

Black vs. White, Life vs. Death; Using Automatic vs. Controlled Processing as a Framework for Understanding Racial Disparities in the Criminal Justice System

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Abstract

An extensive amount of social science research has been conducted on issues related to the criminal justice system. From the moment a crime is witnessed until a verdict and sentence have been rendered there exists opportunity for the human cognitive system to distort and misinterpret data about a crime, about the suspect, and about the process itself. The research presented here describes, in easy to understand terms, some of the empirical research that points out disadvantages minorities face within the system, differences in the way in which trial information is received and evaluated, and provides a framework that may potentially lend itself to methods for mitigating these disadvantages and individual differences.

Keywords: Criminal justice; Crime; Life; Death; Forensic psychology; Racial bias

Introduction

The judicial system, while striving for objectivity and precedent-based decision making, is wrought with human error. This paper provides an overview of some of the empirical research that pinpoints the areas of the judicial system in which racial biases exist. From the moment a crime is committed until the last phase of sentencing is complete, human factors play a large role in determining the outcome. Among the many stages involved in a criminal trial, bias occurs when witnesses are asked to describe what they saw, when jurors view a taped confession, when jurors are presented with a judge's instructions, and when jurors deliberate, consider the "special issue" and a sentence or award is being decided.

For many years, human information processing has been interpreted within a dual-process framework. According to this general framework, human cognition utilizes both automatic and controlled processing. Automatic processing occurs very quickly with a lack of effort or conscious decision on the part of the processor. It depends heavily on already existing associations that form memory. Controlled processing, on the other hand, requires deliberate thought and is much more resource demanding and considerably slower than automatic processing [1]. Tasks which may originally have required controlled processing, for example reading and riding a bicycle, become automatic over time. When processes are automatic, it is very difficult to prevent them from occurring. Automatic processes require very little cognitive capacity whereas controlled processes require much processing capacity and thus are limited by the human information processing system. Over the years the dual-process theory has been applied to many cognitive phenomena including, but not limited to, visual search tasks, selective and divided attention [2]. In this paper, cognitive biases which operate to the detriment of the racial minority are interpreted within this framework and where available, potential remedies for such biases are presented.

What did you see?

One of the first places in which human bias occurs is during the commission of a crime. What happens when a police officer has to make a split-second decision about whether to shoot a suspect who appears to be armed? What happens when a victim or witness to a violent crime has to describe whether or not she saw a weapon? Because the human information processing system is one of limited attention, we must necessarily decide on which aspects of a situation we will focus. Attentional bias has repeatedly been demonstrated in the laboratory. Payne reported on a study [3] in which participants were flashed a face of either a black or white individual followed by a picture of either a hand tool or a gun which was followed by a visual mask to eliminate afterimages. Participants were instructed to ignore the faces and simply judge whether the object they observed was a tool or a gun. When participants were allowed to pace themselves through the materials using more controlled processing to make their decisions, accuracy was high, participants correctly distinguished the guns from the tools, and the probability of making a mistaken identification was less than 0.10. However, even in this self-paced condition, guns were more readily detected and identified when they were preceded by a black, rather than a white, face. In the fast-paced condition, where participants were asked to make their judgments in 500 msec and thus relied on automatic processing, error rates were substantial. Participants were likely to falsely identify an object as a gun (the probability of mistaking a tool for a gun was about 0.30), and this effect was more pronounced when the object was preceded by a black face (probability of error approached 0.40) than a white face. Payne explains this weapon bias by reference to the dual process theory in which automatic stereotyping and intentional response systems are mitigated by the amount of cognitive control a viewer maintains [2]. When decisions have to be made quickly, we have little cognitive control and automatic impulses based on stereotypes associating an African American face with a weapon or violence overrides the otherwise intentional response of not appearing racially biased. Unfortunately, when decisions need to be made quickly, cognitive control is in short supply. Surprisingly, both Caucasian and African

American participants show a similar bias of interpreting objects as guns when they are viewed in black hands [4,5], and the bias still exists when participants are told explicitly to ignore the potentially biasing characteristic of race [6].

People with both implicit and explicit negative attitudes towards blacks show more weapon bias than those without such attitudes [3,7] and this bias is especially pronounced when the person making the judgment has depleted cognitive resources [2] such as a police officer at the end of a long shift. Recent research has demonstrated, however, that those police officers with the highest level of firearms training (e.g. gun identification) were least likely to show the race-based weapon bias [8] implying that more experience with weapons can reduce the tendency to misidentify ambiguous items as weapons and perhaps minimize mistaken shootings.

During the commission of a crime another cognitive bias may play a role in mistaken eyewitness identification. This is a result of the propensity for humans to assume that actors and characteristics of an event remain stable; the illusion of continuity. For example, if we view an individual waiting to cross the street and a bus goes by impairing our view of that individual, we assume that when we retain view we are looking at the same person. This assumption leads to instances of change blindness whereby significant changes to the actors or features of a scene go unnoticed by the observer. Our automatic processes do not scrutinize the actor after being obscured by the bus, but assume it is the same person provides stunning examples of exchanging actors in otherwise continuous scenes [9]. In one example a young man is viewed sitting at a desk, he appears to be distracted by something and he rises. In the next scene a young man is seen answering a phone in a hallway. The man at the desk is not the man answering the phone, but few observers detect this. These changes are noticed by less than half of the viewers.

Change blindness has recently been described as possibly being responsible for unconscious transference; a phenomenon whereby an innocent bystander is mistaken for a culprit by an observer [10]. There is a tendency for an eyewitness to identify someone from a line-up based on their familiarity, but the viewer does not need to identify the source or context of the familiarity. It may be someone they observed at the crime scene; someone they saw on a recent talk show; or someone whose picture they viewed when going through mug shots. This inability to identify the source of an individual's familiarity results in a problem that has been termed source monitoring. It has also been suggested that perhaps the witness realizes there were two separate actors, but confuses them. And it has also been speculated that the witness may believe that the perpetrator and the person they have identified are the same individual [11]. Much research has been conducted on the use of familiarity as a means for making identifications, and this process appears automatic. For this reason, facial recognition based on familiarity by aging adults remains intact even when recollection fails and they are unable to recall the specific context in which the face was viewed [12].

Davis et al. [10] attempted to isolate some of the circumstances under which a witness is likely to function according to the illusion of continuity. A video tape was made in a supermarket setting. An innocent person is viewed walking down an aisle, she passes behind a stack of boxes and a different person emerges who proceeds to steal a bottle of wine. The camera angle then switches to show another shopper in a different section of the store. Participants were instructed to pay attention to some of the store products as they viewed this video. They were then asked to identify the perpetrator (i.e. the person

who stole the wine) from a perpetrator absent lineup. When asked, fewer than 60% of the participants mentioned noticing the actor change behind the box and almost 75% chose an innocent person from the lineup. The innocent person who was viewed in the same aisle as the culprit was chosen from the line-up 29% of the time and the person in a different aisle was chosen 23% of the time. Simply having been seen in the video increased the actors' chances of being identified when compared to line-up members not viewed in the video that were chosen 11% of the time.

To test the notion that the poor performance observed in this study was due to the inattention of the subjects (since they were instructed to pay attention to some of the store products), a second study was conducted in which half of the participants were instructed to pay attention to the products and the other half were not. While the distraction of focusing on the store's products did harm participants' ability to notice the actor change (20% noticed), almost half of those who were undistracted failed to notice the change. Again, 71% of the participants chose an innocent person from the lineup and those people who had been viewed in the video, in the same aisle as the crime and in another section of the store, were more likely to be chosen than persons who had not. So a majority of the participants failed to notice a change in actor (change blindness) and they were likely to choose an innocent bystander from a lineup (unconscious transference) due, perhaps, to a problem of source monitoring whereby something is familiar but we don't know where we've seen it before.

It is also possible that this change blindness results from the fact that changes in other race individuals are very difficult to identify. Humphreys, et al. [13] performed a study in which Caucasian or Indian Asian participants were shown slides containing photos of a Caucasian, an Indian Asian, and two other people. This was referred to as the parent slide. It was viewed in alternation with a slide in which either the Caucasian or Indian Asian face had been changed. These slides were viewed at a rapid pace in a cycle until the participant signaled that they had identified a change. Reaction times to identify the change were significantly longer when the participant had to identify a change in an other-race face, the longest identifications times being when Caucasian participants had to identify changes in the Indian Asian faces. These findings lead one to believe that cases of change blindness and hence unconscious transference may be the rule rather than the exception, particularly when identifications must be made across racial lines.

In one clever study, O'Brien [12] was able to demonstrate that when investigators were asked to consider how or if their hypotheses about a suspect in a criminal case might be wrong, their biases were reduced. These findings might be able to be extended to the identification process by asking the witness if they could be wrong about their identification or if, perhaps, they recognize the individual from a context other than the crime.

Did he confess?

Once a suspect has been identified by an eyewitness, they will most likely be interrogated by police [13,14]. It has been estimated that during such questioning, as many as 68% of suspects make incriminating statements [15]. In an effort to minimize the frequency of coerced confessions during interrogation, many police departments now routinely videotape these sessions. These tapes are often viewed by a jury during trial and, if the defendant has confessed to a crime, the jury is highly likely to convict [16]. Unfortunately, false confessions

may be the leading cause of wrongful convictions [17] and jurors, police, and other individuals have a very difficult time determining if a confession is false.

In one study [18], participants either watched or listened as prison inmates “confessed” either to the crime they had committed or to a crime that had been fabricated by the researchers. Participants, either college students or police interrogators with an average of 11 years of police experience, judged each confession to be true or false and expressed their level of confidence in their judgment. Overall accuracy rates were not better than chance. When performance of the two types of participants was compared, students were more accurate than police (59% vs. 48%), but police expressed more confidence in their judgments. Police officers were more likely than college students to accept false confessions as true, although the two groups did not differ in their ability to identify true confessions as such. The authors interpret this finding as indicating a police bias to view suspects as guilty and accepting of confessions, both true and false. In fact, those police officers with more years of deception detection training were more likely to accept false confessions as true; a larger bias towards guilt [18]. More training and more years of experience lead to the automatic stereotyping of suspects as guilty and therefore their confessions as veridical. Overall, performance was better in the audio than the video condition (59% vs. 48%). This is important because many of the deception detection programs that police officers receive in training focus on using behavioral cues, for example averting one’s eyes, to identify deception [19].

Regardless of the cause of false confessions, be they voluntary, coerced, given under duress or after having been presented with fabricated evidence, they present an obvious problem. The tapes, which are intended to allow the jury to see the conditions under which the confession was obtained and judge for themselves the veracity of the confession, introduce a different source of bias; that of illusory correlation. This bias is based on the notion that the person who is most salient in the videotaped interrogation is perceived as being in control of the situation and, since a single camera is typically used to tape the interrogation session, the angle at which the session is taped influences juror perceptions regarding the voluntariness of an obtained confession [20]. Lassiter et al. [21] filmed an interrogation from three angles; a suspect only focus, an interrogator only focus, and an equal perspectives focus. When participant responses were compared it was determined that the suspect only focus led viewers to believe the obtained confession was much less coerced.

Race also influences salience. “Minority group members are definitionally more distinct than majority group members, their behavior is inherently more noticeable at encoding” [22]. In one study, Caucasian participants watched a mock police interview of a Chinese American about a hit-and-run accident. The interrogator was Caucasian and the interrogation was filmed from the equal-focus camera perspective. When participants were asked to evaluate whether the confession observed in the video was voluntary, those who viewed the video were more than three times as likely to say it was voluntary (62%) when compared to a group that read the interview transcript where the race of the suspect could not be determined (21%) [20]. Those who were able to be affected by the race of the person being interviewed in the video condition viewed the suspect as more salient and his confession as more voluntary. The researchers speculated that perhaps the act of reading the transcript, as opposed to viewing the interrogation, resulted in the reduced ratings of voluntariness.

In a second study, Caucasians viewed a Chinese American, African American or Caucasian individual participating in a mock police interrogation about a hit-and-run. The interrogator was always Caucasian. Results showed that the viewers rated the confessions by the Chinese American and African American as more than two times more voluntary (68%) than the Caucasian confession (29%). This “other race salience effect” persists even when the viewers’ racial prejudice is statistically controlled for and even though participants rated the Chinese American as having the lowest likelihood of committing a hit-and run crime. When, in a third study, a Chinese American is interviewed by either a Caucasian or other Chinese American, the voluntariness of the confession is rated lower when the suspect and interrogator are of the same race since in this case neither is more salient. In addition, the recommended sentence is less severe when the suspect and interrogator are of the same race. These results are interpreted to point to the effect of the visual prominence, and thus attentional, effect of minority racial salience. In order to reduce this, having an interrogator of the same race as the suspect would seem a simple answer to this problem. Additionally, consistent with the findings of Kassin et al. [18] that audio taped confessions are better evaluated than are visual taped confessions, jurors could be asked to simply listen to the taped confessions rather than watch them. This would reduce the saliency of the minority suspect and still allow jurors to experience the interrogation procedure.

Race is not always a negative in the judicial system, however. Evidence suggests that by making race salient, i.e. “playing the race card” white juror bias can be reduced [23]. The presence of a black juror during deliberation has been shown to reduce the white juror bias, but the specific mechanism by which this occurs remains unknown [24]. Generally, white jurors are more likely to convict black defendants than white defendants. However, when race is made salient conviction rates for defendants of the two races are equivalent [25]. The theory of aversive racism has been proposed to account for such effects [26]. According to this theory people hold racist views that are much more subtle than they were in the past. Stereotypes about blacks are still held, however when the issue of race is made salient by explicit mention, whites are likely to change their behavior so as to not appear prejudiced. This requires effort and changes the evaluative process from one of automaticity to one of controlled processing.

To demonstrate this, participants were shown a video regarding the trial of a black man charged with attempted vehicular homicide. After leaving a sporting event, the defendant noticed some damage to his car. He was accosted by an individual who denied that anyone had touched his automobile. The defendant then got in his car and hit three white people as he left the area. In one condition, the defendant’s wife testified that the group surrounding the car yelled racial slurs at the couple. In the other condition this material was missing. Those participants who heard the testimony about racial slurs were more likely to find the defendant not guilty than the participants who did not hear such testimony. They also rated the defendant as less guilty and the defense argument as stronger when race was mentioned in the testimony. Thus, making the defendant’s race a salient issue was beneficial to his outcome [23]. Interestingly, those jurors who scored high on a racism scale were more likely to find the defendant guilty than those scoring low on such a scale, but only when race was not made salient. When racist jurors are alerted to the fact (by race being made salient) that what they do may be construed as racism, they are less likely to engage in this behavior, hence the reduction in guilty verdicts for racist individuals in the race salient condition. These findings were replicated in a study where race was made salient

through the defense attorney's opening and closing statements without specific reference to racial slurs. Again, when race was made salient, black defendants were found guilty less frequently than white defendants [27] perhaps due to the extra processing and cognitive control that is needed to guard against the appearance of racism.

What were those instructions?

A major problem jurors have when interpreting instructions during the penalty phase of a capital trial is understanding, aggravating and mitigating factors and what behaviors or circumstances contribute to each. Partly in reaction to this lack of comprehension, California rewrote their capital sentencing instructions using a number of psycholinguistically sound principles; more concrete terms, less legal jargon, fewer negatives and better organization. A glimmer of hope with respect to the effect of this change has been provided by Smith and Haney [28]. In their study participants heard either the standard or the simplified California capital penalty phase instructions. Afterwards they answered a number of questions designed to assess their comprehension. Participants were able to answer significantly more questions correctly after hearing the simplified instructions; they were better able to define aggravating and mitigating; and they were better able to identify specific factors as belonging to the aggravating or mitigating class. Unfortunately, overall comprehension was only slightly better than 50% even for the participants who received the simplified instructions and participants showed the typical tendency of being better able to identify aggravating than mitigating factors.

Note that racism in the courts is not a one way street. Not only are blacks more likely to be charged with capital cases, but cases in which the victim is African American or Hispanic are less likely to be charged as capital homicides than if the victim is White or Asian [29]. In fact, "The odds of being charged with capital homicide for defendants in African American victim cases were one-fifth the likelihood for defendants in White or Asian victim cases...The odds for those defendants [where the victim was Hispanic] were one-twentieth the odds that defendants in White or Asian American victim cases faced" [29].

It has been demonstrated that when comprehension of instructions is poor, black defendants are more likely to receive the death sentence than whites [30]. Therefore, there is a substantial benefit for black defendants when simplified instructions are used. In one study white and non-white participants read a trial transcript of a father accused and found guilty of killing his two children. The race of the defendant was manipulated to be either black or white and participants received either standard California or simplified instructions. Participants were asked to make a sentence recommendation of either life without parole or the death penalty and they were asked questions to evaluate their comprehension of the instructions. Overall, non-white participants recommended life in prison more than the death penalty and they did not differ in how often they recommended the death penalty for black and white defendants. White participants, on the other hand, recommended significantly more death sentences for black than white defendants. When the simplified instructions were read, this bias was eliminated and white and non-white participants gave the black defendant and the white defendant equivalent sentences. Consistent with previous research, those respondents who recommended the death penalty had significantly lower instruction comprehension scores than those who recommended life in prison [30]. Simplifying instructions and insuring there are non-white members on a jury may reduce considerably the racial bias to sentence black defendants to

death. It may be that by providing instructions that are easier to understand, more cognitive resources become available for careful consideration of the case facts rather than a reliance on automatic stereotypes due to insufficient resources.

What should the penalty be?

The process of death qualification results in juries which are heavily dominated by white males, those most likely to hold racist attitudes, and those holding the stereotype of blacks as dangerous [31]. When offenses are consistent with these stereotypes, punishment is likely to be more severe. The degree to which the defendant appears to conform to the "black" stereotype also influences juror sentencing. When examining outcomes of actual capital cases in Philadelphia, Eberhart et al. [32] found that those defendants that possessed more stereotypical black features were more likely to have been given the death penalty. Because we are more likely to empathize with people who are more like ourselves, black defendants who have heavily white male juries are at a distinct disadvantage [33]. Using a group of jury-eligible, nonstudent participants, visual materials rather than the less externally valid trial transcripts, a realistic courtroom setting, and a jury deliberation component Lynch and Haney [34,35] investigated this white male bias by examining the ways in which the white male jurors differed from others; namely women and nonwhite participants. Participants were assigned to one of four conditions created by manipulating the race of the defendant (black vs. white) and the race of the victim (black vs. white) in a capital trial. After viewing the trial each participant provided an individual straw vote and then they deliberated in groups of 6 to reach a sentence of life without parole or the death penalty. Afterwards, they completed a questionnaire about their jury experiences.

Juries were separated into categories based on the number of white male members. Those juries with a high percentage of white male members were significantly more likely to recommend the death penalty for cases in which the defendant was black. As in other research, the process of deliberation created a more punitive outcome with support for the death penalty rising from 55% in the straw vote to 66% after deliberation. During the straw vote, white men were more likely than the others to favor the death penalty. This difference was reduced after deliberation, perhaps because white men were selected as foremen in a disproportionate number of juries and may have influenced others to embrace stronger support of the death penalty. Women and other race individuals assigned the death penalty equally for black or white defendants, but white men assigned the death penalty to black defendants more than to white defendants. White men were also less likely to consider mitigating factors in favor of life for the black defendant and to consider the aggravating factors consistent with their stereotypes more heavily when the defendant was black. The women and other participants showed no differences in how the factors were considered as a function of defendant race. When the defendant was white, the white men considered the mitigating factors more and the aggravating factors less. When asked about the attribution of the crime, white males were more likely to attribute internal factors (e.g., greed or desperation) to the black defendant whereas the attributions that women and others made were more or less equivalent for the black and white defendants. And, when considering the black defendant, the white males were more likely than the others to view him as violent and dangerous. It would behoove the criminal justice system to establish best practices to ensure that the processes of voir dire and death qualification do not lead to juries that

are dominated by white males. It might be additionally advantageous for a defense attorney to cite during opening or closing arguments characteristics of his or her black client that contradict the stereotypes of criminal and dangerous. This would encourage a deeper, more controlled, consideration of the individual and perhaps steer jurors away from their reliance on those stereotypes.

How dangerous is he?

In choosing between life without parole and the death penalty jurors may consider the future dangerousness of the defendant. This "Special Issue" is a consideration of the defendant's continuing threat to society. The court has declared that jurors are capable of making this most difficult of evaluations [36]. It is an important aggravating factor in awarding the death penalty, and it has been shown to be a factor in a significant number of executions.

Often times a clinical psychologist will be called to testify as to the likelihood that the accused will present a threat to society. If it is believed that the individual may be a threat, this is used as an aggravating factor tilting the scales towards death, rather than life in prison. Unfortunately, these predictions are both wrought with error and carry a very heavy weight. "A large body of literature suggests that, as clinicians, mental health practitioners exhibit an unimpressive ability to make accurate future predictions of dangerousness" [37]. Because the incidence of violence in heavily guarded prisons where there is little opportunity for inmate interaction to occur is very low, predicting these rare events is difficult. One analysis showed that prison homicides in capital offenders ranged from 0.002 (that is 1/5 of 1%) to 0.01 (1%), so jurors and clinicians are likely to hugely overestimate the likelihood of capital offenders committing another homicide [38].

Jurors base the decision for death on viciousness of the crime, lack of remorse, the victim's age, and the presence of psychopathology in the defendant but, while these may be good predictors of recidivism in society, they are not good predictors of recidivism in prison. Past history of violence does not predict prison-based violence and the severity of one's first offence is actually negatively correlated with probability of future violence. It is not possible to predict behavior in prison from behavior in society; context matters. In 155 affirmative "special issue" cases where juries were presented with expert mental health testimony that the person would be violent, violence rates among executed inmates, those pending execution, and execution relieved populations were equivalent. Violence estimates among those affirmative cases ranged from between 4 and 7%, so the predictions were wrong 93% to 96% of the time [38]. Because there is so little violence in prison, predictions about these rare occurrences are likely to include many false positives.

Another study supports this conclusion. Marquart and Sorensen [39] collected data on capital offenders who were Furman-commuted and found that when the jurors concluded there was a probability that the defendant would possibly pose a threat of violence and thus sentenced the individual to death, they were correct 5.5% of the time. There was a single murder among the sample studied. But when the special issue was answered negatively and the suspect was given life in prison, they were correct 92.5% of the time. Generally, predictions that an individual will not be involved in future violent actions are far more accurate than those predicting violence [40]. A major complication with the special issue is the notion of the "probability of future violence" that poses a threat to society. Does this mean any

probability? Because to that question, the answer must always be "yes". Perhaps instead of probability, the question should be phrased as "more likely than not" or "disproportionately more likely than other inmates" to pose a threat [38,40]. In addition, when jurors interpret "society" they most likely think of their community rather than the highly guarded "society" of a prison.

The APA called for limits to be set on clinical "expert testimony" predicting future dangerousness. In an amicus brief presented by the American Psychiatric Association, it noted that clinicians making such predictions have error rates as high as 85% and fail to meet the Daubert standards for scientific testimony [41]. The court decided that jurors would be able to successfully determine when the clinical prediction being presented was correct or incorrect [42], despite the fact that jurors have been shown to be influenced more by superficial factors such as an expert's credentials than by the argument, evidence, or science they present [37]. This is evidenced in research showing jurors are more influenced by identical testimony concerning a defendant's insanity plea when it comes from a medical doctor than from a psychologist [43]. This reliance on experts' credentials is particularly true when the defense argument is complex and the jurors are of low need for cognition [44]. Need for cognition refers to an individual difference characteristic describing the degree to which one enjoys engaging in effortful, complex, thought. Persons low in need for cognition bases their decisions on more superficial features of the expert because it is easier to take their testimony at face value than it is to think critically about a complicated argument. Once again, the basis for much of the biases that exist in the criminal justice system may be a result of the use of automatic rather than controlled processing.

There are objective methods for making such predictions. Actuarial models, such as the Violence Risk Assessment Guide or VRAG [45] use statistical findings and data from large numbers of individuals to make dangerousness predictions that are considerably more accurate than those of clinicians. How, then, are the predictions from such models received by jurors and does the type of adversarial evidence (presented either at cross-examination or other expert testimony), impact on the acceptance of these predictions? Krauss and Sales [37] conducted a study in which mock jurors viewed a simulated capital sentencing hearing including the definition of dangerousness and the instructions for such sentencing used in Texas. Participants heard testimony from either a clinical psychologist giving opinion or from a psychologist basing his testimony on the results of an actuarial model (the VRAG). This testimony was followed by one of four types of adversarial experience. Participants were exposed to either ineffective cross-examination, effective cross-examination (attacking either the expert's suitability to make such judgments or the short-comings of the VRAG instrument), or a competing expert that gave either the same type (e.g., opinion versus opinion) or the other type (e.g., opinion versus actuarial) of evidence. Results showed that, compared to ratings of future dangerousness taken prior to expert testimony, all groups showed an increase in perceived future dangerousness after the expert gave his testimony. Clinical opinion raised ratings of future dangerousness significantly more than the actuarial prediction and this increased perception of dangerousness for the clinical group persisted even after the adversarial testimony was given, whereas dangerousness ratings for those who heard the actuarial expert returned to their pre-expert levels. These findings would suggest that the court's decision in *Barefoot*, that jurors are able to ascertain the short-comings of various types of clinical judgment, was incorrect.

Conclusion

The penalty for one found guilty of a capital offense and subsequently sentenced to death is the ultimate penalty one can pay and this paper has tried to elaborate on the many ways the system can go wrong and result in erroneous executions. The pain and suffering is not limited to the victim, the victim's family, the defendant or the defendant's family. Those who serve on capital trials also suffer emotionally, psychologically, and physically. They have reported nightmares, stomach problems, depression, chest pains, and other symptoms associated with post-traumatic stress disorder. Many of the jurors interviewed expressed an unwillingness to ever serve on a capital jury again and felt that this would be a part of their lives forever [46].

The dual process framework of Shiffrin and Schneider (1977) regarding automatic and controlled processing lends itself quite nicely to understanding some of the basis for these racial biases. In fact it is just this sort of framework that [26] rely upon in their aversive racism theory. Some of the existing biases might be mitigated by a reliance on controlled processing. In order for this to occur, those involved need adequate cognitive resources. They need to think critically about their own biases and whether their identifications or decisions might be wrong. Bringing to light our human nature to rely on automatic processing because it is easy and nearly effortless might provide an effective starting point.

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