

JURY'S STILL OUT: HOW TELEVISION AND CRIME SHOW VIEWING INFLUENCES JURORS' EVALUATIONS OF EVIDENCE

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The CSI effect is a phenomenon proposed by the media and attorneys in which crime show viewing is thought to affect jurors' trial decisions. This study examined whether jurors' crime show and television viewing habits interact with the amount of forensic evidence available at trial to affect verdict and other trial decisions. Jurors who reported for jury duty at a southern courthouse were randomly assigned to read a trial vignette containing either no, low, or high levels of forensic evidence. Jurors rendered a verdict, rated the evidence and described their crime show viewing behavior. Results indicated an interaction between level of forensic evidence and crime show viewing in that those who watched crime shows were more likely to favor the defense than those who did not in some evidence conditions. Explanations of these results are discussed with directions for future research.

Keywords: CSI Effect, Cultivation theory, juror decision making, and experiment

Cultivation theory argues that heavy television viewing influences peoples' perceptions of social reality (Gerbner, 1972). Numerous years of cultivation research shows that heavy television viewing has seemed to influence individuals' views of social reality to resemble more of a television reality on issues such as sex roles (Signorielli, 1989), age (Gerbner et al., 1980), politics (Carlson, 1985), violence, and the fear of violence (Gerbner & Gross, 1976). The popular proposed CSI Effect could be defined in terms of the television medium through crime shows cultivating and shaping people's perceptions of social reality, specifically, their perceptions of forensic evidence.

To the media, attorneys, and other actors in the legal system, the common definition of the "CSI Effect" is where jurors who view television crime shows like "CSI" require forensic evidence in every trial, and when forensic evidence is presented, they weigh it more heavily than jurors who do not watch crime shows. This change in perception and expectations of forensic evidence, created as a result of watching fictional crime dramas, may ultimately affect jurors' verdicts (Tyler, 2006). However, there are two possibilities

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for how the CSI Effect may affect jurors' trial judgments. First, the pro-defense argument states that if forensic evidence is absent, this absence may cause those jurors who watch crime dramas to be skeptical of testimony or other common trial evidence (Tyler, 2006). Thus, those jurors will be more likely to find the defendant not guilty, regardless of other evidence. Second, the pro-prosecution argument states that if forensic evidence is present, the jurors who watch crime dramas may focus on the forensic evidence and weigh it heavier than other pieces of evidence. This increases the likelihood that those jurors will find the defendant guilty, regardless of other evidence (Tyler, 2006). Overall, the CSI Effect is reported to cause jurors to believe that they are experts on forensic evidence.

The CSI effect closely resembles cultivation theory. Some cultivation theorists would state that all television viewing would be influential on juries (Gerbner, 1976) and others would say that specific genres, such as crime shows, have more influence on people than other genres (Cohen & Weimann, 2000). This study examined whether television and/or crime show viewing influences participants' perceptions of evidence and verdict decisions. We used actual juror members for this study and real cases. The following literature review will provide first the theoretical backdrop and then the current empirical research on the CSI effect.

LITERATURE REVIEW

Cultivation Theory

Cultivation analysis describes how research examines how a television viewer gleans conceptions about the world from television viewing and applies these to their social reality. The first study investigating cultivation theory was a national probability survey of adults in the 1970's (Gerbner & Gross, 1976). This early study suggested that heavy viewers were more likely than light viewers to give the "television answer" than the "real answer" when asked about crime, danger and law enforcement. The "television answer" is the unrealistic fictional 'fact' that is portrayed on TV, while the "real answer" is closer to reality. Heavy viewers tended to overestimate their likelihood of becoming involved in violence compared to light viewers, supporting the cultivation hypothesis (Gerbner & Gross, 1976). Another study focused directly on heavy television news exposure and found a relationship between fear of crime and heavy news viewing regardless of neighborhood differences, such as crime rate (Romer, Jamieson, & Aday, 2003).

Much cultivation research that has been conducted focuses on criminal justice issues and continues to show support that heavy viewers of television tend to have unrealistic views of criminal justice reality. Specifically, crime show viewing researched from a cultivation perspective has been shown to affect people's perceptions of the criminal justice system. Carlson (1985) conducted a survey of adolescents and found that heavy crime show viewing was associated with lower levels of real legal knowledge. In one study, participants who viewed heavy amounts of television were more likely to answer 'true' to the true-false statement "The amendment that says a person does not have to testify is the 6th amendment" [emphasis added] (Dominick, 1974). This could be attributed to the portrayal

of law enforcement authorities' reading of rights on crime shows, but lack of portrayal of other procedural details (Dominick, 1974). However, heavy crime show viewing also was associated with more support for the legal system and the norm of compliance.

Even with numerous years of research support for cultivation theory, the aspect remains that most research reveals small effect sizes. Critics argue the small effect size is based on how television viewing is measured (Cohen & Weimann, 2000). The overall television viewing may include too much variability as television is quite common and/or this measure could be confounding a more pronounced effect of a specific sub-genre of shows. However, Gerbner has maintained that cultivation theory should be studied using a global viewing measure (Potter, 1991). A global viewing measure asks about individuals' overall viewing patterns and is not program or genre specific such as only asking about television news viewing. Purportedly, this is because the theory is proposed to study the implications of patterns of television content selection as a system. Other researchers of cultivation theory do not agree with this global approach, however, and argue that this type of limited research is flawed (Potter, 1991; Cohen & Weimann, 2000). These researchers argue that the cultivation effect may actually be program specific (Gunter, 1994).

Early researchers Hawkins and Pingree (1980; 1981) revealed evidence that a cultivation effect is more noticeable when television exposure is broken into different show categories. Specifically, they found that viewing crime/adventure and cartoon shows were related to different beliefs about violence. The findings that a cultivation effect is program specific can be tested by studying the proposed CSI Effect which is a genre specific effect of viewing crime drama type shows. There has been limited research on the CSI Effect with very little published research.

CSI Effect Research

Anecdotal research on the legal field concerning the CSI Effect has primarily indicated that legal professionals believe it exists (Houck, 2006; Maricopa County, 2005; Tyler, 2006; Stevens, 2008; Stinson, Patry & Smith, 2007; Watkins, 2004). The few studies that have examined whether jurors' trial decisions vary based on viewing shows such as CSI reveal mixed results. With some studies demonstrating that watching crime shows does not affect jurors' decisions. For example, Podlas (2006) assessed the pro-defense CSI Effect argument in a rape case presented to undergraduates acting as mock jurors. The rape case included witness testimony and no forensic evidence. After reading the scenario, participants rendered a verdict and gave reasons to justify their verdicts. The participants who watched CSI rendered the same verdicts as the participants who did not view CSI. Most participants who found the defendant not guilty reported the lack of forensic evidence as the main reason behind their decision regardless of their crime show viewing behavior. Podlas (2006) concluded that the results did not support the existence of the CSI Effect because jurors who watched CSI did not give different reasons for rendering their given verdict compared to participants who did not watch CSI. Whereas, another study showed an indirect, pro-defense CSI effect (Reardon, O'Neil & Lawson, 2007). That is, the hours of exposure to crime dramas had no direct effect on verdict or likelihood of guilt. However, the researchers did find that the jurors who believed forensic evidence was more accurate

were also more likely to find the defendant guilty compared to those jurors who believed forensic evidence was less accurate. They found some support for the CSI Effect in that jurors who viewed a case with strong non-forensic evidence and weak forensic evidence were less likely to find guilt if they were exposed to more crime dramas than jurors exposed to less crime dramas. They concluded that a new definition of the CSI Effect may be necessary. Specifically, this new definition needs to explain how exposure to crime dramas appears to sensitize individuals to the quality of forensic evidence and assist them in recognizing poor quality forensic evidence (Reardon et al., 2007).

Other research has shown evidence of a pro-prosecution CSI effect. In this web-based research, participants were randomly assigned to read one of four different types of case summaries (a politician accused of murdering an aide, a battered woman and the question of self defense, a child sexual assault case, and an acquaintance rape). In each of these cases there was no DNA or fingerprint evidence. They concluded that there was no significant relationship between crime-drama viewing (CSI and Law & Order) and verdicts. However, those who viewed more hours of CSI were more likely to believe that the prosecution had a stronger case compared to those who viewed less hours of CSI. The significant effects indicated a potential pro-prosecution effect (O'Neil, 2007).

Conversely, another study attempting to assess the causal relationship between viewing CSI's effect and jurors' perceptions of forensic evidence found support for the existence of a CSI Effect in jurors' perceptions of evidence (Patry et al., in press; Smith et al., 2007). Unlike the studies above, they did not ask participants to become jurors and submit a verdict on a particular case. Instead, they focused on whether participants viewed forensic evidence differently because of viewing CSI. In addition, instead of measuring CSI watching behavior, the authors randomly assigned undergraduate students to watch zero, four or eight episodes of CSI and then asked them questions about the reliability and accuracy of forensic evidence. Their findings supported the existence of a CSI Effect in that those students who watched four to eight episodes rated the reliability of forensic evidence higher than the students who had watched zero episodes. In addition, the students who watched four to eight episodes had inferred more confidence in their personal judgments about the reliability of this evidence than their non-viewing counterparts (Patry et al., in press; Smith et al., 2007). This suggests a causal relationship between watching crime dramas and participants' perceptions of forensic evidence, but does not address whether this means that individuals would be more likely to convict or acquit based on these perceptions during a trial.

To our knowledge, only one study has used actual jurors who were summoned for jury duty to study the effect of CSI viewing on jurors' perceptions of evidence, creating a sizable sample of over a thousand people (Shelton, Kin & Barak, 2006). In this study, findings indicated that jurors who were frequent viewers of the crime drama programs were more likely to perceive those programs as accurately portraying the criminal justice system than less frequent viewers of crime drama programs. However, there was not much of a CSI Effect on verdicts. Specifically, watching CSI and related programs was related to a slight increase in the expectation of scientific evidence, but the result depended on the

type of case. CSI viewers were slightly more likely than non-viewers to expect scientific evidence in cases that charged for murder, attempted murder, rape or other criminal sexual conduct, breaking and entering, and cases involving a gun (Shelton, Kin & Barak, 2006).

Each of these studies has contributed to the body of literature examining whether the CSI Effect is a factor in juror decisions. With the mixed results and little published research on the topic, more research needs to be conducted to determine what type of effect watching crime dramas may have on jurors' decisions. Past research may not be finding a CSI Effect because it could be measuring a smaller part of the larger variable; that is, cultivation theory suggests that all television viewing that influences peoples' perceptions and behaviors. Therefore, the CSI Effect may be a bi-product of a larger effect of television watching on peoples' perceptions of reality.

While the articles continue to surface regarding the CSI Effect, existing research is relatively new and the simulation jury research in this area is generally not supportive of an effect (Podlas, 2006; Shelton et al., 2001). This could lead researchers to eschew further study on the CSI Effect and advance onto more fruitful topics. We argue that this movement could be premature for two reasons: 1) legal actors believe there is an effect and are reacting to it by changing their jury selection and trial strategies. This could mean there is some kind of affect only we have not been able to capture the phenomenon with research and 2) the research on this topic has not hit "methodological saturation" meaning all methodological advancements have not been exhausted, making it harder to conclude that an effect likely does not exist.

The proposed study plans to build on previous work in four ways. First, the CSI Effect studies generally examine the pro-prosecution *or* pro-defense argument regarding the CSI effect. That is, it is not clear whether both the presence and absence of forensic evidence will influence crime show viewers' trial decisions. Given that past research shows mixed results, it is possible that both proposed CSI Effects exist. Second, most of these initial studies utilized college student samples which are a younger sample and generational differences and ideas could exist. This study used jurors who reported for jury duty at a local courthouse for participants, providing us with a more ecologically valid sample compared to traditional research on jury decision making. Third, no published study used a trial vignette with detailed case information; they used short scenarios. We condensed the information from an actual case into a trial vignette to provide participants with the amount of information they would have been provided in an actual trial. Fourth, the CSI Effect is restricted to crime show viewing but, we examined whether heavy amounts of all television viewing may have an influence on trial decisions. The theoretical perspective, cultivation theory, finds evidence of all televisions influence on people's perceptions of reality (Shanahan & Morgan 1999).

Research Questions

The following are the research questions we examined in the present study: 1.) Does television/crime show viewing interact with evidence level to affect trial decisions?

2.) Does television/crime show viewing behavior interact with forensic evidence condition to affect trial decisions? 3.) Does television/crime show viewing behavior interact with forensic evidence condition to affect jurors' perceptions of strength of evidence?

METHOD

Design

The study used random assignment of participants to a felony assault trial containing one of three levels of forensic evidence. Heretofore, they will be referred to as no forensic, low forensic and high forensic evidence conditions. Statistical power in relation to sample size was a major concern and was carefully considered when designing this experiment. It was known that previous cultivation studies have found small effects indicating the need for a large sample. That is why the sample was increased from 20 participants per cell to 30.

Participants

Participants were 104 dismissed jurors from a courthouse in the South. The overall sample was made up of 53 males (51%) and 51 females (49%). They ranged in age from 18-79 with a mean age of 42.39 ($SD = 14.92$). All participants were qualified by the court as jury eligible. Participants identified their racial/ethnic background as "White/Non-Hispanic" (75%), "Black, Non-Hispanic" (14%), "Asian" (3%), "Hispanic" (4%), "American Indian" (1%) and "Other" (2%).

Stimulus

The trial vignette was based on an actual case in which the defendant was convicted of aggravated assault (Ryan v. State of Arkansas, 2007). All identifying information was changed for the purposes of the study. In the vignette, three witnesses testified on behalf of the prosecution. First, the defendant's ex-girlfriend testified that the defendant threatened to kill her in a confrontation at her apartment parking lot with a loaded gun. Second, a staff sergeant of the U.S Air Force testified that he retrieved a weapon from the defendant's vehicle when the defendant tried to enter a local airbase to visit his brother after the confrontation with his ex-girlfriend. The third witness was an officer who was called on scene when the gun was found, and this officer testified that he found more bullets, confiscated the gun, and arrested the defendant. For the defense, the defendant testified on his own behalf that he did not threaten the victim and that instead she had threatened him. All of the above described testimony is included in all conditions.

Strength of evidence manipulation. The three levels of forensic evidence included in the vignette built upon each other and included the following: a) no forensic evidence, b) fingerprints on the gun (low forensic evidence condition), c) fingerprints and ballistic evidence demonstrating the bullet in the victim's driveway matched the gun recovered from the defendant (high forensic evidence condition). Both the fingerprint evidence and ballistics were additional evidence not included in the original case. In pertinent conditions, the officer testified about the fingerprint evidence, and a ballistics expert testified about the

ballistics evidence. The ballistics testimony was created using a website on forensic ballistics testing (Athena Research & Consulting, LLC, 2008).

Independent Measures

Crime viewing behavior. After reading the vignette and completing the majority of dependent measures, participants were asked how many hours per week and day they watch each sub-genre of crime shows. For each genre of show, participants were asked to write in the number of times weekly and daily they viewed each group of crime shows. Responses from each of these categories were summed and averaged (due to the large amount of variability in the summed measure), representing the overall weekly and daily crime viewing (termed *crime daily* and *crime weekly*). To enable examination of the effect of shows like CSI specifically on jurors' decisions, participants also indicated how many hours per week that they viewed any crime dramas (termed *crime drama weekly*).

General television viewing behavior. Participants also responded to the following questions designed to capture a more global viewing measure similar to cultivation research (Shanahan & Morgan 1999): on an average day, how many hours do you watch television; and how many hours, in general, do you watch television every week.

Dependent Measures

Trial decisions. After reading their assigned trial vignette, participants rendered a verdict (guilty or not guilty). Then, they indicated on 0-20 point probability scales where 0 equaled 0% and 20 equaled 100% (a) how confident they were with their decision of 'guilty' or 'not guilty' and (b) how sure they were that the defendant committed the crime.

Evidence strength. Participants rated the strength of each piece of evidence that appeared in all conditions (testimony of victim, testimony of staff sergeant, testimony of the officer, testimony of the defendant, and the physical evidence of the gun) independently on a 7 point scale of 'extremely weak' to 'extremely strong.'

Procedure

On jury selection days, the Clerk of Courts made an announcement to the venire about the study. Participants were told that I would be outside the courtroom and they could complete the study once they were dismissed. It was important that only dismissed jurors were allowed to complete the study as the chief judge had stated these parameters. Those released read the informed consent and decided whether to participate. If they consented, they were randomly assigned to one of the three forensic conditions. To mimic what happens in a real trial, jurors first filled out a *voir dire* questionnaire assessing demographic information. Then, participants read the vignette corresponding to their assigned condition, rendered a verdict, and completed the other dependent measures.

RESULTS

Bivariate Analysis [1]

First, we examined whether forensic evidence condition had a significant effect on verdict decisions. A chi-square analysis revealed that whether participants found the

defendant guilty did not significantly differ by forensic evidence condition $\chi^2 (2, N = 98) = 2.541, p = .281$.

One way ANOVAs were also conducted to examine whether the forensic evidence conditions significantly affected whether participants were confident that the defendant committed the crime and confident in their verdict decisions. Forensic evidence condition marginally affected whether participants were confident that the defendant committed the crime $F (2, 93) = 2.72, p = .07$. Participants in the no forensic evidence condition ($M = 8.53$) were less confident that the defendant committed the crime compared to participants in the low and high forensic evidence conditions ($M = 10.67$ and $M = 11.10$).

Does Television or Crime Show Viewing Interact with Evidence Level to Affect Trial Decisions?

A series of logistic regressions were used to predict guilty verdicts. There was a 75/25 split, 25% ($n=24$) of participants responded they would find the defendant 'guilty' and 75% ($n=74$) responded they would find the defendant 'not guilty'. Two sets of analyses were run. The first used daily and weekly crime viewing behavior as predictors; these measures are those used in traditional CSI effect jury research. The second used daily and weekly television viewing as predictors; according to cultivation theory, these variables may be better predictors of how jurors view and evaluate trial evidence. Linear regression was used with all continuous dependent measures.

While we used a traditional alpha level of .05 to indicate significance in this study, we also report those values associated with an alpha level of .10 due to the importance of focusing on effect sizes versus statistical significance (Bushway, Sweeten, & Wilson 2006). Missing data was not a large problem, and was dealt with using listwise deletion. First, we discuss the findings regarding crime show viewing (daily and weekly) and then we discuss findings regarding television show viewing (daily and weekly).

Does crime show viewing behavior interact with forensic evidence condition to affect trial decisions?

In this series of analyses, the dependent measures used are modeled using participants' reports about daily and weekly crime show viewing as a predictor. In regressing verdict onto the forensic evidence conditions and daily crime show viewing variables, neither the main effects model or the model entering the interactions between these variables significantly predicted verdict, all p 's $> .18$. Similarly, regressing verdict onto the forensic evidence conditions, the crime show weekly viewing variable, and the interactions between these two variables did not produce a significant model, all p 's $> .12$.

In examining participants' reported confidence in their decision, a regression model entering the forensic evidence condition variables and the crime show daily viewing variable revealed no significant main effects; however, the second step of the regression (entering the interactions between the IVs) revealed a significant F model change ($p = .04$), although the overall model was still not significant, R^2 of .03, $F (5, 89) = 1.50, p = .19$. In this model, the interaction between daily crime show viewing and low forensic evidence condition significantly affected confidence in decision ($\beta = .29, t (94) = 2.25, p = .03$) and

the interaction between daily crime viewing and the high forensic evidence condition approached significance ($\beta = .28$, $t(94) = 1.87$, $p = .06$). Running separate regressions for each forensic evidence condition regressing daily crime viewing on confidence in decision revealed that in conditions with no forensic evidence, participants higher in daily crime viewing indicated less confidence in their decisions than those who were lower daily crime viewers ($\beta = -.35$, $t(94) = -2.06$, $p = .05$). In the low and high forensic conditions this relationship was not significant (all β 's < .260, all p 's > .16). Similar to analyses with the crime show daily viewing variable, the direct main effects of the crime weekly viewing and forensic evidence condition variables did not produce significant models for the confidence in decision variable. However, entering the interactions into the model did not improve fit.

To test whether the independent variables and their interactions affected participants' ratings of confidence that the defendant committed the crime, we used a series of generalized regression models with likelihood ratios (due to the skewed distribution of the dependent measure). Regressing participants' ratings of the confidence that the defendant committed the crime onto the forensic evidence conditions, the crime show daily viewing variable, and the interactions between these two variables produced no significant main effects or interactions, all p 's > .26. We also tested the effect of the forensic evidence conditions, the crime show weekly viewing variable, and the interactions between these variables on participants' ratings of confidence that the defendant committed the crime. The main effects of crime weekly viewing and forensic evidence conditions on participants' ratings of confidence that the defendant committed the crime were not significant, ($\chi^2(5, 85) = 4.79$, $p = .44$, all B 's < -.25, all p 's > .12). Entering the interactions in the next step of the model revealed a significant effect of the interaction term between the low forensic evidence condition and crime weekly viewing on participants' ratings ($B = .04$, $\chi^2(1, 85) = 4.80$, $p = .03$). Participants who were heavy weekly viewers of crime shows in the low forensic evidence conditions rated higher confidence that the defendant committed the crime than those who were light viewers of crime shows. Participants' confidence that the defendant committed the crime was not affected by crime show viewing in the no/high forensic evidence condition.

Does crime show viewing behavior interact with forensic evidence condition to affect jurors' perceptions of strength of evidence?

Each of the strength of evidence measures (staff sergeant, officer, victim, defendant testimony, and gun evidence) were regressed onto the forensic evidence condition measures, crime viewing measures and interactions between these two variables. Only the models including staff sergeant and the officer revealed significant findings and are therefore included below.

Strength of staff sergeant's testimony. Testing the direct main effects of daily crime viewing and the forensic evidence conditions on participants' ratings of the strength of the staff sergeant's testimony produced an adjusted R^2 of .12, $F(3, 88) = 5.09$, $p = .01$. Participants rated the staff sergeant's testimony significantly lower in the low forensic ($\beta = -.29$, $t(91) = -2.47$, $p = .02$) and high forensic evidence conditions ($\beta = -.39$, $t(91) = -3.45$

$p < .01$) compared to the no forensic evidence condition. Entering the interaction terms did not significantly improve the model ($p > .21$).

Using the crime show weekly viewing variable as a predictor in the model instead of crime show daily viewing produced similar results; the main effects model significantly predicted participants' perceptions of the strength of the staff sergeant's testimony, $R^2 = .15$, $F(3, 93) = 6.72$, $p = .01$. Analyses indicated effects of crime show weekly viewing behavior ($\beta = .22$, $t(96) = 2.19$, $p < .05$), the low forensic evidence condition ($\beta = -.224$, $t(96) = -1.99$, $p < .05$) and the high forensic evidence condition ($\beta = -.397$, $t(96) = -3.67$, $p < .01$) on participants' strength ratings. Participants who were higher on the weekly crime show viewing scale rated the strength of the testimony of the staff sergeant higher than participants lower on the weekly crime viewing scale. Also, participants in the low and high forensic evidence condition rated the strength of the staff sergeant's testimony lower than participants in the no forensic evidence condition. Entering the interaction terms between these two variables produced a significant model, $F(5, 91) = 4.29$, $p = .01$, but there were no significant interactions.

Strength of the officer's testimony. The main effects model entering the daily crime show viewing and forensic evidence condition variables to predict participants' ratings of the strength of the officer's testimony approached significance $F(3, 88) = 2.40$, $p = .07$, adjusted $R^2 = .04$. Analyses indicated a significant effect of the high forensic evidence condition on participants' ratings of the strength of the officer's testimony ($\beta = -.27$, $t(91) = -2.28$, $p = .02$). Participants in the high forensic evidence condition rated the officer's testimony lower than participants in the no forensic evidence condition. Entering the interaction terms yielded a model that approached significance, $F(5, 86) = 2.10$, $p = .07$. The interaction between the high forensic evidence condition and daily crime show viewing significantly affected participants' ratings of the strength of the officer's testimony ($\beta = .25$, $t(91) = 1.75$, $p = .09$). Separate regressions with crime show daily viewing as a predictor of participants' ratings of the strength of the officer's testimony for each forensic evidence condition showed that participants in the high forensic evidence condition who were heavy daily viewers of crime shows thought the officer's testimony was stronger than light daily viewers of crime shows ($\beta = .37$, $t(30) = 1.75$, $p = .04$). In the no and low forensic evidence conditions, participant's ratings of the strength of the officer's testimony were not affected by daily crime viewing (all β 's $< -.04$, p 's $> .82$).

In the model testing weekly crime show viewing and the forensic evidence conditions as predictors, the main effects model significantly predicted participants' ratings of the strength of the officer's testimony, adjusted $R^2 = .10$, $F(3, 93) = 4.47$, $p = .01$. Results indicated a significant main effect of weekly crime viewing ($\beta = .23$, $t(96) = 2.25$, $p < .05$) and the high forensic evidence condition ($\beta = -.31$, $t(96) = -2.76$, $p < .01$) on participant's ratings of the strength of the officer's testimony. Participants in the high forensic evidence condition rated the testimony of the officer lower than those in the no forensic condition, and participants higher on the crime weekly viewing scale rated the strength of the officer's testimony higher than participants who were lower on the crime weekly viewing scale.

Entering the interactions into the model yielded a significant model, $F(5, 91) = 2.90, p = .01$, however, there were no significant interactions.

Does general television viewing behavior interact with forensic evidence condition to affect trial decisions?

In regressing verdict onto the forensic evidence conditions, daily television viewing, and the interactions between these two variables, the interactions between daily television viewing and the low forensic evidence condition and daily television viewing and the high forensic evidence condition significantly affected jurors' verdicts (Table 1). As participants increased in the amount of hours viewing television daily, the odds of them selecting a guilty verdict decreased by 64% in the low forensic evidence condition ($exp B = .36, p < .05$) and by 70% in the high forensic evidence condition ($exp B = .30, p < .01$) compared with the no forensic evidence condition. Daily television viewing influenced the odds of choosing a guilty verdict was strongest in the no forensic evidence condition. The model including weekly television viewing as a predictor yielded no significant results.

Table 1. Participants' verdict decisions as a function of daily television viewing and forensic evidence condition.

Variables	Model 1		Model 2	
	Exp (B)	B	Exp (B)	B
Intercept	.57	-.56 (.74)	.70	-.36 (.84)
Low Forensic Evidence	.96	-.04(.63)	.72	-.33 (.73)
High Forensic Evidence	.48	-.73 (.59)	-1.01	.37 (.70)
Daily TV Viewing	.89	-.12 (.17)	2.03	.71 (.37)a
Low X Daily Viewing			.36	-1.02 (.52)*
High X Daily Viewing			.30	- 1.22 (.50)*
Model χ^2		8.40		4.39
Pseudo-R ²		.04		.15
Correct Classification rate		73.9%		76.1%
-2 Log Likelihood		103.03		95.45

Notes: * $p < .05$, ** $p < .01$, a $p < .10$. The model $N = 92$.

In examining participants' reported confidence in their decision, a regression model entering the forensic evidence condition variables and the television show daily viewing variable revealed no significant main effects (all β 's $< .15$, all p 's $> .15$); however, the second step of the regression (entering the interactions between the IVs) revealed a marginally significant F model change ($p = .07$), although the overall model was still not significant, R^2 of .03, $F(5, 89) = 1.56, p = .18$. This is very similar to the results that were found for crime show daily viewing. Again, the interaction between daily television viewing (as opposed to crime show) and the high forensic evidence condition significantly affected participants' reported confidence in their decisions ($\beta = -.30, t(94) = -1.97, p = .05$). To test

the interaction, separate regressions were conducted for each forensic evidence condition, regressing daily television viewing on participants' reported confidence in their decision. Participants in the condition with no forensic evidence and higher in daily crime viewing indicated more confidence in decisions than those who were lower daily crime viewers ($\beta = .34$, $t(31) = 1.96$, $p = .06$), whereas in the low and high forensic condition this relationship was not significant. In the model using weekly television as a predictor, there was a significant main effect of television viewing, $\beta = .21$, $t(93) = 2.01$, $p < .05$. Participants who viewed higher amounts of weekly television indicated more confidence in their decision than those who viewed lower amounts of weekly television, regardless of level of forensic evidence. There were no significant interactions in this model.

To test whether the daily and weekly television viewing and the forensic evidence conditions affected participants' reported confidence that the defendant committed the crime, we ran two regression analyses for each of the measures of television viewing. First, the dependent measure was regressed onto the daily television viewing measure, the forensic evidence conditions, and the interactions between these variables. The overall models testing the main effects and interactions were not significant; however, the interaction between daily television viewing and the high forensic evidence condition was significant ($B = -2.53$, $\beta = .33$, $p = .05$). Again, separate regressions for each evidence condition were run. Only in the no forensic evidence condition did the influence of daily television viewing on confidence that the defendant committed the crime approach significance ($\beta = .34$, $t(28) = 1.88$, $p = .07$). That is, participants who were heavier viewers of daily television were more likely to report confidence that the defendant committed the crime only in the condition with no forensic evidence. The models testing weekly television viewing yielded no significant results.

Does general television viewing behavior interact with forensic evidence condition to affect jurors' perceptions of strength of evidence?

Participants' ratings of the strength of the different pieces of evidence (staff sergeant, officer, victim, defendant testimony, and gun evidence) were regressed on the forensic evidence condition measures, television daily and weekly viewing measures and interactions between these two variables. The interactions between forensic evidence conditions and crime viewing were significant only for the testimonies of the staff sergeant and the officer and so these models will be described in detail. Models including the gun, victim, and defendant testimonies yielded no significant results.

Strength of the staff sergeant's testimony. The main effects model entering the daily television show viewing and forensic evidence condition variables to predict participants' ratings of the strength of the staff sergeant's testimony was significant, $F(3, 88) = 3.91$, $p = .01$, adjusted $R^2 = .09$. The direct main effects of the high forensic evidence ($\beta = -.88$, $t(91) = -3.29$, $p < .01$) and low forensic evidence ($\beta = -.61$, $t(88) = -2.28$, $p = .03$) conditions (versus the no forensic evidence condition) significantly affected participants' ratings of the strength of the staff sergeant's testimony. Participants in the high and low forensic evidence conditions rated the staff sergeant's testimony as weaker than participants in the no forensic evidence condition. The next step entered in the interaction terms between

the forensic evidence conditions and daily crime viewing and this model increased the predictive ability to 12% explained variance (adjusted $R^2 = .12$). The effect of the interactions between the low forensic evidence condition and daily television viewing and high forensic evidence condition and daily television viewing on participants' ratings of the staff sergeant's testimony were significant and marginally significant, $\beta = -.42$, $t(91) = -2.29$, $p = .03$, and $\beta = -.33$, $t(91) = -1.78$, $p = .08$, respectively. Separate models for each forensic evidence condition to disentangle the interactions indicated a significant effect of daily television viewing in the no forensic ($\beta = .43$, $t(31) = 2.56$, $p = .02$) evidence condition. Participants in the no forensic evidence condition who were heavy daily television viewers rated the staff sergeant's testimony more strongly compared to those who were light daily television viewers.

Models evaluating participants' ratings of the strength of the staff sergeant's testimony with weekly television viewing and forensic evidence conditions as predictors yielded similar results. The overall regression model of weekly television viewing and forensic evidence conditions on participants' ratings of the strength of the staff sergeant's testimony produced an adjusted R^2 of .08, $F(3, 88) = 3.79$, $p = .01$. There was a significant main effect of forensic evidence condition on ratings in that participants evaluated the strength of the staff sergeant's testimony higher in the high and low forensic evidence conditions than in the no forensic evidence conditions, $\beta = -.38$, $t(91) = -3.28$, $p < .01$ and $\beta = -.23$, $t(91) = -1.97$, $p = .05$, respectively. When the interactions were entered into the model, the effects of both interactions on participants' evaluations of the strength of the staff sergeant's testimony approached significance, low forensic evidence condition and weekly television viewing

($\beta = -.22$, $t(91) = -1.68$, $p = .10$), high forensic evidence condition and weekly television viewing ($\beta = -.25$, $t(91) = -1.80$, $p = .08$). Separate models for each forensic evidence condition revealed indicated a marginally significant effect of weekly television viewing in the no forensic ($\beta = .34$, $t(31) = 1.96$, $p = .06$) evidence condition. Similarly to the daily television viewing, participants in the no forensic evidence condition who were heavy weekly television viewers rated the staff sergeant's testimony more strongly compared to those who were light daily television viewers.

Strength of the officer's testimony. The main effects model entering the daily television viewing and forensic evidence condition variables to predict participants' ratings of the strength of the officer's testimony was significant, $F(3, 88) = 3.31$, $p = .02$, adjusted $R^2 = .07$. The direct main effects of the high forensic evidence condition ($\beta = -.30$, $t(91) = -2.52$, $p < .01$) and daily television viewing ($\beta = .19$, $t(91) = 1.91$, $p = .06$) significantly affected participants' ratings of the strength of the officer's testimony. Participants in the high forensic evidence conditions rated the officer's testimony to be weaker than the participants in the no forensic evidence condition. Additionally, heavy daily television viewers rated the strength of the officer's testimony to be stronger than lighter viewers. Entering in the interaction terms into the model increased the predictive ability of this model to 12% explained variance. The effect of the interaction between the low forensic evidence condition and daily television viewing on participants' strength ratings was significant ($\beta = -.36$,

$t(91) = -2.45, p = .02$). Separate models for each forensic evidence condition indicated a significant effect of daily television viewing in the no forensic evidence condition, ($B = .33, \beta = .40, t(29) = 2.31, p = .03$). Heavier daily television viewers rated the strength of the officer's testimony higher than lighter daily television viewers only in the no forensic evidence condition.

In the model testing weekly television viewing and the forensic evidence conditions as predictors, the main effects model predicting participants' ratings of the strength of the officer's testimony approached significance, adjusted $R^2 = .04, F(3, 87) = 2.41, p = .07$. In the weekly television viewing model, the high forensic evidence condition ($\beta = -.29, t(90) = -2.39, p < .05$) predicted participants' ratings of the strength of the officer's testimony. Participants in the high forensic evidence condition rated the strength of the officer's testimony lower than participants in the no forensic evidence condition. The interaction between low forensic evidence condition and weekly television viewing was also significant ($\beta = -.28, t(90) = -2.02, p < .05$). Separate models for each forensic evidence condition indicated no significant effects of weekly television viewing in the two lower forensic evidence conditions, but the effect of weekly television approached significance in the high forensic evidence condition ($\beta = -.32, t(28) = -1.72, p = .10$). Participants higher in weekly television viewing rated the officers' testimony lower than less heavy television viewers in the high forensic evidence condition.

DISCUSSION

This study examined the competing hypotheses regarding the proposed CSI Effect in which heavy crime show viewing is posited to influence people's perceptions of evidence and trial decisions (Tyler 2006); and the Cultivation hypothesis which states that *any* heavy television viewing influences people's perceptions of their social world (Gerbner & Gross 1976). These findings lend support to both hypotheses in that the concentration of television/crime show viewing had the strongest effect on jurors' decisions as evidenced by the stronger effects for heavy daily viewing for both types of television viewing (general and crime). These findings, however, lend a bit more credence to the argument that heavy general television viewing has a stronger, more consistent influence on people's perceptions of their social world (and therefore their perceptions of evidence and verdict). In the following paragraphs we discuss the implications of our findings for both theory and methods along with limitations of the present research and thoughts for future research.

While we found an influence of crime show viewing on participants' ratings of evidence, the effect was strongest when considering daily crime show viewing in conditions with no forensic evidence. The stronger concentration of crime show viewing having a larger effect was not surprising given past research. Smith et al. (2007) found in their experiment that participants who viewed many (4-8) episodes of CSI rated evidence differently than non-viewers, but did not find this effect for viewers of a few (1-3) episodes. What was surprising was the lack of findings for ratings of the victim, defendant, and gun evidence. That is, participants only viewed governmental officials (the sergeant and of-

ficer) differently based on whether they watched crime shows. Speculation as to what sort of political ideology crime shows are portraying and how the shows construct race and gender should be further examined. To our knowledge, only one study thus far has examined the content of a crime show (Law & Order) regarding how the show constructs gender, but no studies have examined the construction of race in crime shows (Humphries, 2009). In addition, only one study has conducted an evaluation of how these shows are portraying forensic evidence (Patry et al. in press).

For cultivation theory, the debate between Cohen & Weimann (2000) and Gerbner (Potter 1991) regarding how cultivation theory should be measured is not entirely resolved by this paper as effects were found both for genre specific crime shows and global television viewing. Findings of general television viewing could be support for Gerbner's argument that a global television viewing measure is necessary, but because crime and crime shows are so prevalent on television maybe it is difficult to actually tease out a crime genre specific measure of television viewing. With crime being an ever-present aspect on all television channels maybe the issue lies with the impossibility of participants not having any exposure to some sort of crime on television. Future research could attempt to expand the measurement of television genres and operationalization of crime television measures.

Overall, these findings provide some support for the pro-defense argument, not the pro-prosecution argument of the CSI effect. Recall that the pro-defense argument states that if forensic evidence is absent, the jury who watches CSI type shows will be less likely to convict than the jury who does not watch CSI type shows. The pro-prosecution argument states that if forensic evidence is present, CSI watching jurors are more likely to convict than their counterparts (Tyler 2006). Heavy television viewers were less likely than light television viewers to select a guilty verdict in the lower forensic evidence conditions. Heavy crime daily viewers were also less confident than light daily viewers in their decision of guilt or innocence in the no forensic evidence condition. Additionally, heavy crime drama viewers were more confident than light crime drama viewers that the defendant committed the crime in the no forensic evidence condition. All of these findings lead to the speculation that heavy crime and television show viewers expected more evidence in these conditions to convict.

This study appears to be yet another study indicating a mostly null finding of the proposed CSI effect, especially if using a .05 significant level. It is possible that one reason there has been so little support for the CSI effect in this study and in the literature generally is that the CSI effect is actually a larger phenomenon than just the effect of watching CSI on jurors' verdicts. That is, legal scholars have suggested that the proposed CSI effect in jurors' decisions is actually a part of a larger cultural phenomenon in which shows like CSI have affected the actions and choices of attorneys, criminals, crime victims and students as well (Cole & Dioso-Villa, 2009). So, it is possible that the CSI effect has affected several aspects of our culture. Thus, given how broad and wide-spread the effect is, trying to isolate the effect of watching CSI on jurors' decisions may be difficult.

Limitations

Our sample was made up of jurors who were dismissed from jury duty at a local courthouse. These jurors were qualified by the court to serve as jurors, and therefore should arguably be representative of actual jurors. However, the sample was non-probability and there could be differences between our sample and the general population or even those impaneled on the jury. There could be differences between those sent home after *voir dire* and those chosen during jury selection. However, many jurors were released because the trial they were called for was cancelled; thus, these potential jurors were not even subjected to *voir dire*. The sample is clearly not generalizable to the entire population, but it is more ecologically valid than an undergraduate student sample which is more commonly used in experimental jury work (Bornstein, 1999; Zicafoose & Bornstein, 1999). A probability sample of jurors would be almost impossible to obtain for numerous reasons: First, access to a complete sampling frame is unavailable. Second, there are concerns of juror bias if one can gain access to the venire prior to *voir dire*. Third, there was no funding for this project, and projected response rate was quite low based on the amount of time a person had to commit based on the length of the survey. There was the potential for a high dropout rate, incomplete surveys, and a difficult time getting permission from people to participate. Based on all these reasons, it would not have been cost or time efficient to attempt to gain a probability sample.

Another limitation is small effect sizes. The crime viewing behaviors of the juror study indicated that many people reported that they did not watch *any* crime shows. This study then demonstrated that there is a small effect (if any) of watching crime shows on influencing juror decisions in a trial, as evidenced by the amount of effects which were close to significance. However, small effect sizes have been characteristic of other jury research large sample sizes have helped with this issue (Stebly et al. 1999). This also lends support to cultivation theory where small effect sizes are a major criticism because these effects were argued to be rendered not significant if other controls were entered into the model (Hirsch 1980). The current study utilized an experimental design and effectively controlled for rival hypothesis garnering further support for the cultivation model. Power is a major concern for any study and it was carefully considered when designing this experiment. It was known that previous cultivation studies have found small effects indicating the need for a large sample. That is why the sample was increased from 20 participants per cell to 30.

Also, in examining interactions there is a known issue of multi-collinearity, which means that hypothesis tests may have low power and became an issue with this study. However, critics of null hypothesis testing argue that there is a difference between analytical significance and statistical significance and the former is too often ignored in social science research (Bushway, et al. 2006). Analytical significance refers to the effect being analytically interesting yet statistically not significant. Conversely, effects can be analytically uninteresting and yet statistically significant (Bushway et al. 2006). Research examined how criminologists report findings in regards to null hypothesis testing and they found that in criminal justice evaluations the trend was to describe statistically not significant findings as no results, impacts, effects, etcetera (Weisburd et al. 2003). Even with these

limitations the present study builds on prior research and used a theoretical framework that has previously been ignored. Findings from research on the CSI Effect are decidedly mixed and the conclusion that can be drawn from the present findings is that the CSI Effect should continue to be examined.

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1. To ensure participants noticed the differences between levels of our manipulation, we asked participants questions to ensure they noticed manipulation content. Participants in conditions with fingerprint evidence reported seeing fingerprint evidence post-trial compared to participants in conditions without fingerprint evidence (low forensic evidence condition = 100%; $c^2(2, N = 70) = 62.43, p < .05$, high forensic evidence condition = 91%; $c^2(2, N = 69) = 50.51, p < .05$, both compared to the no forensic evidence condition (6%). Participants in conditions with ballistics evidence also reported seeing the evidence compared to participants in conditions without ballistics evidence (no forensic evidence condition = 0%; $c^2(2, N = 70) = 54.69, p < .05$, low forensic evidence condition = 3%; $c^2(2, N = 68) = 49.86, p < .05$, both compared to the high forensic evidence condition (88%).