EXECUTIVE SUMMARY:
FINDINGS AND RECOMMENDATIONS

The Connecticut Study of Capital Case Charging, Advancement, and Sentencing:
The Role of Race, Ethnicity, Gender, Age, Socioeconomic Status, and
Judicial District
(1973-1998)

Report Submitted to the

Office of the Chief Public Defender for the State of Connecticut
Capital Defense and Trial Services Unit
Hartford, CT

by

Neil Alan Weiner, Ph.D.
Paul D. Allison, Ph.D.
Gretchen Livingston, MA
Philadelphia, Pennsylvania

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Findings

The study findings point in the following directions:

- *Arbitrariness:* Insofar as the legally relevant variables examined did not appear to be consistently and strongly related to case advancement, arbitrariness may have been operating in Connecticut's capital-case processing system;

- *Unfair Disparity—Crosstabular Approach:* There were signs that legal unfairness might have been operating at the points of capital-felony charging (prosecutorial decision making) and advancing to a penalty trial (a combination of juror and prosecutorial decision making):

    - ➤ *Judicial District:* Of all the legally suspect variables examined, judicial district had the most consistent and strongest relationship to case advancement. Defendants processed in judicial districts with the fewest death-qualified cases were charged with capital felonies, advanced to penalty trial after conviction for a capital felony, and received death sentences at higher rates than defendants processed in judicial districts with the most death-qualified cases.

    - ➤ *Defendants' and Victim(s) Race/Ethnicity:* There was some evidence that the victim(s) race/ethnicity was related to procedural and sentencing advancement: cases involving white victims were more likely to be charged as capital felonies and, later on, to advance to penalty trial than cases involving other victim(s) races/ethnicities.

        There was no evidence that the defendant's race was related to procedural and sentencing advancement.

    - ➤ *Defendant's and Victim(s) Gender, Age and Socioeconomic Status:* The analyses provided very little evidence that gender, age, or socioeconomic status of the defendant or victim(s) was related to procedural and sentencing advancement.

    - ➤ *Defendant's and Victim(s) Religion and Sexual Orientation:* The data collected for this report did not include information about religion and sexual orientation. For this reason, we could not address these issues.

- *Unfair Disparity—Frequency Approach:* Analyses that examined death sentencing among both similarly and dissimilarly situated defendants—consistency and selectivity in death sentencing, respectively—showed patterns that were consistent with decision making that was either arbitrary or unfair.

Recommendations

The findings suggest the following recommendations:

- continue quantitatively analyzing capital case processing in the State using the present data employing statistical techniques and analysis strategies suitable to samples of small to modest sizes like the present one;

- continue analyzing the present data, focusing on variables that have not been examined in the present report but that might help explain procedural and sentencing outcomes;

- consider updating these data to include more recent death-qualified cases, thereby expanding the analytical pool of cases; and

- review and assess information gaps that need to be filled (e.g., religion, sexual orientation), thereby, expanding the pool of analytical variables.

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30 Trinity Street, 4th Floor
Hartford, CT 06106

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Neil Alan Weiner, Ph.D.
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Philadelphia, Pennsylvania

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I. INTRODUCTION AND BACKGROUND: THE STUDY'S MANDATE

The Origin and Compass of the Study Mandate. In 1998, the Office of the Chief Public Defender for the State of Connecticut commissioned a study of all homicide cases prosecuted in Connecticut since 1973, the year in which the death penalty was reinstated in the aftermath of the United States Supreme Court decision in <u>Furman v. Georgia</u>, 408 U.S. 238, 92 S. Ct. 2726 (1972). The purpose of the study was to gather data on each homicide prosecution and to submit these data to rigorous statistical analysis, controlling, to the extent possible, for neutral variables, in order to discern whether any systemic or individual racial or other bias existed in the selection of cases for prosecution as capital felonies. The study would examine key decision-making points in the prosecution of homicide cases, focusing in particular on the prosecuting attorney's use of discretion in charging a defendant with a homicide offense, and on the decision of the jury or other sentencing body to impose or not to impose a death sentence following a conviction for capital felony.

In July 2001, the Connecticut legislature enacted *Public Act No. 01-151 for Substitute Senate Bill No. 1161* (hereafter the *Death Penalty Act*). The *Death Penalty Act* established, among other things, "a Commission on the Death Penalty to study the imposition of the death penalty in this state" (Sec. 4.) (hereafter the *Commission*). The *Death Penalty Act* directed that the *Commission's* study would encompass but not be limited to:

> ➤ "(3)[a]n examination of whether there is any disparity in the decision to charge, prosecute and sentence a person for a capital felony based on the race, ethnicity, gender, religion, sexual orientation, age, or socioeconomic status of the defendant or the victim;
> ➤ (4)[a]n examination of whether there is any disparity in the decision to charge, prosecute and sentence a person for a capital felony based on the judicial district in which the offense occurred."

(See Section.4.Subsection.(c)(3)(4).) To date, no study has been conducted in the State that has addressed these issues with the requisite scientific rigor and comprehensiveness.[1]

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[1] Preliminary data, unadjusted for the influence of factors legally relevant to prosecutorial, juror, or others' decision making, was presented to the Connecticut Supreme Court in 1995. These data suggested that the death penalty had been disproportionately applied to defendants who were black as well as to defendants whose victims were white. The data presented were calculated by counsel for Sedrick Cobb, a death-

The question of whether disparity exists in the administration of the death penalty at the points of charging, prosecution, and sentencing has been at the heart of death-penalty research nationwide both before and after the Supreme Court's decision in *Furman* voided state death-penalty statutes nationwide. In the post-*Furman* world of death penalty administration, it was anticipated that each statute would be applied in an evenhanded and uniform way because every statute was required to incorporate language and procedures that were both sufficiently specific and stringent enough to reign in the unfettered use of discretion. Evenhanded and uniform administration was thought to insure, in turn, evenhanded and uniform judicial outcomes.

Unfortunately, it is not always easy to detect disparity and its sources. There are several reasons for this. First, one needs to look for detectable, legally relevant patterns *within and across* the sequential procedural points at which capital case decisions are made. Data must be available, accurate, and comprehensive in order to conduct competent analyses. Second, one needs to determine whom the decision maker or set of decision makers is at each procedural step and understand how their separate or combined decision making might result in disparate outcomes. Third, procedural disparities in capital case processing can occur in different kinds and degrees. Perhaps most central in this regard is that some kinds of disparity are legally benign. Some, unfortunately, are not, and these are the ones that most need to be spotlighted.

The aforementioned considerations combine to present potentially formidable hurdles that must be capably negotiated if one is to detect with confidence procedural and sentencing disparities, whether legally benign or otherwise. We believe that this research possesses strengths that reduce the impact of these hurdles for reasons spelled out below.

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sentenced inmate, based on data supplied by the Criminal Justice Information Services Division of the Federal Bureau of Investigation and the Uniform Crime Reporting Program of the State of Connecticut. Three of the Connecticut Supreme Court justices reviewing the Cobb case expressed "alarm" at these preliminary, unadjusted, data. Justice Berdon reiterated an opinion he articulated in State v. Ross, 230 Conn. 183, 306-307 (1994), that "the available statistics 'compel the conclusion that prosecutorial discretion has resulted in the arbitrary imposition of the death penalty'". The three prevailing justices in State v. Cobb, supra, noted that the data had not been "subjected to a rigorous statistical analysis to determine the accuracy of the data, to account for the racially neutral variables, and to determine the statistical significance of the data," and that "to the extent that [Cobb's] statutory interpretation claim...resembles the federal constitutional challenge made by McCleskey, some sort of statistical evidence and fact-finding, similar to that presented and undertaken in McCleskey (v. Kemp, 481 U.S. 279 (1987)) will be necessary." Cobb, supra, 234 Conn. at 738, n.4. The purpose of the present study is to undertake precisely the most rigorous statistical analyses possible as contemplated by the prevailing justices in the Cobb case.

Identifying Decision Making Pathways and Points. In order to detect disparities that may have legal relevance, it is important to chart clearly the procedural pathway that each capital case has followed. Each procedural point in the pathway needs to be clearly marked and separately examined. The purpose of such scrutiny at each procedural point is to determine whether there are indications of disparities in the processing of homicide cases that are legally objectionable.

Disparity, Arbitrariness, and Discrimination. Decisions that involve disparate outcomes in charging, prosecution, and, ultimately, sentencing are legally rational and acceptable if such outcomes have been predicated on *legally relevant* factors that related to the incident's aggravation level and the defendant's degree of personal culpability with regard to that incident. In short, cases and defendants characterized by *unequal* levels of aggravation and culpability are expected to sustain different outcomes. These outcomes are considered legally benign. Cases and defendants that have had greater levels of aggravation and personal culpability are expected to have proceeded further into the capital case processing system and, further, to have entailed harsher outcomes, such as death sentences, than cases with lower levels of aggravation and personal culpability. The mere presence of a raw disparity in procedural and sentencing outcomes—that is, one that has not been adjusted for the influence of other, legally relevant factors—does not in and of itself show that the observed difference is legally unacceptable.

Disparity in outcomes becomes legally problematical when cases or defendants of *equal* aggravation or culpability level display *unequal* outcomes. There are basically two ways that this can occur. First, although a disparity is observed, it *cannot* be explained by factors related to the participants, the judicial district of occurrence or prosecution, or by the incident. In this instance, the disparity is *arbitrary.* Second, a disparity might be observed, and it *can* be explained. The disparity might (1) flow from the discriminatory use of discretion or (2) be the discriminatory result of a system that is discretionary. Both patterns in disparity comprise *discrimination.* In the first instance, the discrimination follows from the express deliberation of *individual* decision makers because each individual intentionally renders an arbitrary or discriminatory decision. In the second case, the discrimination flows from the decisions of *many* decision makers that, for one or another reason, which may or may not be understood, has as its overall outcome a disparate result. In this instance, unfair disparity can occur because of the *cumulative impact* of the decisions made by *many individual* decision makers, none of which necessarily resulted from an intentional act of arbitrariness or discrimination. Despite the absence of discernible individual discriminatory intent, the combined impact of the individual decisions nonetheless results in an aggregate pattern of one or

the other type (i.e., discriminatory use of discretion or the discriminatory result of a system that is discretionary).

The present research investigates whether there is any basis supporting the conclusion that the Connecticut death penalty statute has operated disparately. The data collected for studying this issue focused on whether disparity resulted from the decisions of *many* decision makers. The data did *not* lend itself to the analysis of the express intent of individual decision makers. We studied, therefore, to the extent the data permitted, whether, in the aggregate, capital felony cases of *equal or near equal* aggravation level or capital felony defendants of *equal or near equal* culpability displayed, *on average, unequal outcomes*—arbitrary or discriminatory—at one or more of the three broadly enumerated procedural points—charging, prosecution, and sentencing. Toward this end, we focused on *systemic* patterns.

The Guilt and Trial Procedural and Sentencing Pathways. In order to examine whether one or the other type of procedural and sentencing unfairness existed, we have divided the procedural flow of capital-felony cases into two pathways: (1) the *guilty plea* pathway and (2) the *trial* pathway. Figure 1depicts these divergent pathways, highlighting the trial procedural pathway to a death sentence by using bold directional and box-encasement lines. Among cases that qualified as capital felonies (procedural Point 1), one portion was charged with capital felonies (procedural Point 2), thereby rendering them death-penalty eligible. Among those that were charged with capital felonies, a portion resulted in a guilty plea (procedural Point 3a), which, as the figure shows, diverted and, in practice, effectively *removed the vast majority* of those cases from the death-flow pathway.2

Also, among those cases that were charged as capital felonies (procedural Point 2), another portion resulted in a guilt trial (procedural Point 3b). Among those cases that resulted in guilt trials, a portion remained along the death-flow trial pathway by virtue of the prosecutor filing a notice of aggravating factors (procedural Point 4), while the other portion, although they involved guilt trials, did not stay on the death-flow pathway. Those cases that proceeded to a death-penalty guilt trial, and, which, thereby, remained along the death-flow pathway, either resulted in a capital felony conviction (procedural Point 5), or did not, because of withdrawals, dismissals, and acquittals. The convicted portion then either (a) received a sentence less than death because the State never intended to seek the death penalty in the case,

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2 Among the defendants in the data set, only one pled guilty to capital felony, advanced to penalty trial, and received a death sentence. This defendant was placed on the trial pathway because, even though a plea was negotiated, and the guilt trial was bypassed, the penalty trial was nonetheless held. This case involved the murder of a police officer.

(b) received a sentence less than death because the prosecutor declined to proceed to a penalty trial following a conviction for capital felony, or (c) went to penalty trial (procedural Point 6). Some cases that proceeded to penalty trial then received a death sentence (sentencing Point 7).

Each procedural and sentencing point along one of the two capital felony pathways involved one or more decision makers. The *lightly shaded* points along the two pathways (points 1, 2, 3a, and 3b) represent nodes at which prosecutorial decision making operated. As such, any finding of arbitrary or discriminatory unfairness at these points potentially points to improper use of prosecutorial discretion. Alternatively, the *more deeply shaded* points in the two pathways (points 4, 5, 6, and 7) represent nodes at which juror decision making operated. As such, any finding of arbitrary or discriminatory unfairness at these procedural points would suggest unfairness on the part of jurors. It is also possible to find unfairness in the decision making of both decision makers. This report was designed to examine, to the greatest extent possible, whether arbitrariness and discrimination operated at the sequential capital felony case processing points falling along the two procedural pathways.

In order to provide information that is responsive to the questions posed by the *Death Penalty Act*—determining whether selected *personal characteristics* of the *defendant or victim* and the *judicial district* were related to disparity, we tracked cases across the procedural and sentencing points just specified. At each procedural point, we asked whether those defendants who advanced to the *next* procedural point, thereby placing them in progressively greater jeopardy of eventually receiving a death sentence, differed in the personal and jurisdictional ways identified by the *Death Penalty Act*.

We now turn our attention to the study methodology: (a) universe of cases for study, (b) data collection and entry, (c) variables (measures used), and (d) statistical analyses. This discussion is followed by the presentation of the findings.

II. METHODOLOGY

The methodology for the analyses reported here is set forth in detail in the Research Design: Connecticut Study of Homicide Prosecutions (April 28, 1999) (see Appendix A).

A. Universe of Cases for Study

The Role of Capital Felonies and Statutory Aggravating Factors.
The cases examined in the report were selected from a much larger universe in

the following way. The researchers, in collaboration with legal and research staff of the Office of the Chief Public Defender, Capital Defense and Trial Services Unit, first identified and examined all arrests for capital murder, intentional murder, felony murder, and manslaughter in the first degree that occurred since 1973, when the death penalty was reenacted in the State, and that had a sentence determination by December 31, 1998.[3] All in all, approximately 2,500 cases in which homicide was charged were identified. All 2,500 cases were reviewed for "death eligibility," that is, for the presence of strong, undisputed evidence that the defendant committed an act that fit into one of the nine categories of capital felony, which, because of this, could have resulted in a charge of capital felony under Conn. Gen. Stat. §53a-54b.[4]

Pursuant to Connecticut law, prosecutors may seek the death penalty only in homicide cases that meet the statutory criteria to be charged with one or more of *nine capital felonies*. The nine capital felonies are:

1. murder of a law enforcement officer;
2. murder for hire or pecuniary gain;
3. murder by one who has previously been convicted of intentional or felony murder;
4. murder by someone under a sentence of life imprisonment;
5. murder of a kidnap victim during the course of the kidnapping;
6. illegal sale of cocaine, heroin or methadone to a person who dies as a direct result of the use of those drugs;
7. murder during the course of a first degree sexual assault (added 1980);
8. murder of two or more persons in the same transaction (added 1980); and
9. murder of a person under sixteen years of age (added 1995).

In order for a case to have been included in the study, the defendant must have been formally charged by the State with a homicide, the facts of which could have supported a capital felony charge, *whether or not the defendant was so charged*. One purpose of the study, then, was to examine the decision making of prosecutors and sentencing bodies with respect to their assessment of the death-worthiness, or overall aggravation and culpability levels attributable to cases and defendants. In order to examine this issue, all

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3 The cutoff date was imposed in order to permit sufficient time for trials to have undergone post-trial review and retrials by the time the analytical dataset was made final. As it turned out, the few retrials in the present dataset overwhelmingly affirmed the sentences of the initial trials. Nonetheless, analyses like those reported here need to impose such a cutoff-date case-selection rule in order to review cases for possible changes in sentencing outcomes. Analyses need to be designed to take into account sentencing changes that may have occurred often enough that they might alter findings. In the present set of cases, there were virtually no changes in sentences from the initial ones imposed.

4 Cases were also removed if they were not actually eligible to be sentenced to death (e.g., under age 18).

"death-eligible" cases—those in which the underlying facts *could* have warranted a capital felony charge—were selected, regardless of whether the defendant ultimately proceeded to a guilt or death penalty trial. Among the identified arrests for capital murder, intentional murder, felony murder, and manslaughter in the first degree that occurred since 1973, *100* cases, excluding corresponding retrials, were found whose facts supported a capital felony charge, *whether or not the defendant was so charged*.

The State can have proceeded to a penalty trial, following the defendant's *conviction* of one or more of the nine enumerated capital felonies, only when one or more of the following *seven statutory aggravating factors* was first alleged and then presented by the prosecutor:

1. defendant committed the offense during the commission of a felony of which he had previously been convicted (h)(1);
2. defendant committed the offense after having been convicted of two or more independent state and/or federal offenses that involved the infliction of serious bodily injury upon another person (h)(2);
3. defendant knowingly created a grave risk of death to another person in addition to the victim (h)(3);
4. defendant committed the offense in an especially heinous, cruel or depraved manner (h)(4);
5. defendant procured the commission of the offense by payment, or promise of payment; of anything of pecuniary value (h)(5);
6. defendant committed the offense as consideration for the receipt or expectation of the receipt, of anything of pecuniary value (h)(6); and
7. defendant committed the offense with an assault weapon (h)(7).

In order for a defendant to have been considered for a death sentence, the penalty trial jurors must have been *unanimous* in their finding of *at least one of the seven statutory aggravating factors*.

The Role of Statutory Mitigating Factors. If the jurors were unanimous with respect to finding the presence of at least one of the nine statutory aggravating factors, they then were permitted to consider whether to find one or more of the five statutory mitigators or one or more of the many nonstatutory mitigators. The *five statutory mitigating factors* considered were:

1. defendant was under age 18 (g)(1);
2. defendant's mental capacity was significantly impaired or his ability to conform his conduct to the requirements of law was significantly impaired but not so impaired as to constitute a defense to prosecution (g)(2);

3. defendant was under unusual and substantial duress, although not such duress as to constitute a defense to prosecution (g)(3);
4. defendant was criminally liable for the offense, which was committed by another but his participation in such offense was relatively minor, although not so minor as to constitute a defense to prosecution (g)(4); and
5. defendant could not reasonably have foreseen that his conduct in the course of commission of the offense of which he was convicted would cause, or would create a grave risk of causing, death to another person (g)(5).

If a death sentence was imposed, the jurors must have been *unanimous* in their rejection of any and all mitigation. Among the defendants studied here, six received death sentences. These defendants represented more than 6% of the study universe.

The Unit of Analysis—The Defendant. The unit of analysis adopted in this report was the *defendant*. *Defendant* was used in the *legal* sense. A defendant was someone who was subjected to a capital felony *prosecution (i.e., proceeding)*. A defendant was synonymous, then, with a *prosecuted case* (hereafter, *case*). For example, if one person committed a capital felony on five different occasions, as a serial murderer does, then this one person was treated in the analyses as *five* legally defined defendants, or synonymously, cases. A defendant was *not*, therefore, identical to a unique *person*. In contrast to a defendant, an *incident* was a homicide *event* that could have involved one or more defendants (and, hence, cases).

In the present dataset, there were only two instances where one individual was included as a defendant in more than one case, due to the fact that the individual was involved in more than one homicide *incident*. As in the example sketched above, one person was involved in five capital felony murders that occurred on separate occasions. Three of the five cases were tried together and resulted in death sentences. The two others were included in a plea that effectively removed the defendant from the death penalty pathway for those cases. In the other instance, one person was involved in two separate murders, neither of which resulted in a death sentence.

The fact that one person was involved in five capital felonies and another in two separate homicides posed a methodological problem. If we had included all seven cases in the analyses, we would have been including substantially *repetitive* information, in particular, about the defendant. From a statistical standpoint, the multiple cases relating to a single defendant were not independent of one another. The repetition would have biased the results in

ways defined by these two defendants' personal characteristics and possible propensities for becoming involved in certain kinds of homicides.

How one solves this problem depends upon the nature of one's primary substantive concern. If one is most interested in the influence of the *defendant's* characteristics (e.g., race and ethnicity) upon procedural advancement and sentencing for capital felonies, only one *defendant* (i.e., prosecution/case) in each of the two sets of cases should be used. Otherwise, the information about the single *person* would have been counted five times for the one defendant and two times for the other defendant (i.e., one time for each prosecution accounted for by each person), which would have made their personal- and incident-related information count five times more heavily and two times more heavily, respectively, than each of the other single defendants. If, however, one is most interested in the effect of crime or trial characteristics upon procedural advancement and sentencing for capital felonies, then, for example, for the first defendant, who was involved in the five murders, one would randomly select one of the three death sentenced cases, all of which involved trials, and one of the two pleas.

We were certainly interested in the influence of defendant characteristics on procedural outcomes, but we were also interested in this same regard in crime and trial characteristics. In order to balance these two objectives, we treated the two multiple-murder defendants as follows. For the person with five involvements, we randomly selected one case from among the three death sentences imposed and, also randomly, one case from the two pleas. For the person with two involvements, we randomly selected one of the two cases.

The rather moderate size of the dataset made the issue of repetitive data salient. For example, the five serial-murderer cases would have accounted for more than 5% of the cases, thereby amplifying their impact. Similarly, the two cases would have had an impact that was disproportionate to the representation of the single murderer responsible for them in the dataset.

Because three of the five serial murder cases were not selected in the first instance, and one of the two cases was not selected in the case of the defendant with separate murder cases, the original set of 100 defendants was reduced by 4, *leaving 96 defendants in the analytical dataset.*

Only the Initial Trial is Included for Study. There was another, related issue that might have complicated the selection of the universe of cases for study. If the defendant did not negotiate a guilty plea and, thus, was tried for his or her involvement in a homicide incident, then, after the sentencing

hearing was concluded, the defendant might have been retried if so ordered by an appropriate reviewing body. Had we included in the analysis retrials along with their corresponding initial trials, we would have introduced entirely repetitive information, except possibly for the sentencing outcome. In fact, in this situation, where the facts of the trial were virtually identical to the facts of the retrial, the problem of nonindependence would have been even more pronounced than it would have been in the prior scenario in which the same individual appeared in the database more than once.

Among the 96 defendants (that is capital felony prosecutions/cases), there were five trial-retrial pairs. In four of the five pairs, the sentence imposed at the initial trial was affirmed at the retrial. In one of the pairs, the sentence imposed at the initial trial was different from the sentence imposed at the retrial; both the trial and retrial, though, resulted in non-death sentences, that is, terms of years (i.e., the years of the sentence were simply reduced at the retrial). Because the initial trials and corresponding retrials were all consistent in the *type* of sentence imposed, we have decided to conduct only an *initial* trial analysis. The initial trials were the ones applied to the 96 defendants in these analyses.

In sum then, the 96 *defendants* represented 96 *unique trials and 95 unique persons.* The following analyses focused on just these defendants. Figure 2 (a simple amplification of Figure 1) shows numerically how these defendants advanced through the two procedural and sentencing pathways implemented since the enactment of the Connecticut death penalty statute.

B. Data Collection and Entry

1. Collection

The analyses conducted for this report were based upon comprehensive and detailed information about each of the 96 death penalty-eligible cases. The information was compiled from several documentary sources and then coded in the Connecticut Homicide Review Study Data Collection Instrument (hereafter DCI) (see Appendix B for the DCI). These data sources included the:

- trial court opinion;
- appellate court opinion;
- presentence investigation report;
- mental health evaluation(s)(report(s);
- notice of aggravating circumstances;

- bail reports;
- affidavit of probable cause/police report(s);
- complaint/information;
- guilt trial or guilty plea transcripts;
- penalty trial transcripts;
- Department of Corrections records;
- autopsy/medical examiner's report(s);
- jail/prison intake records;
- attorney interviews;
- defendant/state briefs; and
- media accounts.

Overall, using these data sources, information was coded for more than 600 variables pertaining to the following substantive domains:

1) each defendant and codefendant, including both race and ethnic identifications, age, gender, and socio-economic status;
2) victim(s) (killed or otherwise), including both race and ethnic identifications, age, gender, and socioeconomic status;
3) circumstances of the incident;
4) procedural decision makers and decision-making outcomes,
5) strength of evidence of guilt; and
6) culpability (statutory and non-statutory aggravating and mitigating factors).

In order to assemble the most reliable and valid data possible, the information collected about the incidents in which *each* of the defendants was involved was coded *independently* by *two* lawyers. The two independently coded DCIs were then compared to each other in one or more joint staff meetings that were held weekly. Each item coded on the DCI was compared for consistency (reliability) across the two DCIs as well as for accuracy and substantive meaning (validity). This procedure was followed for *each* item in *each* DCI. *The result was a 100 percent reliability and validity check.*

To facilitate the review of the case files and assist in the double-coding process, the Project Manager prepared the *Connecticut DCI Coding Instructions* (hereafter the *Coding Instructions*) (see Appendix C). The *Coding Instructions* specified documentary sources that were to be used for compiling the coded information, described how to interpret and code selected information, detailed what to do when information was missing, and codified how to handle information that was not consistent across documentary sources.

2. Entry

The DCIs were entered into an automated, machine-readable format by a professional data-entry firm to ready them for statistical analysis. Details of the accuracy of that process are presented in a memorandum drafted by one of the research staff members at the Office of the Chief Public Defender, Capital Defense and Trial Services Unit (see Appendix D). The data-entry firm used the industry standard of *double data entry*—that is, replicated keystrokes for each coded character—which ensures that the final set of entries for each DCI is consistent across the two data-entry sequences.

The double-entry protocol does not, however, guarantee that the ensured consistency corresponds to the original DCI that was the basis for the double entry. In other words, the double-entry procedure by itself is not able to confirm that the entered information, although consistent across the two independent data-entry procedures, conforms exactly to the DCI.[5] For this reason, we conducted a third-party review of the double-entry protocol. We wanted to be certain that the entered data was accurate when compared to the source used for the data entry. In order to convince ourselves that the entered data was highly accurate, the third party review compared the final entered data for 15 defendants to the original DCIs used for data entry. The design of that review is described in Appendix D.

Overall, among the approximately 51,000 data-entry keystrokes registered for the double entry of the 15 DCIs, only *one* typographical error (one character) discrepancy was detected between the double-entry dataset (reliability) and the original DCIs. That is virtually a perfect record of both consistency and accuracy.

The combination of (a) independent, double coding of all DCIs and (b) the findings from the third-party review of the data-entry procedures gives us substantial confidence in both the reliability and accuracy of the data used for the analyses.

C. Analytical Variables (Measures Used)

The information contained in the analytical dataset (also known as *measures* or *variables*) is divided into three parts, corresponding to the specifications articulated in the *Death Penalty Act*: (1) procedural and sentencing *outcomes* (i.e., the legal events that are to be explained), (2) legally

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5 If the person entering the data first is reading the wrong line of characters and this error is repeated by the person entering the data second, then the double-entry procedure will result in consistent (reliable) data that is nonetheless in error (inaccurate).

suspect variables (i.e., selected defendant and victim characteristics that are extralegal—defendant and victim race and ethnicity, gender, age, and socioeconomic status; judicial district), and (3) legally *relevant* variables that calibrate the incident's overall aggravation and the defendant's specific culpability (i.e., statutory aggravators; statutory mitigators; nonstatutory aggravators; and nonstatutory mitigators).

Screening Variables for Inclusion in the Analyses. This three-way partitioning of information provided a broad framework for selecting variables for inclusion in the analyses among the more than 600 variables available in the DCI. Because only 96 defendants could be studied, we were limited, for statistical reasons, in our ability to include a large number of the 600-plus variables in the DCI. When one has a limited number of defendants relative to the number of variables collected, the information represented by the variables will be stretched thin. This is because the many pieces of information about each variable, whose independent influences on procedural and sentencing outcomes we ultimately wanted to determine, were unlikely to have the *variability* (also known as being "well distributed") that was needed for their proper analysis.6 If one wants to examine the importance of one variable, say the type of statutory aggravating factor alleged by the prosecutor, in comparison to another variable, say, the defendant's socioeconomic status, on a procedural outcome, say, a guilty plea, then, optimally, one needs information that relates the nine statutory aggravating factors to each level of socioeconomic status. If this does not occur, it becomes difficult to determine how each of the nine statutory aggravators affects guilty pleas for defendants, after controlling for the level of socioeconomic status. In short, the more variables one wants to study, the more defendants one needs in the study group because an ample supply of defendants of varying personal and offense characteristics helps to ensure that the different levels measured by the variables of interest can combine in the variety of ways needed for their sound analysis, independently and in combination.

Because all 600-plus variables could not be included for study here, a subset was selected. The selection of the subset for study involved the following steps:

1. We omitted variables that appeared to be redundant (i.e., conceptually, empirically, and based upon prior experience) among the statutory and nonstatutory aggravating and mitigating factors.

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6 A variable was well distributed when all or most of its values appear in the dataset in sufficient number for reliable analysis.

2. Those variables that were not redundant (step 1 above) were then examined to determine the extent to which they had missing information. Variables that had little or no missing information (i.e., information for the variable was available for all or most of the 96 defendants) were kept in the pool of potential analytical variables. 7

3. Those variables that remained in the pool of potential variables after step 2, were then examined to determine if their values were well distributed.
   a. Those variables that were well distributed were kept in their original coded form.
   b. Those variables that were not well distributed were recoded in order to improve their value distribution.8 9

4. Those variables that survived steps 1, 2, and 3 were included in the crosstabular analyses.

In total, 101 variables were selected for study.

The Variables Selected for Study. Table E.1 presents how the variables yielded by steps 1, 2, and 3 were defined (measured) for the analyses. Parts A, B, and C correspond, respectively, to the three types of variables identified in the *Death Penalty Act*: procedural and sentencing outcomes, suspect variables, and legally relevant variables (both statutory and nonstatutory). In each *cell* of the table, that is, intersection of a row and column, the first line lists the variable of interest. Below the variable of interest, in *brackets* "[ ]," is the variable name (i.e., label) assigned to that

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7 Usually no more than five to ten cases had missing information, but, on one or two occasions, we reported variables with more than ten missing values. In all cases where information was missing but where we nonetheless decided to use that variable, we reported the number of missing values.

8 One means of coding involves "recoding" (also called "grouping"). For example, the defendant's occupation, which was used as one of two available proxies for defendant socioeconomic status (the other was education level), had seven general categories of occupations (e.g., professional and managerial; law enforcement and military), each with between three and six subcategories. Overall, 36 different defendant occupations or related information could have been coded on the DCI. When we looked at the actual coding of occupation for the 96 defendants, it became clear that the specific occupational types under the general categories were not coded often enough (i.e., they were not well distributed) to permit their reliable, separate analysis. For this reason, we only reported findings at the category rather than subcategory level. For example, all professionals and managers were grouped together under "professional and managerial."

9 Another means of coding involved "counts". A count is simply a sum, or enumeration, of the number of times a specified value of one or more variables appears. For instance, one can count the number of statutory aggravators that were alleged by the prosecutor (i.e., the number of alleged statutory aggravators with a value of "1"). Also, one can count the number of presented statutory mitigators or the number of presented nonstatutory mitigators (i.e., the number of presented statutory mitigators with a value of "1"). In the main, we have identified count variables by assigning them variable names with language like "the number of." Count variables basically equate each of the summed variables to one another in terms of their relative weight in influencing the outcome of interest. That is because each variable contributes an equal number to the count, usually a value of "1," as they did here.

variable for use in the computerized statistical analysis. On the same line, to the right of the variable name, in *braces* "{ }," is the variable name as it appeared in the DCI. Below this line, we have indicated in parentheses how the variable was coded. Almost all variables were coded "0 = No; 1 = Yes". However, some variables were coded differently, for example, the count variables. The coding schema for these variables appears in parentheses in the line below the line with the DCI item number (e.g., number of alleged statutory aggravators—"0," "1," and "2+"; Part C. row 1.(8)).

Parts A, B, and C are split into four columns. This was done because some variables were defined in as many as, but no more than, four ways. We discuss below, in the appropriate subsections pertaining to the suspect variables, why these different definitions were used. Basically, though, we formulated more than one variable definition in order to explore the extent to which relationships between variables might be sensitive to alternative definitions. To the extent that the relationships remained intact across definitions, the findings could be viewed as stable (i.e., robust) because they were not sensitive to measurement alteration.

Ensuring the Accuracy of Key Variables. Some information in the DCI that characterized the participants, the incident, and the procedural and sentencing history of the case was coded with respect to how certain we were of its presence and validity. That is, we coded whether the information was "expressly stated in the [data source] file" or "suggested by the file but not specifically indicated" (e.g., see V292-V297) as opposed to one or another lower standard, such as "factor existed from the defendant's perspective." In every instance, we coded the information as present for these variables only if one or the other of the *highest two* standards was met (i.e., "expressly stated" or "suggested by the file but not specifically indicated").10

1. Procedural and Sentencing Outcomes: Guilty Plea and Trial Pathways

Procedural Departure and Destination Points. As Figure 2 shows, the guilty plea and trial pathways were segmented overall into seven discrete

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10 The following variables in the DCI were subjected to this coding procedure:
  (1) special precipitating events—[PRECIPTOT], V292-V297;
  (2) special aggravating circumstances of the victim—[AGGVICT2], V301-V314;
  (3) other aggravating features of the offense—[AGGTOTB2], V325-V331;
  (4) special aggravating features of the offense specifically attributable to the defendant—[AGGDTOT2], V377-V393;
  (5) defendant's motives—[MOHATE], V402-407; [MOMONEY], V408-V411; [MORAGE], V412-V415; [MOSEX], V416-V418; [MOCRIME], V419-V426; and [MOOTHER], V427-V429.
  (6) defense to charges—[DEFENSE], V443-V446;
  (7) nonstatutory mitigating circumstances, generally—[MITBOTHDUM], V526-V595.

procedural and sentencing points. At every point along a pathway, the defendants were analyzed from the perspective that they were at risk of *advancing to the next, adjacent procedural or sentencing point* that took them closer to a death sentence. The procedural and sentencing outcome variables appear in Table E.1, Part A.

2. Legally Suspect Variables

No information was compiled about the defendants' and victims' *religious and sexual* orientations. For this reason, we were unable to examine these factors listed in the *Death Penalty Act*. The remaining legally suspect variables appear in Table E.1, Part B.

a. Race and Ethnicity of the Defendant and Victim(s)

Race/Ethnicity Issue 1—The Defendant: The first issue regarding race/ethnicity was whether *defendants* of certain races/ethnicities experienced deeper procedural advancement and harsher sentencing than specific other races/ethnicities.

Defendant Race, Definition 1: The race/ethnicity of the defendant was defined as falling into one of four categories: black, white, Hispanic, and other (Table E.1, Part B, Row 1.a, Definition 1).

Defendant Race, Definition 2: However, a critical, ongoing legal concern has been the extent to which *black defendants* have suffered unduly in their procedural advancement and sentencing relative to *all other races/ethnicities*. Therefore, the defendant-race variable appearing in Table E.1, Part B, Row 1.a, Definition 3 was used to examine this possibility. Black defendants were compared with all other defendant races/ethnicities combined.

Race/Ethnicity Issue 2—The Victim(s): The second issue regarding race/ethnicity was whether defendants who murdered *victims* of certain races/ethnicities experienced deeper procedural advancement and harsher sentencing than defendants who murdered victims of other races/ethnicities. However, complications arose in the unambiguous assignment of race/ethnicity in *multiple victim* cases. As a result, we defined victim(s) race/ethnicity in four ways.

Victim(s) Race, Definition 1: The initial definition (Table E.1, Part B, Row 1.b, Definition 1) classified race based upon an "all-murder-victims" rule: if *all* of the murder victims were of a single race/ethnicity, the variable was coded for

that race/ethnicity. However, if the victims represented *more than one* race or ethnicity, then race/ethnicity was coded as "mixed."

Victim(s) Race, Definition 2: Under Definition 1, if there was a white victim among the victims of other races/ethnicities, then that race/ethnicity variable was coded as "mixed". However, we also wanted to examine whether defendants who had murdered one-or-more white victims, even if there were other nonwhite victims, received harsher treatment, whether by deeper procedural advancement or by more severe sentencing. For this reason, we examined the influence of the presence of even a single white victim on procedural advancement and sentencing using Definition 2 of victim(s) race/ethnicity. If just one victim was white among the multiple victims, the "white victim" variable was coded as such (Table E.1, Part B, Row 1.b, Definition 2).

Victim(s) Race, Definition 3: Another critical, ongoing legal concern has been whether defendants who have murdered *victims who were all white* have suffered unduly in their procedural advancement and sentencing relative to *all other defendants, that is, to those defendants who have murdered either no white victims or one-or-more white victims who were among victims of other races/ethnicities.* The victim(s) race/ethnicity variable appearing in Table E.1, Part B, Row 1.b, Definition 3 was used to examine this possibility.

Victim(s) Race, Definition 4: Under Definition 3, the "white victim" variable was coded only if *all* victim(s) were white. However, we also wanted to see whether defendants who had murdered one-or-more white victims, even if there were other nonwhite victims, received harsher treatment, whether by deeper procedural advancement or more severe sentencing. For this reason, we examined the influence of the presence of even a single white victim on procedural advancement/sentencing using Definition 4 of the victim(s) race/ethnicity. *Defendants who had murdered even a single white victim were compared to those defendants who had murdered no white victims.* If just one victim was white among multiple victims, the "white victim" variable was coded (Table E.1, Part B, Row 1.b, Definition 4).

Race/Ethnicity Issue 3: *Defendant/Victim(s) Race/Ethnicity Interaction Variables:* We were aware of the possibility that the combination of the defendant and victim(s) races/ethnicities might affect procedural and sentencing outcomes, quite apart from their separate, independent influence. For this reason, we defined race/ethnicity "interaction variables" to reflect the various combinations of race/ethnicity corresponding to the two definitions of defendant race/ethnicity (i.e., the 4-value version that preserves all race/ethnicity types of defendants and victim(s) and the two value version that

compares black defendants and victims to all other races/ethnicities combined). In each instance, the one 4-value defendant race/ethnicity variable was crossed (intersected with to create the interaction variable combinations) with each of the two 4-value race/ethnicity variable definitions of the victim(s); similarly, the 2-value race/ethnicity-of-defendant variable was crossed with each of the two 2-value race/ethnicity-variable definitions of the victim(s). These six sets of race/ethnicity interaction variables do not appear in Table E.1 because they are derivative variables, created from combinations of already defined variables. These variables are, however, separately reported in the forthcoming crosstabular analyses.

b. Gender of the Defendant and Victim(s)

Gender Issue 1—The Defendant: The first issue regarding gender was whether *male defendants* in comparison to female defendants *experienced deeper procedural advancement and harsher sentencing* (Table E.1, Part B, Row 2.a, Definition 1).

Gender Issue 2—The Victim(s): The second issue regarding gender was whether defendants who murdered *female victims* experienced *deeper procedural advancement and harsher sentencing* than defendants who murdered male victims. As we saw above with respect to victim race/ethnicity, complications in gender assignment can arise in multiple victim cases in which victims are both male and female. This coding complication was handled in exactly the same way as it was for victim race/ethnicity. The initial definition (Table E.1, Part B, Row 2.b, Definition 1) classified gender based upon an "all-murder-victims" rule: if the victims were all males or all females, victim gender was coded accordingly. If at least one murder victim was male and at least one was female, the victims' gender was coded as "mixed."

We also wanted to see whether the presence of even a single female victim influenced procedural and sentencing outcomes. In cases with victims of mixed genders, that is, in which at least one victim was female, the variable was coded as "female victim." This gender measure appears in Table E.1, Part B, Row 2.b, Definition 2.

c. Age of the Defendant and Victim(s)

Age Issue 1—The Defendant: The first issue regarding age was whether *defendants* who were *the youngest or oldest* in comparison to defendants falling between these lower and upper age bounds experienced *less deep procedural advancement and less harsh sentencing.* This representation can be found in Table E.1, Part B, Row 3.a, Definition 1

Age Issue 2—The Victim(s): The second issue regarding age was whether defendants who murdered *victims who were young or old* (i.e., less than age 6, that is, in preschool, or age 66 and older) experienced *deeper procedural advancement and harsher sentencing* than defendants who murdered victims who fell between these lower and upper ages. As we saw above with respect to victim race/ethnicity, complications in age assignment can arise in multiple victim cases in which victims are of different ages. This coding complication was handled in exactly the same way as it was for victim race/ethnicity. The initial definition classified age based upon an "all-murder-victims" rule: if all murder victims fell into the same age group, victim age was coded accordingly (Table E.1, Part B, Row 3.b, Definition 1). If two or more victims were in different age categories, the victims' age was coded as "mixed."

We also wanted to see whether the presence of even a single victim who was either young or old influenced procedural and sentencing outcomes. In cases with victims of mixed ages, if just one victim was young or just one victim was old, the age variable was coded accordingly. This age formulation appears in Table E.1, Part B, Row 3.b, Definition 2.

d. Socioeconomic Status of the Defendant and Victim(s)

Socioeconomic Status Issue 1—The Defendant: The first issue regarding socioeconomic status was whether *defendants of lower socioeconomic status* in comparison to defendants of *higher socioeconomic status experienced deeper procedural advancement and harsher sentencing.*

Socioeconomic Status Issue 2—The Victim(s): The second issue regarding socioeconomic status was whether defendants *who murdered victim(s) of higher socioeconomic status* in comparison to defendants who murdered victim(s) of lower socioeconomic status *experienced deeper procedural advancement and harsher sentencing.*

The issues regarding socioeconomic status closely parallel those regarding race/ethnicity. Indeed, the connection between race/ethnicity and socioeconomic status is close and complex: procedural advancement that one might find to be related to race/ethnicity might actually be attributable, in whole or part, to socioeconomic status. In order to try and sort out the separate contributions of these two variables, we have included both for analysis. Furthermore, as we have done with race/ethnicity, we have elected to measure socioeconomic status in alternative ways.

Socioeconomic status is commonly thought of as comprising some combination of (1) occupation, (2) education, and (3) income. Information was collected in the DCI for the first two of the three defendant and victim(s) characteristics—occupation, for both the defendant and the victim, and education, for only the defendant. If victims in multiple murder cases fell into more than one occupation or education group, victim(s) occupation and education was coded as "mixed." The defendant's occupation variable appears in Table E.1, Part B, Row 4.a, Definition 1. The victim(s) occupation variable appears in Table E.1, Part B, Row 4.b, Definition 1. Finally, the defendant's education variable appears in Table E.1, Part B, Row 4.c, Definition 1.

e. Judicial District of Charging, Prosecution, and Sentencing

Connecticut is divided into eight counties that have been partitioned into 12 Judicial Districts. We examined whether deeper procedural advancement or harsher sentencing was associated with the *judicial jurisdiction in which the case was prosecuted and sentenced.* We looked into this issue by first examining all 12 judicial districts separately (Table E.1, Part B, Row 5, Definition 1) and then by comparing each of the three high-volume judicial districts (i.e., the most death-qualified cases; Fairfield, Hartford, and New Haven) to a group composed of all nine remaining judicial districts (i.e., the fewest death-qualified cases) (Table E.1, Part B, Row 5, Definition 2).

3. Legally Relevant Variables

Legally relevant variables are variables that can legitimately shape decision making and, thereby, procedural and sentencing outcomes. We were particularly sensitive to examining these variables because they primarily reflected case aggravation and defendant culpability, which are commonly viewed as appropriate for guiding decision maker discretion. We selected from the DCI those nonstatutory aggravators and mitigators that might conceivably have influenced case outcomes. We were quite inclusive in selecting them, although not every one was incorporated in the analyses for the reasons spelled out earlier (i.e., redundancy, too many missing values, not well distributed). The selected legally relevant variables appear in Table E.1, Part C.

a. Statutory Aggravators

The seven statutory aggravators followed a legally defined procedural sequence. If the prosecutor believed that the facts of the case so warranted, one or more of the seven statutory aggravating factors was alleged in the filing of a formal legal notice. If the prosecutor decided to present the filed aggravators, then the penalty trial jurors either accepted (found) or rejected the

presented aggravating factor(s). The statutory aggravators conformed, then, to the following procedural sequence: (1) alleged, (2) presented, and (3) found. In the analyses, we examined the statutory aggravators in two ways: (1) the formal prosecutorial allegation and (2) according to incident fact patterns coded in the DCI. By doing so, we hoped to assess the extent to which prosecutorial discretion might have played a part in filtering out cases, by not filing an accusation of aggravation, whose fact patterns supported precisely such a filing. Ultimately, we wanted to know whether case filtering affected case progression. The statutory-aggravator variables appear in Table E.1, Part C.1.

b. Statutory Mitigators

If the defense counsel believed that the facts of the case so warranted, one or more of the five statutory mitigating factors was presented at the penalty trial to counter and potentially negate the prosecutorial presentation of one or more statutory aggravating factors. At that point, the penalty-trial jurors accepted (found), rejected, or deadlocked on the presented mitigating factors. The statutory mitigators conformed, then, to the following procedural sequence: (1) presented and (2) found. Much as we were concerned about prosecutorial discretion with regard to the filing of a notice of aggravation, we were also interested in examining the extent to which the facts of a case might have supported the presentation of a statutory mitigator, yet no such presentation occurred. Ultimately, we wanted to know, as we did with respect to the filing of a notice of aggravation, whether the filtering affected case progression. The statutory-mitigator variables appear in Table E.1, Part C.2.

c. Nonstatutory Aggravators

The DCI collected a wide range of information about aspects of the defendant, codefendants, and incident that reflected on the overall aggravation level of the event, the contribution of the victim(s) to the outcome, and the specific culpability of the defendant and codefendant(s). From among the available variables reflecting incident aggravation and defendant culpability, we selected a wide array for examination, 50 in all, using the criteria discussed earlier about non-missing information and how well the variables were distributed. In several cases, we created counting variables to calibrate how many of the specified factors or circumstances were present (e.g., number of special aggravating features of the murder; number of aggravating circumstances of the victim). The primary reason for doing so was that many of the variables used for creating the counting variable were not individually well distributed. Although this prevented their separate examination, they were

suitable for and valuable as contributors to a composite variable that formed a count.

We then split each count into groups (intervals), which are listed at the bottom of the cell. So, for example, the sequence "0, 1, 2, 3+" appearing for the "number of special aggravating circumstances of the victim," (nonstatutory aggravator #6), indicates that we split the count into those cases with none, one, two, and three-or-more such victim-related nonstatutory aggravators. Many of the aggravators naturally fell under those aggravators related to the defendant's contribution to the incident (e.g., number killed, injured, placed at risk), prior delinquent and criminal record, and motives. The nonstatutory-aggravator variables appear in Table E.1, Part C.3.

d. Nonstatutory Mitigators

Twenty-one nonstatutory mitigators were selected for examination. These may usefully be thought of as falling into the following types: (1) mitigators related to precipitations that prompted/promoted the defendant to act as he/she did; (2) mitigators attributable to the defendant; (3) mitigators attributable to the victim; and (4) mitigators culled from the defendant's legal defenses to the charges. In every instance, we created counting variables. This was done for the reasons outlined earlier, to offset the infrequent appearance of single mitigators. Whereas a specific type of nonstatutory mitigation might not have occurred often enough to use that variable by itself, as with the nonstatutory aggravators, it was possible to use it productively in combination with other types of nonstatutory mitigators. The nonstatutory-mitigator variables appear in Table E.1, Part C.4.

e. Others

There were two other variables that we thought might provide useful insights into the operation of the death penalty in the state. These included the year in which the murder was committed and the year in which the sentence was imposed. We wanted to make certain that we were not reporting patterns that might have held sway a long time ago that overwhelmed current procedural patterns and which, thereby, made it appear as if they were occurring today. These other variables appear in Table E.1, Part C.5.

D. Statistical Analyses

The report presents statistical analyses that examined the relationship between two variables (i.e., bivariate analyses) at a time. In each bivariate analysis, one of the two variables was always either a legally suspect variable or a legally relevant variable. The other variable was always one of the procedural or sentencing outcomes. The two types of variables were always paired together because we were interested in whether they were related to each other. Table1 summarizes the bivariate statistical analyses. It shows whether a bivariate relationship was statistically significant and, if statistically significant, the strength of the relationship.

We determined the strength of a bivariate relationship using a measure of statistical significance.[11] Statistical significance can be thought of as the degree of certainty that the relationship between the two variables actually existed and was not, therefore, a chance (i.e., random) finding. The measure of statistical significance shown in Table 1 is called a "p-value" (i.e., probability value). When a cell entry lists a p-value $\leq$ .05 (the symbol "$\leq$" should be read as "less than or equal to"), then this indicates that we were "95 percent certain" that the statistically significant relationship between the two variables actually existed (i.e., was "true") and was not a chance finding. Similarly, if a cell entry listed a p-value of $\leq$ .10, this indicates that we were "90 percent certain" that the statistically significant relationship between the two variables actually existed and, again, was not a chance finding.[12] [13] For example, Table 1, row 1.b, Definition 1 indicates that there was a statistically significant relationship (p-value $\leq$ .05) between the victim(s) race/ethnicity and going to penalty trial (point 6) but that there was no statistically significant relationship between the victim(s) race/ethnicity and receiving a death sentence (point 7). To summarize, whenever there is a cell entry in Table 1 that means that there was a statistically significant relationship between the two variables represented by that cell. A value of .05 indicates a stronger relationship was observed than a value of .10. If a cell is empty, then there was no statistically discernible relationship between the two variables.

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11 Statistical significance was determined using the Fisher's exact test.
12 In this case, statistical "confidence" is calculated as 1 minus the p-value, that is, 1 minus .05 = .95 = 95 percent statistical confidence. In the same vein, 1 minus .10 = .90 = 90 percent statistical confidence.
13 The number of defendants under study can affect the capacity (known as statistical "power") of the analysis to accurately discern the statistical relationship between variables. The modest number of defendants under analysis here limits the capacity in this regard. Consequently, in order to help avoid overlooking the possible presence of troublesome patterns in disparity in procedural and sentencing outcomes, we have reported the traditional, and more stringent, .05 level of statistical significance as well as the less stringent level of .10.

The crosstabular analyses reported in Table 1 are a basic first step along the way to employing techniques like regression analysis that "adjust" one variable for another. In regression analysis, unadjusted variables are statistically "adjusted" for one another to show their independent contributions to the outcome of interest. For instance, Table 1 shows that a relationship existed between the victim(s) race/ethnicity and advancing to penalty trial— white victim cases advanced most often. The table also shows a strong relationship between judicial district and advancement to penalty trial. If it happened that murders involving white victims were concentrated in judicial districts that advanced cases to penalty trial in high numbers, then we cannot determine, by conducting separate bivariate analyses, which of the two variables contributed to the outcome. Was it the victim(s) race/ethnicity or the judicial district that propelled the defendants forward? With regression analysis, however, we can examine the influence of the victim(s) race/ethnicity on going to penalty trial, controlling for the fact that white victim(s) cases may have been concentrated in those judicial districts that advanced cases most frequently. Were we able to institute statistical controls using regression analysis, we might be in a better position to understand which variable was more strongly related to advancing a defendant to penalty trial—victim(s) race/ethnicity or judicial district.

The modest number of study cases in this study's dataset did not lend itself to conducting conventional regression analyses.14 Simply put, there was

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14 The family of these more complex statistical techniques is known as regression models. These models look at the types and degrees of the influence of one or more independent variables on a dependent variable.

An independent variable is a defendant or incident characteristic that has a presumed influence on a dependent variable, which is the procedural or sentencing outcome that one seeks to explain. In an extension of the present study, one aim will be to measure the influence of selected legally suspect variables (i.e., race and ethnicity, gender, age, socioeconomic status, judicial district) on several dependent variables (e.g., whether a notice of aggravating factors was filed, whether a trial was held).

In a simple regression model, one independent variable (e.g., defendant's race/ethnicity) is used to explain numerically the procedural outcome of one dependent variable (e.g., whether a notice of aggravating factors was filed). This numerical calculation is called the variable's coefficient. If there is more than one independent variable in the regression model, each one has a coefficient calculated for it. A coefficient is calculated to determine two main things: (1) the numerical magnitude, which is the weight of that variable in influencing the procedural outcome and (2) the direction of the variable's influence, which is whether the variable increases (positive coefficient) or decreases (negative coefficient) the chances that the procedural outcome will happen.

Regression models are calculated ("estimated") in such a way as to produce an equation. The equation comprises a set of coefficients, each of which corresponds to an independent variable. The regression equation enables one to predict or explain a dependent variable, or procedural outcome, based upon its associations with the independent variables selected for study and included in the equation. When many independent variables are included in the same regression model, the contribution of each independent variable to the procedural or sentencing outcome is calculated separately. Using this method, the effect of one variable can be detected while adjusting or "controlling" for the effects of other statistically significant variables.

Various regression methods have been developed to examine the simultaneous influence of multiple variables on an outcome of interest, such as the filing of a notice of aggravating factors. In these analyses, each procedural or sentencing outcome is defined (i.e., measured) in the form of a two-value, or

not sufficient data to permit the introduction into the regression analysis of all variables thought to potentially influence decisions regarding the procedural and sentencing advancement of cases. We have explored several techniques for getting around these difficulties, but none has been entirely successful. Although some of these techniques were able to produce numerical estimates, the estimates were too statistically unreliable to draw firm conclusions about any of the variables in the regression analysis. For this reason, an alternative regression strategy will most likely be needed, one that is being designed and tested but that has not yet been fully conducted. This approach will focus on whether the selected "target" variables, for example, the race/ethnicity of the defendant and victim(s), were related to procedural advancement. While this kind of analysis might yield insight into this narrow focal target, it does not "model" the decision making process at a procedural point, which is to say, it does not identify the wider set of variables that might also influence decision making beyond the targeted variable.15

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dichotomous, scale representing alternative procedural outcomes. For example, a notice of statutory aggravating factors is either filed or it is not or a plea is either negotiated or it is not. When one wants to examine the effects of several independent variables, and the outcome is dichotomous (i.e., has two values, one for each outcome), the preferred regression technique is *logistic* regression. The variable coefficients calculated by logistic regression can be interpreted as the quantitative influence, either positive or negative, that the presence of that defendant or case characteristic has on the "odds" that a particular decision making outcome, like a death sentence, will occur. A major benefit of logistic regression is that one can use it to try to detect the presence of an effect of a variable of interest, like the defendant's or victim(s) race, on a procedural/sentencing outcome while adjusting or "controlling" for the overall level of aggravation of the murder incident and the individual defendant's contribution to it (i.e., culpability). That way one can begin to sort out the effect of one or another legally suspect or other kind of variable for cases of comparable aggravation.

15 In order to limit the number of variables in the regression analysis, we used a screening method to rule out those variables that would be very unlikely to make a difference in case advancement if they were included. Specifically, we eliminated those variables that did *not* have a statistically significant relationship with the *procedural outcome* of interest (this was the first screen) and that also did *not* have a statistically significant relationship with the *legally suspect* variable of interest (i.e., race of the victim; judicial district) (this was the second screen). The number of variables was greatly reduced by this "double screening" selection method. Approximately150 variables were screened for each outcome of interest, including all those examined in the crosstabuar analyses, in the measurement formats used there and, for some, in alternative formats. For the most part, less than 15 passed the double screens at the outcomes examined. Nonetheless, most of the conventional logistic regression models that we estimated would not numerically converge. That is, the calculations would not produce a stable set of values. Consequently, we tried two other logistic regression methods—the "exact" method and the "penalized likelihood" method—that are more computationally intensive but which are known to be more numerically stable. Neither of these methods worked for the two outcomes that had, in the crosstabular analyses, been statistically significantly related to the race of victim and/or judicial district—(1) proceeding to "penalty trial" (i.e., procedural point 6, N = 26 → 20) and (2) receiving a "death sentence" (i.e., procedural point 7, N = 20 → 6). However, both methods produced numerically stable estimates for the third, earlier procedural outcome,that had been statistically significantly related to the race of victim and/or judicial district—"charged as a capital felony" (i.e., procedural point 2, N = 96 → 75). Nonetheless, even for these estimates, there was insufficient data to produce statistically significant results for *any* of the variables in the regression analysis. In the future, we anticipate screening additional variables.

III. FINDINGS

A. Crosstabular Analyses of Procedural/Sentencing Outcomes

Parts B and C of Table E.1 list "legally suspect" and "legally relevant" variables, respectively, relating to the defendant, the victim, and the murder incident. Crosstabular analyses were conducted for each of the 23 variables in Part B and each of the 78 variables in Part C, for a total of 101 variables, first with respect to the sequential points on the trial procedural pathway (points 1 through 7) and then with respect to the guilty plea procedural pathway (points 1 through 3a) (Figure 2). In every crosstabular analysis, the analysis was conducted looking at the advancement from one procedural/sentencing point to the *next, adjacent* procedural/sentencing point. Thus, we examined advancement across the following points:

(1) 1 to 2   —   (the procedural point 2 crosstabs; $N = 96 \rightarrow 75$),
(2) 2 to 3a   —   (the procedural point 3a crosstabs; $N = 75 \rightarrow 31$),
(3) 2 to 3b   —   (the procedural point 3b crosstabs; $N = 75 \rightarrow 44$),
(4) 3b to 4   —   (the procedural point 4 crosstabs; $N = 44 \rightarrow 30$),
(5) 4 to 5   —   (the procedural point 5 crosstabs; $N = 30 \rightarrow 26$),
(6) 5 to 6   —   (the procedural point 6 crosstabs; $N = 26 \rightarrow 20$), and
(7) 6 to 7   —   (the sentencing point 7 crosstabs; $N = 20 \rightarrow 6$).[16]

The crosstabular analyses have been reported in three tabular series of 83 tables each. The trial procedural pathway series appears in Appendix F, and the guilty plea procedural pathway series appears in Appendix G. To distinguish the two series, while at the same time, to enhance navigating between them, we have placed equivalent crosstabular analyses in the same spot in each series. In order to distinguish companion tables, we have placed a "T" after the number of the trial pathway tables and a "P" after the corresponding number of the guilty plea pathway tables. For example, Table F.1T examined the relationship between the defendant's age, gender, and race/ethnicity at each of the seven trial pathway's procedural points. Table G.1P examined the same three variables for the shorter three-step guilty plea procedural flow.[17]

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16 As the parenthetical comments indicate, the procedural and sentencing *outcome* (i.e., destination) always determined the point designated by the analysis. Consequently, the analysis of advancement from point 1 to point 2 represented a "point 2"crosstabular analysis.

17 The tables in each tabular series are formatted in exactly the same way. The row headings designate the points along the procedural pathway defined by the particular tabular series. The column headings, which are numbered for ease of reference, specify the values, or categories, of the variable being analyzed. For example, in Table F.1T, the column headings designate, from left to right, the three age intervals, the two gender values, and the four race/ethnicity values that have been used to examine the relationship between

We should add, by way of explaining why we primarily focused on the trial procedural pathway, that the guilty plea pathway has a predictable, *reverse* relationship to the trial pathway at the point that they diverge. Figure 1 shows that once the prosecutor has charged a defendant with a capital felony (point 2), the defendant either negotiates a guilty plea (point 3a) or goes to trial (point 3b). From both a conceptual and a statistical point of view, the two procedural points are, therefore, mirror images of each other. That is, if a variable is related to a heightened chance that a defendant will go to trial, that same variable will be related to a diminished chance of negotiating a guilty plea.18

Consequently, we elected to focus on just the trial procedural pathway. We lost *no* information about or understanding of the influences on the procedural advancement of cases, while at the same time we could track cases down the *entire* sequence of procedural/sentencing points that were pertinent to furthering our understanding capital case processing. Although we focused on the trial pathway, we have nonetheless presented the guilty plea tables for review by those who might be interested in understanding that particular flow pathway as an integral set of destination points in its own right.

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the defendant's age, gender, and race and procedural/sentencing advancement. Row 1 of each table shows, for each category of the variable of interest, the number of defendants whose murders qualified as capital felonies. This information, technically known as the "unconditional distribution" (also known as the "unconditional prevalence" or "initial distribution") of cases, appears in parentheses beneath the number "1.00." The "1.00" simply indicates that the number of defendants appearing in parentheses comprises the entire set, or universe, of defendants starting out and then proceeding down the procedural flow for that value of the variable of interest. Footnote 1 of each table explains how the procedural advancement probability, technically known as the "conditional probability," was calculated for each procedural point. (The conditional probability simply represents the probability of advancing to the next procedural point *given*, or *conditional* upon, having already advanced to the prior procedural point.) Footnote 2 explains how statistical significance was represented (boldface entries represented significance levels, or p-values, of $\leq .10$, and boldface in combination with shading represented the more stringent significance levels of $\leq .05$). Below each table and to the right, we have noted, in capital letters, the name(s) (i.e., label[s]) assigned in the analytical dataset to the variable(s) used in the crosstabular analyses represented in the table. To the right of the variable name, in parentheses, is the corresponding variable identifier in the DCI. With this format, one can easily move from the crosstabular analysis to the DCI.

18 To see that this is so, turn to companion tables F.21T and G.21P, which examine how the number of alleged statutory aggravators was related to going to trial or, conversely, to not going to trial and negotiating a plea. Row 3a of table G.21P shows that the probability of negotiating a guilty plea is highest (.60) for the lowest number of alleged statutory aggravators (column 1, "0" alleged aggravators). Row 3b of table F.21T shows just the opposite, in fact, *exactly the opposite*. Column 1 of row 3b shows that those defendants with the lowest number of statutory aggravators (again, the "0" category) have the lowest probability or going to trial (.39). Notice that the sum of the two probabilities is 1.00 (after taking rounding error into account). That is because, of the 38 defendants with "0" alleged statutory aggravators who were charged with a capital felony (see Table G.21P, row 2, column 1, the numerator of the fraction in parentheses), 23 of them negotiated guilty pleas (the numerator of the fraction in parentheses in row 3a, column 1) and the remaining 15 went to trial (the numerator of the fraction in parentheses in Table F.21T, row 3b, column 1). In other words, to the extent that defendants travel down the guilty plea pathway (measured as a probability), they do *not* travel down the trial pathway in a predictable, exactly calculable way [(1) minus [the probability of traveling down the guilty plea pathway)]. The reverse is, of course, also true.

In addition to examining the trial and guilty plea procedural flows, we have also examined two of what we have called "procedural jumps." The idea behind "procedural jumps" was to see whether the "jump" from death-qualified defendant status (all 96 defendants in the data set at point 1) to a death sentence (point 7) or the subsequent jump from death-eligible defendant status (the 75 defendants in the data set at point 2) to a death sentence (again point 7) was related to the analytical variables. The two jump analyses basically explored whether, *net* the effect on case advancement of all intervening procedural steps, the analytical variable of interest was still related to the death sentence outcome. These tables are presented in Appendix H.19

Overall, the three parallel tabular series in appendices F, G, and H (the "T," "P," and "Q/E" series respectively) comprised 249 tables. Their sheer number was so large that some way was needed to summarize findings for ease of understanding. Table 1 was produced for just this purpose. However, before discussing the table, we first need to work through Tables I.1, I.2, and I.3 (see Appendix I), from which Table 1 was derived.20

Table I.1 is essentially a "cross referencing index" of the analytical variables enumerated in Table E.1. It displays *both statistically significant and statistically nonsignificant findings* along with references to the supporting analytical table in Appendices F, G, and H upon which those findings were based, the variable names created for the statistical analyses, and the DCI-item variables that corresponded to the variable names. Table I.2 has simply struck from Table I.1 all of the cross-reference information.

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19 For each table in the "T" and "P" tabular series, there is a corresponding table in this tabular series. The tables in the "death qualified" and "death eligible" series are distinguished by the "Q/E" designation after the tabular number. Consequently, Table H.21Q/E examines the influence of the number of alleged statutory aggravators on the two procedural jumps, designated by rows 1 and 2.

20 The first column of Table I.1, entitled "Analytical Variables," lists in the rows each of the analytical variables defined in Table E..1 (see Appendix E). Appearing in brackets in the cells in that same first column is the set of three companion tables that pertain to that variable in Appendices F, G, and H. For instance, the entry in row 1.a in the first column [F.1T, G.1P, H.1Q/E], which applies to the "Defendant's Race/Ethnicity," indicates that these tables were the source of the findings summarized to the right in that row. The second column, entitled, "Definition," presents the definition of each variable examined in the related tabular series as well as the variable name in braces that corresponds to it in the DCI. (Row 1.a presents then findings regarding the defendant's race/ethnicity for the four-value defendant race variable.) The next set of columns, running from (1) through (7), enumerates the procedural and sentencing points. The last pair of columns, (A) and (B), designate the two procedural jumps described earlier in the text. The "T" series tables were used for filling in statistical findings for procedural and sentencing points 1, 2, 3b, 4, 5, 6,and 7. The "P" series tables were used in the same way for procedural point 3a. The "Q/E" series tables were used for filling in statistical findings for procedural jumps A and B. Whenever a variable identified in a table was statistically significant at a procedural or sentencing point or jump, for purposes of consistency, we have applied the convention used for identifying statistical significance in the underlying, supporting table being summarized: boldface by itself represented statistical significance at p-value $\leq$ .10, and boldface *and* shade together represented statistical significance at p-value $\leq$ .05.

A quick scan of the empty cells of Table I.2 indicates that many variables at several procedural and sentencing points were not statistically significant at either of the two levels of statistical significance. In order to facilitate the interpretation of these findings, we have removed all variables (listed in the rows) that were not statistically significant at *any* of the seven procedural points or *either* of the two procedural jumps.21 Overall, of the 101 variables in Table I.2 (the 23 variables in Part B and the 78 variables in Part C), 47 dropped out for one or the other of these reasons, leaving 54 variables (6 variables in Part B and 48 variables in Part C). Table I.3 is the condensed version of Table I.2, pruned of the 47 variables that were statistically nonsignificant across *all* procedural, sentencing, and procedural-jump points.

After examining Table I.3, it became clear that one more pruning would be useful before taking a closer look at patterns in both variable inclusion and exclusion. Table 1 is the condensed version of Table I.3, which *collapses redundant columns* into each other and *removes redundant analytical variables*. In other words, Table 1 presents an overview of the statistical findings after collapsing across columns 3a and 3b (guilty plea versus trial), columns (A) and (B) (procedural jumps), and after removing one of each pair of variables (the rows) that share common associations with procedural and sentencing outcomes (it was always definition 2 that was removed).22 The

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21 The numbering sequence of variables in Table I.1 is preserved through each successive tabular iteration in order to facilitate easy navigation across tables. Thus, when variables were removed, for whatever reason, the gaps in numbering created by their removal remained intact.

22 The final tabular consolidation was based upon the following observations. The first, and most obvious, pattern detected in Table I.3 was that the guilty plea and trial columns needed to be grouped together, for the same reason that we decided not to focus on both in the text discussion. The two columns were mirror images: a variable that was statistically significant in one direction in the guilty-plea, 3a, column was equally statistically significant in the opposite direction in the trial, 3b, column. One can simply scan the two columns to see that this was so. We, therefore, consolidated the two columns into one—the unified 3a/b column— in order to avoid giving the wrong impression that variables were statistically significant at more procedural points than they were.

The second most obvious pattern in Table I.3 was that whenever a variable was statistically significant in procedural-jump column (A), it was almost always statistically significant in the corresponding procedural-jump column (B). This indicated that the two sets of defendants, the second comprising a subset of the first, were not sufficiently different in this generation of the dataset to register meaningful differences in their respective procedural "jumps" to their death sentencing outcomes. For this reason, we have also consolidated these two columns into a unified (A/B) column. If there was an inconsistency between the two procedural jumps, we retained the value that was less statistically significant.

The third, but not so obvious, pattern in Table I.3 was that several of the alternatively defined "legally suspect variables" yielded fairly consistent results, suggesting that they were not as different in fact as one might have thought in theory. (Technically speaking, they were "correlated.") For example, victim(s) races/ethnicities in row pairs 1.b.(1) and 1.b.(2), 1.b.(3) and 1.b.(4), 1.c.(1) and 1.c.(2), and 1.c. (3) and 1.c.(4) showed consistent results among the pairs. In this dataset, the alternative definitions of the victim(s) race/ethnicity did not diverge in their relationship with the procedural and sentencing outcomes. When one of the definitions was statistically significant, the other also was. The consistency appeared because the composition of the cases in the dataset did not change very much across alternative definitions. For example, look at Table I.3, Part B, row 1.b.(1) and row 1.b.(2) (i.e., 5-value victim(s) race/ethnicity variables, all-white victim(s) and one-or-more white victim(s) definitions, respectively). Under the all-white-victim(s) definition, there were 49 cases in which all victims were white. Under the one-or-more white victim(s) definition, there

pruning process resulted in 54 variables remaining for further examination—6 variables in Part B and 48 variables in Part C— because they were statistically significant at p-value $\leq$ .10 at one or more procedural and sentencing points or procedural jumps.

There are several general points to be made about Table 1. First, of the 365 possible statistically significant findings (54 variables times 7 procedural,

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were just three additional cases in which one-or-more victims were white, making for a total of 52. The same pattern held for the 2-value white race/ethnicity variables [Table I.3, Part B, row 1.b.(3) and row 1.b.(4)]. The very slight change across the two definitions of the white victim(s) variable also explains why their corresponding race/ethnicity interaction variables did not vary in their relationship with procedural and sentencing outcomes. Essentially, the same white victim(s) variables were being crossed with the defendant's race/ethnicity variables to produce the race/ethnicity interaction variables.

The situation was slightly different with respect to the two definitions of victim(s) gender [Table I.3, Part B, row 2.b.(1) and row 2.b.(2)]. After reviewing the two victim(s) gender crosstabs (supporting Tables F.6T and G.10T), it became clear why the two definitions were parallel. Outcomes for all-male victim(s) (defined in row 2.b.(1)) cases did not differ from the all-female victim(s) and the "mixed" victim(s) categories (defined in row 2.b.(2)). Consequently, combining the "mixed" gender cases (all of which involved at least one female) with the all-female cases did not change the overall result of no difference between male and female victim(s) cases, regardless of whether the victim(s) were all females or mixed with one or more males.

Like the patterns just described, the two judicial-district definitions also yielded parallel results [Table I.3, Part B, row 5.(1) and row 5.(2)]. The patterns imbedded in the 12-value definition persisted when the 4-value definition was applied. The critical low-murder frequency but high death-sentence frequency judicial districts of Waterbury and Windham "drove" the comparison of the grouped low-murder frequency judicial districts and the other high-murder frequency judicial districts of Fairfield, Hartford, and New Haven. For this reason, because patterns across judicial districts were stable across the two definitional representations, we elected to remove the grouped definition. The more refined, 12-value definition provides the greater detail. For that reason, it might be of greater interest and use to others reviewing these findings.

The patterns in findings of the multiple definitions of the statutory aggravator and statutory mitigator variables and their corresponding count variables were also consistent (Table I.3, Part C: row 1.(1) and row1.(2), and row 2.(1) and row 2.(2)). The decision to focus on one or the other variable definition (Table I.3, Part C: row 1.(1) and row 2.(1)) depends upon how one might use them. The multiple value definitions are useful for tracking capital-case flows by procedural and sentencing points for purposes of comparing the comparative flows of statutory aggravators and statutory mitigators, separately. Their counting definitions (Table I.3, Part C: row 1.(2) and row 2.(2)) are useful for what are known as "frequency," or comparative case, analysis. At this time, for these variables, there are too few cases with varying count levels to permit many and detailed "frequency" analyses. For this reason, we have decided to retain the 7-value and the 5-value definitions of the statutory aggravators and mitigators, respectively, for the present analyses. In a later analysis presented in this report, we will use the counting definitions as part of a limited frequency analysis.

After reconsidering the findings regarding nonstatutory mitigators (Table I.3, Part C, row 4.1), we elected to drop this variable too, despite its apparent strong showing at 8 of the 9 procedural/sentencing and procedural jump points. That is because nonstatutory mitigation, like its statutory counterpart, is presented at the penalty trial. For that reason, these mitigations may not be known by or vetted with decision makers at earlier procedural points. The mitigators only "appear" to flow with the case because their presentation occurs at the penalty trial, which makes it appear that they helped advance the case to that point when that appearance is only an artifact of their retrospective, post hoc assignment to the case. Although the presentation of mitigators has this artifactual impact on the analyses, that does not, by itself, mean that they should be entirely discounted. They may, in fact, faithfully reflect case characteristics. Strictly speaking, from an analytical standpoint, nonstatutory mitigators presented at the penalty trial should be included in analyses only at that procedural point and at sentencing. Other, independent verification should be conducted to confirm the factual presence of these mitigators for analyses at procedural points prior to the penalty trial. We have, in fact, sought to verify their presence by constructing variables based upon the fact patterns appearing in the DCI.

A thin white column has been placed to the right of the two pairs of procedural points that have been collapsed into single points (points [3a/b] and jumps A/B) as a way to remind the reader of this decision.

sentencing, and procedural-jump outcomes, minus 13 relationships that were not applicable ["NA]"), just more than one fourth (N = 102; 28%) were statistically significant.23 That leaves many statistically *nonsignificant* findings (i.e., blank cells) in the table. Such a finding would be welcome, we think, if the higher proportion of statistically nonsignificant findings was located in Part B of the table, which applies to legally suspect variables.

Table 2 summarizes the number of statistically significant findings presented in Table 1 by whether the variables were suspect (Part B) or legally relevant (Part C) and by the level of statistical significance. Of the *42 possible* statistically significant findings in Part B of Table 1 (6 variables times 7 procedural, sentencing, and procedural-jump outcomes), 14 were in fact observed to be statistically significant (33%) at p-value $\leq$ .10 (Table 2, Part B, sum of cell entries in row c). Of the *323 possible* statistically significant findings in Part C of Table 1 (48 variables times 7 procedural, sentencing, and procedural-jump outcomes, minus the 13 "not applicables" [i.e., NA]), 88 were observed to be statistically significant at this same p-value (27%) (Table 2, Part C, sum of cell entries in row c). Using the more stringent p-value of $\leq$ .05, among the legally suspect variables (Part B of the table), 9 of the 42 cells were statistically significant (21%). Using this same standard in Part C, 49 of the 323 cells were statistically significant (15%). The larger proportions of significant findings are found then among the *suspect variables*, irrespective of the statistical significance level.

While we do not want to over emphasize these findings because they have not been adjusted for the influence of other pertinent variables, in particular, the cases' aggravation and the defendants' culpability levels, a somewhat higher proportion of the legally suspect variables were statistically significantly related to judicial outcomes than were the legally relevant variables, irrespective of which level of statistical significance was used.24 In a system that was operating fairly, just the opposite would be expected, one would hope by a wide margin.

Second, although there is no fixed standard that we can think of for how large a portion of the legally relevant variables should be related to procedural

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23 "Not Applicable" ("NA") applies to those procedural points at which a variable of interest cannot have operated, mainly because it was not legally in play until a later procedural point. For instance, presented statutory mitigation does not trigger until the penalty trial. Consequently, NA applies to all prior procedural points with respect to it.

24 Also, the relative proportion of statistically significant findings is dependent upon how many variables one started out with. If the variables analyzed were the universe of all such variables or represented a random sample selected from that universe, then we might be able to emphasize these findings more than we have. However, even if one or the other of these conditions was met, the unadjusted nature of the findings seems to us to be the more salient methodological concern.

and sentencing outcomes in a fair, legally and rationally administered capital case processing system, the fact that so many showed either no relationship or only a tenuous relationship to procedural and sentencing outcomes is troubling. Such a finding is consistent with arguments supporting procedural and sentencing arbitrariness. An arbitrary procedural system is, as we described earlier, one in which an observed disparity is not readily explicable by factors related to the participants, the judicial district of occurrence or prosecution, or by the incident. As Table 1 has shown, in more than a few instances, some cases continued down the death-sentencing pathway while others exited for reasons that have not here been "explained," even in a limited way, using a statistical approach that did not adjust for case aggravation and defendant culpability.

Third, as Table 2 shows in the final row, the greatest concentrations of statistically significant findings were at points 2, 3a/b, 4, and 6 (i.e., charged as a capital felony, guilty plea versus trial, death penalty trial, and penalty trial, respectively). Of the 81 statistically significant findings observed at points 2 through 7 (excluding the procedural jumps), 56 fell at these four points (69%). We were unable to detect much, however, that was statistically significantly related to decision making at point 5 or 7, convicted of capital felony or death sentencing, respectively. At first glance, either the few cases at these points or the heavily skewed split of the cases with respect to the procedural outcomes might seem to explain the lack of statistically significant findings. Yet, we did find statistically significant relationships at other procedural points with few cases and uneven splits on the outcomes. So, the limited number of cases and the splitting imbalances do not, by themselves, explain why little of statistical significance was found at the points of conviction for capital felony and death sentence.

In sum, the findings discussed above are consistent with the following observations:

- Insofar as legally relevant variables do not appear to be consistently and strongly related to case advancement, arbitrariness may be operating in the State's capital-case processing system, and
- There are signs that legal unfairness may be operating at the points of capital-felony charging (point 2, a prosecutorial function) and advancing to a penalty trial (point 6, a combination of juror and prosecutorial decision making).

We now turn to what Table 1 and its underlying "T," "P," and "Q/E" supporting tabular series can tell us specifically about capital case

Table 2
Analytical Variables:
Summary of *Totals of Statistically Significant Findings in Table 1*
Bivariate (Two Variable) Crosstabular Analyses

Analytical Variables	Definition	Procedural/Sentencing Points								Procedural Jumps
		(1)	(2)	(3a/b)	(4)	(5)	(6)	(7)		(A/B)
Part B: Legally Suspect Variables (N = 6 Variables)—Number of Statistically Significant Findings at Procedural Points										
a. P-Val ≤ .05			3	0	1	0	3	1		1
b. P-Val ≤ .10			2	1	0	1	0	0		1
c. Overall Total (Rows a + b)			5	1	1	1	3	1		2
Part C: Legally Relevant Variables (N = 48 Variables)—Number of Statistically Significant Findings at Procedural Points										
a. P-Val ≤ .05			3	8	8	2	12	4		12
b. P-Val ≤ .10			3	9	6	3	7	4		7
c. Overall Total (Rows a + b)			6	17	14	5	19	8		19
Total: Parts B (Legally Suspect) and Part C (Legally Relevant) (N = 54 Variables)										
a. P-Val ≤ .05			6	8	9	2	15	5		13
b. P-Val ≤ .10			5	10	6	4	7	4		8
c. Overall Total (Rows a + b)			11	18	15	6	22	9		21

1. Column headings 1 to 7 represent the following procedural/sentencing points:
(1) Qualifies as Capital Felony (N = 96)
(2) Charged with Capital Felony (N = 75)
(3a) Guilty Plea (N = 31)
(3b) Guilt Trial (Death plus Non-Death) (N = 44)
(4) Death Penalty Trial (N = 30)
(5) Convicted of Capital Felony (N = 26)
(6) Penalty Trial (N = 20)
(7) Death Sentence (N = 6)
(A) Death Qualified to Death Sentence (N = 96 → 6)
(B) Death Eligible to Death Sentence (N = 75 → 6)

Table 3
The Frequency Approach to Assessing Fairness:
Death Sentence Rates by the Number of Presented Statutory Mitigators and
the Number of Alleged Statutory Aggravators

Number of Presented Statutory Mitigators	Number of Alleged Statutory Aggravators					
	0	1	2	3	4	Total
0	(0,0) 59 NDS 0 DS 0.00% DSR	(0,1) 14 NDS 0 DS 0.00% DSR	(0,2) 5 NDS 0 DS 0.00% DSR	(0,3) 1 NDS 0 DS 0.00% DSR	(0,4) 1 NDS 0 DS 0.00% DSR	80 (83%)
1	(1,0) 0 ---	(1,1) 4 NDS 4 DS 50% DSR	(1,2) 4 NDS 1 DS 20% DSR	(1,3) 1 DS 100% DSR	(1,4) 0 ---	14 (15%)
2	(2,0) 0 —	(2,1) 1 NDS 0 DS 0.00% DSR	(2,2) 1NDS 0 DS 0.00% DSR	(2,3) 0 —	(2,4) 0 —	2 (2%)
Total	59 (61%)	23 (24%)	11 (12%)	2 (2%)	1 (1%)	96 (100%)

Table notation:
    NDS → NonDeath Sentence
    DS → Death Sentence
    DSR → Death Sentence Rate [(Number of Death Sentences) divided by
        (Number of Death Sentences + Number of NonDeath Sentences)]

advancement in Connecticut as pertains to the *Death Penalty Act's* specific concern with:

- "(3)[a]n examination of whether there is any disparity in the decision to charge, prosecute and sentence a person for a capital felony based on the race, ethnicity, gender, religion, sexual orientation, age, or socioeconomic status of the defendant or the victim;
- (4)[a]n examination of whether there is any disparity in the decision to charge, prosecute and sentence a person for a capital felony based on the judicial district in which the offense occurred."

The Commission elected to focus on legally suspect variables. Unfortunately, the Commission's concern about religion and sexual orientation could not be addressed here. No relevant data were collected on the DCI administered by the Office of the Chief Public Defender. We were, however, able to address the issues of race/ethnicity, gender, age, socioeconomic status, and judicial district. Those foci now follow.

1. Legally Suspect Variables

a. Race and Ethnicity of the Defendant and Victim(s)

These analyses provided no evidence that the defendant's race/ethnicity was related to procedural and sentencing advancement (supporting Tables F.1T, G.1P, H.1Q/E).

These analyses did, however, provide some evidence that the victim(s) race/ethnicity was related to procedural and sentencing advancement. Cases involving white victims were more likely to be charged with a capital felony and, later on, to advance to penalty trial than cases involving other victim(s) races/ethnicities (Table 1, Part B, row 1.b.(1) and row 1b.(2); supporting Tables F.7T, G.7P, H.7Q/E and F.12T, G.12P, H.12Q/E). Defendant's and victim(s) race/ethnicity interactions were also observed to be related to further procedural and sentencing penetration (Table 1, Part B, row 1.c.(1) and row 1.c.(2); supporting Tables F.13T, G.13P, and F.15T, G.15P). Cases with white victims tended to advance furthest and receive harsher sentences.

b. Gender of the Defendant and Victim(s)

Neither the gender of the defendant nor of the victim(s) showed a consistent pattern in relationship to case advancement (supporting Tables F.1T, G.1P, H.1Q/E; Tables F.6T, G.6P, H.6Q/E; and Tables F.10T, G.10P, H.10Q/E).

c. Age of the Defendant and Victim(s)

Neither the age of the defendant nor the age of the victim(s) showed a consistent pattern in relationship to case advancement (supporting Tables F.1T, G.1P, H.1Q/E; Tables F.6T, G.6P, H.6Q/E; Tables F.9T, G.9P, H.9Q/E).

d. Socioeconomic Status of the Defendant and Victim(s)

Only the defendant's education, as a proxy for socioeconomic status, showed any relationship to case advancement; more highly educated defendants were charged at higher rates with capital felonies than were less educated defendants (Table 1, Part B, row4.c; supporting Tables F.5T, G.5P). However, the test of statistical significance was at the less stringent level of $p \leq$ .10, and the finding appeared only at a single case advancement point. The supporting evidence for a pattern in case advancement related to socioeconomic status is, therefore, weak.

e. Judicial District of Charging, Prosecution, and Sentencing

Of all the legally suspect variables that were examined, judicial district had the most consistent and strongest relationship with case advancement (Table 1, Part B, row 5; supporting Tables F.17T, G.17P, H.17Q/E). Defendants in the judicial districts of New London, Waterbury and Windham, which fell among judicial districts with the fewest number of death-qualified cases, were charged with capital felonies, advanced to penalty trial after conviction for a capital felony, and received death sentences at higher rates than defendants processed in other judicial districts. These findings also held for the two procedural jumps, from death qualified (all 96 defendants) to death sentencing (6 defendants) and from death eligible (75 defendants charged with a capital felony) to death sentencing (the same 6 defendants).

2. Legally Relevant Variables

The sets of legally relevant statutory and nonstatutory aggravators and mitigators showed a spotty pattern in relationship to procedural and sentencing outcomes. This is not what one would expect to find if a system of capital case processing and advancement was operating in a legally rational and fair manner, guided by legally relevant factors.

When we examined the type of alleged statutory aggravators, we found that the (h)(4) factor (i.e., defendant cruelty to the victim(s)) was most often alleged (32 times among the 96 defendants) and was statistically significantly related to advancing through two procedural points (guilt trial and death guilt trial; supporting Tables F.19T, G.19P). However, it was not statistically significantly related to receiving a death sentence at the penalty trial. The (h)(1) statutory aggravator, though only infrequently alleged (just 5 times among the 96 defendants), was the only statutory aggravator found to be statistically significantly related to receiving a death sentence at the penalty trial.

Our findings were no different when we examined statutory aggravation using fact patterns that were culled from the DCI rather than based upon prosecutorial allegation. Few of the statutory aggravators defined in this alternative way appeared to play a part in case progression, and, of those that did exhibit some relationship to procedural outcomes, none did so systematically across multiple procedural points (supporting tables F.20T, G.20P, and H.20Q/E).

Among the statutory mitigators presented, only the (g)(2) factor (i.e., the defendant's mental capacity was significantly impaired) was presented to any great extent (14 times among the 96 defendants). It was not related to case advancement at the only procedural point at which it operated, penalty trial, (Table 1, Part C, row 1; supporting Tables F.22T, G.22P). The (g)(2) factor was also related to the procedural jump from death-qualified status to death sentence (Table 1, Part C, row 2; supporting Table H.22Q/E).

This pattern in thin findings was paralleled by the approach to establishing the presence of statutory mitigation based upon the DCI. Few mitigators defined in this way appeared to be related to procedural outcomes, and, of those that were related to outcomes, they failed to show a consistent relationship to case advancement across multiple procedural points (supporting tables F.23T, G.23P, H.23Q/E).

Among the nonstatutory aggravators, only the "number of special aggravating features of the offense," which focused on cruelty and pain inflicted during the incident, and "victim's body was abused," were related in consistent and expected ways to case advancement at three-or-more procedural points (points 2, 3a/b, 4, 5, 6; charged with a capital felony, going to trial, going to a death trial, being convicted of a capital felony, and going to penalty trial, respectively) (Table 1, Part C, row 3.a.(3); supporting Tables F.31T, G.31P, H.31Q/E; F.34T, G.34P, H.34Q/E).

In addition to the above two nonstatutory aggravators, only one of the nonstatutory mitigators (i.e., "the defendant was abused or neglected as a child") was statistically significantly related to case advancement at three-or-more procedural points. Besides this variable, none of the other nonstatutory mitigators was related to case advancement at more than one procedural point. If a capital case processing system were operating in a fair manner, one would have expected to find a far greater number of legally relevant variables operating systematically to provide principled grounds for case advancement than was found here.

B. Regression Analyses

As noted in the methodology section, we also attempted to perform logistic regression analyses in order to determine whether the crosstabular results would hold up when other variables were statistically controlled.25 Because of the small number of cases, these analyses did not produce evidence that would be judged "statistically significant" by standard criteria. In fact, most of the regression analyses that we conducted would not work at all.

It is worth noting, however, that for the one procedural outcome that yielded numerically stable results—"charged as a capital felony"—the relationship with race of victim was consistent with the crosstabular results. Using the "exact" logistic regression method, we estimated that when the victim was white, the chances of being charged as a capital felony were about 150% higher than when the victim was not white. Using the "penalized likelihood" method, the chances of being charged were about 65% higher when the victim was white. Both of these methods controlled for several other statistically relevant variables, including judicial district, the number of statutory aggravators, the number of persons put at risk by the crime, whether there was evidence at the scene, and the defendant's employment status.

Although these estimates of a race-of-victim effect have a great deal of uncertainty attached to them, they still point to a trend that is of sufficient magnitude to cause concern. If this trend holds up as the data set increases in size, it could well rise to the level of statistical significance.

C. Frequency Approach to Assessing Fairness in Procedural/Sentencing Outcomes

One way to examine whether procedural and sentencing outcomes were fairly decided in the State—that is, whether they were commensurate and,

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25 Section II, D and footnote 15.

thereby, equitable—was to study the outcomes of cases of comparable aggravation and defendants of comparable culpability by counting the *number of legally relevant factors* that characterized the cases and defendants. To begin examining this issue, we employed a simple numerical representation of legal relevance. We counted the *number of alleged statutory aggravators and the number of presented statutory mitigators* as the basis for establishing case and defendant *comparability*. One can also use this counting procedure to compare cases of *noncomparable* aggravation level. Both kinds of comparison—comparable and noncomparable—are useful for disentangling whether the Connecticut capital case processing system has been fairly operating.

Table 3 presents the number of presented statutory mitigators (rows) crosstabulated against the number of alleged statutory aggravators (columns).26 For the present analysis, we focused on death sentences as the tabular outcome of interest. The intersection of a row (presented statutory mitigators) and a column (alleged statutory aggravators) is called a "cell." Each cell has its unique "address," which appears in the upper right-hand corner in parentheses. The notation "(0,0)," for example, refers to the cell defined by "0" presented statutory mitigators and "0" alleged statutory aggravators. In the same vein, the notation "(0,1)" refers to the cell defined by "0" presented statutory mitigators and "1" alleged statutory aggravator.

The frequency approach enables one to look at the extent to which defendants involved in cases with *either equal or unequal* numbers of statutory aggravators and statutory mitigators received comparable or noncomparable sentencing outcomes. Two kinds of cell comparisons can be made: (1) *within* and (2) *between*. Within-cell comparisons, called the *consistency* comparison, involved answering the question of whether *similarly situated cases or defendants*—that is, cases with similar aggravation and mitigation or, put differently, defendants with similar culpability—received *appropriately similar* procedural outcomes and sentences. Between-cell comparisons, called the *selectivity* comparison, involved answering the question of whether *dissimilarly situated* defendants—that is, cases of dissimilar aggravation and mitigation or, put differently, defendants of dissimilar culpability—received *appropriately dissimilar* procedural outcomes and sentences.27

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26 All seven alleged statutory aggravators are treated as equally importance because they each contribute a value of "1" to the overall count. The same is true for the five presented statutory mitigators.

27 The numerical definition of what constitutes a "similar" or "comparable" procedural or sentencing outcome is not at the present time legally well established. Nonetheless, we do not think that anyone would disagree that if a defendant received a death sentence, ideally, the principle of commensurability among similarly situated defendants would dictate that the overall death sentencing rate should be close to 100% in whichever cell even one death sentence might appear and close to 0% in whichever cell even one nondeath sentence might appear. That is, in a perfectly rationally operating capital case processing system, in which

There are two kinds of between-cell comparisons that can be made. First, one can compare cases of *equal mitigation but unequal aggravation*.28 In Table 3, this would be *horizontal selectivity*, which is examined by contrasting cells in a specific *row*. For a given number of presented statutory mitigators, cases and defendants with the higher number of alleged statutory aggravators in a row (i.e., cells progressively further to the right) should have advanced furthest procedurally and/or received the harshest sentences. Second, one can compare cases of *unequal mitigation but equal aggravation*.29 In Table 3, this would be *vertical selectivity*, examined by contrasting cells in a specific *column*. For a given number of alleged statutory aggravators, cases and defendants with the fewer number of presented statutory mitigators in a column (i.e., cells at the higher points within a column) should have advanced furthest procedurally and/or received the harshest sentences.30

Irrespective of whether the selectivity is horizontal or vertical, the critical issue under scrutiny is whether *the most aggravated cases and culpable defendants have advanced furthest procedurally or received the harshest sentences*. Ideally, if *only* the number of legally relevant statutory aggravators and statutory mitigators determined procedural and sentencing outcomes, one should observe no overlap between the least and most aggravated and culpable cases and defendants, respectively, with respect to the depth of their procedural penetration and, ultimately, the harshness of their sentencing. Put differently, procedural advancement and harsh sentencing should be concentrated in the highest cells in a column and in the rightmost cells in a row. Overall, if one looks at the *intersection* of rows and columns, selectivity is appropriately greatest if procedural advancement and death sentencing are most pronounced in the rightmost columns and the uppermost rows. Because other factors can come into play in determining procedural and sentencing outcomes, we would expect to find departures from this hypothetical, ideal pattern.31

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case outcomes depended exclusively upon the presence of statutory aggravators and statutory mitigators, all death sentences should cluster together and all nondeath sentences should likewise cluster together. This pattern would represent perfect selectivity, which, by the way, would also represent perfect consistency.

28 In the present case, one controls for, or holds constant, the level of presented statutory mitigation.

29 In the present case, one controls for, or holds constant, the level of alleged statutory aggravation.

30 Between-cell comparisons have also been called "neighbor" analyses. Cells adjacent to the anchor cell are called "near" or "proximate" neighbors. Cells that are not adjacent are called "far" or "distant" neighbors. The principle of selectivity would suggest that procedural advancement and sentencing outcomes should be most similar among near neighbors and progressively more dissimilar among far neighbors.

31 Departures from the "0.00%/100%" threshold of commensurate procedural and sentencing outcomes will be *legitimate* to the extent that *legally relevant* variables have operated to mitigate (i.e., lessen) or aggravate (i.e., heighten) procedural advancement or sentencing harshness. The departures from this threshold will be *illegitimate* to the extent that legally suspect or legally irrelevant (i.e., extra legal) variables have operated.

Both within- and between-cell comparisons can involve either *individuals* or *groups*. This distinction can be illustrated by describing questions that one might ask with respect to a simple within-cell comparison. First, one can compare individual defendants to one another within a cell; for example, one can ask whether two defendants with the same number of alleged statutory aggravators and presented statutory mitigators received death sentences. Second, one can compare groups of defendants to one another within a cell; for example, one can ask whether two racial/ethnic groups, for instance, black defendants and nonblack defendants with the same number of alleged statutory aggravators and presented statutory mitigators received the same percentage of death sentences. Third, one can compare an individual defendant to a group within a cell; for example, one can ask whether the sentencing outcome for an individual black defendant was excessive when compared to the death-sentencing rate of all black defendants with the same number of alleged statutory aggravators and presented statutory mitigators. Each of these within-cell comparisons has an analogous between-cell comparison.[32]

The 96 defendants' 6 death sentences were distributed across just three tabular cells: (1) *cell (1,1)*, with 4 death sentences, (2) *cell (1,2)*, with 1 death sentence, and (3) *cell (1,3)*, also with 1 death sentence. Consequently, despite the many kinds and levels of analysis described above that are logically possible, only a few could actually be made in the present case. Specifically, those made were *symmetrical group comparisons of consistency and selectivity, both horizontal and vertical.*[33] Though few in number, the comparisons were nonetheless instructive about how the Connecticut capital case processing system thus far might have been operating.

The within-cell analyses of cells (1,1), (1,2), and (1,3) present a potentially troubling pattern. The within-cell death sentencing rates were 50% (4 of 8 defendants) for cell (1,1), 20% (one of five defendants) for cell (1,2), and 100% (one of one defendants) for cell (1,3). Insofar as cell (1,3) had only one case, which received a death sentence, the consistency standard could not

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32 As the above examples show, there are different *levels of analysis*. When an *individual is compared to an individual* or a *group is compared to a group*, the comparison is said to be *symmetrical*. When an *individual is compared to a group*, the comparison is said to be *asymmetrical*.

33 Because the data collected for this report did not pertain to the decision-making intention of individual decision makers, we restricted the analysis to *group* comparisons, both within and between cells. The data have, accordingly, been aggregated and examined, therefore, for *systemic* patterns.

We should also point out that although we did compare individual defendants/cases, we did so only with respect to procedural and sentencing outcomes and *not* with respect to the decision maker(s) *intention to discriminate*. Also, in some cells, there was just one death sentence. That single case was actually treated as a "group" with a single member.

be applied because no comparison case existed. Accordingly we did not further consider this cell.

Neither cell (1,1) nor (1,2) exhibited a death-sentencing rate approximating 100%, which would have underscored consistency in death sentencing if, as noted above, *only* the counts of alleged statutory aggravators and presented statutory mitigators had determined procedural and sentencing outcomes. The 50% rate approximated death sentencing by coin flip. The 20% rate approximated a rare event, like the chances of being struck by lightning. Neither finding was in line with what one would have expected if the State's capital case processing system was operating in a *consistent* fashion for those defendants falling into these two cells, *all other things being equal.*

Similarly potentially troublesome patterns appeared when we examined fairness in death sentencing according to the two between-cell strategies, horizontal and vertical. First, among those cases of equal presented mitigation but unequal alleged aggravation (horizontal: between-cell comparisons across row 1), defendants with a single alleged aggravator [cell (1,1)] exhibited a *higher* death-sentencing rate than defendants with two alleged aggravators [cell (1,2)] (50% versus 20%, respectively). Second, among those cases of equal alleged aggravation but unequal presented mitigation (vertical: between-cell comparisons down columns 1 and 2), defendants with *no* presented mitigation in comparison to defendants with one presented mitigator exhibited *lower* death-sentencing rates (column 1, 0.00% versus 50%; column 2, 0.00% versus 20%), and defendants with *one* presented mitigator in comparison to defendants with two presented mitigators exhibited *higher* death-sentencing rates (column 1, 50% versus 0.00%; column 2, 20% versus 0.00%).

It is unclear why the *absence* of presented statutory mitigation was associated with *lower* death-sentencing rates than with *higher* death-sentencing rates. Perhaps defense counsel only presented statutory mitigators in those cases in which they expected to be confronted with alleged statutory aggravators that needed to be challenged. Perhaps the pattern may best be understood as one that represents legal strategy rather than arbitrariness.

On balance, what do the above sets of within- and between-cell comparisons tell us about the Connecticut capital case processing system? In brief, they signal potential problems.34 The patterns were consistent with decision making that was either arbitrary or unfair, depending upon the within-

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34 Further analysis of more detailed aspects of the cases and defendants is necessary. One would have to pay attention to the types of alleged statutory aggravators and presented mitigators, suspect variables, and nonstatutory aggravators and mitigators. One could examine these using statistical (i.e., quantitative) or case-reading (i.e., qualitative) approaches, or both.

and between-cell comparisons reviewed. However, we need to underscore, as we have throughout, that the number of cases overall and death sentences in particular were modest and, further, adjustments were not made for other possible influences beyond the number of alleged statutory aggravators and the number of presented statutory mitigators. Consequently, it is difficult to draw conclusions beyond simply noting the presence of sentencing patterns that challenge us to engage in greater in depth analysis.

IV. Conclusions

There are several conclusions that can be drawn from the analyses of the 96 defendants who were studied for this report. However, these conclusions need to be understood within the *methodological* and *conceptual* contexts from which they emerged.

Methodological Context. First, with respect to research methodology, perhaps the most central issue in this regard is that the analyses were based upon a modest number of cases. The pool of 96 defendants did not provide the requisite statistical power to permit us to conduct a sufficient number of analyses that adjusted one variable of interest for the influences of other variables of interest. Phrased differently and more pointedly, we could not systematically, statistically control for, and thereby equalize, case aggravation and defendant culpability in order to see whether cases equal in these ways exhibited disparate outcomes that might be related to legally suspect variables. We were forced, therefore, to conduct crosstabular analyses that did not engender these important adjustments. Second, although the DCI, the data collection instrument upon which these analyses rested, was quite comprehensive, there may well be additional kinds of data relevant to case processing in the State that would force us to rethink and recast our findings. As an example, information about the jurors was not compiled which might have been found to be relevant to trial outcomes. Because this and other possibly relevant information was not obtained, our findings need to be tempered accordingly.

Conceptual Context. Recall that the present research investigated whether there was any basis for concluding that the Connecticut death penalty statute has been operating disparately. The data collected for studying this issue focused on whether disparity resulted from the decisions of *many* decision makers. The data did *not*, therefore, lend itself to the analysis of the express intent of individual decision makers. Consequently, we have focused on detecting *systemic* patterns in outcomes.

In light of these methodological and conceptual parameters, the findings discussed above, and summarized below, are best understood as a basic, *initial stepping stone that is part of a recommended larger and longer study design and plan.* The findings are, we think, most reasonably viewed, then, as research "flags" marking potential trouble spots in the State's capital case processing system that need further inquiry rather than as confirmed results.

In view of the above caveats, the study findings point in the following directions:

- *Arbitrariness:* Insofar as the legally relevant variables examined did not appear to be consistently and strongly related to case advancement, arbitrariness may have been operating in Connecticut's capital-case processing system;

- *Unfair Disparity—Crosstabular Analyses:* There were signs that legal unfairness might have been operating at the points of capital-felony charging (prosecutorial decision making) and advancing to a penalty trial (a combination of juror and prosecutorial decision making):

  - *Judicial District.* Of all the legally suspect variables examined, judicial district had the most consistent and strongest relationship to case advancement. Defendants processed in judicial districts with the fewest death-qualified cases were charged with capital felonies, advanced to penalty trial after conviction for a capital felony, and received death sentences at higher rates than defendants processed in judicial districts with the most death-qualified cases.

  - *Defendant's and Victim(s) Race/Ethnicity:* There was some evidence that the victim(s) race/ethnicity was related to procedural and sentencing advancement: cases involving white victims were more likely to be charged with capital felonies and, later on, to proceed to penalty trial than cases involving other victim(s) races/ethnicities.

    There was no evidence that the defendant's race was related to procedural and sentencing advancement.

  - *Defendant's and Victim(s) Gender, Age and Socioeconomic Status:* The analyses provided very little

evidence that gender, age, or socioeconomic status of the defendant or victim(s) was related to procedural and sentencing advancement.

➢ *Defendant's and Victim(s) Religion and Sexual Orientation:* The data collected for this report did not include information about religion and sexual orientation. For this reason, we could not address these issues.

• *Unfair Disparity—Frequency Approach:* Analyses that examined death sentencing among both similarly and dissimilarly situated defendants—consistency and selectivity in death sentencing, respectively—showed patterns that were consistent with decision making that was either arbitrary or unfair.

The findings suggest the following research recommendations:

• continue quantitatively analyzing capital case processing in the State using the present data employing statistical techniques and analysis strategies suitable to samples of small to modest sizes like the present one;

• continue analyzing the present data, focusing on variables that have not been examined in the present report but that might help explain procedural and sentencing outcomes;

• consider updating these data to include more recent death-qualified cases, thereby expanding the analytical pool of cases; and

• review and assess information gaps that need to be filled (e.g., religion, sexual orientation), thereby, expanding the pool of analytical variables.

Although we have not unequivocably confirmed the presence and loci of procedural and sentencing arbitrariness and unfair disparity, these analyses suggest the possibility that they exist. With respect to life-and-death decisions, like capital case processing, prudence dictates that whenever and wherever such troubling patterns are detected, that proper vigilance be used. Our findings recommend just such vigilance. They are a bellwether urging that the State stop and take stock of how its capital case processing system is operating.

More research is certainly needed to better understand capital case processing in Connecticut. That understanding and vigilance might be in the form of a statewide *monitoring system* that is regularly and routinely informed by research evidence. The data collected and kinds of analyses conducted here can provide a framework for beginning to think about the parameters and operation of such a monitoring system.

Figure 1
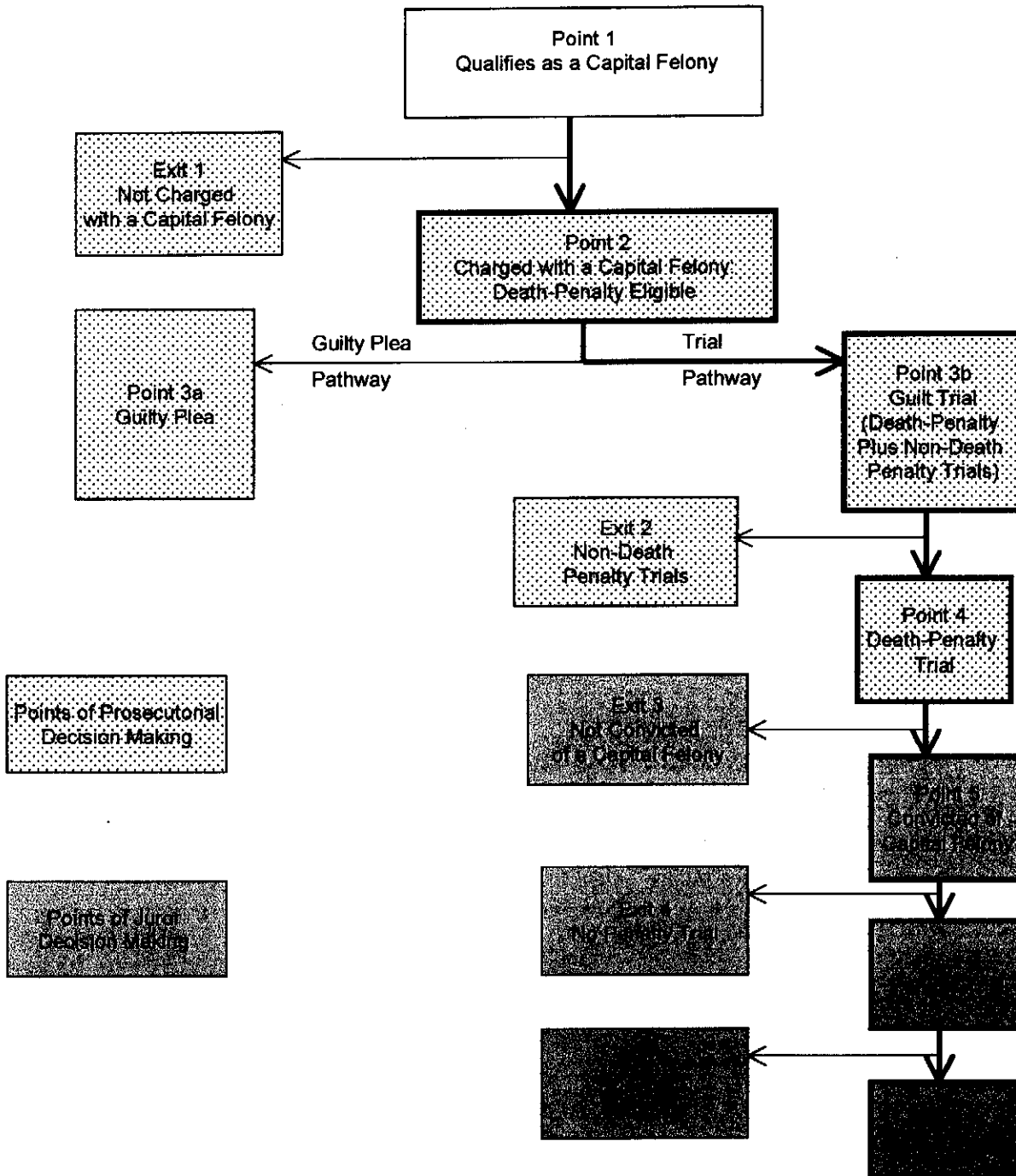## Capital Case Procedural Pathways:
Guilty Plea and Trial Schema

Figure 2
Capital Case Procedural Pathways:
Guilty Plea and Trial Schema—
Defendant Advancement Frequencies
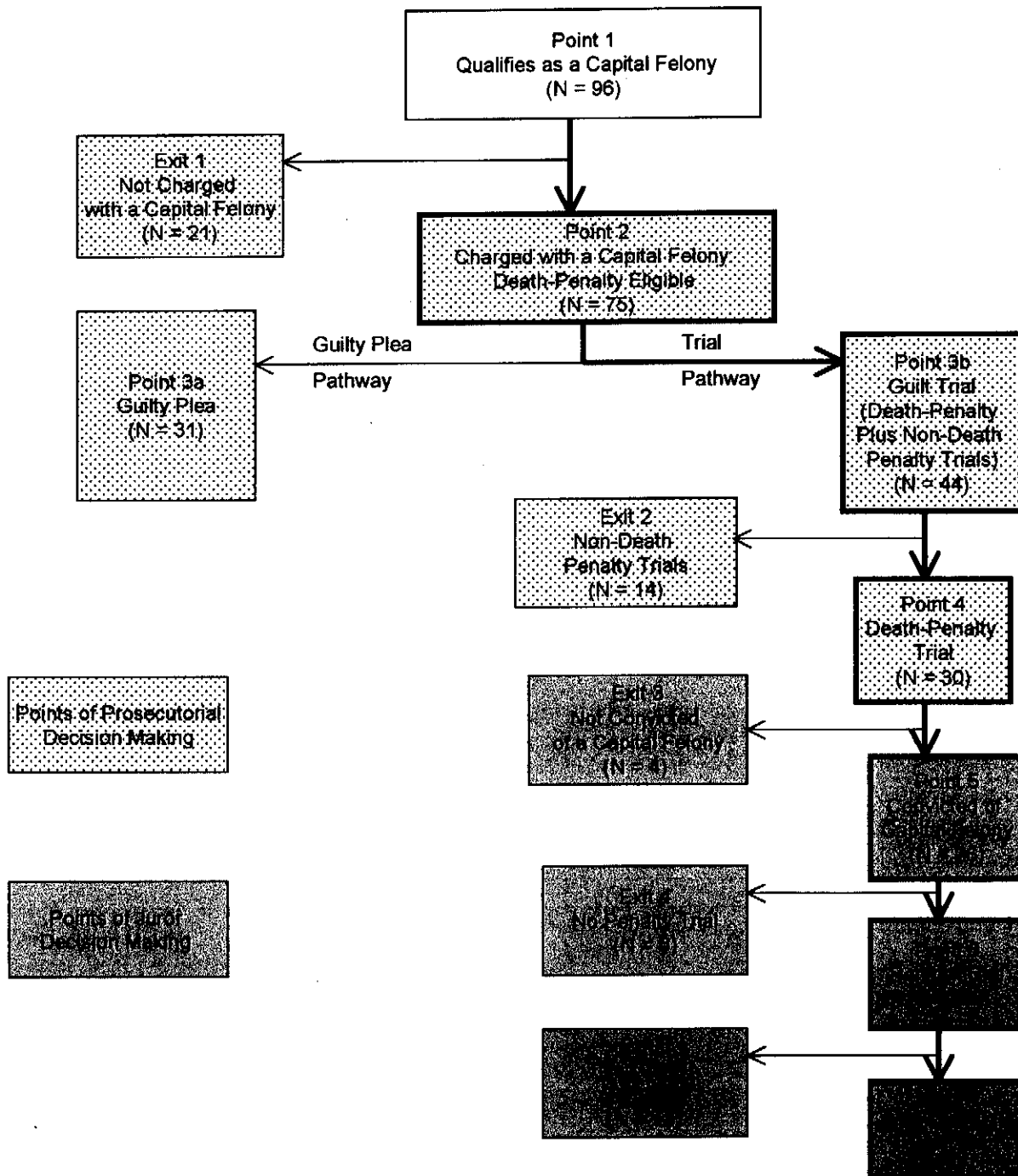
MAY (3

Table 1
Analytical Variables:
Summary of Only *Statistically Significant* Findings—
Collapsing Redundant Columns and *Removing* Redundant Analytical Variables
Bivariate (Two Variable) Crosstabular Analyses [1,2]
(Condensed Version of Table I.3)

Part B: Legally Suspect Variables

Analytical Variables	Definition	Procedural/Sentencing Points							Procedural Jumps
		(1)	(2)	(3a/b)	(4)	(5)	(6)	(7)	(A/B)
1. Defendant/Victim Race/Ethnicity									
b. Victim(s) Race/Ethnicity	(1) 5 Victim(s) Races/Ethnicities (All White Victim Definition)		≤.05				≤.05		
c. Defendant/Victim Race/Ethnicity Interactions	(1) Defendant's Race (4 Values) Crossed with Victim(s) Race (5Values) [All White Victim Definition]		≤.10	≤.10			≤.05		
2. Defendant/Victim Gender									
b. Victim(s) Gender	(1) Male Versus Female (All Female Victim(s) Definition) (3 Values)				≤.05				
4. Defendant/Victim Socioeconomic Status: Occupation and Education									

[1] Column headings 1 to 7 represent the following procedural/sentencing points:
(1) Qualifies as Capital Felony (N = 96)
(2) Charged with Capital Felony (N = 75)
(3a) Guilty Plea (N = 31)
(3b) Guilt Trial (Death plus Non-Death) (N = 44)
(4) Death Penalty Trial (N = 30)
(5) Convicted of Capital Felony (N = 26)
(6) Penalty Trial (N = 20)
(7) Death Sentence (N = 6)
(A) Death Qualified to Death Sentence (N = 96 → 6)
(B) Death Eligible to Death Sentence (N = 75 → 6)

[2] Cell entries in boldface were significant at p-val ≤ .10. Cell entries in boldface *and* shade were significant at p-val ≤ .05.

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Analytical Variables	Definition	Procedural/Sentencing Points							Procedural Jumps
		(1)	(2)	(3a/b)	(4)	(5)	(6)	(7)	(A/B)
b. Defendant's Employment	(1) Employment Status		≤.05			≤.10			
d. Defendant's Education	(1) Defendant's Education		≤.10						≤.10
5. Judicial District	(1) 12 Judicial-District Definition (12 Values)		≤.05				≤.05	≤.05	≤.05

Part C: Legally Relevant Variables

Analytical Variables	Definition	Procedural/Sentencing Points							Procedural Jumps
		(1)	(2)	(3a/b)	(4)	(5)	(6)	(7)	(A/B)
1. Statutory Aggravators	(13) 7-Value Definition Alleged (Formal Prosecutorial Allegation)		NA	≤.05 (h)(4)	≤.05 (h)(4)			≤.05 (h)(1)	≤.05 (h)(1) (h)(4)
					≤.10 (h)(3)				
	(14) 7-Value Definition (DCI-Based)			≤.05 (h)(6)			≤.05 (h)(3)		
				≤.10 (h)(5)			≤.10 (h)(4)		≤.10 (h)(1)
2. Statutory Mitigators, Presented	(1) 5-Value Definition (Formal Defense Counsel Presentation)		NA	NA	NA	NA	NA		≤.05 (g)(2)
	(2) 5-Value Definition (DCI-Based Definition)		≤.10 (g)(2)	≤.10 (g)(2)	≤.05 (g)(2)				
3. Nonstatutory Aggravators									
a. Incident Related	(1) Type of Capital Felony		NA	NA	≤.10			≤.10	NA

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Analytical Variables	Definition	(1)	Procedural/Sentencing Points (2)	(3a/b)	(4)	(5)	(6)	(7)		Procedural Jumps (A/B)
	(2) Type of Capital Felony for Which Convicted		NA	NA	NA	NA		≤.10		
	(3) Type of Contemporaneous Offense				≤.10					
	(5) Number of Special Precipitating Events Relating to the Defendant and/or Victim						≤.10			
	(6) Number of Special Aggravating Circumstances of the Victim						≤.05			
	(7) Number of Special Aggravating Features of the Offense		≤.05	≤.05	≤.05	≤.05				
	(8) Number of Other Aggravating Features of the Offense				≤.05	≤.10				
	(10) Victim(s) Body Abused				≤.05					
	(11) When the Victim's Body was Abused			≤.10	≤.10		≤.05			
	(12) Abandoned Victim to Death									≤.10
	(14) Continued Painful Attack though Victim was Dying						≤.10			
	(15) Abandoned or Hid Victim, or Continued Painful Attack			≤.10			≤.10			≤.05
	(16) Number of Types of Severe Physical Suffering							≤.05		≤.05
	(17) Duration of Mistreatment						≤.05			

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MAY 12

Analytical Variables	Definition	(1)	Procedural/Sentencing Points							Procedural Jumps
			(2)	(3a/b)	(4)	(5)	(6)	(7)		(A/B)
	(19) Type of Weapon Used to Kill the Victim(s)			≤.05		≤.10				
	(20) Number of Victim(s) Wound(s)			≤.05						
	(21) Number of Victims Killed Overall in Incident			≤.05			≤.10			
	(22) Number of Victims Killed by Defendant						≤.10			
	(24) Number of Persons Other than Victim(s) Placed at Risk in Incident		≤.05	≤.10						
	(25) Number of Coperpetrators			≤.10						
	(26) Coperpetrator's Role		≤.10							
b. Defendant's Motive(s)	(1) Types of Motives			≤.05 (Other)	≤.10 (Other)		≤.05 (Crime)			≤.10 (Rage)
c. Defendant's Prior Record	(1) Number of Prior Felony Arrests (Juvenile plus Adult) of the Defendant						≤.10	≤.05		≤.05
	(2) Number of Prior Misdemeanor Arrests (Juvenile plus Adult) of the Defendant									≤.05
	(3) Number of Prior Separate Adult Prison Sentences Imposed on the Defendant							≤.10		≤.10

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Analytical Variables	Definition	Procedural/Sentencing Points							Procedural Jumps
		(1)	(2)	(3a/b)	(4)	(5)	(6)	(7)	(A/B)
	(7) Number of Prior Adult Convictions of Defendant								≤.10
	(9) Number of Prior Juvenile Adjudications or Adult Convictions of Defendant, Outside County of Murder					≤.05			
	(10) Number of Prior Juvenile Adjudications or Adult Convictions of Defendant, Inside And Outside County Combined						≤.05		
	(14) Number of Prior Adult Convictions for Nonviolent Crimes			≤.10			≤.05		
	(15) Number of Prior Juvenile Adjudications and Adult Convictions for Violent Crimes, Combined								≤.05
	(16) Number of Prior Juvenile Adjudications and Adult Convictions for Nonviolent Crimes, Combined						≤.05		
	(17) Year Arrested for Most Recent Violent Crime				≤.10			≤.10	≤.10
	(18) Year Arrested for Most Recent Nonviolent Crime						≤.05		

Analytical Variables	Definition	Procedural/Sentencing Points							Procedural Jumps
		(1)	(2)	(3a/b)	(4)	(5)	(6)	(7)	(A/B)
	(19) Number of Victims of Juvenile Offenses of the Defendant								≤.05
4. Nonstatutory Mitigators									
	(2) Defendant's History of being Institutionalized for Mental Illness							≤.05	
	(5) Defendant Classified as Mentally Retarded				≤.05				≤.05
	(6) Defendant's IQ Qualifies as Mentally Retarded				≤.05				≤.05
	(8) Number OF Defendant's Disabilities			≤.10					
	(9) Defendant Abused or Neglected as a Child		≤.05		≤.05		≤.05		≤.05
	(11) Number of Defendant's Brain, Mental, or Neurological Impairments						≤.05		≤.10
	(18) Defendant's Statements Consistent with Self Defense					≤.10			
	(19) Number of Defenses to Charges		NA	≤.05					
	(20) Defendant's Statements Consistent with Diminished Responsibility			≤.10					
4. Selected Other	(1) Year of Offense		≤.10	≤.10					