

The Influence of Deceptive Forensic Testimony on Jury Decisions: The CSI Effect

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**ABSTRACT**

The goal of this study was a better understanding of the impact of forensic evidence on jury decisions. One additional factor integrated was viewership of *CSI* and other crime drama television shows (hereafter *CSI*). Using an actual case from the Innocence Project as a guide, subjects read a trial summary that utilized a forensic expert's testimony to convict an alleged rapist. This testimony was varied experimentally so that it was either honest or misleading in one of three ways. Subjects then were asked a series of questions regarding their views of the case. Subjects who were exposed to the most severe deception were most likely to convict, however, viewership of *CSI* shows had a moderating effect. It is likely that frequent *CSI* viewers were more critical of the forensic evidence.

**Key words:** forensic science, CSI effect, jury, testimony

Toward an Understanding of the CSI Effect and Forensic Sciences: Communication and the Law

Because of their presumed expertise, authority figures tend to be very influential (e.g., see Milgram, 1974), and this factor has important implications for the manner in which jurors decide legal cases (Cutler et al. 1989). In a society rife with those claiming authoritative knowledge in various arenas, people often look to those who are labeled as more credible to guide their decision-making. These authorities include forensic scientists, who might be the most important witnesses in certain trials (Garrett and Neufeld 2009).

Problems arise when experts lack expertise in the domain in which they are testifying, trustworthiness, or both. With respect to expertise, a forensic scientist on the stand may lack experience or competence in their field, or lack sufficient specialized knowledge necessary to perform the specific tests required in a given case. Limitations such as these are often exposed in cross-examination, during which the opposing attorney can challenge the expert witness's education, experience, procedure, and conclusions. Some attorneys may, however, fail to expose weaknesses in these areas.

With respect to trustworthiness, the extent to which a forensic scientist is trustworthy is unclear. By taking an oath to tell the truth when testifying, it is accepted by law standards that witnesses are telling "the whole truth and nothing but the truth." This assumption might be unwarranted. For example, Garrett and Neufeld (2009) found that in 137 cases in which the defendant was later exonerated and forensic testimony was involved in the original case, 82 cases involved invalid forensic testimony. In this set of

cases, 72 different forensic scientists were employed. These experts' mistakes can be attributed to a full spectrum of ranging from duplicity to egregious errors in judgment.

Invalid testimony could be exposed during cross-examination or through the use of obtaining the testimony of an expert witness by the opposing attorney. But unlike the expertise of the witness, attorneys rarely examine the trustworthiness of testimony as closely (Garret and Neufield 2009). When rival attorneys challenge the trustworthiness of expert forensic witnesses' testimony, judges tend to protect the witnesses' credibility (Imwinkelried 2000). Moreover, underfunded public defenders rarely have the resources to call a counter forensic witness to challenge the prosecutor's forensic witness's testimony (Garrett and Neufield 2009). Consequently, the testimony of forensics experts is likely to remain unchallenged, so that from the perspective of jurors there is little reason not to believe it. Given the lack of reason to disbelieve, it is likely to be embraced (Gilbert, 1991).

Compounding these matters is the current saturation of the television market with crime dramas largely centered on forensic science. On the Internet Movie Database, some of the current highest user-rated TV shows include *Bones*, *Dexter*, *NCIS*, *CSI*, and *The Mentalist*, all of which involve extensive use of various forms of forensic science. The popularity of these shows has resulted in many Americans attending to the details of forensic science.

Cole and Viso-Dilla (2006) refer to the hypothesized effect of this influx of crime-solving shows as the "CSI effect." This effect might, as discussed by Cole and Viso-Dilla (see also, Saks and Schweltzer, 2007), assume any of a number of forms, six of which are discussed subsequently.

First, the *professor effect* involves to the recent migration during the last decade of university students to majors that prepare them to enter the field of forensics science. This change may well be attributable to the popularity of *CSI* type shows with younger Americans.

Second, the *police chief effect* involves a possible outcome of frequent crime drama viewing that may have decidedly anti-social effects. It refers to a belief among certain members of the law enforcement community that these shows may teach criminals practices that are effective means of fooling law enforcement or hindering investigations.

Third, *CSI*'s creator, Anthony Zuiker, proposed what has become known as the *producer effect*. The claim made by proponents of the producer effect is as a result of frequent viewing jury members become better-informed and more knowledgeable about forensic science.

Fourth, the *defense effect* suggests that frequent crime drama viewing results in an advantage for prosecutors. Those espousing this point of view claim that because they possess more resources, prosecutors are more likely to be able to obtain and present forensic evidence. They then argue that because jurors find such evidence highly credible, juries are more likely to convict when forensic evidence is presented.

Although interesting, these four effects address either issues that are tangential to trial outcomes or that might have very indirect effects on trial outcomes. The experiment reported subsequently, however, focuses on effects that might impact trial outcomes more directly.

One of these effects is the *strong prosecutor effect*. This effect refers to the possibility that prosecutors will feel pressured to provide forensic evidence in a trial whenever possible and regardless of necessity, and that a jury composed of frequent *CSI* viewers is likely to acquit if such testimony is omitted. A second prong of this argument is that jurors influenced by crime drama viewership may be more critical of forensic evidence when it is presented than would those who view crime dramas with substantially less frequency.

The other, *the weak prosecutor effect* asserts that as a result of anticipating that jurors watch crime dramas frequently prosecutors are required to spend more resources, including time during the trial, explaining why they did not include forensic evidence. Presumably the time and other resources used to explain the absence of forensic evidence could be employed more effectively to explain the evidence available to them, some of which might be of greater probative value.

To provide an initial test of the effect of untrustworthy forensic evidence jurors were exposed to testimony pertaining to the case of Alejandro Dominguez. Dominguez was a 16-year-old Mexican immigrant accused of raping a white woman in Chicago. A critical piece of evidence was presented by a forensic serologist testifying for the prosecution, and Dominguez was convicted after misleading testimony by this scientist. An investigation done a decade later by the Innocence Project cleared Dominguez and exposed the deceptive testimony (Innocence Project 2002).

It is expected that this result could be replicated, so that subjects who are exposed to similarly misleading testimony would be likely to convict. It is also expected that as this testimony becomes more severely deceptive, the likelihood of conviction increases.

Finally, because they are likely to have a more positive impression of forensic experts, and thus are more likely to believe their testimony, those subjects with frequent *CSI* viewership are generally expected to convict with higher probability and to find the forensic scientist to be more trustworthy than those with less frequent *CSI* viewership.

## METHODS

Subjects for this study were 163 students drawn from multiple sections of a communication course at a large Midwest university during the fall semester of 2012. They were assigned randomly to one of four conditions: total honesty, credential questioning, quantity deception, and quality deception.

Subjects were first asked to read the same summary of a criminal trial. Only the last paragraph was varied across conditions. All subjects read the following summary:

A sixteen-year-old man is charged with raping an 18-year-old woman. He is the neighbor of the victim and lives only a few doors down from her in an apartment complex in Chicago. He was arrested because of his proximity to the victim and because he matched her initial description, although the woman is unable to definitively identify him as the perpetrator. He doesn't have an alibi, he has not confessed to the crime, and the only hard evidence in the case known to the jury is a semen sample obtained from the victim's underwear.

The prosecution's opening statement appealed primarily on providing justice for the victim, and that the evidence pointed to the defendant as the only perpetrator. The defense's opening statement asserted that the evidence was

circumstantial, and reminded jurors of the inability of the victim to identify the defendant.

The limited evidence in the case summaries was designed to counterbalance the witnesses' testimony. Testimony for the prosecution was met with defense counterarguments regarding the circumstantial nature of the testimony, and was designed to raise reasonable doubt. The defendant was portrayed relatively neutrally, with no prior crimes but without remarkable qualities. In contrast, the victim's identity was protected. The prosecution's final piece of evidence was the semen sample.

When presenting this evidence, the prosecution called a forensic scientist. This expert testified that he worked in the Northern Illinois Crime Lab as a forensic serologist (someone who specializes in the study of bodily fluids and microscopic evidence analysis). He also testified that he had performed hundreds of relevant tests and that he had degrees in criminal justice and forensic science, both from George Washington University.

His subsequent testimony indicated that he had obtained multiple samples (3) of semen from the victim's underwear and had analyzed it to reveal that the genetic material in all three samples was marked by blood Type H. He explains that Type H is a foundational blood type in fetuses, equivalent to Type O in adults. In effect, a semen sample marked by blood Type H will develop into Type O, Type A, Type B, or Type AB depending on the markers on the cells.

He continued to explain that when he performed similar tests on a blood sample obtained from the defendant, he could not eliminate him as the source of one of the stains from the victim's underwear but could eliminate the victim herself as the source. For the other two samples he could eliminate neither the defendant nor the victim as the source.

The last paragraph of the summary was assigned randomly across the four conditions. Those subjects in the *Honest Condition* read:

Following this testimony, the defense calls a counter witness with similar credentials who is shown to have performed tests exactly like this hundreds of times. He testifies that the sample that could not eliminate the defendant as the source would be unable to eliminate 67% of all men. To summarize, he testifies that this critical sample could be matched to two-thirds of all men. His argument holds up in cross-examination. Following this testimony and closing statements that closely reflect what is argued in each opening statement, the jury is sent to deliberate.

Those subjects in the *Credential Condition* read:

In cross-examination, defense questions credentials and experience. The witness elaborates on 12 years of experience in the Northern Illinois Crime Lab and again estimates that he has conducted tests such as this hundreds of times. Defense questions validity of tests, and witness describes experience in the field again and

personal accuracy regarding tests such as these. His argument is shown to be strong.

In the *Quantity Deception Condition* subjects read:

Defense questions test itself as an identifier. Witness reiterates that the sample from the victim's underwear showed sperm cells with markers consistent with the defendant's blood sample. Defense asks whether the markers from the sperm specifically match the markers from the defendant's blood sample, and expert confirms this is the case. Defense questions whether this definitively means that the defendant is the source of the semen from the victim's underwear, to which the witness responds that it doesn't, but there is a high probability that he is the source, based on the results of the test.

And, finally in the *Quality Deception Condition* subjects read:

Defense questions test itself as an identifier. Witness reiterates that the sample from the victim's underwear showed sperm cells with markers consistent with the defendant's blood sample. Defense asks whether the markers from the sperm specifically match the markers from the defendant's blood sample, and expert confirms this is the case. Defense questions whether this definitively means that the defendant is the source of the semen from the victim's underwear, to which the witness responds that based on the results of the test, it is their professional opinion

that the defendant is the only possible source for this sample of semen. The markers on the sperm cells exactly match those from the defendant's blood sample, which conclusively identifies the defendant as the source of the semen in the victim's underwear.

After reading this summary, the subjects were presented with a series of questions regarding the verdict and confidence in decision, trustworthiness of the forensic expert, and viewership of CSI shows. Other demographics were recorded as well. The specific items employed are presented in Appendix A. At the completion of the survey, subjects were debriefed by providing them with a brief summary of the real case of Alejandro Dominguez.

## RESULTS

The probability of a verdict of "guilty" is partitioned by condition and is presented in Table 1. From this table one may observe that the probability of guilt increased almost proportionally from the honesty, to the credentials, quantity, and finally quality conditions. A chi square analysis of the linear trend was consistent with this observation,  $\chi^2(1)=6.12$ ,  $p=.01$ ,  $r=.19$ .

These data are also decomposed by frequency of *CSI* viewing and presented in Table 2 and 3. As one may observe the probability of a guilt verdict decreases substantially with increased *CSI* viewing, and statistical analyses are consistent with this observation,  $\chi^2(3)=10.52$ ,  $p=.01$ ,  $r=-.20$ . The primary difference in this table is between those who do not watch *CSI* and those who do, regardless of the frequency with which they view. Thus, the viewing data were collapsed into these two categories. The

subsequent chi square analysis produces evidence of a substantial effect,  $\chi^2(1)=6.42$ ,  $p=.01$ ,  $r=-.25$ ,  $OR=2.92$ .

Subsequent analyses examined the multivariate effect of both condition and viewing on verdict. There was no evidence that these variables combined non-additively to affect verdict. Moreover, there was no evidence of sex differences in verdict. Finally, there was no evidence that condition, viewership, sex, or any non-additive combination of these variables affected confidence in judgment.

## DISCUSSION

This experiment produced both expected and unexpected results. The prediction that as deception increases the likelihood of conviction increases proportionally was consistent with the data. The blatant lie in the qualitative condition is very convincing and makes the defendant appear very much guilty. It is very likely that subjects in this condition took the forensic scientist's claim at face value and recognized his expertise and trustworthiness as legitimate. The conditions involving a deception of quantity and the defense merely questioning the scientist's credentials showed a more modest effect, with slightly higher proportions of guilty verdicts. This outcome is once again likely a result of the forensic expert being judged as highly knowledgeable and trustworthy by the subjects, although his testimony is less damning evidence against the defendant.

The other more interesting effect is the effect of CSI viewership. The subjects who did not watch crime dramas were almost three times more likely to convict the defendant than were those who did watch crime dramas. These data are consistent with a producer effect. Modifying this idea slightly, viewers of crime dramas may be more critical of forensic evidence than those who do not watch those shows. If these viewers

perceive forensic evidence such as the evidence presented in these scenarios as less probative, then it logically follows that they are less likely to convict in a case in which this type of evidence is central to the case.

In retrospect, it would have been preferable to have been able to examine these effects in a natural setting, i.e., in a courtroom. Factors such as the amount of testimony, the length of each witness' testimony, the number of witnesses, and numerous other factors might require modifying some of the claims that follow from the results observed in this experiment.

Nevertheless, the general methodological strategy pursued in this experiment has considerable flexibility to pursue this question, not only in natural settings, but also by varying additional parameters of the trial. Particularly, altering the nature of the deception, the type of forensic evidence introduced at trial, the quantity of forensic evidence introduced at trial, controlling more rigorously the viewing behavior of the mock jurors, and extending the experiment by employing a wider age range of subjects are especially interesting, and potentially profitable, variations.

The implications of these findings extend into the field of trial consulting and the justice system in general. Through these results and the results of other experiments, it has become more plausible that forensic evidence is very probative for jury members. Perhaps the most dramatic finding from this experiment is that more than 30% of the subjects voted to convict when the expert witness admitted the limitations of his test outcomes. Furthermore, even frequent viewers of *CSI* convict at a relatively high rate across conditions. Perhaps even frequent *CSI* viewers are insufficiently critical of questionable forensics testimony. This point is particularly salient for trial consultants in

cases in which forensic evidence plays a critical role in the case. Future research performed on cases such as this one have the potential to produce important findings concerning at what point forensic evidence can tip the decisions of jurors.

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## Appendix A: The Content of the Questionnaire

- If you were a member of this jury, what would your vote regarding verdict be?
  - Guilty
  - Innocent
- On a scale of 1-10 (10 being the most confident), how confident in this verdict are you?
  - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
- On a scale of 1-10 (10 being the most trustworthy), how trustworthy do you think the forensic scientist is in his testimony?
  - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
- On a scale of 1-10 (10 being the strongest), how strong of a case do you think the prosecution has?
  - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
- On a scale of 1-10 (10 being the strongest), how strong of a case do you think the defense has?
  - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
- Do you regularly watch television shows that involve criminal investigations and include forensic science? If so, how often do you watch them?
  - I do not watch them, <2 times a week, 3-5 times a week, >6 times a week
- What is your gender?
  - Male
  - Female

**Table 1 – Probability of Guilt for Each Condition**

	%G	N
Honesty	31.71%	41
Credentials	41.94%	31
Quantity	50.98%	51
Quality	57.50%	40
		163

**Table 2 – Probability of Guilt by Viewership and Condition**

	honesty	credentials	Quantity	quality
Infrequent (>3 hours)	.29	.44	.55	.61
Frequent (3+ hours)	.5	.25	.33	.43

**Table 3 – Percent Delivering a Guilty Verdict by Viewership – All Conditions**

	0	<3	3-6	6<
%G	63%	36%	40%	33%
N	59	78	20	6

**About Clint Townson:**

Clint Townson is an undergraduate communication student, set to graduate in December 2013. He hopes to enroll in a PhD program for the following fall. He wants to continue research into the field of communication and the law as part of his interest in trial consulting as a career. This project was his first foray into the CSI Effect, but he has a strong interest in the topic and hopes to continue researching it.