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But What is the CSI Effect? How Crime Dramas Influence People's Beliefs About Forensic Evidence

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ABSTRACT

There is anecdotal evidence supporting the notion that television crime dramas affect people's opinions and expectations of forensic evidence and verdicts. Two studies were conducted to measure attitudes toward forensic evidence and identify the extent to which beliefs and attitudes are a function of television viewing. As viewing of crime dramas increased, so did rating of the accuracy and reliability of a number of types of scientific forensic evidence (but not "non-scientific" evidence). To some extent, these effects were found to be causal. Implications for policy and practice are suggested, and avenues for future research are discussed.

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The premise is compelling. A body is found under suspicious circumstances. The crime scene investigators swoop in and conduct a fast, insightful, and conclusive investigation. The same people question the suspect and extract a confession. In fewer than 60 minutes, DNA is analyzed, the case is solved, justice is served, and everyone goes home proud of a job well done. Police officers are satisfied, the victims' families are relieved, and most importantly, the viewers are happy. Popular, internationally syndicated television programs such as *CSI: Crime Scene Investigation* and *Law & Order* and their spin-offs are topping TV viewing ratings in North America (Nielsen, 2006) and have been doing so for a number of years.

A synthesis of actual criminal cases with intelligent, scientifically-grounded, and viable forensic techniques and procedures, these television crime dramas blur the line between reality and fiction. One recurring theme in these shows is that the quality of forensic evidence is far superior to any "non-scientific" evidence (e.g., confessions, eyewitness evidence). Moreover, these shows (particularly the *CSI* series) inculcate viewers with the notion that "science will lead us to the truth" and that "the evidence is there". These shows convey the notion that the most viable path to justice is through science, or at least what is portrayed as science in these shows.

There is some anecdotal evidence that viewers of television crime dramas are susceptible to what the press and a few academics have called the *CSI Effect* (Lovgren, 2004; Podlas, 2006; Tyler, 2006). At this point, however, the exact nature of the CSI effect – or whether it even exists – is unclear. Most references to the CSI effect reflect the notion that it is an undesirable effect on jurors that is caused by their perceived expertise about forensic techniques and police investigations and which contributes to unrealistic expectations about the quantity and quality of forensic evidence jurors expect to see at trial. Essentially, the perceived problem surrounding the CSI effect is that due to their perceived expertise on all matters forensic, *CSI*-"educated" jurors expect to see more

scientific evidence and more compelling evidence than they have in the past. When the scientific evidence presented at trial fails to meet jurors' expectations, they are then more likely to acquit the defendant.

THE SCIENTIFIC LITERATURE EXAMINING MEDIA EFFECTS

Research based on classic Social Learning Theory (see, e.g., Bandura, 1969, 1978) has consistently shown that our social environment provides a powerful source of information, and that much human learning occurs through observation of others. For example, a decades-long debate among researchers on whether TV violence causes aggressive behavior seems to have been resolved in the affirmative (e.g., Bushman & Anderson, 2002; Fiske, 2004; Paik & Comstock, 2004; Savage, 2004). Although the most realistic data are generally correlational, converging evidence (including laboratory studies) strongly suggests that exposure to TV violence causes aggressive behavior (see Freedman, 1992 for an opposing view). Some of the more pertinent and compelling research examines the extent to which sexually violent films affect cognition and behavior (e.g., Dexter et al., 1997; Linz et al., 1988). Generally, science provides an affirmative response to both, demonstrating, for example, that even viewing a short film can produce cognitive changes in men that affect their behavior toward women (Mulac, Jansma, & Linz, 2002).

However, there is little research on the extent to which television media affects individuals' understanding and perceptions of the legal system (Podlas, 2006). Recently, researchers found that although television shows aired during the last 20 years sometimes portrayed forensic issues correctly, the shows frequently misrepresented the issues and reported relationships between forensically relevant variables incorrectly (e.g., the relationship between stress and memory; Desmarais, Price & Read, 2006). Thus the potential influence of the media on jurors is clear.

Pre-Trial Publicity

Television news coverage can influence prospective jurors' perceptions of both civil (see, e.g., Robbenolt & Studebaker, 2003) and criminal cases (see e.g., Kovera, 2002; Moran & Cutler, 1997; Studebaker, Robbennolt, Pathak-Sharma, & Penrod, 2000; Vidmar, 2002; Wilson & Bornstein, 1988). This research has generally focused on pretrial publicity of specific cases, and sometimes on the news coverage of the trial itself. Generally, this literature demonstrates that exposure to pretrial publicity increases juror's proclivity to convict (Steblay, Besirevic, Fulero, & Jimenez-Lorente, 1999).

THE REALITY OF CRIME DRAMAS

The producers of *CSI* seem to take pride in the fact that the techniques and procedures used on the show are all grounded in science. Indeed, the show's website provides an online handbook that lists the various types of evidence, tools, and procedures presented in the show. Although the techniques used on these shows are considered to be technically possible, many are simply not practical, not common, or not used as depicted in the shows (such as "earprint databases"; Patry, Smith, & Stinson, in press).

WHAT IS THE CSI EFFECT?

Typically, the print news media describes the CSI effect in several basic ways (Patry et al., 2006), two of which fall within the scope of this paper[a]: 1) how jurors are purportedly influenced by the CSI effect; and 2) how legal professionals have changed their behavior in order to deal with what they perceive are changes in public attitudes, knowledge, and expectations about their professional roles (Patry et al., 2007). Dozens of articles have appeared in major news outlets (e.g., *USA Today; U.S. News and World Report; Toronto Star; Associated Press Syndicate*) describing cases where jurors have cited the prosecution's failure to provide forensic evidence as a reason for acquittal. For example, jurors in the Robert Blake case (the actor who was charged but acquitted of murdering his wife) cited a lack of gunshot residue as a main reason for acquitting the actor (Keating, 2005). In another case, a man was acquitted because a jury foreman, who was reportedly a fan of *CSI*, convinced fellow jurors to acquit because fingerprint evidence was lacking (Lotstein, 2004). Prosecutors have typically blamed this reasoning on jurors' fascination with shows such as *CSI*.

EMPIRICAL RESEARCH ON THE CSI EFFECT

Many news reports have documented anecdotal perceptions of lawyers and other legal professionals with regard to the CSI effect. Most of these stories have focused on how lawyers have changed their behavior to deal with this alleged problem. One of the few empirical studies of the CSI effect was an analysis of the perceptions and behaviors of 102 members of the Maricopa County Prosecuting Attorney's Office (Maricopa County, 2005).

a *Other descriptions of the CSI Effect include the proposition that television crime dramas have peaked student interest in topics such as Biology, Anthropology, and Psychology, and this had led to increased enrollments in these courses and in forensic science programs at technical schools, colleges and universities (Patry et al., 2006). Finally, the media has also described the CSI Effect in terms of its purported educational value for criminals. This perspective holds that that these shows educate criminals on how to engage in criminal activity without detection or how to elude police investigators. To date there is little empirical evidence to support these conceptualizations.*

The report clearly showed that prosecutors believe there is a CSI effect: 38% of attorneys believed they had lost a case because of the CSI effect; 45% claimed that jurors relied on scientific evidence more than they should; and 72% maintained that *CSI* fans exerted undue influence on other jurors. The prosecutors also cited striking examples of acquittals. In one case corrections officers removed drugs from a body cavity of a prisoner; jurors acquitted him because they felt that residue on the baggie should have been subjected to DNA analysis in order to conclusively link the defendant to the drugs.

The Maricopa county report also documented the approaches prosecutors had taken to reduce the CSI effect: 70% asked about television viewing habits during voir dire; 90% took the time to explain police procedures concerning forensic evidence to jurors; and 52% had plea bargained cases when they anticipated jurors would succumb to the CSI effect.

Despite the opinions and reported experiences of these legal professionals, the extent to which trial outcomes can be attributed to the effect of television crime dramas is unclear. To date and to our knowledge, there have been three prior studies that have directly assessed the CSI effect. Podlas (2006) presented mock jurors with a scenario of an alleged rape. The case was based entirely on the credibility of witnesses (no forensic evidence was presented). Participants rendered a verdict and reported on the basis for their decision. Although the lack of forensic evidence was the reason most often provided for mock jurors' decisions, people who were frequent viewers of *CSI* were not more likely to cite the lack of forensic evidence for their not-guilty verdicts than infrequent viewers of *CSI*. Podlas concluded that watching *CSI* did not produce the expected anti-prosecution CSI Effect.

In another pair of studies, O'Neil and his colleagues found limited support for a relationship between viewing *CSI* and mock juror verdicts. O'Neil and colleagues conducted two web-based mock juror studies in which they examined self-reported viewing of law-related TV shows to test for relationships between perceptions of evidence and verdicts (Reardon, Cooper, Morales, & O'Neil, 2006; York, O'Neil, & Evans, 2006). In one study the data revealed relationships between watching television crime dramas and perceptions of evidence, but there were no effects on verdict (Reardon et al., 2006). In a second study, they found no relationships between self-reported viewing of law-related TV programs and mock juror verdicts (York et al., 2006). These data suggested some two- and three-way interaction effects involving self-reported viewing of law-related TV programs, but the results did not yield any clear trends or suggest parsimonious, concrete conclusions. In summary, the studies by O'Neil and colleagues suggest that watching *CSI* and other law-related programs may have an impact on mock jurors' perceptions of evidence and may play a role in decision-making processes, but viewing these programs does not seem to directly influence verdict decisions.

Tyler (2006) has taken a different stand by arguing that it is equally plausible that watching *CSI* contributes to a pro-prosecution bias. In our recent analysis of the first season of *CSI* and *CSI: Miami;* 97.8% of the storylines ended in the criminal being caught (Patry et al., 2007). Tyler argued that these consistent conclusive endings may serve our Belief in a Just World (Lerner, 1980) and our psychological Need for Closure (Kruglanski, Peri, & Zakai, 1991). Further, Tyler (2006) argued that the recent (anecdotal) rise in acquittals cited by prosecutors can be explained by factors independent of current television content. Prosecutors may be trying to find excuses for losses that may be a function (at least in part) of increased sympathy for defendants, differing thresholds for conviction between judges and juries, increased distrust in legal authorities, and prosecutors' overestimation of the strength of their cases. Tyler highlighted the need for empirical investigations of the CSI effect to determine what influence (if any) shows like *CSI* and *Law & Order* have on the general public.

GENERAL OVERVIEW

The two studies described below assess the extent to which watching television crime dramas influences people's views on forensic evidence. Our objectives were to 1) assess attitudes regarding forensic evidence (e.g., fingerprints), 2) measure the extent to which these attitudes and expectations are linked to television viewing habits, and 3) determine whether there is a causal relationship between viewing *CSI* and perceptions about forensic evidence.

STUDY 1
METHOD

Participants

Participants were 148 people recruited through snowball sampling. Students in a Psychology and Law class were asked to take 5 questionnaires home and have them completed by someone they knew. Participants were told that this was a class demonstration whose purpose was to compare student and non-student knowledge about forensic evidence. Age of participants ranged from 15 to 88 (M = 30.7, SD = 13.92). In total, 77 women and 67 men responded (4 did not indicate gender). Participants represented a wide range of occupations including students, military personnel, medical professionals, teachers, construction workers, banking professionals, and retired individuals.

Materials and Procedure

Participants were provided a description of, and then asked to evaluate, several types of forensic evidence including: DNA, fingerprinting, toxicology, confession evidence, eyewitness evidence, compositional description of materials (e.g., the percentage of base materials found in bullets), arson evidence, physical pathology, ballistics, matching (i.e., fiber), and handwriting analysis. For each type of evidence, participants evaluated the reliability and accuracy of the evidence type, as well as the fairness of a verdict in a situation in which the primary evidence against the defendant was that type of evidence (e.g., toxicology) and the defendant was found guilty. All items were answered on a 7-point scale ranging from 1 (*not at all*) to 7 (*very*). After completing the forensic knowledge items, participants completed an assessment of television viewing habits which asked participants to indicate how many hours per week they watched of 24 popular television shows (*CSI*, *Law & Order*, other crime dramas, sitcoms, dramas, sports, and news shows). Finally, participants provided demographic information.

STUDY 1 RESULTS

To determine whether watching law-related shows was related to judgments of the reliability and accuracy of forensic evidence and fairness of trial outcomes, we conducted a series of regression analyses. First, we obtained an index of the extent to which each participant watched crime dramas by summing the total number of hours that participants reported watching the three *CSI* and three *Law & Order* shows per week (range was 0-15). Next, the index was used, in separate regressions, as a predictor of judgment of the reliability and accuracy of each type of evidence, as well as the fairness of the trial outcome.

Table 1 presents the results of our analyses. In the left column of the table, the evidence types predicted are listed. To the right of the evidence type we provide the beta and t-test for each criterion (reliability, fairness and accuracy) for each of the evidence types. As Table 1 illustrates, viewing crime dramas was related to judgments of the reliability of DNA, arson, compositional, and handwriting analysis evidence such that watching more *CSI* and *Law & Order* was associated with higher reliability ratings for those types of evidence. The effects on reliability ratings for pathology and ballistics evidence were marginal. Interestingly, the reliability of toxicology, fingerprint, confession, matching and eyewitness evidence were unrelated to television crime drama viewing habits. Television viewing habits were related to judgments of the fairness of ballistics and arson evidence, such that viewing crime dramas was related to higher fairness ratings. Fairness judgments of both DNA and toxicology evidence were marginally related to viewing habits. Ratings of the remaining evidence types were not associated with viewing habits. Finally, in terms of accuracy assessments, viewing habits were related to judgments of DNA evidence (and marginally related to judgments of ballistics evidence) such that viewing television crime dramas was positively associated with perceptions of the accuracy of DNA evidence.

Table 1: ***TV watching as a Predictor of Reliability, Fairness and Accuracy of the Forensic Techniques.***

Technique	Item					
	Reliability		Fairness		Accuracy	
	Beta	t-test	Beta	t-test	Beta	t-test
DNA	.17	2.03*	.15	1.86†	.16	1.99*
Fingerprint	.04	.45	.09	1.14	.06	.70
Toxicology	.04	.47	.13	1.64†	-.00	-.02
Ballistics	.15	1.88†	.19	2.29*	.14	1.64†
Arson	.22	2.72*	.19	2.31*	.06	.67
Pathology	.14	1.64†	.08	.92	.08	.93
Confession	.04	.51	.06	.70	.06	.67
Compositional	.18	2.16*	.07	.86	.08	.96
Matching	-.02	-.26	.03	.31	.09	1.05
Handwriting	.18	2.16*	.09	1.10	-.02	-.03
Eyewitness	.02	.26	.06	.73	.05	.63

*$p < .05$; †$p \leq .10$

Across all three categories, watching forensically relevant television programs was most consistently associated with judgments of DNA, ballistics, and arson evidence. Toxicology, pathology, compositional, and handwriting evidence were more sporadically related. Finally, ratings of fingerprint, confession, matching, and eyewitness evidence were unrelated to watching *CSI* and *Law & Order* programs.

STUDY 1 DISCUSSION

These data demonstrate that watching law-related television shows is associated with judgments of the reliability, fairness and accuracy of some types of forensic evidence but not others. What kind of information and misinformation about forensic techniques are people gleaning from television crime dramas? Are the results of Study 1 a function of the content of these shows? Because the survey methodology used in Study 1 precludes us from making any causal inferences, we conducted Study 2.

STUDY 2
METHOD

Participants

We recruited 190 undergraduate students enrolled in introductory and sophomore-level psychology courses

to participate in this study. Fifteen participants failed to provide valid data, 13 did not complete the assigned task, and two withdrew from the study. Our final sample consisted of 160 participants who were mostly Caucasian (80.7%) and female (72.2%), with a mean age of 20.6 (*SD* = 2.8).

Procedure

Participants were recruited to participate in a study of "opinions about the media". Individuals were prescreened to ensure that they were not regular watchers of *CSI* and *Law and Order*. Only people who had seen the program "less than a few times" were invited to participate in the study. After arriving at the lab, participants were assigned randomly to experimental conditions (0, 4, or 8 episodes of *CSI)* and were provided with DVD disks containing the appropriate number of *CSI* episodes.

To maximize external validity, we instructed participants to view the episodes in the comfort of their own homes or wherever they normally watch television. We instructed participants not to engage in any cognitive tasks (e.g., homework or leisure reading) while viewing the episodes, but that it was acceptable to engage in non-cognitive pastimes while they watched (e.g., snacking). In order to ensure that participants in the *CSI* condition watched the shows, reduce any potential demand characteristics, and enhance the cover story, participants each received viewing questionnaires corresponding to each assigned episode. These questionnaires included 8 to 10 multiple choice or fill-in-the-blank items dealing with the story line of the corresponding episode. They were instructed to complete the viewing questionnaire after watching the assigned episode and told that that their responses would be checked for accuracy.

Participants were allowed two weeks to watch the episodes. Participants then returned to the laboratory where they completed a series of questionnaires, including the key dependent measures (i.e., judgments regarding forensic techniques). Participants in the zero-episode control condition completed these measures upon their initial arrival (and only visit) at the lab.

Materials

CSI. Individuals were randomly assigned to a starting point among the 6 DVDs from the first season of the original *CSI* show (each DVD contains 4 episodes of *CSI*); participants were assigned a contiguous series of episodes (i.e., participants in the 8-episode condition received 2 consecutive DVDs with 4 episodes each).

Assessments of Forensic Evidence. The dependent measures were very similar to Study 1 and included items on the accuracy and reliability of DNA, fingerprint, ballistics, matching and handwriting analysis. In addition, participants were asked a general item on the extent to which they felt that evidence used by law enforcement was reliable. We expected that participants who viewed *CSI* would have more favorable ratings on all of these items.

STUDY 2 RESULTS

Unfortunately, but perhaps not unexpectedly due to the nature of the task, attrition was highest in the 8-episode group. Moreover, participants in the 8-episode condition did not always watch all 8 episodes. Thus, we combined participants in the 4 (n = 63) and 8-episode (n = 48) conditions. Importantly, analysis revealed that there were no significant differences between the responses of people in the 4-episode and 8-episode conditions.

One-way ANOVA analyses revealed that compared to those who did not view *CSI*, participants who watched *CSI* reported higher estimates of the reliability of DNA tests, and the accuracy and reliability of fingerprint analysis (see Table 2). Furthermore, participants in the *CSI* condition were also more likely to endorse the item concerning the reliability of evidence used by law enforcement[b]. As mentioned above, we also measured participants' estimates of the accuracy and reliability of other types of forensic evidence, specifically handwriting analysis, hair and fiber evidence, and firearms analysis. Participant judgments of these forensic techniques did not differ between participants who viewed *CSI* and those in the control condition.

Table 2: ***Effects of exposure to CSI.***

Item	Non-CSI mean (n=66)	CSI mean (n=111)	T	df	r
Overall, how reliable do you think DNA analysis is?	6.33	6.66	3.13*	175	.230
Overall, how accurate do you think DNA analysis is?	6.53	6.68	1.59	175	.119
Overall, how reliable do you think fingerprint analysis is?	5.97	6.24	2.02*	175	.151
Overall, how accurate do you think fingerprint analysis is?	6.03	6.30	2.12*	175	.158
The scientific evidence used by law enforcement officers is very reliable.	4.70	5.06	2.23*	175	.167

*Note. All measures were on 7-point bipolar scales with higher values indicating greater accuracy/reliability/fairness estimates. These effects were not significantly reduced when prior exposure to CSI was entered as a covariate. *p < .05*

b As mentioned above, we recruited participants who reported minimal exposure to CSI before coming to the study. Nonetheless, in order to control for any effects of prior exposure, we re-analyzed the data including prior exposure to CSI as a covariate. There were no significant differences in the outcomes of interest.

STUDY 2 DISCUSSION

The results of Study 2 suggest that the relationship between watching *CSI* and beliefs about certain types of forensic evidence is at least partially causal. However, it is clear that watching *CSI* does not equally influence judgments of all forensic techniques. In this study, judgments of both DNA and fingerprint evidence were positively affected by watching *CSI*. One possible explanation stems from the fact that the two types of evidence for which we see significant differences, DNA and fingerprint analysis, are also the types of evidence most commonly portrayed on the show (according to our recent content analysis; see Table 3, reproduced from Patry et al., 2007). Overall however, participants exposed to CSI did have stronger beliefs in the reliability of evidence use by law enforcement.

Table 3: ***Percentage of techniques depicted in Season 1 episodes of CSI (Reproduced from Patry et al., 2006)***

Technique	% of techniques (across shows)
DNA	18.9%
Printing (shoe or finger)	12.0%
Chemical makeup	11.2%
Physical Matching	8.6%
Ballistics	6.9%
Recreations	6.4%
Hair and Fiber	5.6%
Presence of blood	5.6%
Tool Mark	3.9%
Molds	2.1%
Tread Analysis	1.7%
Forensic Dentistry	1.3%
Photography	0.9%
Forensic Entomology	0.9%
Toxicology Screen	0.4%
Other	13.7%

GENERAL DISCUSSION

The two studies presented here serve as a first attempt at understanding the nature and consequences of the purported CSI effect. Study 1 demonstrated that self-reported viewing of *CSI* and *Law & Order* was related to multiple judgments about the quality and usefulness of a variety of types of forensic evidence, but viewing habits were not related to opinions about non-forensic evidence. Study 2 demonstrated that at least to some extent, the relationship between viewing *CSI* and attitudes toward different forensic techniques is causal. People who watched *CSI* rated police evidence (specifically, DNA and fingerprint evidence) as more reliable.

Is there a CSI Effect?

Does the *CSI* effect actually exist? Our preliminary, empirically-rooted response is "yes". Our data suggests that watching television crime dramas such as *CSI* is related to favorable judgments of forensically relevant evidence, but not for more traditional types of evidence such as eyewitness and confession evidence. These data indicate that people who watch *CSI* judge forensic evidence to be more reliable and accurate, and they may be more willing to convict based on forensic science than other non-scientific forms of evidence. These findings support Tyler's (2006) speculation that watching *CSI* could contribute to a pro-prosecution bias, but conflict with how the media has described the CSI effect (pro-defense bias). However, it is not yet clear how watching *CSI* influences people's expectations of the police and police investigations, and whether these expectations might in turn might affect jury deliberations and outcomes.

Public Beliefs and Expectations

The fact that the media can influence the public's beliefs is not new (e.g., Kovera, 2002; Vidmar, 2002). Yet, our research is novel because it demonstrates that generic information about forensic evidence can influence the attitudes and beliefs of potential jurors. As another example of this phenomenon, Wijdicks and Wijdicks (2006) recently found that television and movie portrayals of medical patients in comas are unrealistic and contribute to distorted beliefs and expectations a patient's family members might have about the patient's condition.

People who watch television programs such as *CSI* may develop an unrealistic assessment of the quality, availability, and diagnosticity of forensic evidence. Jurors who watch television crime dramas may have unreasonable expectations of the evidence that police should be able to collect and analyze from the crime scene. Interestingly, in another study we found that over 90% of forensic professionals reported that since the advent of programs such as *CSI*, the public expects more clear-cut and decisive evidence about what happened at a crime scene (Stinson, Patry, & Smith, 2007).

Unrealistic media portrayals can have a reality-distorting effect on public perceptions, but it is not yet clear whether these general beliefs can actually influence trial outcomes. It is possible that deliberation process may serve to correct this effect. Future research should continue to examine this issue.

Legal Professionals' Perceptions

What is clear from the Maricopa County study (2005) is that legal professionals believe that shows like *CSI* influence jurors. Indeed, the Maricopa County Attorney's Office has developed a new office policy to deal with the

purported CSI effect that includes questioning potential jurors about their television viewing habits and addressing this issue during opening and closing arguments. As further evidence that legal professionals are not only concerned about this issue but also intent on finding solutions, the 2006 Summer Conference of the Prosecuting Attorneys' Council of Georgia was titled "Prosecuting in the real world: Overcoming the CSI effect."

These lawyers are not alone. Forensic professionals report that they too have changed the way they practiced or investigated their cases because of television crime dramas (Stinson et al., 2007). Specifically, forensic professionals reported that the public and other legal professionals expect them to find and process more evidence (even when the probative value of more evidence is moot). In other words, the public seems to have increased expectations of what the police can and should do, and how quickly evidence is gathered and analyzed. Some of these expectations appear to be unrealistic.

Thus the *perception* that legal dramas are influencing the public is clear. Legal professionals seem to believe this is the case, and they are changing their in-court behavior to counter the CSI effect, even though there is little if any empirical evidence to elucidate the nature of this effect. Thus it is important to understand the nature of the CSI effect and develop appropriate, legally viable interventions. Developing strategies to deal with a "problem" is premature when the nature of the problem is not yet clear (Tyler, 2006; Wegener et al., 2000).

LIMITATIONS AND FUTURE DIRECTIONS

Our research has only begun to scratch the surface of this issue. Although we have identified some of the attitudinal and judgmental implications of watching *CSI* and other legal dramas, there are many other directions for research.

Causal Relations

Study 2 is important because it demonstrates that watching *CSI* changes people's attitudes and beliefs regarding forensic evidence. In Study 1, we found that some people watched up to 15 hours per week of the most popular legal crime dramas. Nonetheless, we were able to show significant effects of viewing as few as 4 episodes of *CSI*. A typical season of a legal drama will have up to 26 episodes, and many of these programs (such as a number of the *CSI* and *Law & Order* iterations) can be seen daily in syndication. However, these effects were far from universal across the dependent measures. Perhaps watching more episodes would strengthen the effects we obtained. Alternatively, attitudes and expectations may be shaped after watching a relatively small number of episodes. It would be interesting to assess the impact of watching these programs on a variety of other measures, such as their expectations of the police and their investigations.

Are There Multiple Facets of the CSI Effect?

We suspect that the CSI effect may be multi-faceted, affecting various "players" in our legal system, including criminal defendants, crime victims, and police investigators. One prominent criminal defense lawyer told us that these television crime dramas are affecting defendants' notions of what effective advocacy looks like (J. Arnold, personal communication, 2005). He commented that some of his clients deemed his advocacy to be poor unless he behaves like lawyers portrayed on television do (e.g., aggressively insisting that his client is innocent). Are television crime dramas driving criminal defendants' assessments of the competence and effectiveness of their legal counsel? If so, how are these competence assessments affecting defendants' legally-relevant decisions (e.g., their decision to fire their lawyer, their decision to represent themselves)? Along a similar vein, crime victims' expectations about police investigations may be unrealistically skewed by watching *CSI* and related television crime dramas. Victims of home burglaries may feel that police investigators are not doing their job if officers do not employ the full range of forensic techniques demonstrated in these shows (T. McCullough, personal communication, 2006). How might these assessments of police officers (including their competence) affect people's perceptions of the fairness of and trust in our criminal justice system? These are questions worthy of empirical scrutiny.

Juror Expectations versus Reality

Future studies should aim to assess the public's expectations about police investigative practice. On shows such as *CSI*, seemingly limitless resources are devoted to investigating every case thoroughly, regardless of the severity of the crime. Constraints on resources make this approach impossible for police departments. The theft of a car radio will typically elicit a different level of forensic analysis than a sexual assault or murder. Presumably, if *CSI* and other legal dramas influence public expectations, regular viewers of these programs might expect a higher (unrealistic) level of evidence collection than non-viewers of these programs.

The data we have presented here represent a preliminary attempt to determine the nature and consequences of the CSI effect. Three things are clear given this data: 1) the CSI effect exists in that watching television crime dramas influences people's beliefs about forensic evidence; and 2) this effect is at least partially causally related. However, it is not yet clear how broad-based the

CSI effect is, how viewing forensic programming influences people's expectations about police investigative practices, and whether this effect manifests itself in court. Although we feel the present research provides a start to the investigation of how legal dramas influence juror beliefs, there are a number of directions in which research on the CSI effect can be expanded.

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