

THE CSI EFFECT FOR OFFENDERS: THE EFFECT OF
TELEVISION VIEWING AND EDUCATION ON COLLEGE
STUDENTS' PERCEPTIONS

by

BAILEY K. DAVIS

A senior thesis submitted in partial fulfillment of the requirements for
High or Highest Honors for the degree of Bachelor of Arts in
Criminology at the University of Florida
Gainesville, Florida

Spring Term
2018

Thesis Chair: Erika J. Brooke

ABSTRACT

Criminal justice television programs have become increasingly popular in the United States and around the world since the premiere of the hit forensics show *CSI: Crime Scene Investigation*. Several years after the show began to air, a concept known as the “CSI effect” emerged, which suggested that forensic science-focused television programs were affecting real-life courtroom outcomes. While research indicates that the traditional definition of the CSI effect on jury decision-making does not seem to exist, certain studies suggest that, in spite of established research, the public *believes* that the CSI effect exists. Many in the academic community contribute this to the promotion of the CSI effect by mass media, and they assert that this misconception causes or could potentially cause real problems for the criminal justice system. Additionally, the definition of the CSI effect has been expanded to include other aspects of the criminal justice system in previous studies, but little research has been done with these new definitions. The current study uses a sample of university students to measure whether society believes that a CSI effect exists for jury verdicts and offender decision-making and if crime show viewing behavior and/or formal education are factors in shaping that belief. The findings indicate that students expressed belief both in the CSI effect on jury verdicts and an effect on offender behavior, and that these perceptions were influenced by their amount of criminology education and the amount of television and crime shows they watched, respectively. Overall, the current study adds to the existing literature on the traditional definition of the CSI effect and establishes an initial understanding of the relationships between crime show viewing and education with belief in a CSI effect on offender behavior. It also points to a possible solution for decreasing the disconnect between the results of past research and community members' perceptions of the CSI effect on jury decision-making.

For my parents, Ed and Melanie Davis, who gave me all the tools I needed to get to this point.

For my sister, Cassidy Davis, as our never-ending academic arms race partially inspired me to
write this thesis. I think I win.

Finally, for Dr. Brooke. I have become a better writer and researcher because of you. I could not
have asked for a better person to guide me through this year-long “hazing process”. I did it!

CHAPTER 1: INTRODUCTION

The primetime crime drama *CSI: Crime Scene Investigation* first aired on the CBS network in the United States in 2000 (Cole & Dioso-Villa, 2007). The program was novel because it steered the focus on the forensic scientists and their methods that aided in the apprehension of criminal suspects rather than traditional police tactics alone (Cole & Dioso-Villa, 2009). The concept proved to be an incredible success, and it was at one time named the most popular television show in the world (Shelton, 2010). The response to the original *CSI* led to the creation of an entire franchise, with *CSI: Miami* premiering in 2002, *CSI: New York* in 2004, and most recently *CSI: Cyber* in 2015 (Cole & Dioso-Villa, 2009; Hibberd, 2016). Other networks soon followed suit, and shows like *Numb3rs*, *Bones*, *NCIS*, *Dr. G. Medical Examiner*, *48 Hours*, *American Justice*, and similar programs were promptly introduced into television programming lineups (Cole & Dioso-Villa, 2009; Shelton, Kim & Barak, 2006).

The term “CSI effect” first began to take shape in 2002, when media outlets started to hypothesize that aspects of criminal trials, especially jury decisions, were being compromised by forensic science shows like *CSI* (Cole & Dioso-Villa, 2009). Specifically, it was postulated that that television programs were blurring the line between fictional forensic science and real forensic science. The generally agreed upon concept of the CSI effect is defined as “...crime show viewing influences jurors to have unrealistic expectations of forensic science, which affects their trial decisions” (Hayes & Levett, 2012). This belief can manifest in two ways. On one hand, forensic-focused shows produce greater expectations about forensic science than can be achieved, and as a result, create an issue for the prosecution when no evidence is presented. On the other hand, they foster the mentality that forensic science is infallible and always makes use of extremely reliable methods and manufactures consistent results, which can further burden the

defense when forensic evidence is presented (Alldredge, 2015; Hayes-Smith & Levett, 2011; Schweitzer & Saks, 2007; Tyler, 2006). Thus, the CSI effect may lead to wrongful acquittals when little forensic evidence is available, or it may lead to wrongful convictions when forensic evidence is present. Beyond the traditional definition, researchers have asserted that the CSI effect can apply to multiple scenarios beyond jury decision making (Cole & Dioso-Villa, 2007). This includes influences on prosecutorial, judicial, and offender behavior, but research on these areas is lacking (Cole & Dioso-Villa, 2007).

While a much smaller amount of research has been conducted on the CSI effect compared to other criminal justice issues, the findings have shown little to no support of its existence (Cole & Dioso-Villa, 2007; Hayes-Smith & Levett, 2011; Podlas, 2005; Podlas, 2006; Shelton, 2010; Shelton, Kim & Barak, 2006; Tyler, 2006). However, many researchers have found that the perception of its existence among the public and criminal justice actors (e.g., lawyers and judges) is the opposite (Alldredge, 2015; Cole & Dioso-Villa, 2009; Hayes & Levett, 2012; Hayes-Smith & Levett, 2011; Robbers, 2008; Shelton, 2010). These differences are largely attributed to the promotion of the CSI effect by popular media (Cole and Dioso-Villa, 2007; Cole & Dioso-Villa, 2009; Podlas, 2005; Shelton, 2010; Tyler, 2006). Numerous articles in newspapers, magazines, and other media sources have established the CSI effect as a social problem running rampant in the U.S. (Cole and Dioso-Villa, 2007). The fact that many individuals believe the CSI effect exists, in spite of the empirical findings that suggest otherwise, potentially creates significant issues for the criminal justice system, including increases to the already large backlogs of many forensic laboratories across the country (Alldredge, 2015; Hayes & Levett, 2012; Shelton, 2010). Additionally, media assertion that the CSI effect is real despite research may cause criminal justice actors like prosecutors, and even jurors themselves, to try to

minimize the effects of a phenomenon that may not exist, inadvertently creating their own CSI effect (Cole & Dioso-Villa, 2007; Cole & Dioso-Villa, 2009; Shelton, 2010).

Statement of the Problem

While it has been established in the literature that the traditional definition of the CSI effect (unlawful acquittals or convictions due to the creation of unrealistic juror expectations about forensic science because of exposure to forensics-focused media) does not seem to exist, criminal justice personnel and the general public believe that it does (Cole and Dioso-Villa, 2007; Cole & Dioso-Villa, 2009; Podlas, 2005; Shelton, 2010; Tyler, 2006). For example, an article written by news outlet CBS in 2005 acknowledged the probable existence of the CSI effect following the Robert Blake murder trial (Dakss, 2005). Dakss (2005) argued to place the blame for Blake's acquittal on the jury's unreasonable belief that there should have been more forensic evidence even though prosecutors presented multiple witnesses who testified Blake asked them to murder his wife. Researchers debate that the perception of the CSI effect as a valid, occurring phenomenon can cause and is causing problems for the criminal justice system. Prosecutors have altered their behavior and approach to trials due to their belief in the CSI effect (Cole & Dioso-Villa, 2007). Specifically, they have reported taking extra time during trials to further discuss and clarify forensic evidence, establish the credibility of witnesses and their testimony, and to point out the difference between forensic science television and reality (Robbers, 2008). The increased use of negative evidence witnesses (individuals called to inform juries why forensic testing was not performed or not needed), ordering unnecessary forensic tests, and presenting irrelevant forensic evidence at trial to avoid an acquittal were also mentioned (Alldredge, 2015; Robbers, 2008). The CSI effect has also altered how prosecutors select jurors through *voir dire*, as they may take extra care to ensure that a potential juror's

objectivity has not been compromised by frequently watching crime shows (Shelton, 2010).

Shelton (2010) argues that attorneys' belief in the existence in the CSI effect and the corresponding actions they have taken to prevent it may in actuality be creating one.

Additionally, all of the extra precautions and time taken by criminal justice personnel to ensure that a trial is protected from the influence of the CSI effect may slow down the criminal justice system as it strives to keep up with the amount of cases that passes through it.

The perception of a real CSI effect may also have an influence on law enforcement and forensic science operations. A seemingly logical response to the perceived desire of jurors to see more forensic evidence would simply be for police to collect more of it. However, this is considered to be extremely challenging, or simply not possible, under the current circumstances (Shelton, 2010). Forensic labs are already incredibly understaffed and lack essential resources; an influx of evidence to be analyzed would only contribute to already established backlogs and leave more room for error due to expectations for faster processing, which could affect achieving true justice at trial (Alldredge, 2015; Hayes & Levett, 2012; Shelton, 2010). Additionally, it is sometimes simply impossible for law enforcement to secure the specific evidence expected by juries, or the technology to perform the desired analyses does not exist (Kim, Barak & Shelton, 2009). Overall, believing that the CSI effect exists pushes for a level of analysis and efficiency for the collection and processing of evidence that at the current time, law enforcement and forensic labs cannot provide.

Cole & Dioso-Villa (2007, 2009) state in both of their studies that a concept called the "CSI effect effect" may exist due to the perception that the CSI effect is real. They assert prosecutors may use a jury's belief in the CSI effect to their advantage. By claiming they have been adversely affected by the unrealistic expectations to produce substantial amounts of

forensic evidence, prosecutors may be more likely to persuade jurors to accept their argument. Cole & Dioso Villa (2007) also argue that the “CSI effect effect” influences jurors directly. If jurors are frequent consumers of mass media that sensationalizes the traditional CSI effect, they might come to the conclusion that prosecutors are disadvantaged at trial on their own. They may also believe that the expectations for forensic evidence are unreasonable and that convictions are becoming extremely difficult to achieve (Cole & Dioso-Villa, 2009). Jurors may then be more sympathetic to the prosecution and try to correct for a strong prosecutor’s effect that doesn’t exist, unintentionally creating a pro-prosecution bias (Cole & Dioso-Villa, 2009).

Ultimately, the belief in the existence of the CSI effect by those involved in the criminal justice system and by community members has potentially negative consequences for society. The same may apply to a perception that shows like *CSI* educate offenders. If individuals believe that such an effect exists, this could lead to an increased fear of crime since criminals would appear to be getting better at evading apprehension and would continue to remain at large. It could also lead to a decreased confidence and faith in the criminal justice system to effectively identify and stop these criminals. The current study aims to establish whether or not the community believes that the CSI effect impacts offender decision making in order to raise awareness for its potential impacts on the criminal justice system.

Summary of the Present Study

The current study seeks to expand on the existing literature on the CSI effect by investigating whether the community supports the existence of the CSI effect and what factors have a hand in shaping their perceptions. Specifically, the study explores whether crime show viewing habits and formal education on the criminal justice system impact beliefs in the CSI effect on offender decision making among university students. This research attempts to address

gaps in the literature by providing insight into whether society perceives crime television programs to influence criminal decision making among offenders. This research uses data collected from an online survey of undergraduate students at a southeastern university.

Accordingly, this study will address the following three research questions:

- 1) Do college students believe the CSI effect exists?
- 2) Does the viewing of crime shows impact the perception that the CSI effect exists for offenders among college students?
 - a) What crime show viewing habits impact these perceptions?
- 3) Is formal education related to student belief in the CSI effect?
 - a) What components of education are related to the belief in the CSI effect?

Several theoretical and policy implications will result from this study. This research will help to distinguish if societal belief in the CSI effect extends to other designated definitions of this phenomenon, specifically if crime shows affect offender behavior. It will highlight which educational or media elements affect this belief. Ultimately, this study will expand the knowledge about what contributes to the disconnect between empirical research about the existence of the CSI effect and public perception.

Plan for the Thesis

Chapter 2 reviews the current literature on the CSI effect. Focus is given to what exactly the CSI effect is and to what the term applies, whether it exists, and society's perceptions of the concept. Chapter 3 describes the study methods and defines all variables. The participants of this thesis include undergraduate students enrolled in Criminology classes at a southeastern university. Chapter 4 details the results of this study. Chapter 5 discusses the results and includes implications of this study as well as study limitations and suggestions for future research.

CHAPTER 2: LITERATURE REVIEW

Definitions of the CSI Effect

The mainstream definition of the CSI effect is rooted cultivation theory. Cultivation theory asserts that the television content that individuals consume, and the frequency with which they consume it, directly affects how they view reality (Alldredge, 2015; Hayes-Smith & Levett, 2011; Podlas, 2005; Podlas, 2006). While researchers are slightly varied in their definitions of the CSI effect, the vast majority agree that the CSI effect is centered in the belief that heavy exposure to *CSI* and other forensic science-focused television programming causes unrealistic expectations among jurors (Baskin & Sommers, 2010; Hayes & Levett, 2012; Podlas, 2005; Podlas, 2006; Shelton, 2010; Shelton, Kim & Barak, 2006; Tyler, 2006). As a result, these perceptions may lead to either wrongful acquittals when forensic evidence is absent or wrongful convictions when large amounts of forensic evidence are present (Alldredge, 2015; Hayes-Smith & Levett, 2011; Schweitzer & Saks, 2007; Tyler, 2006). However, the majority of research and media coverage on the CSI effect focuses on wrongful acquittals (Kim, Barak, & Shelton, 2009; Podlas, 2005; Podlas, 2006; Schweitzer & Saks, 2007; Shelton, 2010; Shelton, Kim & Barak, 2006; Tyler, 2006).

As a result of the heightened media attention that *CSI* and forensic-focused television have received, Cole & Dioso-Villa (2007) have built upon the existing CSI effect framework and have expanded the definition of the CSI effect to address not only effects on juror decision making, but also any change to the criminal justice process or the public's perceptions of forensic science (Kim, Barak & Shelton, 2009). In this definition, they established six distinct categories of how the CSI effect could alter reality: the strong prosecutor's effect, the defendant's effect, the weak prosecutor's effect, the producer's effect, the educator's effect, and

the police chief's effect. The strong prosecutor's effect and the defendant's effect are the two names given to the already established definitions for the CSI effect. The strong prosecutor's effect refers to jurors in real criminal cases acquitting defendants due to lack of forensic evidence that they would have otherwise convicted if not for their exposure to fictional forensic science on television (Cole & Dioso-Villa, 2007; 2009). This definition is the most heavily promoted by the media and investigated by researchers (Cole & Dioso-Villa, 2007). The defendant's effect states that the portrayal of forensic scientists on TV as the heroes of the criminal justice system increases the credibility of forensic expert witnesses who testify in criminal trials and the perceived infallibility of forensic science regardless of the content that is presented, which could lead to wrongful convictions (Cole & Dioso-Villa, 2007; 2009). The weak prosecutor's effect describes how prosecutor behavior is altered due to juror expectations created by *CSI* and other shows. Meaning, prosecutors take more preventative steps during jury selection and the trial itself in order to minimize *CSI* and forensic television influence. The producer's effect mainly pertains to the creators of *CSI*, who assert that their show and others like it are educational, and that the public is now more aware of what forensic science is and can better evaluate expert testimony and evidence itself (Cole & Dioso-Villa, 2007; 2009). The educator's effect is concerned with how the popularity of forensic science-focused television has generated a strong interest in entering the real-life forensics field among young people. Finally, the police chief's effect claims that *CSI* and its contemporaries have educated criminals to avoid detection by popularizing techniques like the use of gloves to avoid leaving fingerprints, using bleach to obscure forensic evidence, and not licking envelopes to remove the possibility of law enforcement obtaining a criminal's DNA profile (Cole & Dioso-Villa, 2007; 2009).

In assessing the empirical research, the weak prosecutor's effect has received some attention and has proved to possess merit (Robbers, 2008; Stevens, 2008). While the police chief's effect has been mentioned by some researchers, research on this area has been largely ignored (Cole & Dioso-Villa, 2007; Cole & Dioso-Villa, 2009; Kim, Barak & Shelton, 2009). The current study attempts to further explore the police chief's effect by measuring university students' perceived belief in its existence and what factors affect that belief.

Does the CSI Effect Exist?

While a small number of empirical studies have explored the impact of the CSI effect, the majority have concluded that the phenomenon does not exist in its traditional sense of producing unrealistic expectations among jurors about forensic science in the courtroom. These expectations are predicted to translate into unlawful acquittals in the absence of forensic evidence and unlawful convictions in its presence, but this hypothesis lacks support from past studies. Research on the CSI effect began to take shape a few years after the term's creation in 2002. It focuses on the existence of CSI effect in general as well as specifically on the influence of variables like crime show watching behavior and sociodemographic factors.

General Findings

Some studies that address the CSI effect tend to prioritize a broad investigation into whether the phenomenon exists instead of investigating the influence of specific variables on a more in-depth level. First, Podlas (2005) examined the strong prosecutor's effect by surveying 254 jury eligible undergraduate and graduate students at a large state university in the Northeast. She found no significant difference between the reasons that *CSI* viewers and non-viewers issued a particular verdict for a provided trial scenario (Podlas, 2005). Next, Podlas (2006) continued her investigation of the strong prosecutor's effect by combining several sources of data such as

acquittal rate statistics from several states, surveys of 42 assistant district attorneys (“ADAs”) from the New York area, and surveys from 538 mock jurors. She found that acquittal rates in California, Texas, Illinois, and New York had not increased as the CSI effect would predict. Podlas (2006) also asked ADAs to recall specific cases they had worked on where the CSI effect was a factor in the outcome. Their recollections of multiple cases tainted by the CSI effect mostly proved to be incorrect, as nineteen of the twenty reported cases ended in convictions, not acquittals. She also discovered that the primary factors considered by mock jurors for their verdict were: witness credibility, motive to lie and/or interest in the case, plausibility of story, and the *mens rea* of the defendant. In fact, considerations having to deal with *CSI* and forensic science seemed irrelevant for mock jury participants (Podlas, 2006). Podlas (2005, 2006) went on to assert that the concept of the CSI effect seemed to exist only because people believed that the phenomenon was real. In the same year, Tyler (2006) conducted a review of the literature and concluded that the CSI effect can be explained by other phenomena, such as a developed sympathy for the defendant when evidence is unclear. Tyler (2006) also mentioned that the different standards for guilt and innocence between judges, prosecutors, and jurors could affect trial outcome as well as a declining trust in the legal system as a whole. For example, research had found that juries have higher conviction thresholds than judges, meaning they were less likely to convict when looking at the same case (Tyler, 2006).

In 2007, Cole & Dioso-Villa also investigated the support for the traditional definition of the CSI effect. Through reviewing anecdotes from jurors, surveys of prosecutors and defense lawyers, the results of simulated jury decision making studies, and the acquittal rate statistics of criminal cases in the United States, they concluded that there is very little support for the notion that *CSI* and other forensic television shows were causing jurors to wrongfully acquit in cases

lacking forensic evidence or wrongfully convict due to an unrealistic increased level of confidence in forensic scientists and their methods. Contrary to the popular belief of prosecutors, there was nothing to suggest that the CSI effect had altered the burden of proof and had elevated it from “beyond a reasonable doubt” to the more difficult to attain “TV standard”. Additionally, for the five years before and after 2000, the year that *CSI* first aired, the acquittal rate for criminal trials in the U.S. remained essentially stable, further providing evidence that the traditional CSI effect does not exist. At the time their study was conducted, the sharp drop in acquittals in 2005 had occurred too recently to determine whether it was random or the beginning of a significant trend (Cole & Dioso-Villa, 2007). Due to this evidence, Cole and Dioso-Villa (2007) asserted that the belief in the CSI effect as a major social problem is due to its promotion in the media.

Cole & Dioso-Villa (2009) expanded their 2007 study by analyzing the acquittal rate data of felony jury trials in eight states (California, Florida, Hawaii, Illinois, New York, North Carolina, Texas, and Vermont) and 258 media documents that dealt with the CSI effect. They also considered literature concerning juror anecdotes, surveys of prosecutors and other legal actors, and the results of actual and simulated jury decision making studies. Cole and Dioso-Villa (2009) found that acquittal rates were fairly stable over time. Data seemed only to support a small and brief strong prosecutor’s effect, or unlawful acquittals due to the lack of forensic evidence, but this anomaly could be attributed to other factors considering the rise in acquittals only occurred in 2001 and 2002 and the acquittal rate was already on the rise before *CSI* premiered (Cole & Dioso-Villa, 2009). Overall, Cole and Dioso-Villa (2009) concluded that there was little empirical evidence to support the statement that the CSI effect exists. However, their review of the 258 media documents revealed a disconnect between popular media and

research. Using the online database LexisNexis to search for articles about the CSI effect, they yielded 504 hits just in the past six years. The strong prosecutor's effect (unlawful acquittals in the absence of forensic evidence) was mentioned in these articles about seven times more often than the defendant's effect (unlawful convictions in the presence of forensic evidence). The articles revealed that there was little disagreement in the media about the CSI effect being a very real phenomenon, even though empirical studies lacked the evidence to support this conclusion (Cole & Dioso-Villa, 2009). Thus, Cole and Dioso-Villa (2009) postulated that if jurors and criminal justice actors, like prosecutors, believed the CSI effect exists when in reality it does not, they may try to correct the issue and unintentionally create their own CSI effect.

More recently, Alldredge (2015) conducted a review of several studies, including Hayes and Levett's 2011 and 2012 studies and the research by Kim, Barak, and Shelton (2009). He pointed out the inaccuracy of forensic science focused television programming when it comes to evidence acquisition and analysis, specifically that which deals with DNA. He acknowledged that the work by Hayes-Smith and Levett (2011) offered some support for the CSI effect that pertains to wrongful acquittals, and that Kim, Barak, and Shelton (2009) found exposure to CSI-type television programming affected participant's expectations for forensic evidence, but these expectations did not translate to altered verdicts. Alldredge (2015) also mentioned that regardless of whether the CSI effect exists, the community and criminal justice actors like attorneys believe that it does, and they take precautions to prevent it. This posed potentially serious negative consequences for the criminal justice system, such as the unnecessary use of resources due to prosecutors ordering unneeded forensic tests and worsening backlogs in forensic laboratories. He proceeded to offer solutions in the event that the CSI effect resulting in unlawful acquittals does exist. Alldredge (2015) argued that using multimedia presentations instead of written or oral jury

instructions may reduce the CSI effect since they make information easier to learn and retain. These presentations could include information about the reality of forensic science as well as its limitations to overcome the bias created by watching television shows like *CSI*. A second solution would be to develop a method to eliminate jurors who have been affected by the CSI effect before a trial even begins (Alldredge, 2015).

Impact of Crime Show Viewing and Education on Existence of the CSI Effect

Research pertaining to perceptions of forensic science and the existence of the CSI effect have frequently measured crime show viewing habits, and less commonly education level. In 2006, Shelton, Kim, and Barak concluded from their survey of 1,027 potential jurors in Washtenaw County, Michigan, that modern jurors do expect some scientific evidence in every case, and that as the seriousness of the criminal charge increased, so did the expectation for forensic evidence. Additionally, they found that respondents with less education tended to be more frequent watchers of *CSI*. Habitual watchers of *CSI* and comparable programs were found to have higher expectations for all types of evidence when compared to non-viewers. However, they also discovered that increased expectations for forensic evidence did not mean that jurors required evidence for a guilty or innocent verdict, with exceptions being cases with circumstantial evidence only or sexual assault scenarios. It was hypothesized that a so-called “tech effect”, or the shifts in culture due to advancement of modern technology as a whole, could also be the source of increased expectations regarding forensic evidence in the courtroom instead of crime shows (Shelton, Kim & Barak, 2006). Similarly, Schweitzer & Saks (2007) surveyed 48 jury-eligible university students and found that frequent forensic television show viewers rated themselves as having a better understanding of what forensic scientists do and an increased confidence in their verdicts. They also discovered that frequent crime show viewers were more

critical of the evidence presented to them in a simulated trial transcript. However, there was no significant difference between verdicts handed down from the frequent crime show viewers and the participants designated as non-viewers (Schweitzer & Saks, 2007). This supported Shelton, Kim, and Barak's (2006) earlier conclusion that the increased expectations for forensic evidence produced by watching crime shows do not necessarily transform into the unlawful verdicts expected to be delivered due to the CSI effect.

Additionally, Kim, Barak, and Shelton (2009) surveyed a sample of 1,027 potential jurors in Washtenaw County, Michigan and found that for scenarios that were based only on circumstantial evidence or eyewitness testimony, exposure to the *CSI* dramas had no significant effect on the decision of an individual to issue a conviction. While participants who were frequent *CSI* viewers reported increased expectations for evidence in circumstantial scenarios, this was not enough to affect their verdict. It was also concluded that these raised expectations for evidence may not stem from watching *CSI* or other related programming. Many other variables could have been at work, not just the *CSI* effect. Kim, Barak, and Shelton (2009) mentioned the liberation hypothesis as a possible example, which states that jurors will make use of their personal values and beliefs, not the law, in their decision-making when presented with weak or contradictory evidence. This aligned with Tyler's (2006) earlier statement that the *CSI* effect can be explained by other phenomena. Kim, Barak, and Shelton (2009) also utilized education as one of their demographic variables and found that respondents with lower levels of education had a higher willingness to convict defendants in scenarios based only on circumstantial evidence and no scientific evidence. Also, they discovered that individuals with lower levels of education were more likely to be viewers of *CSI* related television programs (Kim, Barak, & Shelton 2009).

The findings from Shelton, Kim, and Barak's (2006, 2009) previous studies were substantiated in Shelton's (2010) follow-up investigation. After surveying 1,219 potential jurors in Wayne County, Michigan, Shelton (2010) again found no significant relationship between crime show viewing behavior and the likelihood of acquittal in the absence of scientific evidence. He also discovered that jurors were more likely to find guilt *without* forensic evidence if there was testimony from the victim or from a witness, again with the exception being rape and sexual assault cases, insinuating that jurors placed more weight with eyewitnesses than scientific evidence. His study also produced support for the tech effect, where the more advanced jurors were with their personal use of technology, the more they expected scientific evidence to be presented by the prosecution. Shelton (2010) also included education as one of his demographic variables in addition to age, gender, political views, and others. He found that consistent watchers of *CSI* and its related dramas were more likely to be female, politically moderate, and have less education (Shelton, 2010).

In the same year, Baskin and Sommers (2010) randomly surveyed 1,201 registered voters in California by phone to measure the relationship between crime show viewing habits and the perceived reliability of forensic evidence. They discovered viewing habits impacted individuals' pretrial attitudes regarding scientific evidence like DNA and fingerprints as well as various forms of testimony from medical experts, law enforcement, victims, and eyewitnesses. Baskin and Sommers (2010) found that the more hours of crime and justice focused television an individual watched, the more reliable they found forensic evidence to be. All forms of science-based evidence were considered more reliable than any type of testimony. These values were significant when compared to participants who watched only 0-2 hours of crime and justice television per week. This study did not take into account whether these affected attitudes and

dispositions translated into altered verdicts, but the researchers suggested that jury decisions resulted from the combination of many different factors and behaviors in addition to the influence of crime focused television, including individual juror personality and their perceptions of the criminal justice actors (attorneys, judges, expert witnesses) participating in a trial. Baskin & Sommers (2010) also included the effect of education on perceived reliability of evidence. They found that respondents with higher education levels found DNA, fingerprint evidence, and police officer testimony more reliable and eyewitness testimony less reliable. However, they also found the relationship between education and crime-show viewing was not significant (Baskin & Sommers, 2010).

Moreover, Hayes-Smith and Levett (2011) administered a survey to 104 dismissed jurors from a courthouse in the South to further explore the relationships between evidence strength, crime viewing behavior, and general television behavior with trial verdicts and perceived evidence strength. The survey consisted of a vignette about an aggravated assault case that varied in the amount of forensic evidence present: no evidence, low evidence, and high evidence. The low forensic evidence category included fingerprint evidence and officer testimony, while the high forensic evidence category included fingerprint evidence, officer testimony, ballistics evidence, and testimony from a ballistics expert. The researchers found the results provided more support for cultivation theory, or heavy television viewing in general affecting an individual's perceptions of their social environment, than the CSI effect itself. Whether participants found the defendant guilty did not significantly differ by how much evidence they encountered, and weekly or daily crime show viewing did not significantly affect their verdict (Hayes-Smith & Levett, 2011). Crime show viewing did affect participant's perceived strength of evidence, and this effect was strongest when considering daily crime show viewing with the no forensic evidence

vignette. Heavy television viewers were less likely than those who watched less television to find the defendant guilty in the lower evidence scenarios. Also, heavy crime show viewers were less confident in their verdicts. Both of these statements seem to support a pro-defense CSI effect, but the findings were not statistically significant. Overall, Hayes-Smith and Levett (2011) concluded that their findings contributed to the weak support, if any, for the CSI effect leading to wrongful acquittals, but no support for unlawful convictions.

Overall, the majority of researchers have found that while programs like *CSI* may cause jurors to have increased expectations for forensic science at trial, these expectations do not equate to wrongful acquittals or convictions. Thus, there is a stark difference in belief in the CSI effect and empirical data. Unrealistic expectations about forensic science as a discipline and its role in the courtroom can be attributed to other factors, such as the tech effect. Additionally, forensic science television could be only one influence among many other variables. A juror's personal values, their personality, and their perceptions of the attorneys and judges involved in a trial can all have an effect on juror's expectations for forensic evidence (Baskin & Sommers, 2010; Kim, Barak, & Shelton, 2009; Shelton, 2010; Shelton, Kim, & Barak, 2006; Tyler, 2006). However, a common limitation within the research is its main focus is on only a facet of what the CSI effect has come to be defined as. Researchers have identified effects on prosecutors, judges, students, and offenders in addition to jurors, but few have specifically addressed them. Most empirical studies focus on what Cole and Dioso-Villa (2007, 2009) designated as the strong prosecutor's effect or the defendant's effect, meaning that forensic science focused television shows alter juror's perceptions of what forensic science is and should be, resulting in unlawful acquittals in the absence of forensic evidence at trial and unlawful convictions when forensic evidence is present. Ultimately, future research on the CSI effect would benefit from addressing

the other definitions of the concept that have been mentioned in the literature but not largely addressed, such as police chief's effect, which states *CSI* and other crime shows educate criminals about techniques to better avoid apprehension by law enforcement (Baskin & Sommers, 2010; Cole & Dioso-Villa, 2007, 2009; Hayes-Smith & Levett, 2011; Kim Barak, & Shelton, 2009). To date, the research has ignored the influence of the CSI effect on criminal behavior.

Perceptions of the CSI Effect

While research has indicated minimal support for the existence of the CSI effect, studies on the perceptions of this concept suggest that members of society, especially criminal justice actors like prosecutors, defense attorneys, and law enforcement, possess beliefs about the CSI effect that directly contradict established conclusions. For example, Robbers (2008) surveyed 290 prosecutors, public defenders, and judges working in criminal law who had experience both before and after the broadcast of *CSI* and its related programs. She discovered that over 75% of respondents named specific occurrences when they believed the jury had been influenced by forensic science on TV, and that about 85% felt that the jobs they performed had been altered due to the widespread influence of shows like *CSI*. The chief issue expressed by court actors was that jurors preferred scientific evidence over witness testimony. Thus, Robbers (2008) concluded that individuals who work in criminal justice trial system believe that the CSI effect exists and that they need to take steps to minimize its influence on jurors and their verdicts. A limitation of the study, also noted by the author, was the lack of structured research. The open-ended nature of the measures used for respondents meant only broad conclusions were able to be made from the study results. Robbers (2008) recognized there was much room for future specification and more structure when analyzing the CSI effect. The current study aims to address this limitation by

asking participants questions specific in nature and by avoiding open ended responses whenever possible in favor of multiple choice.

Similarly, Stevens (2008) administered a questionnaire to 444 state prosecutors in the United States and found that over half of his respondents claimed that juries were always affected by forensics, no matter the quality of the evidence. In fact, over 80% of judges reported that forensic evidence had an influence regardless of quality. While Stevens (2008) found that evidence, whether general or forensic specific, did not influence the prosecutor's decision to file criminal charges against a suspect, he did note that the belief in the CSI effect caused them to take considerable measures to minimize its perceived effect at trial. A limitation of this study is the lack of women and minorities in the research sample. The current study strives to overcome this limitation by using undergraduate university students as the sample of interest, which will include a wider range of individuals concerning gender and race.

The general public's perception of the CSI effect has also been studied. Hayes & Levett (2012) conducted an online survey of 191 community members and found that a majority of respondents had not heard of the CSI effect, and the individuals who had heard of it were more likely to be frequent crime show viewers. When participants were asked to define the concept, several themes emerged. The four main themes were: 1) that *CSI* and forensics-focused television shows create unrealistic expectations of evidence; 2) make people believe that forensic science in the real world is like forensic science on TV; 3) make people believe that they have the ability to solve crimes because of what they have learned from the shows; and that 4) crime shows are educating criminals. After being provided with a definition of the CSI effect, respondents believed that it did in fact exist. Participants also specifically reported that they believed crime shows generally educate the public, influence trial events, and that jurors who

watch them will expect more forensic evidence. However, respondents were divided on whether crime shows would affect convictions, with 23.9 percent agreeing, 37.7 percent disagreeing, and 36.3 percent remaining neutral on the statement that jurors who watch crime shows will not convict without forensic evidence (Hayes & Levett, 2012). A limitation of this study is the exclusion of education as an independent variable for belief in the CSI effect. As a result, the current study will introduce education as an independent variable for belief in a CSI effect on offender behavior. Additionally, Hayes and Levett (2012) acknowledged their research indicated that definitions of the CSI effect beyond what they addressed should be explored. Specifically, future empirical research should move beyond the effect of crime shows on juries and focus on perceptions of a CSI effect on criminals and/or the general population. The current study attempts to address this issue by highlighting university students' perceptions of the CSI effect among offenders, also known as the police chief's effect.

The disconnect between empirical research and public perception on the CSI effect has been largely attributed to the mass media (Cole and Dioso-Villa, 2007; Cole & Dioso-Villa, 2009; Podlas, 2005; Shelton, 2010; Tyler, 2006). As previously stated, the term "CSI effect" was first used in 2002, and the media perspective on the concept inflated it into a significant social problem plaguing the justice system by 2005 by allowing guilty offenders to go free due to the lack of scientific evidence presented at their trials (Cole & Dioso-Villa, 2007). Prominent publications covered the supposed phenomenon, like *U.S. News & World Report* and *National Geographic*, attesting to the widespread national and international reach of the CSI effect despite the majority of research that offered no support for its existence (Cole & Dioso-Villa, 2009). Leading science magazine *Scientific American* has published a spread acknowledging the CSI effect, and the *Journal of Chemical Education* included a brief summary of how to avoid

reinforcing forensic science misconceptions in the classroom (Bergslien, 2006; Houck, 2006). While more academic-leaning media sources like *Scientific American* tended to leave the issue of the existence of the CSI effect in ambiguity, other sources claimed outright that the CSI effect was alive and well in American society (Dakss, 2005; Deutsch, 2006; Gillis, 2006). An article by Deutsch (2006) of the Associated Press quoted prosecutors, university professors, and forensic scientists to claim that jurors will not convict defendants without forensic evidence. One article depended heavily on reports from criminal justice officials to claim that crime shows are educating criminals to obscure evidence in order to evade law enforcement, such as dumping cigarette ashtrays in stolen cars to confuse investigators or by making victims shower after a sexual assault, but offered no concrete links to the academic sources backing up these claims (Gillis, 2006). The current study aims to investigate if community members believe the CSI effect exists for offenders like it believes it exists for jurors, and if exposure to academic sources disproving the CSI effect through education reduces the mass media influence on their opinions.

As a whole, the research does not support the existence of the CSI effect on criminal justice outcomes. However, researchers have found that criminal justice actors and the public do perceive its existence. While informative, the above literature highlights the need to expand the narrow definition of the CSI effect commonly used in the research and examine its influence beyond court actors and juror decision making. This includes offender decision making. Additionally, studies have found that a relationship exists between crime-show viewing and awareness of the CSI effect and between the CSI effect and education, but the specific factors that affect these relationships remain unclear. Some of the literature already established on the CSI effect mentions the relationship between belief in the CSI effect, crime show viewing habits, and education (Baskin & Sommers, 2010; Kim, Barak & Shelton, 2009; Shelton, 2010; Shelton,

Kim & Barak, 2006). They imply that people who watch CSI-type programming, and who also tend to possess lower levels of education, could be less aware of the literature that states that the CSI effect does not exist, and/or they could be at greater risk for accepting the opinions circulated by the mass media. The current study aims to investigate the magnitude of the influence of these variables by testing whether the television watching habits and education level of each participant influence their belief that the CSI effect affects offender behavior.

Current Study

The present study adds to the existing research by addressing the abovementioned gaps in the literature. First, this research will further examine the roles of formal education and crime show viewing on the belief in a CSI effect using a sample of college students. Specifically, this study explores whether education components like college major, number of credit hours, college courses taken, and crime show viewing habits are related to belief in the CSI effect and its influence on courtroom decisions and offender decision making. Based on prior research, it is expected that belief in the CSI effect on courtroom verdicts will not have a relationship with crime show viewing. It is predicted that belief in the CSI effect on jury decision making will have an inverse relationship with higher education, as college students taking criminology courses have a greater probability of being made aware of the lack of support for the CSI effect.

In addition, the study investigates whether college students believe that the CSI effect exists for offender decision making and the factors that influence these perceptions. It is hypothesized that a positive relationship will exist between crime show viewing and believing in a CSI effect on offender behavior. However, it is predicted that this measure will have a negative relationship with higher levels of education, since longer exposure to criminology-type topics increases the likelihood that students have heard of the CSI effect and the lack of support for its

existence. Up until this point, previous research has primarily examined the influence of the CSI effect on courtroom decisions, not its impact on offender behaviors. This study tests for belief in the CSI effect for offenders using a survey of college students in criminology classes at a southeastern university. The following chapter on methodology will detail the variables to be used in the current study, along with a description of the data and the statistical analyses.

CHAPTER 3: METHODOLOGY

This chapter describes the methodology of the current study. The goal of this research is exploratory in nature and aims to investigate the relationships between an individual's crime show viewing habits and formal education with their belief that the CSI effect exists for jury verdicts as well as for offenders, meaning they believe forensic science focused television shows affect how criminals commit crime. A description of how the data was obtained, study variables, and analytical strategy follows.

Data

The data for this study was collected using an online survey distributed to undergraduate students enrolled in various criminology classes at a southeastern university for the Spring 2018 semester. The survey was created on Qualtrics specifically for this study and consisted of a variety of multiple choice and short answer questions that addressed participant demographic information, television habits, and beliefs about the CSI effect as it pertains to jury decisions and offenders (list of survey questions is included in Appendix B). The participants in this study made up a convenience sample and were selected using non-probability sampling. An e-mail was sent to professors teaching courses in the Spring of 2018 asking for permission to include the students in their class in the study. Following professor consent, students in each class were

recruited to participate in the study through a brief in-class presentation by the researcher and/or an e-mail from their instructor. This e-mail contained a letter written by the researcher explaining the nature of the research and how to take the survey. Extra credit was offered as compensation. Data collection occurred from February 1, 2018 to February 21, 2018.

Variables

Dependent Variables

The dependent variables of interest for this study were: (a) *belief in the traditional definition of the CSI effect* and (b) *belief in a CSI effect for offenders*. To define the CSI effect on offenders, this study used Cole and Dioso-Villa's (2007) definition of the police chief's effect, which states that crime shows are educational for criminals and alter how they commit crime, so they can better evade apprehension. While societal perceptions of the CSI effect have been studied in the past, the results of previous studies warrant further investigation as the perceptions of criminal justice actors (attorneys, judges, etc.) have been the major focus of most research (Hayes & Levett, 2012; Robbers, 2008; Stevens, 2008) To the researcher's knowledge, perception of a CSI effect for offenders has never been used specifically as a dependent variable in prior research regarding the CSI effect.

Belief in the traditional CSI effect. Hayes and Levett's (2012) past research indicated that most of their respondents had not heard of the CSI effect. However, once community members had been informed about what the traditional CSI effect is (unlawful acquittals or convictions with the presence or absence of forensic evidence, respectively, resulting from the influence of forensic science focused television shows) they tended to agree it existed by altering jurors' expectations, but they were divided on whether this would actually affect verdicts. Within this study, this belief was measured by responses to the

question: *Do you think the CSI effect has affected courtroom verdicts?* (yes, no, or I'm not sure). For this study, this measure was recoded into a dichotomous variable, with responses of "I'm not sure" being recoded as "No."¹ It is expected that belief in the traditional CSI effect will have no significant relationship with crime show viewing based on prior research. It is hypothesized that an inverse relationship will exist between belief in the CSI effect on jury verdicts and higher education.

Belief in the CSI effect for offenders. Community members' perceptions of a CSI effect on offender behavior (also known as the police chief's effect) has to the researcher's knowledge never been empirically studied, so no past research exists for this dependent variable. In the current study, the belief in the police chief's effect was measured in two ways. First, by answering the question: *Do you think the CSI effect could possibly affect how people commit crime?* (yes, no, or I'm not sure). For this study, this measure was recoded into a dichotomous variable, with responses of "I'm not sure" being recoded as "No."²

Second, through the question: *To what degree do you agree with the following statement: Crime shows like CSI and other crime-based entertainment media help people commit crime and avoid getting caught by the police.* The second question was measured on a 5-point scale, with "1" corresponding to "disagree" and "5" corresponding to "agree". For this study, this variable was recoded into a 3-point scale: "Disagree" (Disagree and slightly disagree), "Neither agree or disagree", and "Agree" (Agree and slightly agree).³ "Agree" will serve as the reference category. Previous research on the

¹ Issues with low cell counts required the researcher to collapse this variable

² Issues with low cell counts required the researcher to collapse this variable

³ Issues with low cell counts required the researcher to collapse this variable

traditional CSI effect leads to the expectation that a positive relationship will exist between crime show viewing and agreeing with the above statements. It is also predicted that this measure will have a negative relationship with higher levels of education.

Independent Variables

The independent variables of interest for this study strive to explore the factors that influence an individual's belief that forensic science focused television programs affect offender decision making. They address crime show viewing habits, education, and established opinions/perceived knowledge about forensic science television. The variables pertaining to crime show viewing include daily television viewing hours, daily crime show viewing hours, and the top three crime shows watched by the participant. Education was measured in several ways, including college major, number of credit hours earned, and the criminology-focused courses taken by the student. Variables concerning personal opinions and perceived knowledge about forensic science television included self-reported understanding of forensic science, educational value of crime shows for the general public, and awareness of the concept of the CSI effect. Many studies have used crime show viewing habits as an independent variable (Baskin & Sommers, 2010; Hayes-Smith & Levett, 2011; Kim, Barak, & Shelton, 2009; Podlas, 2005; Schweitzer & Saks, 2007; Shelton, 2010; Shelton, Kim & Barak, 2006). Education has also been utilized but has not been consistently addressed in prior research (Baskin & Sommers, 2010; Kim, Barak, Shelton, 2009; Shelton, 2010; Shelton, Kim & Barak, 2006). To the researcher's knowledge, none of these variables have been used to investigate community members' belief in a CSI effect for offenders.

Crime Show Viewing Habits. As previously mentioned, crime show viewing habits are commonly used as variables in studies regarding the CSI effect. An individual's crime

show viewing habits were measured by participant's responses to the following questions:

1) *How many hours per day do you watch television?*

This variable was measured on a 3-point scale, with choices including "0-1 hours", "2-4 hours", and "5 or more hours". Hours of television watched per day was split into three categories rather than a continuous variable due to previous research using categorical measures for viewing habits on either a three or five-point scale (Podlas, 2005; Podlas, 2006; Shelton, Kim & Barak, 2006; Kim, Barak, & Shelton, 2009, Baskin & Sommers, 2010). This question was included to ensure that certain perceptions about the CSI effect stemmed from watching crime shows, not just television in general, since prior research has found more support for general cultivation theory than the CSI effect. The category "0-1 hours" will serve as the reference category.

2) *How many of these hours were spent watching crime shows?*

This variable was also measured on a 3-point scale, with choices including "0-1 hours", "2-4 hours", and "5 or more hours". Hours of crime shows watched per day was split into three categories rather than a continuous variable due to previous research using categorical measures for viewing habits on either a three or five-point scale (Podlas, 2005; Podlas, 2006; Shelton, Kim & Barak, 2006; Kim, Barak, & Shelton, 2009, Baskin & Sommers, 2010) For this study, the responses for watching 5 or more hours of crime shows per day were coded as missing.⁴ This question was included to measure the effect of the amount of crime show television watched on

⁴ Issues with low cell counts required the researcher to collapse this variable

perceptions of the traditional CSI effect and a CSI effect for offenders. The category “0-1 hours” will serve as the reference category.

3) *What are the top three crime shows that you watch most often?*

This question was open ended. This measure was included to identify the most watched crime shows among current students taking criminology courses. For this study, this measure was modified to only include each participant’s top crime show and collapsed further into categories based on fictional (crime dramas, comedies, etc.) or reality-based shows to analyze which category may have the largest influence on college students’ perceptions of real life forensic science and the CSI effect. For this study, the responses for not having a favorite crime show were coded as missing.⁵

Education. Prior research has utilized education as an independent variable in some studies, but it is inconsistently studied and is more often used as a control variable. Its use in past literature calls for a continued investigation into its relationship with perceptions of the CSI effect. Within this study, education was further investigated through the following questions:

1) *What is your major?*

This measure was open-ended. Differences in perceptions may exist for students depending on the focus of the college education they have received. For this study, participant majors were categorized as either “criminology”, “double major with criminology”, or “non-criminology.” Criminology majors will serve as the reference category.

2) *How many credit hours had you earned at the start of Spring 2018?*

⁵ Issues with low cell counts required the researcher to collapse this variable

This measure was a continuous variable. It was included in order to explore whether perceptions of the CSI effect differ among varying education levels.

- 3) *Please select all the criminology or criminology-focused courses you have taken at UF. This includes courses offered by the Criminology department, requirements for the Criminology major, and approved electives outside the department that may contain some criminological elements.*

This question allowed participants to indicate all of the criminology courses they had taken at the university where this study was conducted based on the undergraduate course catalog. An option to write in any course not listed was included. The purpose of this measure was to identify if differences in perceptions may exist for students depending on the amount of criminology-focused education they have received. For this study, this information was used to discern the number of criminology-focused courses each participant had taken. The variable was then collapsed into three categories: “Less than average”, “Average”, and “More than average.” These categories were determined based on the average number of criminology classes taken among the sample, which was five. Consequently, those deemed to belong to the “Less than average category” had taken less than five criminology classes, and those who were “More than average” had taken more than five criminology classes. This variable was collapsed into a categorical variable in order to explore whether students who had received more or less criminology education held varying perceptions on the CSI effect. “Average” will serve as the reference category.

Established opinions/perceived knowledge about forensic science television. Past empirical research has found that higher levels of crime show viewing correlate to a

higher perceived educational value of forensic science focused television programs and a higher chance that respondents have heard of the CSI effect. It is expected that perceived educational value of forensic science focused programs will have a negative relationship with education, since criminology students are more likely to be aware of the complexities of forensic science and its inaccurate portrayal on television and other forms of entertainment media. On the other hand, it is expected that the more formal education respondents have, the higher the likelihood that they will have at least heard of the CSI effect, as they presumably have access to more in-depth information about the criminal justice system than the average member of society. Participants' established opinions and perceived knowledge about forensic science television were measured by their responses to the following questions:

- 1) *How educational do you think crime shows are for the general public to learn about forensic science?*

This variable was measured on a 5-point scale, with "1" corresponding to "not educational", "2" corresponding to "slightly educational", "3" corresponding to "moderately educational", "4" corresponding to "very educational", and "5" corresponding to "extremely educational". It was included to explore to what magnitude respondents believe that crime shows are educational for society as a whole and whether this belief correlates to their perceived educational value of these shows for themselves and for offenders. During analysis, the answer categories were collapsed into a dichotomous variable, resulting in participant responses being coded as either "not educational" or "educational". Participants who responded with values

of 2 through 5 on the 5-point scale were grouped into the “educational” category, which also served as the reference.⁶

2) *Have you heard of the CSI effect?* (yes or no)

This dichotomous measure was included to investigate how many respondents already had previous knowledge about the CSI effect and/or were familiar with the term. Additionally, its comparison with other variables included in this study may provide information about the source of their knowledge about or awareness of this concept. The response “Yes” was used as the reference category.

Control Variables

The control variables included in this analysis are: (a) *gender*, (b) *age*, (c) *race*, (d) *socioeconomic* status, and (e) *political preference*. In past studies, *gender* has been shown to significantly affect crime watching patterns, willingness to convict defendants, and reliability of evidence (Baskin & Sommers, 2010; Kim, Barak & Shelton, 2009; Shelton, 2010; Shelton, Kim, Barak 2006). The *gender* variable was coded as (0) = *female* and (1) = *male*. *Female* will serve as the reference category.

Due to previous research conducted about the CSI effect, *age* was included as a control variable. Age has been found to influence expectations of scientific evidence and willingness to convict a defendant in scenarios with only circumstantial evidence and scenarios with eyewitness testimony when considering exposure to *CSI*-type dramas (Kim, Barak & Shelton, 2009). *Age* appears as a continuous variable in this study.

Race also was included as a control variable in this study. Past studies have shown that race can influence perceptions of the CSI effect and the educational value of forensic science

⁶ Issues with low cell counts required the researcher to collapse this variable

television programs (Hayes & Levett, 2012). Race has been found to affect perceived reliability of evidence and willingness to convict in trial scenarios with circumstantial evidence only (Shelton, Kim & Barak, 2006; Baskin & Sommers, 2010; Kim, Shelton & Barak, 2009). The categories for *race* were: (1) *White*, (2) *African American*, (3) *Hispanic/Latino*, (4) *Asian*, (5) *Native American*, and (6) *Other*. For this study, the categories *Asian*, *Native American*, and *Other* were combined into one *Other* category.⁷ *White* will serve as the reference category.

Socioeconomic status was also included as a control variable. Socioeconomic status was defined in this study as combined annual parent income. Research has not found evidence for a significant relationship between socioeconomic status and crime watching habits and influence of crime shows on expectations for forensic evidence (Kim, Barak & Shelton, 2009; Shelton, Kim & Barak, 2006). However, support has been found for a link between socioeconomic status and awareness of the CSI effect (Hayes & Levett, 2012). It is also used a control variable in various studies (Baskin & Sommers, 2010; Kim, Barak & Shelton, 2009; Shelton, 2010). The categories for *socioeconomic status* include: (1) *Less than \$30,000*, (2) *\$30,000-\$49,999*, (3) *\$50,000-\$99,999*, (4) *\$100,000-\$150,000*, and (5) *More than \$150,000*. For this study, responses were recoded into three main categories: (1) *Less than \$50,000*, (2) *\$50,000-\$99,999*, and (3) *More than \$100,000*.⁸ This variable was collapsed into three categories in order to explore whether students who came from socioeconomic backgrounds above or below the average household income bracket held varying perceptions on the CSI effect. According to the U.S. Census Bureau (2017), the average household income in the United States was \$83,143 in 2016. Therefore, an income of *\$50,000-\$99,999* will serve as the reference category.

⁷ Issues with low cell counts required the researcher to collapse this variable

⁸ Issues with low cell counts required the researcher to collapse this variable

Political preference was the final control variable in this study. Previous research has indicated that political views can affect an individual's crime watching patterns, expectations for scientific evidence, and willingness to convict a defendant in scenarios where eyewitness testimony was presented (Kim, Barak & Shelton, 2009; Shelton, 2010; Shelton, Kim & Barak, 2006). The categories for political preference are: (1) *Liberal*, (2) *Liberal-leaning Moderate*, (3) *Moderate*, (4) *Conservative-leaning Moderate*, and (5) *Conservative*. For this study, this variable was recoded into two categories: *Moderate*, and *Not moderate*.⁹ This measure was collapsed to specifically investigate whether strong political views are more likely to influence societal perceptions when compared to moderate views. *Moderate* will serve as the reference category.

Analytic Strategy

The present study will use SPSS to analyze the recorded data. The analytical strategy employed will consist of several different regression techniques that correspond with the dependent variables being analyzed. Bivariate analyses included: chi-square tests, an independent sample t-test, a one-way ANOVA, and a correlation matrix. The correlation matrix was used to analyze possible multicollinearity between all variables. For multivariate tests, logistic regression and multinomial regression were used. Logistic regression was utilized since two of the dependent variables were collapsed into dichotomous variables. The multinomial regression was used for the third dependent variable because it remained split into multiple nominal categories.

⁹ Issues with low cell counts required the researcher to collapse this variable

CHAPTER 4: RESULTS

The results of the analyses are presented in this chapter. Multiple analytical models were performed to investigate the study's three research questions. The goal of this research was to explore the relationships between an individual's formal education (major, number of credit hours, number of criminology classes taken) and crime show viewing habits (hours of television watched per day, hours of crime shows watched per day, favorite crime show) with their belief in a CSI effect for jury verdicts and offender behavior using a sample of undergraduate university students at a southeastern university.

Sample Demographics

The study sample consisted of 265 undergraduate university students enrolled in various criminology courses at a southeastern university. Table 1 displays the descriptive characteristics of the sample. Twenty-two cases were excluded due to missing data.

Table 1: Descriptive Statistics for the full sample

Study Variables	Mean (SD)	Percentage	N
Gender			
Female		74.0%	194
Male		26.0%	68
Age	22.29 (6.67)		263
Race			
White		65.8%	171
African American		6.5%	17
Hispanic/Latino		20.0%	52
Other		7.7%	20
Socioeconomic Status			
Less than \$50,000		29.3%	75
\$50,000-\$99,999		25.0%	64
More than \$100,000		45.7%	117
Political Preference			
Not moderate		74.9%	197
Moderate		25.1%	66
Major			
Criminology		63.9%	168
Double Major with Criminology		20.1%	53
Non-criminology		16.0%	42
Credit Hours Earned	75.87 (32.71)		253
Number Criminology Classes Taken			
Less than average		50.2%	130
Average		8.9%	23
More than average		40.9%	106
Hours TV Watched Per Day			
0-1 hours		49.4%	129
2-4 hours		46.4%	121
5 or more hours		4.2%	11
Hours Crime Shows Watched Per Day			
0-1 hours		83.4%	216
2-4 hours		16.6%	43
Favorite Crime Show: Drama vs. Real			
Drama/Fictional		86.4%	210
Real Life		13.6%	33
Crime Shows are Educational			
Educational		89.3%	233
Not educational		10.7%	28
Awareness of CSI Effect			
Yes		73.5%	191
No		26.5%	69
CSI Effect on Verdicts			
Yes		76.9%	200
No		23.1%	60
CSI Effect on Offender Behavior			
Yes		90.8%	236
No		9.2%	24
Crime Shows Help People Commit Crime			
Disagree		53.5%	139
Neither agree or disagree		22.3%	58
Agree		24.2%	63

Note. Total number of possible observations = 265. Percentages may be incomplete due to a small number of missing cases (22 cases, or 8.3%).

The respondents were mostly female (74.0%) and the mean age was 22.29 years old. For race, the majority of students reported being White, 6.5% as African American, 20.0% as Hispanic/Latino, and 7.7% as “Other”. For socioeconomic status, students reported the combined annual income of their parents. An income of more than \$100,000 was the most common (45.7%), followed by less than \$50,000 (29.3%) and \$50,000-\$99,999 (25.0%). For political preference, 25.1% of students identified as moderate, while 74.9% did not.

The majority of respondents reported being criminology majors (63.9%), 20.1% were double majors with criminology as one of their concentrations, and 16.0% of the sample were non-criminology majors. The mean number of credit hours earned was 75.87, and the average number of criminology classes taken by each student was five. This value was used to collapse the number of criminology classes taken into three categories for analysis: less than average (50.2%), average (8.9%), and more than average (40.9%). The number of hours each respondent spent watching television each day was also measured, with 49.4% reporting they watched 0-1 hours, 46.4% reporting they watched 2-4 hours, and 4.2% reporting they watched 5 or more hours. Of the hours spent watching television each day, students reported that 0-1 (83.4%) or 2-4 (16.6%) of these hours consisted of watching crime shows. Additionally, each respondent’s favorite crime show was recorded. Answers varied and some of the most common responses included: *Criminal Minds*, the *Law & Order* franchise, *NCIS*, the *CSI* franchise, *How to Get Away with Murder*, *Bones*, and *Forensic Files*. Other shows named included *Miami Vice*, *Brooklyn Nine-Nine*, *Prison Break*, *Blue Bloods*, and many others. Among the sample, the majority reported their favorite crime shows as a crime drama/fictional program (86.4%), while (13.6%) preferred shows based on real life.

An overwhelming number of respondents found crime shows to be educational for the public to learn about forensic science (89.3%) rather than not (10.7%). Of the sample, most reported that they had heard of the CSI effect (73.5%), and a similar percentage stated that they believed that the CSI effect has affected courtroom verdicts (76.9%). For the same measure, 23.1% indicated that either they did not believe the CSI effect has affected verdicts, or that they were unsure. For a possible CSI effect on offender behavior, 90.8% of respondents answered that they believed such an effect could occur, while 9.2% said either no or they were not sure. When asked whether they agreed that crime shows like *CSI* help people commit crime and avoid getting caught by the police, the results were split: 53.5% disagreed, 22.3% neither agreed or disagreed, and 24.2% agreed.

Bivariate Analyses

The association between the independent variables and the three dependent variables (belief in a CSI effect for jury verdicts, belief in a CSI effect for offenders, and belief that crime shows help people commit crime and avoid apprehension) was tested at the bivariate level. All of the dependent variables were categorical. Because the majority of the independent variables were categorical (everything except *number of credit hours*), a chi-square test was conducted. An independent sample t-test and a one-way ANOVA were performed for the one continuous independent variable.

Table 2 shows the results of the chi-square test performed on the categorical independent and dependent variables. The bivariate tests indicated that a statistically significant relationship existed between awareness of the CSI effect and the perception of the CSI effect on courtroom verdicts. Another significant relationship existed between the hours of crime shows watched per day and the perception that crime shows help people commit crime. Additionally, the association

between the number of criminology courses taken and the perception of the CSI effect on courtroom verdicts was statistically significant. The relationship between student major and the belief that the CSI effect has affected courtroom verdicts approached significance. The association between hours of television watched per day and the belief that a CSI effect may exist for offender behavior also approached significance. Finally, the perception that crime shows are educational for the public to learn about forensic science approached significance with the perception that a CSI effect may exist for offender behavior.

Table 2: Chi-square results for the categorical independent variables and CSI effect on verdicts, CSI effect on offender behavior, and if crime shows help people commit crime and avoid apprehension

Study Variables	CSI Effect on Verdict		CSI Effect on Offender Behavior		Crime Shows Help People Commit Crime	
	Chi-square value	p-value	Chi-square value	p-value	Chi-square value	p-value
Major	5.014	0.082†	0.226	0.893	3.016	0.555
Criminology Courses Taken	5.991	0.050*	2.723	0.256	3.030	0.553
Hours TV Watched Per Day	3.867	0.145	5.142	0.076†	2.110	0.716
Hours Crime Shows Watched Per Day	2.325	0.127	1.323	0.250	6.813	0.033*
Drama vs. Real	0.010	0.920	0.304	0.581	3.657	0.161
Crime Shows are Educational	1.366	0.242	2.787	0.095†	0.846	0.655
Awareness of CSI Effect	9.157	0.002*	0.032	0.858	0.298	0.862

† $p \leq 0.10$, * $p \leq 0.05$, ** $p \leq 0.001$

Tables 3 and 4 show the results of the independent t-tests performed on the continuous independent variable and the categorical dependent variables for perception of the CSI effect on

jury verdicts and on offender behavior, respectively. The number of credit hours earned with the belief that the CSI effect has affected courtroom verdicts reached statistical significance ($p = 0.029$).

Table 3: Independent sample t-test results for the continuous independent variable and belief in the CSI effect on jury verdicts

Study Variable	CSI Effect on Verdicts						95% CI for Mean Difference	t	df
	Yes			No					
	M	SD	n	M	SD	n			
Number of Credit Hours	78.51	31.94	191	68.00	32.84	59	1.07, 19.94	2.19*	248

† $p \leq 0.10$, * $p \leq 0.05$, ** $p \leq 0.001$

Table 4: Independent sample t-test results for the continuous independent variable and belief in a possible CSI effect on offender behavior

Study Variable	CSI Effect on Offender Behavior						95% CI for Mean Difference	t	df
	Yes			No					
	M	SD	n	M	SD	n			
Number of Credit Hours	76.27	33.21	228	73.55	22.79	22	-11.55, 16.99	0.376	248

† $p \leq 0.10$, * $p \leq 0.05$, ** $p \leq 0.001$

Table 5 shows the results of the one-way ANOVA performed on the continuous independent variable and the perception that crime shows help people commit crime and avoid apprehension. This relationship was not statistically significant.

Table 5: One-way ANOVA results for the continuous independent variable and if crime shows help people commit crime and avoid apprehension

Study Variable	Crime Shows Help People Commit Crime	
	F	p-value
Number of Credit Hours	0.973	.555

† $p \leq 0.10$, * $p \leq 0.05$, ** $p \leq 0.001$

Additionally, correlation and VIF intolerance tests were run in SPSS to ensure no variable was adversely affected by multicollinearity. Both results indicated that this was not the

case. None of the correlations between the independent variables exceeded 0.7, and none of the models displayed a VIF value above 3 or a tolerance less than 0.5, so it was considered safe to proceed to multivariate analysis. The correlation matrix for all of the independent and dependent variables is included in Appendix A.

Multivariate Analyses

Multivariate analyses were performed for the three different dependent variables in order to investigate the study's three research questions. The models aim to establish relationships among respondent demographics (control variables), education, and crime show viewing behavior and whether they believe the CSI effect exists for jury verdicts and offender decision making. The findings are presented below with a brief discussion of the results.

Logistic regression was performed with the dichotomous dependent variables. Tables 6 and 7 present the findings for each dependent variable, respectively.

Table 6: Logistic regression results for the CSI effect on verdicts.

Study Variables	CSI Effect on Verdict		
	B	SE	B (Exp)
Male	0.368	0.417	1.445
Age	-0.001	0.036	0.999
African American	0.071	0.738	1.073
Hispanic/Latino	0.256	0.449	1.292
Other	-0.378	0.752	0.685
Less than \$50,000	-0.169	0.536	0.845
More than \$100,000	0.337	0.426	1.401
Not moderate	0.294	0.415	1.342
Double major with criminology	0.727†	0.435	2.068
Non-criminology	0.416	0.520	1.516
Number of credit hours	-0.008	0.006	0.992
Less than average	-1.041†	0.559	0.353
More than average	-1.124*	0.591	0.325
2-4 hours (daily TV)	0.040	0.375	1.041
5 or more hours (daily TV)	-19.747	11715.642	0
2-4 hours (crime show TV)	-0.784	0.573	0.457
Real-life	0.480	0.499	1.616
Educational (No)	-0.309	0.643	0.734
Awareness of the CSI Effect (No)	0.643†	0.375	1.901

† $p \leq 0.10$, * $p \leq 0.05$, ** $p \leq 0.001$

Table 6 indicates that for belief in the traditional definition of the CSI effect (also known as the traditional definition of the CSI effect) one variable yielded a statistically significant relationship. The number of criminology classes taken predicted belief in the traditional CSI effect. Students who had taken more than the average number of criminology courses (i.e., five classes) ($b = -1.124$, $p = 0.057$) were significantly less likely to indicate that the CSI effect impacts courtroom verdicts compared to students who had taken the average number, or five, criminology courses. Thus, those who had received more criminology education did not perceive the existence of the CSI effect on juror decision making. Additionally, several variables approached significance. Individuals who had taken less than the average number of criminology courses ($b = -1.041$, $p = 0.062$) were also less likely to indicate that crime shows influenced jury decisions compared to students who had taken the average number of criminology courses.

Those who reported having a double major with criminology ($b = 0.727$, $p = 0.095$) were more likely to indicate they believed in the traditional definition of the CSI effect compared to criminology majors. Also, students who indicated they had not heard of the CSI effect previously ($b = 0.643$, $p = 0.086$) were more likely to respond that they believed the traditional CSI effect existed compared to those who reported that they had heard of the concept before.

Table 7: Logistic regression results for the CSI effect on offender behavior.

Study Variables	CSI Effect on Offender Behavior		
	B	SE	B (Exp)
Male	-0.577	0.639	0.561
Age	0.021	0.049	1.021
African American	0.806	0.94	2.240
Hispanic/Latino	-0.583	0.827	0.558
Other	-0.902	1.224	0.406
Less than \$50,000	-1.035	0.769	0.355
More than \$100,000	-0.498	0.590	0.608
Not moderate	-0.533	0.622	0.587
Double major with criminology	0.100	0.690	1.105
Non-criminology	0.592	0.783	1.808
Number of credit hours	-0.003	0.009	0.997
Less than average	-1.219	0.780	0.296
More than average	-0.782	0.801	0.458
2-4 hours (daily TV)	-1.389*	0.644	0.249
5 or more hours (daily TV)	-0.325	1.255	0.722
2-4 hours (crime show TV)	-0.524	0.947	0.592
Real-life	0.802	0.682	2.231
Educational (No)	1.124	0.716	3.077
Awareness of the CSI Effect (No)	-0.163	0.596	0.850

† $p \leq 0.10$, * $p \leq 0.05$, ** $p \leq 0.001$

Within Table 7, only one variable reached statistical significance. The amount of television watched per day was found to be related to this dependent variable. Respondents who watched two to four hours of television per day ($b = -1.389$, $p = 0.031$) were less likely to report that they believed in a CSI effect for offender behavior compared to those who watched zero to one hour of television daily.

Next, the perception that crime shows help individuals commit crime and evade apprehension was analyzed on the multivariate level. A multinomial logistic regression was selected due the categorical dependent variable consisting of three separate responses. Table 8 presents the findings for those who disagreed with this idea compared to those who agreed that crime shows help individuals commit crime and evade apprehension. Table 9 presents the findings for those who remained neither agreed nor disagreed compared to those who agreed that crime shows help individuals commit crime and evade apprehension.

Table 8: Multinomial regression results for those who disagreed that crime shows help people commit crime and avoid apprehension compared to those agreed

Study Variables	Crime Shows Help People Commit Crime		
	B	SE	B (Exp)
Male	-0.090	0.421	0.914
Age	-0.029	0.031	0.971
African American	-0.212	0.770	0.809
Hispanic/Latino	-0.948*	0.485	0.388
Other	-0.799	0.770	0.450
Less than \$50,000	0.195	0.498	1.215
More than \$100,000	0.137	0.424	1.147
Not moderate	-0.666†	0.391	0.514
Double major with criminology	-0.316	0.456	0.729
Non-criminology	-0.707	0.600	0.493
Number of credit hours	0.000	0.007	1.000
Less than average	1.209†	0.726	3.352
More than average	1.100	0.732	3.005
2-4 hours (daily TV)	-0.191	0.399	0.826
5 or more hours (daily TV)	0.483	0.910	1.621
2-4 hours (crime show TV)	0.986*	0.499	2.681
Real-life	0.453	0.494	1.573
Educational (No)	-0.401	0.665	0.670
Awareness of the CSI Effect (No)	0.475	0.401	1.608

† $p \leq 0.10$, * $p \leq 0.05$, ** $p \leq 0.001$

Within Table 8, two independent variables in this model reached statistical significance. Hispanic or Latino respondents ($b = -0.948$, $p = 0.051$) when compared to Whites were less likely to disagree that crime shows help people commit crime over those who agreed.

Participants who reported watching 2-4 hours of crime show television per day ($b = 0.986$, $p = 0.048$) when compared to individuals who watched 0-1 hours were more likely to disagree that crime shows helped people commit crime over those who agreed. Thus, those who watched more crime shows were more likely to disagree that crime shows aid offenders. Additionally, two variables approached significance. Individuals who had taken less than the average number of criminology classes ($b = 1.209$, $p = 0.096$) when compared to those who had taken the average number, or five classes, were more likely to disagree that crime shows helped people commit crime over those who agreed. Respondents who indicated they held non-moderate political views ($b = -0.666$, $p = 0.088$) when compared to moderates were less likely to disagree that crime shows helped people commit crime over those who agreed.

Table 9: Multinomial regression results for those who neither agreed nor disagreed that crime shows help people commit crime and avoid apprehension compared to those who agreed

Study Variables	Crime Shows Help People Commit Crime		
	B	SE	B (Exp)
Male	0.205	0.529	1.228
Age	-0.020	0.036	0.981
African American	-0.725	0.860	0.484
Hispanic/Latino	-0.834	0.580	0.434
Other	-0.737	0.943	0.479
Less than \$50,000	-0.171	0.587	0.843
More than \$100,000	0.504	0.532	1.655
Not moderate	-0.594	0.484	0.552
Double major with criminology	0.271	0.597	1.312
Non-criminology	-1.072	0.717	0.342
Number credit hours	-0.600	0.008	0.994
Less than average	1.388†	0.854	4.007
More than average	0.915	0.866	2.497
2-4 hours (daily TV)	-0.437	0.486	0.646
5 or more hours (daily TV)	1.074	1.322	2.926
2-4 hours (crime show TV)	0.808	0.604	2.244
Real-life	0.050	0.567	1.052
Educational (No)	-0.424	0.822	0.655
Awareness of the CSI Effect (No)	0.711	0.517	2.035

† $p \leq 0.10$, * $p \leq 0.05$, ** $p \leq 0.001$

Within Table 9, none of the independent variables in this model were statistically significant.

CHAPTER 5: DISCUSSION

This study explores whether education components like college major, number of credit hours, college courses taken, and crime show viewing habits are related to belief in the CSI effect and its influence on courtroom decisions and offender decision making. Prior literature indicated there is a disconnect between empirical results and public perception about the existence of the CSI effect. While past research has found minimal support for the CSI effect pertaining to jury decisions, many members of the public and criminal justice actors like attorneys, law enforcement, and judges believe the phenomenon to exist (Cole & Dioso-Villa, 2007; Cole & Dioso-Villa, 2009; Podlas, 2005; Shelton, 2010; Tyler, 2006). The present study investigated the impact of crime show viewing habits and formal education on the belief in the existence of: (1) the CSI effect on jury verdicts and (2) a CSI effect on offender behavior. A summary of the findings is provided below. Discussion of the implications of this research, as well as the limitations of the study and directions for future research, follow the summary.

Summary

This study produced several findings that contribute to the existing body of knowledge surrounding the CSI effect. The following discussion is organized by research question.

RQ 1: Do college students believe the CSI effect exists?

The first research question measured whether undergraduate university students believed that the CSI effect exists for juror and offender decision making. Survey results indicated that most students believed that the CSI effect on jury verdicts existed. Most also believed in a possible effect on offender behavior. This supports prior research that has found that community

members believed a CSI effect for verdicts existed when provided a definition for the CSI effect (Hayes & Levett, 2012). However, respondents were divided over the variable that measured belief that crime shows help individuals commit crime and avoid apprehension. Participants gave varying results for their level of agreement, even though an overwhelming number indicated that they thought a CSI effect could influence offender behavior. This occurrence could have resulted from wording in the survey created for this study. It also could indicate that students believe a CSI effect on offenders is *possible*, but the effect may not exist in reality. Another possible explanation could be that college students believe an effect does exist, but it does not help criminals commit crime and avoid apprehension.

The measure investigating whether respondents believed that crime shows helped people commit crime yielded a significant relationship between race and disagreement that crime shows aid offenders. Respondents who identified as Hispanic or Latino were less likely to disagree that crime shows help people commit crime over those who agreed (compared to Whites). This is an interesting finding and warrants further investigation into the differences in perception of the CSI effect among individuals with different racial backgrounds.

An interesting departure from the previous literature is that most students indicated they had heard of the CSI effect previously. This differs from Hayes and Levett's (2012) earlier study, where the majority of respondents had not heard of the CSI effect, but acknowledged that it existed after being provided a definition. The notion that respondents believed the traditional definition of the CSI effect to exist after receiving a definition was supported by the statistically significant relationship between awareness of the CSI effect and belief in the CSI effect on jury verdicts at the bivariate level. This relationship only approached significance during multivariate analyses, but it was found that those who were not aware of the CSI effect previously were more

likely to indicate that they believed it to exist compared to those who were aware of the concept. These correlations were not present for the belief in a CSI effect on offender behavior. Most participants reported that crime shows held some level of educational value for the public to learn about forensic science, but this variable was not significantly related to belief in the CSI effect. This indicates that when several factors are considered, the perception that crime shows are educational for the public to learn about forensic science is not strongly related to perceptions of the CSI effect on jury verdicts or offender behavior. This supports the assertion in the previous literature that many other influences must be considered when examining events in the criminal justice system, not just the CSI effect (Baskin & Sommers, 2010; Kim, Barak, & Shelton, 2009; Shelton, 2010; Shelton, Kim, & Barak, 2006; Tyler, 2006).

RQ 2: Does the viewing of crime shows impact the perception that the CSI effect exists for offenders among college students?

Previous research has indicated that crime show viewing does influence an individual's perceptions of evidence strength and their pretrial attitudes about forensic evidence, but not the likelihood of them delivering a specific verdict (Schweitzer & Saks, 2007; Baskin & Sommers, 2010; Shelton, 2010; Hayes-Smith & Levett, 2011). In the present study, most students watched less than 5 hours of television per day, with 0-1 of those hours being composed of crime shows. The majority of respondents reported watching fictional programs like crime dramas opposed to reality-style shows. The current study found a significant relationship between hours of crime shows watched per day and belief that crime shows helped people commit crime on the bivariate level. This association persisted during multivariate analyses. Respondents who watched 2-4 hours of crime shows per day when compared to those who only watched 0-1 hours were more likely to disagree that crime shows help people commit crime over those who agreed. In

addition, the amount of general television watched per day was significantly related to belief in a CSI on offender behavior at the multivariate level. Students who watched 2-4 hours of television per day were less likely to believe that a CSI effect on offender behavior existed compared to those who only watched 0-1 hours daily. These findings agree with the hypothesis proposed at the beginning of this study that crime show viewing would have no relationship with belief in the CSI effect on jury verdicts, as they only pertain to a CSI effect on offender decision making. The results disagree with the hypothesis that the independent variables would have a positive relationship with belief in a CSI effect for offenders, as both significant relationships suggest the opposite. The reason for this is may be that individuals who are crime show viewers are more likely to have heard of the CSI effect previously (Hayes & Levett, 2012). The increased awareness of the CSI effect possessed by those who watch around 2-4 hours of general television or crime show television might have resulted in a more realistic approach towards and an increased skepticism of the accuracy of forensic science-focused programs. Further research is needed to fully explore this result.

The multivariate results offer some support to the past research done by Hayes-Smith and Levett (2011) which found that investigation into the CSI effect yielded support for general cultivation theory. The significant relationship between belief in a CSI effect for offenders and television viewing in general suggests that consuming any television media, not just as specific genre, has an influence on an individual's perceptions of their surroundings.

RQ 3: Is formal education related to student belief in the CSI effect?

As previously mentioned, education has been utilized as a variable in the past literature but has not been consistently studied (Baskin & Sommers, 2010; Kim, Barak, Shelton, 2009; Shelton, 2010; Shelton, Kim & Barak, 2006). Results from the current study indicated that the

majority of students who participated came from criminology backgrounds, meaning they were either a criminology major or a double major with one of their concentrations being criminology. The reported number of credit hours indicated that the average respondent held second semester junior status based on a course load of 30 credit hours per year, with an average of five criminology classes already taken in the student's undergraduate career. Bivariate analysis indicated a statistically significant relationship existed between a participant's number of credit hours earned and their belief in the CSI effect for jury verdicts, but not for their belief in an effect on offender behavior. The results were the same for the significant bivariate relationship between the number of criminology courses taken and belief in the CSI effect for jury verdicts.

The association between number of credit hours and belief in the CSI effect on jury verdicts did not persist in the multivariate analysis. However, the relationship between the number of criminology courses taken and belief in the traditional definition of the CSI effect remained. Students who had taken more than the average number of criminology courses were significantly less likely to indicate that crime shows influenced jury decisions compared to students who had taken the average number of criminology courses. This finding supports the hypothesis that educational variables would have a negative relationship with belief in a CSI effect on jury verdicts but offers little support for an association between formal education measures and perceptions of a CSI effect on offender behavior. This result suggests that criminology education may alleviate the disconnect between the public's perceptions of the traditional CSI effect and empirical research that asserts it does not exist. However, this conclusion cannot be made for perceptions on a CSI effect for offender decision making. Regardless, this finding does imply that the amount of criminology education that an individual

receives is related to belief in the different definitions of the CSI effect. This calls for further exploration on education differences in future studies.

Overall, the current study conducted an exploratory investigation into the association of television viewing habits and education with the belief that a CSI effect exists for both jury verdicts and offender decision making among university students. Many measures were found to not have any significant correlation with these two phenomena. However, some factors, like awareness of the CSI effect, the amount of television watched per day, number of credit hours earned, and the amount of criminology education received were found to have a statistically significant relationship with a definition of the CSI effect on either a bivariate or multivariate level of analysis. Due to these findings, an initial understanding of the relationships between crime show viewing and education with the belief that crime shows affect offender behavior has developed. Additionally, this study adds to the existing research on perceptions of the traditional CSI effect by measuring the effect of crime show viewing habits and exploring the influence of education, a variable that has been infrequently addressed in the previous literature.

Theoretical Implications

The results of this study have implications for theorizing about the CSI effect and society's perceptions of the concept. The primary one is that studying the various definitions of the CSI effect is important and needed. While multiple definitions of the CSI effect have been proposed, only two dominate the debate. Only the strong prosecutor's effect, or juries acquitting defendants when forensic evidence is not present due to increased expectations for forensic science, has been extensively researched and is frequently mentioned in the media. The current study has established a relationship exists between television viewing behavior and education with belief in a CSI effect for offender behavior. These results indicate that the other definitions

of the CSI effect should not be ignored and warrant investigation. It is encouraged that researchers look at the complete picture of the CSI effect which includes its possible effects on prosecutors, offenders, and other members of society, not just jurors.

Additionally, formal education should be a variable of interest when studying perceptions of the CSI effect. While education may have a relationship with belief in the CSI effect and could possibly alleviate misconceptions about its existence, not enough research has been done to give a definitive answer. Previous studies have largely ignored education when analyzing its relationship with the CSI effect, and when it is included it is commonly utilized as a control variable. The current study implies that a relationship exists between characteristics of formal education and perceptions of the CSI effect, specifically taking more criminology focused classes and decreased belief in the traditional definition of the CSI effect. Links between education and belief in the definitions of the CSI effect beyond criminology-specific education need to be clearly established in order to definitively ascertain the relationship between the them. This could potentially aid in developing effective tools for making criminal justice actors and the public aware of the realities of the CSI effect.

Due to the broad and exploratory nature of this study, only superficial connections were able to be made between crime show viewing habits and education with belief in the CSI effect on jury verdicts and on offender behavior. A clear solution for minimizing media influence on belief in the CSI effect among society has still not been identified. While the current study provides suggestions that may point future research in a certain direction, the gap between empirical research on the existence of the CSI effect and society's perceptions still persists. While this study contributes to the research on what factors may contribute to belief in the CSI effect, it only offers suggestions of what may be significant for future research to follow. It is

important to find a strategy that will decrease the disconnect between academic research and societal beliefs about the CSI effect in order to avoid negative consequences in the criminal justice system, like the increasing backlogs in forensic science laboratories across the country.

Study Limitations and Future Research

The conclusions from this study indicate that future research is needed in order to provide a more accurate picture of the relationships between crime show viewing and formal education with belief in the CSI effect on jury verdicts and offender behavior, especially for education. A limitation of this research is that the study sample consisted of a small number of undergraduate student from one public university in the Southeast enrolled in classes in one academic department. Future research should attempt to expand the survey to include more students, more departments outside of criminology (other social sciences, communications, business, STEM, etc.) universities in different regions, and possibly graduate students in order to increase the generalizability of the results. Also, the results of this study indicate that the amount of criminology-focused courses taken by students impacts their perceptions of the CSI effect. Future research would benefit by exploring this association further to possibly discern which criminology courses, if any, specifically impacts belief in the CSI effect.

Additionally, it is recommended to include input from other community members outside of the university population. A limitation in this study was that the sample only included students currently enrolled at the university. By surveying non-students, researchers would be able to compare the results from individuals who did not attend college to those who graduated from college or are currently enrolled. This could possibly provide more insight into the influence of education on belief in the traditional definition of the CSI effect on jury verdicts or a CSI effect on offender behavior.

Finally, another recommendation is to repeat this study for improved validity. To the researcher's knowledge, many of the measures in this research have not been mentioned in the past literature or have not been explored in the specific manner investigated here. Since a previous study has not looked into a CSI effect on offender behavior, being able to replicate the results found in this research is essential in order to assert that they have empirical value.

Overall, it is clear that jury verdicts and offender behavior are incredibly complex decisions that are subject to many variables of influence. This may include a possible impact from watching forensic science focused television programs, or a CSI effect, but prior research suggests that such an effect does not exist. The intricate nature of these concepts also applies to the public's perceptions of whether or not a definition of the CSI effect is real. This study expands upon the gaps in previous research by exploring a largely ignored definition of the CSI effect, along with investigating how education may influence students' perceptions of its existence. The findings of this study indicate that education is in some way related to belief in both the traditional definition of the CSI effect on jury decisions and a CSI effect on offender behavior. Results also imply that television viewing habits are related to belief in the CSI effect on offender behavior. Future research in these areas is needed to discover the concrete connections between these two measures and this phenomenon.

REFERENCES

- Allredge, J. (2015). The “CSI effect” and its potential impact on juror decisions. *Themis: Research Journal of Justice Studies and Forensic Science*, 3(1), 114-126.
- Baskin, D.R., & Sommers, I.B. (2010). Crime-show-viewing habits and public attitudes toward forensic evidence: the “CSI Effect” revisited. *The Justice System Journal*, 31(1), 97-113.
- Bergslien, E. (2006). Teaching to avoid the “CSI effect”: keeping the science in forensic science. *Journal of Chemical Education*, 83(5), 690-691.
- Cole, S.A., & Dioso-Villa, R. (2007). *CSI* and its effects: media, juries, and the burden of proof. *New England Law Review*, 41, 435-470.
- Cole, S.A., & Dioso-Villa, R. (2009). Investigating the ‘CSI effect’ effect: media and litigation crisis in criminal law. *Stanford Law Review*, 61(6), 1335-1374.
- Dakss, B. (2005). The CSI effect. *CBS News*. Retrieved from <https://www.cbsnews.com/news/the-csi-effect/> .
- Deutsch, L. (15 January 2006). ‘CSI’ and ‘Law & Order’ lead jurors to great expectations. *Globe Gazette*. Retrieved from http://globegazette.com/entertainment/television/csi-and-law-order-lead-jurors-to-great-expectations/article_b5a99f8e-85c7-5486-82d8-4fe0a88058d2.html.
- Gillis, C. (31 July 2006). New crime shows educate criminals. *The Canadian Encyclopedia*. Retrieved from http://www.thecanadianencyclopedia.ca/en/article/new-crime-shows-educate-criminals/#h3_jump_0.
- Hayes, R.M., & Levett, L.M. (2012). Community members’ perceptions of the CSI effect. *American Journal of Criminal Justice*, 38, 216-235.

- Hayes-Smith, R.M., & Levett, L.M. (2011). Jury's still out: how television and crime show viewing influences jurors' evaluations of evidence. *Applied Psychology in Criminal Justice*, 7(1), 29-46.
- Hibberd, J. (12 May 2016). 'CSI: Cyber' canceled by CBS. *Entertainment Weekly*. Retrieved from <http://ew.com/article/2016/05/12/csi-cyber-canceled/>.
- Houck, M. M. (2006). CSI: Reality. *Scientific American*, July 2006, 85-89.
- Kim, Y.S., Barak, G., & Shelton, D.E. (2009). Examining the "CSI-effect" in the cases of circumstantial evidence and eyewitness testimony: multivariate and path analyses. *Journal of Criminal Justice*, 37, 452-460.
- Podlas, K. (2005). "The CSI effect": exposing the media myth. *Fordham Intellectual Property, Media and Entertainment Law Journal*, 16(2), 429-465.
- Podlas, K. (2006). The CSI effect and other forensic fictions. *Loyola of Los Angeles Entertainment Law Review*, 27, 87-125.
- Robbers, M.L.P. (2008). Blinded by science: The social construction of reality in forensic television shows and its effect on criminal jury trials. *Criminal Justice Policy Review*, 19(1), 84-102.
- Schweitzer, N.J., & Saks, M.J. (2007). The CSI effect: Popular fiction about forensic science affects the public's expectations about real forensic science. *Jurimetrics*, 47, 357-364.
- Shelton, D.E. (2010). Juror expectations for scientific evidence in criminal cases: Perceptions and reality about the "CSI effect" myth. *Thomas M. Cooley Law Review*, 27, 1-35.
- Shelton, D.E., Kim, Y.S., & Barak, G. (2006). A study of juror expectations and demands concerning scientific evidence: does the "CSI effect" exist?. *Vanderbilt J. of Entertainment and Tech. Law*, 9(2), 331-368.

Stevens, D.J. (2008). Forensic science, wrongful convictions, and the american prosecutor discretion. *The Howard Journal*, 47(1), 31-51.

Tyler, T. (2006). Viewing CSI and the threshold of guilt: managing truth and justice in reality and fiction. *The Yale Law Journal*, 115(5), 1050-1085.

United States Census Bureau. (2017). Income and poverty in the United States: 2016, Table A-1. Retrieved from <https://www.census.gov/library/publications/2017/demo/p60-259.html>

APPENDIX A: Correlation matrix for the full sample

	Major	Credit Hours Earned	Number Criminology Courses Taken	Hours TV Watched Per Day	Hours Crime Shows Watched Per Day	Favorite Crime Show: Drama vs Real	Crime Shows are Educational	Awareness of CSI Effect	CSI Effect on Verdicts	CSI Effect on Offender Behavior	Crime Shows Help People Commit Crime
Major	1										
Credit Hours Earned	.036	1									
Number Criminology Courses Taken	-.216**	.349**	1								
Hours TV Watched Per Day	-.097	.109	.034	1							
Hours Crime Shows Watched Per Day	-.033	-.005	.056	.424**	1						
Favorite Show: Drama vs Real	-.088	.029	.092	-.052	.130*	1					
Crime Shows are Educational	.005	.034	-.018	-.072	-.089	-.083	1				
Awareness of CSI Effect	.123*	-.197**	-.210**	-.105	-.008	-.074	-.125*	1			
CSI Effect on Verdicts	.137*	-.138*	-.152*	-.095	-.095	.006	-.072	.188**	1		
CSI Effect on Offender Behavior	-.011	-.024	-.027	-.120	-.072	.035	.104	-.011	.078	1	
Crime Shows Help People Commit Crime	.061	.012	-.099	-.071	-.158*	-.122	.057	-.033	.038	.207**	1

*p ≤ .05, **p ≤ .01

APPENDIX B: Survey questions used for this study

Demographics: Fill in the blank or bubbles for each item

1. What is your gender?

2. What is your age?

3. Race- check ONE option that most applies to you

- White
- African American
- Hispanic/Latino
- Asian
- Native American
- Other

4. Socioeconomic Status- check ONE option that most accurately represents the *combined* annual income of your parents

- Less than \$30,000
- \$30,000-\$49,999
- \$50,000-\$99,999
- \$100,000-\$150,000
- More than \$150,000

5. Political Preferences- check ONE option that most applies to you

- Liberal
- Liberal-leaning Moderate
- Moderate
- Conservative-leaning Moderate
- Conservative

6. What is your major?

7. How many credit hours had you earned at the start of Spring 2018?

8. Please select all of the criminology or criminology-focused courses you have taken at UF listed below. This includes the courses offered by the Criminology department, requirements for the Criminology major, and approved electives outside the department that may contain some criminological elements.

- CCJ 2020 Introduction to Criminal Justice
- CCJ 3024 Advanced Principles of Criminal Justice
- CCJ 3701 Research Methods in Criminology
- CCJ 4014 Criminological Theory
- CCJ 4037 Psychology and Law

- CCJ 4934 Women and Crime
- CCJ 4934 Criminal Careers
- CCJ 4934 Prisons and Jails
- CCJ 4934 Media and Crime
- CCJ 4934 SCC Training
- CCJ 4934 Investigations
- CCJ 4934 Victimology
- CCJ 4934 Police and Society
- CCJ 4934 White Collar Crime
- CCJ 4934 Business and Crime

- CJC 4010 Introduction to Corrections
- CJE 3114 Introduction to Law Enforcement
- CJE 4144 Private Security and Control
- CJJ 4010 Juvenile Justice

- CJL 2000 Law and Legal Process
- CJL 3038 Law and Society
- CJL 4050 Juvenile Law
- CJL 4110 Criminal Law
- CJL 4410 Criminal Procedure

- ANT 3520 Skeleton Keys: Forensic Identification
- ANT 4273 Anthropology of Law
- ANT 4740 Introduction to Forensic Science
- Other: If one of the courses you have taken was not listed above, please list them below.

Crime Show Viewing Habits: Fill in ONE answer choice for each item

1. How many hours per day do you watch television?
 - 0-1 hours
 - 2-4 hours
 - 5 or more hours

2. How many of those hours were spent watching crime shows?
 - 0-1 hours
 - 2-4 hours
 - 5 or more hours

3. What are the top three crime shows that you watch most often?

4. On a scale of 1 to 5, how educational do you think crime shows are for the general public to learn about forensic science?
 - 1 (Not educational)
 - 2 (Slightly educational)
 - 3 (Moderately educational)
 - 4 (Very educational)
 - 5 (Extremely educational)

CSI Effect: Fill in ONE answer choice for each item

1. Have you heard of the CSI effect?
 - Yes
 - No

For questions 2-4, refer to the definition of the CSI effect provided below:

The CSI effect is a phenomenon that describes how television programming that involves or focuses on forensic science, like the widely popular CSI and its spin-offs, alters the public's perceptions of real forensic science.

2. Do you think the CSI effect has affected courtroom verdicts?
 - Yes
 - No
 - I'm not sure
3. Do you think the CSI effect could possibly affect how people commit crime?
 - Yes
 - No
 - I'm not sure

4. On a scale of 1 to 5, to what degree do you agree with the following statement:

Crime shows like CSI and other crime-based entertainment media help people commit crime and avoid getting caught by the police.

- 1 (Disagree)
- 2 (Slightly disagree)
- 3 (Neither agree or disagree)
- 4 (Slightly agree)
- 5 (Agree)