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The Importance of Forensic Evidence in Establishing Criminal Guilt

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Abstract

According to recent research, the general public has the perception that forensic evidence is prone to error and requires considerable human judgment. By comparing decisions on guilt and punishment in criminal cases that involve forensic versus eyewitness testimony evidence and determining whether there is a CSI effect, this study examines how important the general public finds forensic evidence. In particular, the experimental survey used a 2 (crime type: murder or rape) 4 (type of evidence: DNA, fingerprint, eyewitness testimony from a victim or bystander, or eyewitness testimony from a bystander) 1 design, which produced seven vignettes to which participants were randomly assigned. According to the findings, forensic evidence was linked to a greater confidence in a guilty verdict and a higher number of guilty verdicts. The ideal sentence length and the expected sentence length were both unaffected by forensic evidence. However, when forensic evidence was presented for rape, respondents thought the defendant should receive a longer sentence, but the likely sentence respondents expected the defendant to receive did not change. This study did not find evidence of a CSI effect. In general, this study suggests that DNA and other forensic evidence have a greater impact during the verdict stage than during the sentencing stage.

Keywords: Forensic science •Forensic evidence • CSI effect • Eyewitness testimony

Introduction

Particularly, DNA evidence has been regarded as the gold standard for jurors' forensic technique. This demonstrates that individuals have faith in DNA and have preconceived notions that DNA evidence is more precise and discerning than non-DNA forensic evidence, making it less likely to risk a coincidental match. According to research, jurors are unaware of DNA evidence's potential fallibility and believe it to be more trustworthy than it actually is. However, there have also been recent studies that have revealed that the general public has a perception of forensic evidence as being relatively inaccurate and requiring a lot of human judgment. In general, incorrect perceptions or beliefs regarding forensic evidence can have devastating effects, particularly when incorrect forensic analyses lead to wrongful convictions. As a result, there has been an increase in research into how various actors in the criminal justice system, including potential jurors, judges, defense attorneys, and prosecutors, view forensic evidence and whether or not they are aware of its limitations [1].

The so-called "CSI effect" is a concern that arises from the use of forensic evidence in jury trials. The CSI effect basically says that public perceptions, beliefs, attitudes, or expectations of forensic science evidence may be influenced by television shows that show forensic evidence, and forensic evidence may be misunderstood as being as accurate or as quick to be analyzed as shown on TV. This, in turn, could lead jurors to place an excessive amount of importance on forensic evidence, which could cause them to penalize prosecutors incorrectly when there is no forensic evidence or to penalize defendants incorrectly whenever forensic evidence is presented. When other types of evidence are present that could contradict the available forensic evidence or when forensic evidence is either unavailable or impossible to obtain, it may be especially important to investigate whether criminal justice actors comprehend the limitations of forensic evidence [2].

Literature Review

Some forensic evidence is thought to be more accurate and objective than others, according to previous research. DNA and fingerprint evidence are commonly examined in empirical studies of the CSI effect. Strangely, a concentrate by Kaplan et al. according to the President's Council of Advisors on Science and Technology (PCAST) report, these two types of evidence were also deemed foundationally valid noted that DNA and fingerprinting were perceived as the two most accurate forensic techniques out of the ten techniques that were evaluated. However, other types of evidence may be presented during a case in addition to forensic evidence. The perception of forensic evidence in relation to witness testimony is particularly intriguing. According to numerous studies, jurors consider eyewitness testimony and forensic evidence to be powerful forms of evidence for making decisions during trials. One of the most persuasive pieces of evidence presented to jurors is eyewitness testimony, which has historically been regarded as the gold standard [3].

Additionally, bystander eyewitnesses may be perceived as being less accurate in their descriptions of a defendant than eyewitnesses who were more proximate to the defendant and, as a result, more familiar with the defendant during the commission of the offense. Indeed, when compared to when a stranger was a bystander eyewitness, this type of witness familiarity with the defendant significantly increased the likelihood for and confidence in guilty verdicts. However, jurors frequently misinterpret eyewitness identifications as being more trustworthy than they actually. One third of eyewitnesses are estimated to make an incorrect identification, making eyewitness error one of the leading causes of wrongful convictions. The relative strength of forensic evidence in comparison to other types of evidence has been the subject of research. Because eyewitness testimony is regarded as one of the most persuasive forms of evidence, it has been a comparison of particular interest. The level of confidence in one's own guilt is significantly influenced by both eyewitness testimony and forensic evidence, with forensic evidence producing higher levels of confidence [4].

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Schweitzer and Nuez have argued that researchers should focus on examining the significance of various types of evidence, which are typically presented in criminal trials, to jurors and their verdicts in order for existing literature to better consider the requirements of those who wish to apply it in the courtroom. Particularly, if legal actors, such as judges and lawyers, are aware of the types of evidence that influence jurors' verdicts and for which particular cases, they can make more informed decisions. Testing how various characteristics of such evidence may lead to varying outcomes and confidence in juror verdicts may not only help to better understand juror behavior, but it may also aid in this understanding. This is true for both jury sentences and verdicts involving guilt determination. In fact, juror sentencing is still used in over 4,000 felony cases each year. As a result, thousands of defendants' sentences are decided by juror verdicts every year [5].

In addition, it is essential to investigate the effects of evidence in cases involving offenses that already vary in the likelihood or probability of conviction because the evidence presented at any given trial is specific to each case type. The basic probability that a defendant would ultimately be convicted of a felony charge at trial was highest for those charged with murder (60 percent) and drunk driving, while the probability was lowest for those charged with rape (35 percent) and assault. For instance, the Bureau of Justice Statistics tracked felonies in the 75 largest counties in the United States in 2009. Therefore, Schweitzer and Nuez argue that it is especially crucial to investigate the significance, weight, and impact of various types of evidence in trials with already varying conviction probabilities. Researchers and practitioners alike will benefit from the empirical and practical applications of this work [6].

However, DNA evidence consistently outperformed all other types of evidence in favor of a guilty verdict for rape. For rape, DNA evidence was consistently linked to higher levels of confidence in the verdict decision, and for murder, it was consistently linked to a higher likelihood of a guilty verdict than non-forensic evidence. Additionally, a higher level of confidence in the rape verdict decision was correlated with victim eyewitness testimony. Neither the type of forensic science evidence nor the likely sentence length that participants reported for rape or murder was significantly different. However, with some caveats, forensic does appear to lengthen the sentence that people believe a defendant should receive. Particularly, fingerprinting was found to increase the sentence length that respondents thought a defendant should get, but only for rape and only when compared to victim eyewitness testimony. On the other hand, DNA evidence was consistently found to increase the sentence length that respondents thought a defendant should get. However, this effect was only found for rape and when compared to non-forensic evidence [7].

Discussion

The findings regarding decisions regarding guilt are in line with those that have been reported in previous study. According to the findings of this study, the presence of forensic evidence, particularly DNA evidence, is regarded as a strong form of evidence due to the fact that DNA evidence was found to increase the likelihood that the defendant will be found guilty (in cases involving rape) and individuals are more confident in their decision regarding a verdict when DNA is available (in cases involving rape and murder). In addition, victim eyewitness testimony outperformed bystander eyewitness testimony in our rape case in terms of confidence and likelihood of a guilty verdict. Respondents may have believed that the bystander eyewitness—a person driving into the parking lot where the rape occurred—could not see the offender as well as the victim because the rape occurred at night. However, given that fingerprints did not have a significant impact on the rape case, this does suggest that respondents think victim eyewitness testimony is better evidence than fingerprints, indicating that the finding is not due to the nighttime scenario [8].

In general, the findings suggest that respondents' decisions regarding their sentences do not appear to be significantly influenced by forensic evidence. When forensic evidence was presented in a rape case, respondents believed that the defendant should have received a longer sentence than when non-forensic evidence was presented. However, this did not match the likely sentence respondents expected the defendant to receive. Considering that there were no distinctions in the reasonable sentence that respondents accepted the litigant would get in any event, when criminological proof was introduced, legal proof might assume a more significant part during the decision stage for assault cases. When forensic evidence was presented, it is unclear why respondents' preference for a longer sentence did not translate into a longer likely sentence. In fact, recent high-profile rape cases may have contributed to the development or exacerbation of such perceptions [9].

Nevertheless, these findings may provide some insight into the stage of the trial process at which forensic evidence would have the greatest impact and the types of crimes for which it would be most useful. According to the findings of this study, forensic evidence may have a greater impact on rape cases than on murder cases during the verdict stage. This study contributes to researchers' understanding of the significance of various types of evidence to jurors and their verdicts regarding guilt determination and sentence, and it has practical implications for those who wish to apply it in the courtroom. Practitioners can learn from these findings that forensic evidence contributes to an increase in the certainty of juror guilty verdicts for a variety of offenses. However, this research may help to suggest ways in which various types of evidence can be used to strengthen the likelihood of conviction in rape cases [10].

For instance, DNA evidence was found to increase the odds of a jurors' guilty verdict by a factor of 20 when compared to when bystander evidence was presented. However, the probability that a person who commits rape will ultimately be convicted of rape has been found to be one of the lowest of any felonies. Given the backlog of rape kits in the United States, this highly persuasive effect of DNA evidence in rape cases may be especially important to take into account. Indeed, this study suggests that introducing DNA evidence may significantly strengthen a prosecutor's case and increase the likelihood of conviction in rape cases. As a result, prosecutors may be motivated to devote more time and effort to expediting the processing of rape kits so that DNA evidence can be presented at trial if it has been collected [7].

The methods used by law enforcement at the crime scene may also be affected by the findings of this study. Law enforcement may consider prioritizing the collection of DNA evidence over fingerprints whenever possible in rape cases, particularly when limited by resource constraints that prevent collecting both, as DNA evidence significantly increases the odds of a guilty verdict in comparison to eyewitness testimony. Although DNA can be extracted from fingerprints in some instances, certain methods of fingerprinting prevent the extraction of DNA from those prints. Similarly, victim eyewitness testimony in the rape case increased the odds of a guilty verdict and jurors' confidence in their verdicts when compared to bystander evidence. Recent technological advancements have also increased the ease, speed, and cost of collecting DNA evidence, further increasing the benefit of prioritizing DNA collection over fingerprint collection when investigators cannot collect both [8].

Prosecutors may use findings like these to encourage rape victims to testify as witnesses in rape trials because such testimony may increase the likelihood of a conviction. However, when there are demographic differences (such as socioeconomic status) between the accused and the accuser, prosecutors must weigh the benefits of presenting victim testimony against the potential negative consequences, such as increased psychological damage for the victim as a result of reliving a potentially traumatic event and potential victim-blaming behavior by others [10].

Conclusion

In the end, this study's limitations suggest that future work should investigate the current issues in a variety of different areas. Since rape and murder are two specific crimes that are more likely to involve forensic evidence, the current study focused on these two specific crimes. The used scenarios were created to make the crime reports seem more real; Nevertheless, we are aware that the use of these two distinct crimes, which are fundamentally distinct in terms of their specifics and scenarios, may result in confounds that our design and outcomes are unable to fully account for (i.e., a potential aspect that differed

between the two crime scenarios that unintentionally affected results). We suggest replicating this study with additional vignette scenarios involving other case descriptions of both rape and murder to see if these results hold, despite the fact that our experimental design and random assignment of evidence should help to reduce the effects of such confounds.

In addition, comparing forensic and eyewitness testimony evidence for other kinds of crimes might be helpful. For instance, future research ought to examine perceptions of various types of evidence for property crimes given the increasing use of forensic evidence, particularly DNA, in cases involving property crimes. According to the findings of this study, forensic evidence may have different effects on various crimes at various stages of the criminal justice system. As a result, it might be beneficial for future research to investigate the kinds of evidence that could be used in a criminal trial to better allocate resources.

Acknowledgement

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Conflict of Interest

None.

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