligible Defendants in which Death was Sought and Imposed, by County, December 1981-May 2014.
- B. Table 2: Capital Sentence Outcomes among Death-Eligible Washington State Aggravated Murder Defendants, December 1981-May 2014, by Race of Defendant
- C. Table 3: Capital Case Outcomes among Death-Eligible Washington State Aggravated Murder Defendants, December 1981-May 2014, by Race of Defendant and Race of Victim

III. REGRESSION ANALYSIS

- A. State Expert's Calculation of P-Values
- B. Maximum Likelihood Estimates
- C. Disclosure of Analyses Conducted
- D. Use of Parsimonious Models
- E. State Expert's Testing of the Sensitivity of the Race of Defendant Effect
 - 1. Separate Examination of White v. Black and Other-Race vs. Black Defendants
 - 2. Race of Victim
- F. Interpretation of R^2 and Pseudo R^2 Measures

IV. NEXT STEPS

I. ACCURACY OF DATASET AND DATA CODING

A. Inclusion of All Trial Reports

Background: Dr. Scurich indicates that he was asked to provide a data audit to verify the accuracy of the values reported in the *Updated Report*. As to a data audit, he states that “[i]t remains to be seen” whether any aggravated murder cases are missing from the 331 trial reports filed with this court from 1981-2014. He concludes, “If cases are missing, it is possible that the results would materially change.” The

State provides no information suggesting that there are specific cases for which a trial report has not been filed.³

Interrogatory No. 1 (Directed to Dr. Scurich): Are you aware of cases that are in fact missing from the trial reports, or should your statement be taken as a caveat that you have not independently verified the inclusiveness of the trial reports?

B. Consistency in Data Coding

Background: Dr. Scurich observes that there is no description in the *Updated Report* that measures the degree to which coding by different raters is in agreement. As an example, he points out that there is no description of what constitutes “extensive publicity.” Professor Beckett responds that measures of inter-coder reliability are needed when coders assign numeric values to qualitative or subjective phenomena, and that here “the data entry assistants were simply entering the information provided by judges on trial reports” and not making subjective judgments. Professor Beckett notes one exception to her general statement that the

³ I note that trial reports were filed with this court for only two of three jury sentencing proceedings relating to Mitchell Rupe’s conviction for the murder of two women. This court reversed the death sentence imposed by the first jury because of the erroneous admission of Rupe’s gun collection in the penalty phase of his trial. *State v. Rupe*, 101 Wn.2d 664, 683 P.2d 571 (1984). *Cf.* Trial Report 7. On remand for a second sentencing proceeding, a second jury sentenced Rupe to death, and this court affirmed the sentence. *State v. Rupe*, 108 Wn.2d 734, 743 P.2d 210, (1987). *Cf.* Trial Report 31. Subsequently, the federal district court granted a writ of habeas corpus and vacated the sentence on two grounds. *Rupe v. Wood*, 863 F. Supp. 1307 (W.D. Wash. 1994), *aff’d in part, vacated in part*, 93 F.3d 1434 (9th Cir. 1996). The Ninth Circuit Court of Appeals affirmed the district court’s holding that the refusal to admit evidence of a witness’s polygraph results at the second penalty phase hearing violated Rupe’s due process rights to have relevant, mitigating evidence presented to the jury deciding between a penalty of life or death. *Rupe v. Wood*, 93 F.3d 1434, 1441 (9th Cir. 1996). The Ninth Circuit dismissed as moot the appeal of the district court’s holding that Rupe would suffer cruel and unusual punishment if he were put to death by hanging. *Id.* at 1437. According to docket entries in Thurston County Superior Court No. 81-1-00316-1, the State then filed a notice of a special sentencing proceeding, which was held before a jury. Indeed, Exhibit 24 submitted by Mr. Gregory and referenced in his Opening Brief of Appellant at 66, n.32 is an article from the KOMO News archive that reports on the third jury sentencing proceedings. This article, first published on March 10, 2000, reports that a jury could not reach a unanimous verdict as required for imposition of the death penalty.

data entry assistants were simply entering the information provided by judges on trial reports. As stated in the *Washington State Capital Sentencing Judicial Trial Report Data, 1981-2014 Codebook* (“Codebook”) for the *Updated Report*, legal consultants coded the mitigating circumstances. In her *Response to Evaluation*, Professor Beckett explains that judges wrote notations in a number of the trial reports as to the mitigating circumstances. She determined these notations required legal expertise to interpret, and “[f]or this reason, we relied on the legal expertise of Mr. Gregory’s attorneys in coding this variable.” *Response to Evaluation* at 10, n.22.

Nothing in the *Codebook* or the *Updated Report* articulates the basis for numbers coded by Mr. Gregory’s counsel, but the *Codebook* describes the coding protocols.⁴ For example, the coders are instructed to enter “1” if the court found “one kind” of mitigating evidence, without explaining what “one kind” means. Additionally, notwithstanding the *Codebook* instruction to “[e]nter 3 if the judge lists three or more kinds of mitigating evidence that s/he found credible,” there were four cases coded “4” where the judges listed more than three kinds of mitigating evidence.

A review of the trial reports and the coding entries suggest that the coding practices may have been the following: (1) examine the trial judge’s report under Question 3(c) (“Was there, in the court’s opinion, credible evidence of any mitigating circumstances as provided in Laws of 1981, ch. 138, § 7? If yes, please describe.”) and evaluate the number of individual concepts as separated by the trial judge in the trial report, entering that number in the coding sheet under “MitCircum_Statutory:

⁴ The Codebook at 63 contains the following two instructions:

“55. Court’s determination of credible evidence of mitigating circumstances: “Did the court find any credible evidence of mitigating circumstances?

- a. Enter 0 if the court found no credible evidence of mitigating circumstances.
- b. Enter 1 if the judge lists one kind of mitigating evidence that s/he found credible.
- c. Enter 2 if the judge lists two kinds of mitigating evidence that s/he found credible.
- d. Enter 3 if the judge lists three or more kinds of mitigating evidence that s/he found credible.

56. Was other evidence of mitigating circumstances introduced? If the court lists other mitigating circumstances in section 3d, enter a number that reflects the number of mitigating circumstances about which evidence was entered that the court did not find to be credible. If none, enter a 0.”

Statutory mitigating circumstances”; (2) examine the trial judge’s report under Question 3(d) (“Was there evidence of mitigating circumstances, whether or not of a type listed in Laws of 1981, ch. 138, § 7, not described in answer to (3)(c) above?”) and evaluate the number of individual concepts as separated by the trial judge in the trial report, entering that number in the coding sheet under “MitCircum_NonStat: Non-statutory mitigating circumstances”; and (3) add the two numbers for a total and enter it in the coding sheet under “MitCircum_Total: Total mitigating circumstances.”

There are a few occasions when the coders appear to have exercised judgment based on unwritten data coding protocols rather than recording the number of concepts reported by the trial judge. For example, in Trial Report 25 the judge, in answering Question 3(c) regarding statutory mitigating factors, indicated there was credible evidence of mitigating circumstances under the statute, writing that “[i]n my opinion, under RCW 10.95.070(1), the admissible convictions likely were not considered a significant history as defined in (1). Also, I feel that under RCW 10.95.070(8) there was no evidence that the defendant would pose a danger to others in the future, the only testimony being that it was impossible to meaningfully predict dangerousness.” This was coded as “1” statutory mitigating circumstance. This coding appears inconsistent with the coding in other instances. *See, e.g.*, Trial Report 31 (coder counted the defendant’s lack of a criminal history, age, and the fact there was no evidence the defendant would pose a danger to others in the future as “3” mitigating circumstances); Trial Report 77 (coded “4” mitigating circumstances where the trial judge marked “yes” to indicate that in the court’s opinion there was credible evidence of mitigating circumstances as provided in the statute and then quoted four subsections of RCW 10.95.070, including “(4) whether there is a likelihood that the defendant will pose a danger to others in the future?”).

Additionally, mitigating circumstances were coded as “0” in a range of circumstances. At one end of the range is Trial Report 177, where the trial judge marked “No” in response to both questions as to whether there was credible evidence

of any mitigating circumstances and further indicated that “[t]he defendant requested the jury to impose the death penalty and would not assist defense counsel in presenting mitigation evidence contrary to his desires.”⁵ At the other end of the range is Trial Report 23 where the trial judge did not mark either “yes” or “no” under the questions as to whether there was evidence of mitigating circumstances and left blank the lines provided for descriptions of the evidence, and the coder entered “0” mitigating circumstances.

Interrogatory No. 2 (Directed to Professor Beckett): Please provide a fuller description of the methods utilized by coders who coded mitigating circumstances, identify any applicable written protocols for this coding, and explain any unwritten data coding protocols that were used.

C. Data Coding Entry Errors

Background: Dr. Scurich identifies three coding errors that Professor Beckett agrees should be corrected. The three errors are as follows:

- (1) Jack Owen Spillman (Trial Report No. 167) was incorrectly coded as having “received the death penalty” when the trial report indicates that he received life without the possibility of parole.
- (2) Gary Michael Benn (Trial Report No. 75) was incorrectly coded as an “other race” defendant. The trial report lists his race or ethnic origin as “Caucasian.” Professor Beckett’s response indicates he was recoded as “white.”
- (3) Richard Blake Pirtle (Trial Report No. 132) was incorrectly coded as “did not receive a death sentence” where the trial report states that a sentence of death was imposed. He was re-coded as having received a death sentence.

Additionally, Dr. Scurich suggests that a coding error treated a black defendant as a white defendant in the analysis of whether blacks are more likely than non-blacks to

⁵ Similarly, the Trial Report in 160 affirmatively indicates that there were no mitigating circumstances and indicates the defendant told the jury he deserved the death penalty.

receive the death penalty.⁶ As to the three coding errors identified in Dr. Scurich's report, none treated a black defendant as a white defendant. The only coding error related to race was the miscoding of Gary Michael Benn as an "other race" defendant when he should have been coded as "white". The original codings of Jack Owen Spillman as "white" and Richard Blake Pirtle as "white" were correct.

Dr. Scurich did not identify what evidence he was referencing when he stated there was evidence of a coding error that treated a black defendant as a white defendant in the analysis of whether blacks are more likely than non-blacks to receive the death penalty. As to classification of race, Dr. Scurich also noted that defendant race was classified as "white, black or other race" and observed that there was no explanation of how potentially ambiguous cases were handled. To consider this challenge, I reviewed the information in the trial reports as to the race of defendants classified as "other race."

A review shows that in the following trial reports where death notices were filed and the case proceeded to a special sentencing proceeding, the defendant is listed as "black" or "African American" (except where variations on these terms are otherwise noted): 29, 77⁷, 88, 119, 135, 157, 177, 180, 185, 186, 194, 216, 281, 312. These 14 trial reports match the denominator of 14 black defendants in Table A, p. 16, of Professor Beckett's *Response to Evaluation*. The *Codebook* instructs the use of the code "2" for defendant's race if recorded in the trial report as "Black or African American." Each of these 14 trial reports was coded "2" under "D_Race."

⁶ Dr. Scurich made the following suggestion in the course of discussing how coding errors can alter results: "For instance, if black defendants are to be coded as '2', it is possible that an occasional error could cause a black defendant to be coded as '1', the code for a white defendant. Such a mistake would go undetected unless every single variable code for every single case were independently verified (and even then such errors can get overlooked). However, such an error could completely alter the results, in that it treats a black defendant as a white defendant in the data analysis. There is evidence that this actually occurred in the analysis predicting whether blacks are more likely than non-blacks to receive the death penalty (see section 2.4). Since there was no attempt to estimate inter-rater reliability (consistency), we simply have no idea how often such errors occurred in the current data file." *Evaluation of the Updated Report* at 6, n.3 (emphasis added).

⁷ Listed in trial report as "Black (father black, mother caucasian)."

In the following trial reports where death notices were filed and the case proceeded to a special sentencing proceeding, the defendant was “caucasian” or “white” (except where a variation of these terms is otherwise noted): 2, 3, 7, 9⁸, 15, 20, 23, 25, 26⁹, 31, 34, 34a, 36, 39, 42¹⁰, 43, 44, 45, 47, 48, 51, 52, 53, 56, 58, 62, 63, 64, 65, 66, 75, 76, 86, 92, 93, 95, 125, 132, 140, 144, 154, 164, 165, 167, 174, 175, 176, 182¹¹, 183, 184, 190, 220, 227, 251, 258, 303, 313. These 57 trial reports match the denominator of 57 white defendants in Table A, p. 16, of Professor Beckett’s *Response to Evaluation*. The *Codebook* instructs the use of the code “1” for defendant’s race if recorded in the trial report as “White or Caucasian.” I checked each of these 57 trial reports listed and each was coded “1” under “D_Race, with two exceptions. As noted above, Dr. Scurich identified the original miscoding of Trial Report 75 as “other race.” Professor Beckett states this miscoding has been corrected in the analyses presented in the *Response to Evaluation*. Also, Trial Report 34a was not included in the original analysis and therefore was not included in the coding. Professor Beckett explains that it only recently came to her attention that Trial Report 34a was not simply an addendum, but rather contained information about a separate case involving the same defendant, Paul St. Pierre, a white man who was convicted of two separate aggravated murders and was sentenced by both juries to life without the possibility of parole.

In the following trial reports where death notices were filed and the case proceeded to a special sentencing proceeding the trial reports list the defendant as “other race,” with the trial judge statement as to race appearing as noted: 8¹², 13¹³,

⁸ Listed in trial report as “white (some Hawaiian ancestry).” In answering a question about the percentage of the county population that is the same race as the defendant, the trial judge indicated as follows: “Notwithstanding the trace of Hawaiian descent, I would regard Mr. Campbell as being of the white race.”

⁹ Listed in trial report as “appears to be Caucasian.”

¹⁰ Listed in trial report as “European/N. American.”

¹¹ Trial Report 182 indicates, “The jury for special sentencing was waived by the parties and the court accepted the waiver.” It further indicates, “The court accepted the parties’ stipulation that mitigation was sufficient for leniency.”

¹² Listed in trial report as “¼ to ½ Ponca Indian & caucasi[a]n.”

14¹⁴, 60¹⁵, 158¹⁶, 160¹⁷, 181¹⁸, 197¹⁹, 224²⁰, 256.²¹ These ten trial reports match the denominator of 10 “other race” defendants in Table A, p. 16, of Professor Beckett’s *Response to Evaluation*. The *Codebook* instructs the use of the code “3” for Hispanic or Latino/a; “4” for Native American or Alaskan Native; “5” for Asian or Pacific Islander; and “6” for “Other race.” I checked each of these 10 trial reports and each was coded 3, 4, 5 or 6 under D_Race.

A review shows that in the group of 57 included in the “white” category the trial judge described the defendant as “Caucasian” or “white” in 54 cases and in the other three cases describe the defendant variously as “appears to be white,” “white with some Hawaiian ancestry”²² and “European/N. American.” In the 14 cases included in the “black” category, the trial judge described the defendant as “black” or “African American” in 13 of the cases; in the remaining case the trial judge described the defendant as “Black (father black, mother caucasian).” Of the ten cases Professor Beckett placed in the “other race” category, the trial judge described the defendant as “Asian” in two cases, “caucasian/asian” in one case, caucasian/native American in three cases, Native American in two cases, and “Latino (Mexican)” in one case. In the tenth case, the place on the form to indicate race or ethnic origin was left blank but the trial judge indicated that the defendant was of a different race from the white victims

¹³ Listed in trial report as “Asian.”

¹⁴ Listed in trial report as “Asian.”

¹⁵ Listed in trial report as “½ Caucasi[a]n & ½ American Indian.”

¹⁶ Listed in trial report as “Native.”

¹⁷ The section of Trial Report 160 (Jeremy Sagastegui) asking the race or ethnic origin of the defendant is blank, but a different section of the trial report states that “[t]he three victims were Caucasian” and further indicates the victims were not the same race or ethnic origin as the defendant. The State’s brief in another case, *State v. Thomas*, 150 Wn.2d 821, 83 P.3d 970 (2004), in listing the race of persons executed since the death penalty was reinstated, included “Jeremy Sagastegui (Hispanic).” See bound volumes of briefs, Wash. State Law Library, 150 Wn.2d 821 Briefs, Vol. 11, Brief of Respondent at 164.

¹⁸ Listed in trial report as “Caucasian/Native American.”

¹⁹ Listed in trial report as “Native American.”

²⁰ Listed in trial report as “Latino (Mexican).”

²¹ Listed in trial report as “Caucasian/Asian.”

²² In a later section of Trial Report No. 9, the trial judge states that notwithstanding a “trace” of Hawaiian ancestry, he considered the defendant’s race as white.

and, as noted, the State's counsel has previously represented that this defendant was Hispanic.

Interrogatory No. 3 (Directed to Dr. Scurich): Please indicate if you maintain that there is evidence of an error in the data analysis that treats a black defendant as a white defendant and, if yes, specify the nature and location of that evidence.

Interrogatory No. 4 (Directed to Professor Beckett) Are the following trial reports the reports that relate to the denominator of 14 black defendants in Table A of the *Response to Evaluation* at 16: Trial Reports 29, 77, 88, 119, 135, 157, 177, 180, 185, 186, 194, 216, 281, 312? If your response is "no," please list the trial reports that relate to this denominator.

Interrogatory No. 5 (Directed to Professor Beckett) Are the following trial reports the reports that relate to the denominator of 57 white defendants in Table A of the *Response to Evaluation* at 16: Trial Reports 2, 3, 7, 9, 15, 20, 23, 25, 26, 31, 34, 34a, 36, 39, 42, 43, 44, 45, 47, 48, 51, 52, 53, 56, 58, 62, 63, 64, 65, 66, 75, 76, 86, 92, 93, 95, 125, 132, 140, 144, 154, 164, 165, 167, 174, 175, 176, 182, 183, 184, 190, 220, 227, 251, 258, 303, 313? If your response is "no," please list the trial reports that relate to this denominator.

Interrogatory No. 6 (Directed to Professor Beckett) Are the following trial reports the reports that relate to the denominator of 10 "other race" defendants in Table A of the *Response to Evaluation* at 16: Trial Reports 8, 13, 14, 60, 158, 160, 181, 197, 224, and 256? If your response is "no," please list the trial reports that relate to this denominator.

D. Inclusion or Exclusion of Non-Jury Sentencing Proceedings .

Background: In responding to Dr. Scurich's *Evaluation of the Updated Report*, Professor Beckett adjusted the cases that she included in the calculations and analyses related to sentencing proceedings. Professor Beckett excluded Trial Reports

152 and 153, explaining “defendants subsequently entered a stipulated guilty plea and a special sentencing hearing therefore did not occur.” *Response to Evaluation* at 16 n.37. This reasoning is similar to the explanation in the *Codebook* indicating that Trial Report 81 “was not included in the analysis of jury decision-making because a plea deal was reached before the special sentencing proceeding.” *Codebook* at 4. Trial Report 81 indicates that the parties reached a plea agreement in which the prosecutor agreed to recommend life without the possibility of parole, and notes the date on which a special sentencing proceeding was held before the judge. Trial Reports 152 and 153 provide specific dates that a special sentencing proceeding commenced, suggesting such a proceeding was held before the judge. These reports do not indicate the nature of the State’s stipulation on sentencing.

While Professor Beckett excluded these trial reports, she included Trial Reports 92, 167, 182, and 224, which are also cases in which the defendant and the prosecutor reached agreements and the special sentencing proceeding was conducted before a judge. Trial Report 92 indicates “the proceeding was conducted before a judge” and that “the defendant & prosecutor stipulate that there was mitigating circumstances.” Trial Report 167 indicates “the defendant pled guilty, as noted above. With the consent of the State, he then waived jury for the special sentencing proceeding” and that “the defendant and the State stipulated that the State could not prove beyond a reasonable doubt that there were not sufficient mitigating circumstances to merit leniency.”²³ Trial Report 182 indicates, “[t]he jury for special sentencing was waived by the parties and the court accepted the waiver” and further indicates, “[t]he court accepted the parties’ stipulation that mitigation was sufficient for leniency.” Trial Report 224 indicates that “[t]he defendant pled guilty and waived his right to a jury trial for the special sentencing proceeding,” and that “[i]n lieu of evidence at the special sentencing proceeding, the state and the defendant submitted a

²³ Trial Report 167 is the trial report for Jack Owen Spillman, and as noted above was incorrectly coded as “received the death penalty” when the trial report indicates that he received life without the possibility of parole.

stipulation, accepted by the court, ‘that the State of Washington is not able to prove beyond a reasonable doubt that there are not sufficient mitigating circumstances to merit leniency.’”

However, my review indicates that Trial Reports 92, 167, 182, and 224 were not included in the regression analysis to determine the impact of case characteristics and defendant race on capital sentencing outcomes. Professor Beckett’s *Response to Evaluation* indicates that cases missing data were dropped from the regression analysis. Only 77 of the 81 trial reports comprising the amended dataset in the *Response to Evaluation*, were included in the regression analysis.

Interrogatory No. 7 (Directed to Professor Beckett): Please indicate whether Trial Reports 92, 167, 182, and 224 were in fact included in the set of cases used to calculate the percentages of aggravated murder cases with special sentencing proceedings in which juries imposed a death sentence, by race of defendant. If these trial reports were included in this set of cases, please indicate whether you maintain they were properly included and, if so, the basis for this position.

Interrogatory No. 8 (Directed to Professor Beckett): Please indicate whether cases that are the subject of Trial Reports 92, 167, 182, and 224 were or were not included in the regression analyses relating to special sentencing proceedings in which juries imposed a death sentence. If any of the cases that are the subject of these trial reports were included in the regression analyses, please explain the reasons for such inclusion.

II. BASIC NUMBERS AND COMPARISONS OF PERCENTAGES

Background: When conducting the data audit, Dr. Scurich copied seven tables from the *Updated Report*, made observations about the tables, and indicated whether he was able or unable to verify the information. Since Tables 4-7 reflect the results of regression models, those background and interrogatories related to those tables are under the heading for regressions models below. In this section I present

background and pose interrogatories relating to Dr. Scurich's *Evaluation of the Updated Report* as to Tables 1-3, which involve numbers and comparison of percentages without the application of regression models.

A. Table 1: Proportion of Aggravated Murder Cases with Death-Eligible Defendants in which Death was Sought and Imposed, by County, December 1981-May 2014.

Dr. Scurich questions the logic of the column "Proportion of Aggravated Murder Cases in which Death Penalty was Imposed" in Table 1, where the denominator 297 includes cases in which no death notice was filed. *Id* at 8. *Cf. Updated Report* at 20. He indicates that the denominator should be 86, the number of death notices that were filed. Professor Beckett responds that the use of each of these denominators generates a different measure. She states that use of 297 aggravated murder cases as denominators is "intended to provide readers with a broad sense of county-level variation in the share of aggravated murder convictions that resulted in a death sentence in Washington State—regardless of the precise mechanism that explained this variation." *Response to Evaluation* at 14. Dr. Scurich also states he was not able to verify the numbers in the last two columns in Table 1. First, he states "I was not able to verify the numbers in the 'average number of victims' column. This variable does not appear in the datafile or the codebook. It is also not explicitly defined in the Report, leaving it unclear as to what the average refers to exactly (e.g., average number of victims per defendant, per case, etc.)." *Evaluation of the Updated Report* at 9. Professor Beckett explains in the *Response to Evaluation* at 15 that this average number was not the value of a variable; rather, an average was calculated by summing the number of victims in each case and dividing that sum by the number of cases in a particular county then rounding to the nearest whole number. Dr. Scurich next indicates, "I was not able to verify the numbers in the 'average number of affirmed aggravators' column" because a variable with this description does not appear in the *Codebook* or the datafile. *Evaluation of Updated Report* at 9. Professor

Beckett clarifies that “we consider the number of aggravated circumstances found by the jury to be applicable to be affirmed aggravators.” *Response to Evaluation* at 15, n.34.

The description of Table 1 states that it shows the “share of aggravated murder *convictions* that resulted in a death sentence” in each county. But the numbers appear to include multiple proceedings for the same defendant whether or not the conviction for the crime was vacated. For example, in Thurston County there was one conviction and two sentencing proceedings for the same crime, with the death penalty imposed in both sentencing proceedings. Table 1 indicates that in Thurston County the death penalty was imposed in “33% (2/6),” *Updated Report* at 20, whereas the numerator relates to only one conviction and the denominator relates to 5 convictions.

Interrogatory No. 9 (Directed to Dr. Scurich): To the extent that you were unable to verify the numbers in the last two columns in Table I because of uncertainty about the descriptions, are you able to verify those numbers with the provided clarification? If no, please explain.

Interrogatory No. 10 (Directed to Professor Beckett): Do you maintain the accuracy of the description of Table 1 as showing the share of convictions that resulted in a death sentence? If yes, please explain.

B. Table 2: Capital Sentence Outcomes among Death-Eligible Washington State Aggravated Murder Defendants, December 1981-May 2014, by Race of Defendant

Background: As to Table 2, Dr. Scurich first notes that the total numerator “86” in the “All” row exceeds by one the sum of the numerators for the number of death notices filed as to defendants in three race categories: white, black, and other race. Table 2 is accompanied by the following: “Note: Defendant race is unknown in one case.” *Updated Report* at 21. It appears that Professor Beckett may have added the unknown case to the numerator, but not to the denominator, in the “All” row.

Interrogatory No. 11 (Directed to Professor Beckett): Is it correct that you added the “unknown” case to the numerator but mistakenly did not add it to the denominator? If no, please explain the basis for the numerator and denominator.

Interrogatory No. 12 (Directed to Dr. Scurich): If it may be assumed that Professor Beckett mistakenly added the “unknown” case to the numerator but not to the denominator in the “death notice filed” column of Table 2, does this result in a difference to the percentage calculation?

Background: In the *Updated Report*, Professor Beckett calculated and compared the percentages of cases in which death notices were filed and juries imposed death sentences across racial groups. The *Updated Report* coded 86 cases as having a death notice filed. One of these cases was removed from the calculations on the basis the trial report lists the race of the defendant as “unknown.” Professor Beckett then calculated percentages using the remaining 85 cases. She concluded that “we can calculate that juries imposed death in 37% of the cases involving white defendants, but 64% of the cases involving black defendants, in which prosecutors filed a death notice.” *Updated Report* at 21.

Professor Beckett reconsiders which cases should be included for purposes of this calculation in the *Response to Evaluation*. She observes that in five of the 85 cases included in the *Updated Report*, intervening events prevented the jury from considering death as a sentence. In three of the five cases, Trial Reports 68, 217, and 308, prosecutors filed death sentences but the defendants were later ruled ineligible for special sentencing proceedings.²⁴ Professor Beckett’s *Response to Evaluation* indicates that two additional cases were removed because plea agreements “took death sentences off the table.” She indicates that in Trial Reports 152 and 153 “defendants

²⁴ These cases (unlike other excluded cases listed in the *Codebook*) were among those cases that were coded. These trial reports were coded “0” or “No” for “Death penalty sought” and evidently were included in the original percentage calculations. The *Codebook* at 3, indicates these cases “were not included in the analysis because although death notices were filed by prosecutors, legal rulings prevented a special sentencing proceeding.”

subsequently entered a stipulated guilty plea and a special sentencing hearing therefore did not occur.”²⁵ As noted above, Professor Beckett also added one case, noting that “[i]t recently came to our attention that Trial Report 34A was not simply an addendum, but rather contained information about a separate case involving the same defendant described in Trial Report 34. This case was not included in the analyses presented in our report. The defendant in question is Paul St. Pierre, a white man who was convicted of two separate aggravated murders and was sentenced by both of his juries to life without the possibility of parole.”

These 81 cases ($85-5+1 = 81$) evidently are the cases that comprise the denominators (14 for black defendants and 67 for non-black defendants) used in Table A found in the *Response to Evaluation* at 16.

Interrogatory No. 13 (Directed to Professor Beckett): Is the difference in the 85 cases used in the *Updated Report* at 21 and the 81 cases that comprise the denominators used in Table A in the *Response to Evaluation* at 16 due to the removal of Trial Reports 68, 152, 153, 217, and 308 and the addition of Trial Report 34A? If not, please explain.

Background: Additionally, Professor Beckett’s recalculation of the percentages adjusts the numerators and denominators of the “white defendants” and “other race defendants” to account for the coding error as to Trial Report 75 discussed previously, in which the defendant was coded as “other race” when the trial report describes the defendant’s race as “Caucasian.” Correction of this error subtracts one from the numerator and denominator of the “other race” category and adds one to the

²⁵ Professor Beckett indicates the table in Appendix C of the *Updated Report* shows “cases in which death notices were filed and special sentencing hearings occurred.” See *Response to Evaluation* at 16. Trial Report 152 indicates there was a “guilty plea per stipulation” and Trial Report 153 indicates “guilty plea made by stipulation.” Dates were given for the special sentencing proceedings, and in the blank following the question as to the jury’s findings, the trial judge cross-referenced the guilty pleas by stipulation. (The *Codebook* at 4 indicates that TR 81 had previously been excluded from the analysis of jury decision-making because a plea deal was reached before the special sentencing proceeding.)

numerator and denominator of the "white" category. The *Updated Report* indicated that a jury imposed a death sentence in 22 of 60 cases with white defendants, but Professor Beckett's *Response to Evaluation* indicates that a jury imposed the death sentence in 23 of 57 cases with white defendants. And while the *Updated Report* indicated that a jury imposed a death sentence in 4 of 11 cases with "other race" defendants, Professor Beckett's *Response to Evaluation* indicates that a jury imposed the death sentence in 3 of 10 cases with "other race" defendants.

Table A is entitled "Percent of Aggravated Murder Cases with Special Sentencing Proceedings in which *Juries* Imposed a Death Sentence, by Race of Defendant." *Response to Evaluation* at 16 (emphasis added). While the *Response to Evaluation* states that the percentages reflect cases in which *juries* imposed a death sentence, it seems that the denominators include four cases that did not involve juries at the special sentencing proceedings. The "other race" denominator includes Trial Report 224, which indicates the defendant pleaded guilty and waived his right to a jury trial for the special sentencing proceeding and that State and the defendant submitted a stipulation, accepted by the court, that the State was not able to prove beyond a reasonable doubt that there were not sufficient mitigating circumstances to merit leniency. The "white" denominator seems to include three cases in which the trial reports indicate that sentencing proceedings were not held before a jury: Trial Reports 92, 167, and 182.

Interrogatory No. 14 (Directed to Professor Beckett): Please indicate whether you agree or disagree with the identification of the cases that are appropriately included in the calculations of the percentages. If you agree, please recalculate the resulting percentages. If you do not agree, please explain.

Background: Dr. Scurich reports: "I was not able to verify the numbers in the 'death penalty retained' column, since this variable does not appear in the data file or the codebook." The *Updated Report* explains the term "retained" in a note relating to Table 2, as follows: "'Retained' in this context means that the death sentence was

not reversed by a higher court or was re-imposed after reversal of the original death sentence.” But the *Updated Report* does not identify the sets of cases considered “retained” under the definition that resulted in the numbers identified in Table 2. This category is not adequately explained.

Interrogatory No. 15 (Directed to Professor Beckett): Please list the trial report numbers of cases included in the “death penalty retained” column of Table 2 and further explain why the listed cases are considered “retained.”

C. Table 3: Capital Case Outcomes among Death-Eligible Washington State Aggravated Murder Defendants, December 1981-May 2014, by Race of Defendant and Race of Victim

Background: A note to Table 3 indicates the “[f]igures include only black and white ‘death eligible’ defendants with one white or black victim.” *Updated Report* at 11. Dr. Scurich evidently read this note as including defendants with one or more white victims or one or more black victims. For example, he points out that the dataset shows 54 white defendants with all white victims, whereas Table 3 reports there are 33 such cases. *Evaluation of the Updated Report* at 12. Applying his understanding of Table 3, Dr. Scurich was unable to replicate the figures in Table 3. Professor Beckett responds that Dr. Scurich misinterpreted the table note. She reiterates the explanation in the *Updated Report* that “Table 3 compares outcomes for black and white defendants convicted of killing a single white victim versus a single black victim.” *Response to Evaluation* at 19 (quoting *Updated Report* at 23). She states the purpose of limiting the numbers to single victims was “to consider whether the descriptive data provided preliminary evidence that race of victim in combination with the race of the defendant may be consequential” and included only single-victim cases “in order to informally ‘control for’ the number of victims.” *Response to Evaluation* at 18.

Additionally, Dr. Scurich asserts that the germane percentages would be based upon a denominator of cases in which a death notice was filed. *Evaluation of the Updated Report* at 13. His calculations using this denominator, and including cases with a white defendant and a white victim, have associated percentages that are “drastically different than the percentages reported in Table 3 the Beckett and Evans report.” *Evaluation of the Updated Report* at 14. He reads Table 3 as indicating that 7% of all death-eligible cases that resulted in a death sentence involved a white defendant and white victim, contrasted with his calculations that 54% (19/35) of cases that resulted in a death sentence involved a white defendant and a white victim.

Interrogatory No. 16 (Directed to Dr. Scurich): Using the values identified in the Table 3 note and accompanying narrative, are you now able to replicate the results in the “Death Notice Filed” and “Death Penalty Imposed” columns of Table 3? If not, please explain.

Background: Dr. Scurich also indicates that “I was not able to verify the numbers in the ‘death penalty retained’ column of Table 3, since this variable does not appear in the data file or the codebook.” The *Updated Report* does not identify the sets of cases considered “retained” under the definition that resulted in the numbers identified in Table 3.

Interrogatory No. 17 (Directed to Professor Beckett): Please list the trial report numbers of cases included in the “death penalty retained” column of Table 3 and further explain why the listed cases are considered “retained.”

III. REGRESSION ANALYSIS

A. State Expert’s Calculation of P-Values

Background: Dr. Scurich indicates that when he removed the first sentencing proceedings for Mitchell Rupe, Cecil Davis and Allen Gregory from the analysis (which he contends are “redundant” cases) and then re-ran the model reported in

Professor Beckett's Table 7 of the *Updated Report* (labelled "Impact of Case Characteristics and Defendant Race on Capital Sentencing Outcomes in Death Eligible Cases, December 1981-May 2014"), the effect for the variable representing the race of the defendant is p-value equals .062. But Dr. Scurich does not appear to correct for the coding errors he identified. Use of the uncorrected coding is implied by his text and appears to be confirmed by appendix B3i of the *Evaluation of the Updated Report*, which shows the inclusion of Spillman and the exclusion of Pirtle. As discussed above, Spillman was incorrectly coded as having "received the death penalty" when the trial report indicates that he received life without the possibility of parole. Pirtle was incorrectly coded as "did not receive a death sentence"; he was re-coded as having received a death sentence.

Interrogatory No. 18 (Directed to Dr. Scurich): In this rerun of the model with a resulting p-value of .062, did you in fact rerun the model without correcting the coding errors? If no, please explain. If yes, please indicate whether and what meaningful information is provided by this rerun of the model, given that Professor Beckett has acknowledged the coding errors.

Background: Dr. Scurich also re-ran the model after correcting for the coding errors. His case processing summary indicates 73 cases were included in the analysis, indicating that in this rerun of the model he both corrected for the coding errors and removed the first sentencing proceedings for Rupe, Davis and Gregory from the analysis. He states that the effect for the variable representing the race of the defendant is p-value of .053. *Evaluation of the Updated Report* at 27. Professor Beckett indicates that there were errors in Dr. Scurich's calculation that resulted in the p-value of .053. She states that it appears that Dr. Scurich did not use logarithmic transformation of certain variables (number of prior convictions, number of mitigating circumstances, and per capita revenue) that she used in the regression models. Professor Beckett does not state what effect transforming the variables would have on the results of Dr. Scurich's calculations that resulted in the p-value of .053.

Interrogatory No. 19 (Directed to Professor Beckett and to Dr. Scurich): What p-value results if the model reported in Table 7 of the *Updated Report* is run with the three coding errors corrected, the first sentencing proceedings reported in Trial Reports 7, 180 and 216 removed, and with the logarithmic transformations of variables as set forth in the *Response to Evaluation*?

Interrogatory No. 20 (Directed to Professor Beckett) What p-value results if the model reported in Table 7 of the *Updated Report* is run with the three coding errors corrected, the first sentencing proceedings reported in Trial Reports 7, 180 and 216 removed, Trial Report 34A added, and with the logarithmic transformations of variables as set forth in the *Response to Evaluation*?

Background: Dr. Scurich indicates at another point he “re-ran the model that appears in Table 7 [of the *Updated Report*], except that I used a logarithmic transformation of prior convictions and number of mitigating circumstances.” *Evaluation of the Updated Report* at 20. Dr. Scurich indicates that in this analysis he was able to approximately replicate some of the significant findings from Table 7, including significant findings for applied aggravators, defenses, and victims held hostage. However, he states, “I was not able to replicate the effect for black defendant ($p = .256$). This p-value does not even approach statistical significance (*i.e.*, $p < .05$), suggesting that the effect is not due to a rounding error.” *Id.* Dr. Scurich indicates the complete, unaltered output of the analysis appears in Appendix A7ii of his evaluation. But the case processing summary that appears in Appendix A7ii shows that only 55 cases were included in the analysis. *Id.* at 57-58. Professor Beckett posits that the 22 cases in which the trial reports listed no prior convictions and/or no evidence of mitigating circumstances were inadvertently omitted from the analysis. *Response to Evaluation* at 29. She suspects this is the case because one cannot take the natural log of zero, and any case with missing variable values is automatically dropped from the analysis unless a very small number (such as .001) is added before applying the logarithmic transformation. *Id.*

Interrogatory No. 21 (Directed to Dr. Scurich): Were only 55 cases included in the analysis when you re-ran the model that appears in Table 7 of the *Updated Report*, using a logarithmic transformation of prior convictions and number of mitigating circumstances? Is Professor Beckett correct that the inadvertent omission of other cases accounts for your inability to replicate the effect for black defendants when you re-ran the model using logarithmic transformations?

Background: Similarly, in Tables 4-6, Dr. Scurich indicates he was not able to replicate findings for prior convictions or mitigating circumstances. Professor Beckett, suspecting he was unable to replicate the results because he did not transform the variables, confirmed this conclusion by replicating his models without the transformations and reaching Dr. Scurich's results. *Response to Evaluation* at 71-72. (I note that the *Response to Evaluation* at 72 apparently mislabels the table reproduced from the Evaluation of the Updated Report as relating to Appendix A7 (relating to Table 7) when in fact it is from Appendix A6 (relating to Table 6).)

Interrogatory No. 22 (Directed to Dr. Scurich): Is Professor Beckett correct that you were unable to replicate the results because you did not transform the variables? If no, please explain.

B. Maximum Likelihood Estimates

Background: In describing the methods used to estimate that black defendants subject to special sentencing proceedings before a jury are more likely than similarly situated non-black defendants to be sentenced to death, Professor Beckett indicates that "we fitted logistic regression models, each with an outcome of 0 or 1, using Maximum Likelihood Estimate (MLE) procedures to estimate the probability of receiving a death notice or death sentence given a number of covariates." *Updated Report* at 16-17. None of the reports explains MLE procedures. A technical explanation of MLEs is found in Scott J. Long, and Jeremy Freese,

Regression Models for Categorical Dependent Variables Using Stata, 84 (StataCorp LP, 3d Ed. 2014) as follows:

ML [maximum likelihood] estimates are the values of the parameters that have the greatest likelihood of generating the observed sample of data if the assumptions of the model are true. To obtain the ML estimates, a likelihood function calculates how likely it is that we would observe the set of outcome values we actually observed if a given set of parameter estimates were the true parameters.

Or as explained by another authority, “[t]his estimate is the value of the parameter that is most consistent with the observed data, in the following sense: if the parameter equaled that number (*i.e.*, the value of the estimate), the observed data would have had greater chance of occurring than if the parameter equaled any other number.” AGRESTI, A. AND B. FINLAY, *STATISTICAL METHODS FOR THE SOCIAL SCIENCES*, 124 (Prentice Hall, 3d Ed 1997). Since the MLE of a parameter is the value that makes it most likely to get the observed data, the probable accuracy of the MLE of a parameter relies on the distribution of the observed data points. MLE procedures are generally used for larger datasets for the reason that chance variation may account for the distribution of the bulk of the data in a small dataset, in contrast to a large dataset where it is unlikely the distribution of the bulk of the data is due to chance variation.

Interrogatory No. 23 (Directed to Dr. Scurich and to Professor Beckett): Do you agree with the above general description of MLEs? If not, please indicate what corrections you would make in the description.

Background: Professor Beckett states, “When conducting logistic regression analysis on a relatively small number of cases, it is important to ensure that neither outliers (*i.e.* highly unusual cases) nor small changes in model specification have undue influence on the results.” *Response to Evaluation* at 22. The “Reference Guide on Statistics” in *Reference Manual* at 291 defines “outlier” as “[a] data point that is more than some appropriate distance from a regression line that is estimated using all the other data points in the sample.” The “Reference Guide on Statistics” in

Reference Manual at 240 states, “Particularly in small datasets, the standard deviation can be influenced heavily by a few outlying values. To assess the extent of this influence, the mean and the standard deviation can be recomputed with the outliers discarded.”

Interrogatory No. 24 (Directed to Professor Beckett and Dr. Scurich): Does identifying and removing a data point that is an outlier address the extent to which chance variation accounts for the distribution of the remaining data for purposes of MLEs? If yes, please explain.

Background: Another practice that Professor Beckett identified as important when conducting logistic regression analysis on a relatively small number of cases is “model testing” or “sensitivity testing.” Professor Beckett states, “When conducting logistic regression analysis on a relatively small number of cases, it is of utmost importance to guarantee that small changes in model specification do not have undue influence on the results. It is precisely for this reason that we conducted rigorous model testing (or what [Dr. Scurich] calls sensitivity analysis) to determine what, if any, minor changes might impact the race of defendant effect.” *Response to Evaluation* at 51.

Sensitivity testing analyzes data in different ways to ensure that small changes in model specifications do not have undue influence on the results. See “Reference Guide on Statistics” in *Reference Manual* at 296. The purpose of sensitivity testing is to examine the robustness of a regression model. A statistic that does not change much when data or assumptions are modified slightly are “robust.” *Id.* at 295. *Cf. In re Processed Egg Products Antitrust Litig.*, 312 F.R.D. 171, 189 n.13 (E.D. Pa. 2015) (noting expert’s proposition that “if excluding a group such as a country or a firm or a time period drastically affects the results, this should be reported” because “this type of robustness check will help detect whether the results are driven by one small part of the sample as opposed by the whole sample”). The matters that relate to whether regression results are robust, are discussed in the

“Reference Guide on Multiple Regression” in *Reference Manual* at 322-27. None of these matters relates to the dataset size required for the MLE procedure.

Interrogatory No. 25 (directed to Professor Beckett and Dr. Scurich): Does testing for robustness address the degree to which chance variation accounts for the distribution of the data for purposes of MLEs? If yes, please explain.

C. Disclosure of Analyses Conducted

Background: Based on his review of the *Updated Report*, Dr. Scurich concludes that “numerous analyses were conducted but not included in the final analyses or the Report, and no information was provided regarding how many analyses were actually conducted, the specific variables/configuration of the analyses, or any theoretical rationale for including or excluding variables other than they were not ‘consistently relevant to the outcome.’” *Evaluation of Updated Report* at 29 (quoting *Updated Report* at 18). Dr. Scurich emphasizes the need to disclose the number of hypotheses explored and all statistical analyses conducted in order for the reader to assess whether the hypotheses and analyses were legitimate tests for robustness, or were instead exploratory attempts to reach a desired result that is selectively reported. Dr. Scurich refers to exploratory analyses and selective reporting as “p-hacking.” *Evaluation of Updated Report* at 28.

In response, Professor Beckett presents the unaltered statistical output associated with the alternative models presented in the *Updated Report*. *Response to the Evaluation* at 5 and Appendix C. This information is related to Professor Beckett’s testing to determine if the results regarding the significance of the race of the defendant in jury decisions to impose a death sentence is robust across a variety of model specifications. *Response to Evaluation* at 5.

The *Updated Report* states that the following case characteristics were selected for inclusion in the analysis of jury decision-making: the number of prior convictions possessed by the defendant; whether there were multiple victims; the

nature of the defendant's plea (guilty vs. not guilty); the number of aggravating circumstances found by the judge or jury; the number of mitigating circumstances identified; the number of defenses offered; and whether the victim was held hostage. *Updated Report* at 18. As to "whether the victim was held hostage," Professor Beckett notes that "[i]n these analyses, we treat evidence that the victim was held hostage as a measure of victim suffering." *Updated Report* at 18 n.60. The *Codebook* contained a variable Judge_ProlongSuffInd for prolonged suffering as indicated by the trial judge.²⁶ This variable is distinct from the coding for "victim held hostage," which was separately coded. The trial reports of special sentencing decisions pose separate questions as to these matters and a number of trial reports are coded "yes" for victim held hostage but "no" for "prolonged suffering." The *Response to Evaluation* indicates that sensitivity analyses were the basis for exclusion of the prolonged suffering variable, stating that "research assistants were asked to record whether judges indicated in words that a victim's suffering was prolonged or allowed to endure over time. However, this variable was not included in the final analyses because sensitivity analysis revealed that it was consistently insignificant." *Response to Evaluation* at 10, n.22. Accordingly, the *Response to Evaluation* appears to indicate that testing was conducted in relation to the selection of variables to include or exclude, as least as pertaining to the Judge_ProlongSuffInd variable, but this variable does not appear in any of the statistical output presented in the appendices of the *Response to Evaluation*.

Interrogatory No. 26 (Directed to Professor Beckett): Please provide a full description of the methods and associated testing used in selecting which case characteristic variables to include or exclude in analyses of sentencing decisions and the results of such selection methods and testing. The description of the methods and

²⁶ Question 4(h) on the trial report form asks the judge to "describe the nature and extent of any physical harm or torture inflicted upon the victim prior to death."

associated testing should include, but not be limited to, the variable Judge_ProlongSuffInd.

D. Use of Parsimonious Models

Due to the small size of the dataset of sentencing proceedings (as contrasted with the larger dataset of prosecutorial filing decisions), Professor Beckett developed “parsimonious models” to measure the possible role of race in sentencing. Professor Beckett did not use this phrase in the *Updated Report*, but introduced the underlying concept, noting as follows:

In the analysis of jury decision-making, we included case characteristics that would likely have been known by judges and jurors. These include: the number of prior convictions possessed by the defendant; whether there were multiple victims; the nature of the defendant’s plea (guilty vs. not guilty); the number of aggravating circumstances found by the judge or jury; the number of mitigating circumstances identified; the number of defenses offered; and whether the victim was held hostage. We also tested the significance of a number of social factors. Unfortunately, not all of these factors could be included simultaneously in the analysis of jury decision-making because the smaller sample size reduces the number of variables that can be included in the models. Model testing suggested that the only social factor that was consistently relevant to the outcome is the race of the defendant. For this reason, defendant race is the only social factor included in the analysis of sentencing decisions models presented here.

Updated Report at 17-18 (footnotes omitted). Additionally, Professor Beckett indicated that although the case characteristic of whether the defendant pled guilty was included in the model shown in Table 6, the model shown in Table 7 excluded this variable. *Updated Report* at 30-31. Professor Beckett explained, “In order to accommodate the addition of defendant-race, we did not include the nature of the defendants’ plea in this model.” *Id.* at 30. Dr. Scurich indicates that he finds this omission of the “pled guilty” variable in the second model perplexing. *Evaluation of Updated Report* at 89. The *Response to Evaluation* provides more detailed information about the endeavor to find “the most parsimonious model (the model with the fewest variables) possible that also included (or controlled for) all relevant case

characteristics.” *Response to Evaluation* at 21. More specifically, Professor Beckett notes the “rule of 10” for parsimonious models, and explains that this rule limits the number of covariates to a ratio of one independent variable per ten of the least most frequent events. *Id.* at 52. Professor Beckett states: “If we followed the most conservative approach to model building, we would limit the regression model of sentencing decisions (which resulted in 35 death sentences) to three independent variables ($10/35 = 3.5$.” *Id.* Additionally, Professor Beckett states that the model that omitted this variable and added the race of the defendant is a model that still “included (or controlled for) all relevant case characteristics.” *Id.* at 21.

Interrogatory No. 27 (Directed to Professor Beckett): Please provide a full description of the method and any associated testing used in selecting which variable to remove from those included in the model shown in Table 6 in order to add the race of the defendant variable to the model shown in Table 7.

Interrogatory No. 28 (Directed to Professor Beckett): Please explain the basis for your statement that the model that omitted this variable and added the race of the defendant is a model that still “included (or controlled for) all relevant case characteristics.”

E. State Expert’s Testing of the Sensitivity of the Race of Defendant Effect

Background: Dr. Scurich tested the robustness of the effect that black defendants are more likely to receive the death penalty than non-black defendants by running models that were variants of Professor Beckett’s model reported in the *Updated Report* at Table 7. Two of the four variants, discussed above, corrected coding errors and removed “redundant” cases. Dr. Scurich ran two additional variants of Professor Beckett’s model. One model variant categorized the race of the defendant into white, black, or other race, as opposed to considering black defendants versus non-black defendants. Another model variant included a variable representing the race

of the defendant and the race of the victim. Background and interrogatories relating to these two model variants follow:

1. Separate Examination of White v. Black and Other-Race vs. Black Defendants

Background: Dr. Scurich ran a variation of Professor Beckett's model reported in the *Updated Report* at Table 7, which included the variables that categorizes the race of the defendant into white, black, or other, as opposed to black defendants versus non-black defendants. See *Evaluation of the Updated Report* at 23. Based on the results of this model variant, Dr. Scurich concludes that "while Beckett and Evans purportedly detected an effect for black vs. all other defendants combined, it appears that black defendants are not more likely to receive a death sentence than white or other-race defendants individually." *Id.* at 24 (emphasis omitted). In response, Professor Beckett maintains that the use of black/non-black categories was appropriate in light of the literature on the role of race in capital trials, and in any event there were technical errors in Dr. Scurich's model variant. *Response to Evaluation* at 33. Specifically, Professor Beckett contends the statistical output Dr. Scurich provides in his Appendix B1, *Evaluation of the Updated Report* at 61-64, shows that he failed to use logarithmic transformations of skewed variables, namely, prior convictions and mitigating circumstances. Professor Beckett indicates she ran a model using appropriate transformations resulting in the statistical output shown in Table C6 in the *Response to Evaluation* at 80, and that the results with the transformations indicate that the effect of the race of defendant is still significant when black defendants are compared to white defendants. *Response to Evaluation* at 34.

Interrogatory No. 29 (Directed to Dr. Scurich): Is Professor Beckett correct in her assessment that this model variant (categorizing the race of the defendant into white, black, or other) did not use logarithmic transformations of the variables for prior convictions and mitigating circumstances? If yes, do you agree that

a model using appropriate transformations results in the statistical output shown in Table C6 in the *Response to Evaluation* at 80?

2. Race of Victim

Background: Dr. Scurich ran another model variant based on his premise that the race of the victim should have been included in the model. As a general matter, failure to include an explanatory variable that is correlated with the variable of interest in a regression model may cause an included variable to be credited with an effect that is actually caused by the excluded variable. Here, the hypothesis could be that failure to include the race of the victim may cause the race of the defendant to be credited with the effect of imposition of the death penalty when such an effect is actually associated with the race of the victim. Professor Beckett indicates she assessed whether the race of the victim influenced prosecutorial and/or jury decision-making in capital cases adjudicated in Washington. She concluded that neither the race of the defendant nor the race of the victim appeared to affect prosecutorial decision-making in aggravated murder cases and the fact that a victim was white was not a significant factor in sentencing outcomes.

Dr. Scurich posits that the race of the victim is a “theoretically relevant variable” that should have been included in the model and his conclusion that “once the race of the victim is accounted for in the model, there are no racial effects—for either the victim or the defendant—with respect to the imposition of the death penalty.” *Evaluation of the Updated Report* at 22, 25 (emphasis omitted). Dr. Scurich further states that “when the race of the victim as well as the race of the defendant is included in the model, neither the race of the victim nor the defendant is related to receiving a death sentence.” *Id.* at 3. Dr. Scurich reaches this conclusion after creating a “DefRaceXVicRace” variable, which considers combinations of defendant race and victim race. He does not explain the legitimacy of this variable. The race of the victim may be relevant to identify whether that illegitimate factor, rather than or in combination with the race of the defendant, influenced the outcome of sentencing

proceeding. But explanation is needed as to how use of the DefRaceXVicRace variable is congruent with the basic rationale of using regression techniques in this context, which is to unconfound the factors that influence a jury's decision to impose a death sentence by controlling for other legitimate case characteristics and then considering the extent to which a defendant's odds of being sentenced to death are enhanced by virtue of illegitimate characteristics.

Interrogatory No. 30 (Directed to Dr. Scurich): Do you maintain that your model variant using the DefRaceXVicRace variable demonstrates that there are no racial effects for the defendant with respect to the imposition of the death penalty? If yes, please explain the theoretical basis for a model that includes a DefRaceXVicRace variable if we may assume that consideration of race in assessing whether the defendant should receive the death penalty is an illegitimate factor—whether that consideration is of the race of the defendant alone, the race of the victim alone, or the race of the defendant in combination with the race of the victim.

Background: Professor Beckett questions technical aspects of Dr. Scurich's model variant that included the DefRaceXVicRace variable, such as whether he made the appropriate transformations of the number of prior convictions and number of mitigating circumstances and whether he inappropriately dropped a subset of 16 cases in the model. *See Response to Evaluation* at 35-36.

Interrogatory No. 31 (Directed to Dr. Scurich): Is Professor Beckett correct in her assessment that this model variant did not use logarithmic transformations of the variables for prior convictions and mitigating circumstances and included only 60 sentencing proceedings?

F. Interpretation of R^2 and Pseudo R^2 Measures

Background: In the *Updated Report*, Tables 4, 5 and 6 include an R-squared (R^2) measure, while Table 7 includes a "Pseudo R^2 " measure. An R^2 statistic is the percentage of variation in the dependent variable that is accounted for

by all the explanatory variables used in the model. "Reference Guide on Multiple Regression" in *Reference Manual* at 345. This statistic measures the percentage of variation in the dependent variable that is accounted for by all the independent variables included in the particular model. R^2 varies between 0 (the explanatory variables explain none of the variation of the dependent variable) to an R^2 of 1 (the explanatory variables explain all of the variation of the dependent variable). *Id.* For example, an R^2 of 0.21 indicates that the explanatory variables explain 21% of the variation in outcomes. *See id.*

Dr. Scurich questions the use of the R^2 statistic in the context of logistic regression, as follows:

The Beckett and Evans report does report " R^2 " for each logistic regression model, which is described as the "proportion of variation in outcomes explained." This is an appropriate description of " R^2 " (R-squared) for linear regression but not logistic regression. As others have noted, "numerous formulas have been devised to yield an equivalent of this concept for the logistic model. None, however, renders the meaning of variance explained. Furthermore, none corresponds to predictive efficiency and none can be tested in an inferential framework." Thus, statements by Beckett and Evans such as "adding social factors to the model more than doubles the proportion of variation in outcomes explained (to 20%)" are plainly incorrect.

Evaluation of the Updated Report at 85-86 (footnotes and citations for internal quotations omitted).

Professor Beckett responds by showing "Pseudo R^2 " statistics rather than R^2 statistics in all model results presented in the *Response to Evaluation*, explaining the term "Pseudo R^2 " as follows:

Pseudo R^2 - This is the pseudo R-squared. Logistic regression does not have an equivalent to the R-squared that is found in OLS regression; however, many people have tried to come up with one. There are a wide variety of pseudo-R-square statistics. Because this statistic does not mean what R-square means in OLS regression (the proportion of variance explained by the predictors), *we suggest interpreting this' statistic only to compare models.*

Response to Evaluation at 56 (emphasis added). Several statements in the *Updated Report* indicate the R^2 statistic was used to assess the percentage of variation in the dependent variable that is accounted for by the case characteristics that are included in a particular model. Professor Beckett explains the general concept as follows:

For each set of regression analyses, we first report the results obtained when only case characteristics are included in the model. This allows us to identify which case characteristics influence decision-making in death-eligible cases; *it also allows us to assess the proportion of the variation in outcomes that is explained by case characteristics as a group.*

Updated Report at 18 (emphasis added). After reporting results of " $R^2 = 0.0914$ " for a model (Table 4) that included only case characteristics that Professor Beckett identified as influencing prosecutorial decisions to file death notices, she concludes:

These results show that the case characteristics included in the model explain a small proportion (just 9%) of the variation in whether prosecutors file a death notice. In other words, most of the variation in prosecutorial decisions regarding whether to seek the death penalty is *not* a function of the case characteristics included in this model.

Updated Report at 25. Professor Beckett then adds social factors to the model (Table 5), obtaining results of " $R^2 = 0.2063$ " and concludes that "adding social factors to the model more than doubles the proportion of variation in outcomes explained (to 20%)." *Id.* at 27. She then summarizes that, with certain exceptions, "[o]verall, these results indicate that case characteristics alone explain a very small proportion of the variation that characterizes prosecutorial decisions about whether to seek the death penalty." *Id.* at 28. Similarly, as to jury decision to impose a death sentence, Professor Beckett interprets the reported " $R^2 = 0.2117$ " results of a model that included only selected case characteristics as "[i]ndicat[ing] that case characteristics explain 21% percent [sic] of the variation in decisions to impose the death penalty." *Id.* at 29. After adding defendant race to the model and reporting results of "Pseudo $R^2 = .2473$," Professor Beckett states: "Adding data regarding defendant-race notably improves the model: the amount of variation explained increases from 21 to 25 percent." *Id.* at 30.

Professor Beckett indicates that these results support the second of her three main conclusions, which she presents as follows:

Second, the regression results indicate that case characteristics explain only a small proportion of the variation in the case outcomes analyzed here. Specifically, case characteristics alone explain only 9% of the variation in prosecutorial decisions regarding whether to seek death and 20% of the variation in juries' sentencing decisions. Four case characteristics were significant predictors of prosecutorial decisions to file death notices: the number of prior convictions possessed by the defendant, the number of aggravating circumstances alleged by prosecutors, evidence that the defendant was suspected of committing a sex crime in the course of the homicide, and the involvement of law enforcement officer victims. Neither the number of victims nor evidence that the victim was held hostage were found to be significant predictors of prosecutorial decisions to file a death notice. Several case characteristics were also significant predictors of the decision to impose a sentence of death: the number of applied aggravating circumstances, the number of mitigating circumstances, the number of defenses, and whether the victim was held hostage. Overall, however, the case characteristics for which data are available and which are presumed to be the primary drivers of decision-making in capital cases actually explain a small proportion of the variance in case outcomes in aggravated murder cases. Unexplained variation documented in the results presented here suggest that other extra-legal and social factors – not captured by our statistical models – are playing an important role in death penalty case dynamics.

Id. at 32 (emphasis added).

Interrogatory No. 32 (Directed to Professor Beckett): Do you maintain that the results of any of the models presented in the *Updated Report* provide a basis to determine the percentage of the variance in outcome that is explained by the case characteristics included in the models? If yes, please identify the models and explain.

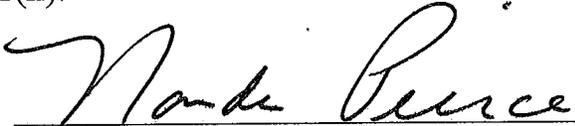
Background: Professor Beckett indicates that “one important correction must be made to Dr. Scurich’s comment about interpreting confidence intervals for log odds coefficients.” *Response to Evaluation* at 49. She emphasizes that when log odds (as opposed to odds ratios) are reported, coefficients that are a positive number indicate a positive relationship, coefficients that are a negative number indicate a negative relationship, and a value at or approaching 0 is the value that indicates no association. *Id.* Dr. Scurich indicates that he included confidence

intervals around $\text{Exp}(B)$ which he describes as “the exponentiation of the logarithmic (natural log) beta parameter” or “[i]n short, it is an odds ratio.” *Evaluation of the Updated Report* at 23. Dr. Scurich appears to reference the confidence intervals for $\text{Exp}(B)$ when he states that confidence intervals that include the value of 1 indicate that the associated odds ratio could be 1:1 (neither increasing nor decreasing the likelihood of the dependent variable) and the variable is interpreted as not being “significantly” predictive of the dependent variable. *Id.*

Interrogatory No. 3 (Directed to Dr. Scurich): Please clarify the object of your statement concerning the interpretation of the confidence intervals that include the value of 1 and indicate whether you agree with Professor Beckett that a correction is needed in your comment about interpreting the confidence intervals.

IV. NEXT STEPS

Answers to the interrogatories should be received by the court and counsel of record for the parties by July 12, 2017. Upon consideration of answers to interrogatories, a final report will be submitted to the court for such weight as each Justice determines to accord it in deciding the matter. As previously noted, nothing in the commissioner’s rulings in this matter precludes a motion for the filing of additional briefs under RAP 10.1(h).²⁷


COMMISSIONER

June 12, 2017

²⁷ Although I am retiring effective June 16, 2017, I have indicated to the Chief Justice that I will be available for a temporary appointment to consider the answers to interrogatories and assist in issuance of findings if my services are needed.