

A Study of Juror Expectations and Demands Concerning Scientific Evidence: Does the “CSI Effect” Exist?

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Many prosecutors, judges and journalists have claimed that watching television programs such as *CSI: Crime Scene Investigation*¹ has caused jurors to wrongfully acquit guilty defendants when the prosecution presents no scientific evidence in support of the case. However, the academic legal-social science community has only just begun to study whether this purported “CSI effect” exists. In a recent article, Professor Tom R. Tyler argued that without empirical studies, claims about the existence of the effect were mixed.² He concluded that it was theoretically just as probable that the effect could both raise and lower the bar in terms of jurors’ likelihood to acquit.³

This article is the first empirical study of jurors designed to investigate the existence and extent of the “CSI effect.” The authors conducted a survey of 1027 persons who had been called for jury duty in a Michigan state court during a nine-week period in June, July and August, 2006. This survey examined the summoned jurors’ demographic information, television viewing habits, their expectations that the prosecutor would produce scientific evidence and whether they would demand scientific evidence as a condition of a guilty verdict.

1. Hereinafter “*CSI*.”

2. Tom R. Tyler, *Viewing CSI and the Threshold of Guilt: Managing Truth and Justice in Reality and Fiction*, 115 YALE L.J. 1050, 1083-84 (2006).

3. *Id.* at 1084.

This study of juror expectations and demands about scientific evidence in relationship to other types of evidence, such as circumstantial or eyewitness, confirmed Professor Tyler's conclusions that the CSI effect was "mixed" and that it did not always work in the direction hypothesized by complaining prosecutors and judges. While the study did find significant expectations and demands for scientific evidence, there was little or no indication of a link between those inclinations and watching particular television shows. This article suggests that to the extent that jurors have significant expectations and demands for scientific evidence, those predispositions may have more to do with a broader "tech effect" in popular culture rather than any particular "CSI effect." In other words, if there is a media effect on juror expectations, it is an "indirect" effect and part of a larger transformation occurring in popular and technological culture. Accordingly, when examining the interactions between televised dramas and juror expectations and/or behavior, scholars and practitioners must be aware that the social construction or the social perception of the "law in action" cannot be separated from the symbolic representations of "law and order" as mediated by mass communications and popular culture.⁴

Throughout mediated society, individuals and groups form a wide range of perceptions about "crime," "criminals," and the "administration of justice" that often vary based on demographics and life experiences. These perceptions are influenced by the different ways in which the interplay between criminals, witnesses, victims, and crime-fighters are portrayed in both fiction and nonfiction alike. In turn, the mass communications or representations of these perceptions construct a cultural awareness of adversarial justice that transcends or is bigger than any alleged "CSI effect," mixed or otherwise, acting alone.⁵ This article contends that any increased expectations and demands imposed by jurors on the legal system are legitimate, and constitutionally based, reflections in jurors of changes in popular culture and that the criminal justice system must adapt to and accommodate, rather than criticize or question, the jurors' expectations of and demands for scientific evidence.

4. See generally MEDIA, PROCESS, AND THE SOCIAL CONSTRUCTION OF CRIME: STUDIES IN NEWSMAKING CRIMINOLOGY (Gregg Barak ed., 1994) (analyzing how the media contributes to and reflects the dominant cultural ideologies about crime and crime control).

5. For an analysis of how class, race, and gender were represented in the highest profile criminal trial in American history by the mass media, see REPRESENTING O.J.: MURDER, CRIMINAL JUSTICE, AND MASS CULTURE (Gregg Barak ed., 1996).

I. FRAMING THE PROBLEM

Film and television have long found fodder in courtroom dramas.⁶ However, in recent years the media's use of the courtroom as a vehicle for drama not only has proliferated, it has changed its focus. More of the recent media representations of the courtroom are based on actual cases, reflecting a seeming fascination with our criminal justice process.⁷ The blurring of reality with fiction begins with the so-called crime magazine television shows, such as *48 Hours Mystery*, *American Justice*, and even *Dateline NBC* on occasion. These shows portray actual cases but only after editing and narrating for dramatic effect.

The next level of reality distortion about the criminal justice system consists of the abundant and extremely popular crime fiction television programs. The ubiquitous *Law & Order* promotes its plots as "ripped from the headlines," and indeed it and other shows seem to replicate immediately some issue in an actual case that was widely disseminated elsewhere in the media.⁸

The most popular courtroom portrayals, whether actual, edited or purely fictional, have been about the use of new science and technology to solve crimes. *CSI* has been called the most popular television show in the world.⁹ It is so popular that it has spawned other versions of itself that dominate the traditional television

6. See generally MICHAEL ASIMOW & SHANNON MADER, LAW AND POPULAR CULTURE (2004) (chronicling the relationship between law, film, and television).

7. See, e.g., CourtTV.com, Court TV Extra, <https://secure.courtstv.com/extra/signup/benefits.html> (last visited Dec. 19, 2006) Court TV now makes live "gavel to gavel" Internet coverage of ordinary trials available on a subscription basis. *Id.* Court TV Extra provides "[a]n unprecedented opportunity to watch trials online" for \$5.95 per month. *Id.*

8. The plots of many episodes resemble real cases. For example, in the 1998 episode "Tabloid", in which a woman is killed in an auto accident after being pursued by a gossip reporter. This followed the similar death of Princess Diana the previous summer. This "ripped from the headlines" nature can also be seen in the opening credit sequence which flows from newspaper headlines, print copy, and photographs into photographs of the actors that evolve from newspaper halftones into high resolution photos. Promotional advertisements of episodes with especially close parallels to real-life cases often use the actual phrase "ripped from the headlines," although a text disclaimer within the actual episode emphasizes that the story and its characters are fictional. The format lends itself to exploring different outcomes or motives that similar events could have had under other circumstances.

Wikipedia.org, Law & Order, http://en.wikipedia.org/wiki/Law_&_Order (last visited Dec. 19, 2006).

9. *CSI Show 'Most Popular in World,'* BBC NEWS, July 31, 2006, <http://news.bbc.co.uk/2/hi/entertainment/5231334.stm>.

ratings.¹⁰ Its success has also produced similar forensic dramas, like *Cold Case*, *Bones*, *Numb3rs*, and many others.

Much of the recent concern about the impact of mass media on the criminal justice system has been focused on these programs. Both prosecutors and judges have observed that the "CSI effect" has led jurors to demand more from the prosecution in the way of scientific evidence and to "wrongfully" acquit defendants when such evidence is not presented.¹¹ The popular media has been quick to repeat the complaints.¹² The actual existence of such a "CSI effect," however, is

10. For example, for the week of October 1, 2006, the Nielsen ratings indicated that the top twenty most watched programs included: (#1) CSI; (#5) CSI Miami; (#8) Criminal Minds; (#10) CSI New York; (#17) Without A Trace; (#18) Cold Case; and (#20) Law & Order Special Victims Unit. See The TV IV, Nielsen Ratings, 2006 http://tviv.org/Nielsen_Ratings/Historic/Network_Television_by_Week/2006#October (last visited December 20, 2006).

11. See Jamie Stockwell, *Defense, Prosecution Play to New 'CSI' Savvy: Juries Expecting TV-Style Forensics*, WASH. POST, May 22, 2005, at A1, available at <http://www.washingtonpost.com/wp-dyn/content/article/2005/05/21/AR2005052100831.html>.

12. See Tresa Baldas, *Lawyers Report Jurors Gone Wild*, THE NAT'L L.J., May 20, 2005, available at <http://www.law.com/jsp/article.jsp?id=1116493511186>; Andrew Blankstein & Jean Guccione, "CSI Effect" or Just Flimsy Evidence? *The Jury is Out: The Blake Case Raises the Issue of Whether Forensic Shows Influence How Much Proof is Needed*, L.A. TIMES, Mar. 18, 2005, available at 2005 WLNR 233341179; "CSI Effect" Making Cases Hard To Prove: *Lawyers, ABC NEWS ONLINE*, Sept. 24, 2005, <http://www.abc.net.au/news/newsitems/200509/s1467632.htm>; Linda Deutsch, *TV Distorting Jurors Expectations?*, SEATTLE TIMES, Jan. 15, 2006, available at 2006 WLNR 836801; Karen Florin, *Crime TV: A Bad Influence on Juries?*, THE DAY (New London, CT), July 29, 2006; Robin Franzen, "CSI" Effect on Potential Jurors Has Some Prosecutors Worried, SAN DIEGO UNION-TRIBUNE, Dec. 16, 2002, at D6, available at 2002 WLNR 11197396; Amy Lennard Goehner et al., *Where CSI Meets Real Law and Order: Ripple Effect*, TIME, Nov. 8, 2004, at 69, available at www.time.com/time/archive/preview/0,10987,995588,00.html; Vince Gonzales, *Prosecutors Feel the "CSI Effect,"* CBS NEWS, Feb. 10, 2005, www.cbsnews.com/stories/2005/02/10/eveningnews/main673060.shtml; Max Houck, *CSI: The Reality*, SCI. AM., July 2006, available at <http://www.sciam.com/article.cfm?chanID=sa006&articleID=000394C8-1227-1493-906183414B7F0162>; *Justice Under the Microscope*, N.Y. TIMES, May 16, 2005, at A20, available at 2005 WLNR 7696471; Stefan Lovgren, "CSI Effect" is Mixed Blessing for Real Crime Labs, NAT'L GEOGRAPHIC NEWS, Sept. 23, 2004, http://news.nationalgeographic.com/news/2004/09/0923_040923_csi.html; Paul Rincon, *CSI Shows Give 'Unrealistic View,'* BBC NEWS, Feb. 21, 2005, <http://news.bbc.co.uk/2/hi/science/nature/4284335.stm>; Kit R. Roane, *The CSI Effect*, U.S. NEWS & WORLD REP., Apr. 25, 2005, at 48, available at <http://www.usnews.com/usnews/culture/articles/050425/25csi.htm>; Ian Robertson, *Courts Feeling CSI Effect - Prosecutors Say Jurors Want More Forensic Evidence Than Ever Before Because of Hit Television Dramas*, TORONTO SUN, Jan. 4, 2006, available at http://www.fradical.com/Courts_feeling_CSI_effect.htm; *The CSI Effect: Does the Crime TV Drama Influence How Jurors Think?*, CBS NEWS, Mar. 21, 2005, <http://www.cbsnews.com/stories/2005/03/21/earlyshow/main681949.shtml>; Richard Willing, "CSI Effect" Has Juries Wanting More Evidence, USA TODAY, Aug. 5, 2004, available at http://www.usatoday.com/news/nation/2004-08-05-csi-effect_x.htm; Richard Winton, *Blake Jurors 'Stupid,' D.A. Says*, L.A. TIMES, Mar. 24, 2005, available at 2005 WLNR 23370423; Press Release, Monica Amarelo,

disputed and has been the subject of considerable debate. Until this article, the only organized studies on the subject were either compilations of opinion interviews with prosecutors¹³ or surveys of college students.¹⁴ Some commentators have questioned whether any such pattern of acquittals without scientific evidence actually exists; and, if such acquittals do exist, whether they are the result of other legitimate jury influences.¹⁵ The plethora of anecdotal reports has generated more light than heat, and no credible empirical study of actual jurors had been conducted to determine if juror expectations or demands for scientific evidence really have been heightened as the result of the surge in forensic television dramas.

This study was conducted to obtain empirical evidence about the existence of the “CSI effect” and to assess juror expectations and demands concerning scientific evidence in light of this increased exposure to crime-related television media. The authors surveyed 1027 persons who had been summoned for jury duty before they had been selected to sit on a case or exposed to any voir dire. The survey sought to determine the level of expectation that the prosecutor would produce scientific evidence in various types of cases, and to determine whether that expectation would convert into demands for scientific evidence as conditions for a guilty verdict. The survey assessed the television watching experiences of the jurors related to various categories of crime-related shows to determine whether their expectations or demands were specifically related to watching any of those types of programs.

American Association for the Advancement of Science, *Pathologists Say TV Forensics Creates Unrealistic Expectations*, (Feb. 21, 2005), www.aaas.org/news/releases/2005/0221csi.shtml; CourtTV Crime Library, *The CSI Effect*, http://www.crimelibrary.com/criminal_mind/forensics/csi_berman/4.html (last visited Dec. 19, 2006); Laura DiBenedetto-Kenyon, *The CSI Factor: Pros And Cons Of Hollywood's Interpretation Of Forensic Video Technology*, GOV'T VIDEO, Apr. 29, 2005, www.governmentvideo.com/articles/publish/article_608.shtml.

13. See Andrew P. Thomas, *The CSI Effect on Jurors and Judgments*, 115 YALE L.J. POCKET PART 70 (2006), <http://www.thepocketpart.org/2006/02/thomas.html> (discussing the results of a survey of Maricopa County prosecutors regarding the “CSI Effect”); Maricopa County: The CSI Effect and its Real-Life Impact on Justice; A Study by the Maricopa County Attorney’s Office (June 30, 2005), <http://www.maricopacountyattorney.org/Press/PDF/CSIReport.pdf> [hereinafter Maricopa County Prosecutors CSI Effect Study] (surveying prosecutors regarding the “CSI Effect”).

14. Kimberlianne Podlas, *“The CSI Effect”: Exposing the Media Myth*, 16 FORDHAM INTELL. PROP., MEDIA & ENT. L.J. 429 (2006) (conducting a survey of jury-eligible college students based on a hypothetical scenario and jury verdict)

15. Tyler, *supra* note 2, at 1076.

II. METHOD

A. Participants

The survey was administered to all persons called for jury duty in Washtenaw County, Michigan, during a nine-week period from June 5 through August 7, 2006. In this county, groups of approximately 100-150 jurors (depending on the number of scheduled jury trials) are summoned weekly from a computerized random selection based on state law.¹⁶ Generally, the list of available jurors is drawn from a larger list generated by the Secretary of State which includes all persons who have a driver's license or alternative State identification card.¹⁷ Persons less than eighteen years old, convicted felons, and persons who have served on jury duty within the last twelve months are excluded.¹⁸ Persons over the age of seventy are not automatically excluded but may remove themselves from the list upon request.¹⁹ Persons can be excused from reporting for jury duty by a judge for health or other hardship reasons.²⁰

Washtenaw County is located in southeast Michigan approximately thirty-five miles from Detroit. Its estimated 2005 population was approximately 342,000.²¹ The two largest population centers in the county are the cities of Ann Arbor and Ypsilanti, both of which are homes to large universities – the University of Michigan and Eastern Michigan University²² – with student populations of about 39,000 and 24,000 respectively.²³ The educational level of the population is accordingly high, with over 53 percent of residents over the age of twenty-five having a bachelor's degree or higher²⁴ compared

16. See MICH. COMP. LAWS §§ 600.1300-1376 (2006).

17. *Id.* § 600.1310.

18. *Id.* §§ 600.1307(a)(1)(a)-(e), 1312(e).

19. *Id.* § 600.1307(a)(2).

20. *Id.* § 600.1320(2), (4).

21. U.S. Census Bureau, 2005 State & County Quick Facts: Washtenaw County, Michigan, <http://quickfacts.census.gov/qfd/states/26/26161.html> (last visited Dec. 20, 2006).

22. See eWashtenaw.org, About Washtenaw County, <http://www.ewashtenaw.org/about> (last visited Dec. 20, 2006).

23. See eWashtenaw.org, Washtenaw County Quick Facts, http://www.ewashtenaw.org/about/quick_facts.html (last visited Dec. 20, 2006).

24. U.S. Census Bureau, Washtenaw County, Michigan, Selected Social Characteristics: 2004, 2004 American Community Survey, http://factfinder.census.gov/servlet/ADPTable?_geo_id=05000US26161&-qr_name=ACS_2004_EST_G00_DP2&-ds_name=ACS_2004_EST_G00_ (last visited Dec. 20, 2006) [hereinafter Washtenaw County Census Profile].

to a national average of 27 percent.²⁵ The demographics of the summoned jurors in the study are shown in Table 1.

Table 1: Descriptive Statistics of Demographic Variables

Variables	Frequency	Percent
Age (Mean: 44.81)		
Less than 30	158	15.4%
30-39	190	18.5%
40-49	249	24.2%
50-59	251	24.4%
60 and over	138	13.4%
Unknown	41	4.0%
Gender		
Female	564	54.9%
Male	446	43.4%
Unknown	17	1.7%
Education		
Less than high school	14	1.4%
High school	195	19.0%
College	459	44.7%
Post graduate	329	32.0%
Unknown	30	2.9%
Income		
Less than 30,000	129	12.6%
30,000-49,999	201	19.6%
50,000-100,000	352	34.3%
Over 100,000	296	28.8%
Unknown	49	4.8%
Race/Ethnicity		
Caucasian	844	82.2%
Hispanic	9	.9%
African American	58	5.6%
Asian	26	2.5%

25. U.S. Census Bureau, Educational Attainment in the United States: 2003 (June 2004), www.census.gov/prod/2004pubs/p20-550.pdf (last visited December 28, 2006).

Other	37	3.6%
Unknown	53	5.2%
Urbanicity		
City	339	33.0%
Suburban	395	38.5%
Rural	270	26.3%
Unknown	23	2.2%
Neighborhood Crime		
Very serious	8	.8%
Serious	57	5.6%
Somewhat serious	310	30.2%
Not serious at all	626	61.0%
Unknown	26	2.5%
Violent Victimization		
Yes	196	19.1%
No	815	79.4%
Unknown	16	1.6%
Property Victimization		
Yes	471	45.9%
No	536	52.2%
Unknown	20	1.9%
Political View		
Very conservative	46	4.5%
Conservative	218	21.2%
Moderate	428	41.7%
Liberal	225	21.9%
Very liberal	78	7.6%
Unknown	32	3.1%
Total	1027	100%

Generally, the participants in this study fairly represented the county population as it is reflected in the census. Surprisingly, the jurors' average education level appeared to be even higher than one

would predict from census data.²⁶ Over three-fourths (76.7 percent) of the respondent jurors, who included persons as young as 18, claimed that their “highest education level” was college or post-graduate. The census data indicates that 79 percent of the county population over twenty-five years old claimed at least some college education.²⁷

The prevalence of Caucasian jurors in this study (82.2 percent) was slightly higher than the census data indicated (77 percent) for the general population in the county.²⁸ The sample also had a slightly higher female population (54.9 percent) than the census showed (51 percent).²⁹ The mean age in the sample (44.81 years) was consistent with census data. The census median age for the county was 33.9 years but that included 23 percent of the population who are under eighteen and not eligible for jury duty.³⁰

Although Washtenaw County is popularly regarded as a more liberal, or “blue,” county,³¹ primarily because of its concentration of universities, the political views of the sample appeared to be fairly balanced: 41.7 percent described themselves as “moderate,” while roughly equal portions described themselves in liberal categories (29.5 percent) and conservative categories (25.7 percent).

As to their individual experience as crime victims, almost 80 percent of the sample indicated they had not been victims of a violent crime in the last ten years. Over half said they had not been the victims of even a property crime during that same period. Most of the summoned jurors in the sample (61 percent) described the crime problem in their neighborhood as “not serious at all.”

B. Materials

Part 1 of the survey³² was titled “Law Related Television Programs.” It asked respondents how often they watched each of thirty-three current television programs. These programs were grouped into six categories, labeled: General News Magazines; Crime News Shows; Forensic Dramas; Forensic Documentaries; General

26. Washtenaw County Census Profile, *supra* note 24.

27. *Id.*

28. *Id.*

29. *Id.*

30. *Id.*

31. Washtenaw County voted Democratic in the last two presidential elections by substantial margins. See Political Info, Washtenaw County, Michigan, <http://www.epodunk.com/cgi-bin/politicalInfo.php?locIndex=22188> (last visited Dec. 20, 2006).

32. A copy of the survey is on file with the authors.

Crime Documentaries; and General Crime or Courtroom Dramas. Respondents rated the frequency with which they watched each program on a five-value scale including “regularly, often, on occasion, almost never, or never.” For each of the six categories, respondents were then asked how accurately they thought the programs reflect how the criminal justice system works. Respondents rated each program on a five-value scale including “very accurately, accurately, somewhat accurately, not accurately, or don’t know.”

Part 2 of the survey was titled “Expectations.” It asked respondents what types of evidence they expected to be presented in a criminal case if they were seated as a juror. Seven questions posed scenarios of the following types of cases and charges: every criminal case; murder or attempted murder; physical assault of any kind; rape or other criminal sexual conduct; breaking and entering; any theft case; and any crime involving a gun. For each scenario, respondents were asked whether they expected to be presented with any of the following seven types of evidence: eyewitness testimony from the alleged victim; eyewitness testimony from at least one other witness; circumstantial evidence; scientific evidence of some kind; DNA evidence; fingerprint evidence; ballistics or other firearms laboratory evidence. For each type of evidence, respondents were given a response choice of “yes, no, or unsure.”

Part 3 of the survey was titled “Burden of Proof.” It asked respondents how likely they were to find a defendant guilty or not guilty based on certain types of evidence presented by the prosecution and the defense. At this point, the survey provided the respondents with the reasonable doubt and burden of proof instruction that is given to the jury at the beginning of every criminal case in Michigan.³³

33. The jury instruction reads:

(1) A person accused of a crime is presumed to be innocent. This means that you must start with the presumption that the defendant is innocent. This presumption continues throughout the trial and entitles the defendant to a verdict of not guilty unless you are satisfied beyond a reasonable doubt that [he / she] is guilty.

(2) Every crime is made up of parts called elements. The prosecutor must prove each element of the crime beyond a reasonable doubt. The defendant is not required to prove [his / her] innocence or to do anything. If you find that the prosecutor has not proven every element beyond a reasonable doubt, then you must find the defendant not guilty.

(3) A reasonable doubt is a fair, honest doubt growing out of the evidence or lack of evidence. It is not merely an imaginary or possible doubt, but a doubt based on reason and common sense. A reasonable doubt is just that—a doubt that is reasonable, after a careful and considered examination of the facts and circumstances of this case.

CJI2d 3.2: Presumption of Innocence, Burden of Proof, and Reasonable Doubt, MICHIGAN CRIMINAL JURY INSTRUCTIONS 3-5 (2d ed. Supp. 2002/2003) (footnote omitted).

In each scenario presented in this Part, respondents were asked to respond on a five-value scale including “I would find the defendant guilty, I would probably find the defendant guilty, I am not sure what I would do, I would probably find the defendant not guilty, or I would find the defendant not guilty.” The thirteen scenarios tracked the same seven types of cases and charges in the Expectations portion of the survey. With regard to “any criminal case,” respondents were first asked to assume that “the prosecutor presents the testimony of the alleged victim and other witnesses but does not present any scientific evidence,” and then to assume that “the prosecutor presents circumstantial evidence but does not present any scientific evidence.”

In cases of murder or attempted murder, respondents were first asked to assume that “the prosecutor presents the testimony of an eyewitness and other witnesses but does not present any scientific evidence” and then to assume that “the prosecutor presents circumstantial evidence but does not present any scientific evidence.” The same two scenarios were presented for cases of a physical assault. For cases of rape or other criminal sexual conduct, respondents were first asked to assume that “the prosecutor presents the testimony of the alleged victim but does not present any scientific evidence.” Three additional scenarios then focused on DNA evidence, asking respondents what they would do in cases of murder or attempted murder, rape or other criminal sexual conduct, and physical assaults where “the prosecutor presents the testimony of an eyewitness and other witnesses but does not present any DNA evidence.”

Two scenarios focused on fingerprint evidence and asked respondents what they would do in a breaking and entering case or any theft case where “the prosecutor presents eyewitness testimony but does not present any fingerprint evidence.” Finally, respondents were asked what they would do in a case of any crime involving a gun where “the prosecutor presents the eyewitness testimony but does not present any ballistics or other firearms laboratory evidence.”

Part 4 of the survey gathered demographic information and advised respondents that it was for statistical information purposes only and that the respondents would not be personally identified. Data was gathered concerning age, gender, educational level, household income, ethnicity, and community type (urban, rural, suburban). Respondents were also asked to describe “the crime problem in your community” on a four-value scale ranging from “very serious” to “not serious at all.” They were also asked whether they or anyone close to them had been the victim of an assaultive crime or a property crime in the last ten years. Finally, respondents were asked to describe their political views on a five-value scale ranging from “very conservative,

conservative, moderate, liberal, or very liberal.” Table 1 includes these results.

C. Procedure

The survey was administered to a total of 1027 jurors who were summoned for jury duty in Washtenaw County during the nine-week period. They had received no other instructions about jury duty, and the survey was administered prior to any jurors being dispatched to courtrooms for selection in any type of case. The group was advised by the presiding judge that the information on the surveys was for academic and research purposes only and that it would have no bearing on whether they were selected for jury duty in any case. They were also advised that the attorneys and judges in pending cases would not see the survey responses and that there was no information on the anonymous surveys that would identify individual respondents.

III. RESULTS

A. Law Related Television Programs and their Perceived Accuracy

To examine the respondents’ law-related television program watching patterns, the survey listed thirty-three programs and asked respondents to rate their watching pattern on a five-value scale. The results show that *CSI* and *Law & Order* were the two most frequently watched programs among the sample. These results are presented in Table 2.

Table 2: Frequency of Watching Law-Related Television Programs – Number (Percent)

	Regularly	Often	On Occasion	Almost Never	Never
General News Magazines					
<i>60 Minutes</i> (CBS)	41(4.0)	79(7.7)	321(31.3)	322(31.4)	253(24.6)
<i>Dateline</i> (NBC)	27(2.6)	78(7.6)	350(34.1)	274(26.7)	278(27.1)
Crime News Shows					
<i>Catherine Crier</i> (Court TV)	6(.6)	13(1.3)	45(4.4)	89(8.7)	854(83.2)

<i>Nancy Grace</i> (CNN)	11(1.1)	20(1.9)	72(7.0)	121(11.8)	786(76.5)
<i>The Abrams Report</i> (MSNBC)	4(.4)	17(1.7)	73(7.1)	107(10.4)	807(78.6)
Forensic Dramas					
<i>Body of Evidence</i> (Court TV)	15(1.5)	26(2.5)	52(5.1)	72(7.0)	838(81.6)
<i>Bones</i> (FOX)	34(3.3)	24(2.3)	85(8.3)	103(10.0)	760(74.0)
<i>Cold Case</i> (CBS)	53(5.2)	65(6.3)	156(15.2)	126(12.3)	604(58.8)
<i>Criminal Minds</i> (CBS)	29(2.8)	36(3.5)	82(8.0)	91(8.9)	767(74.7)
<i>Crossing Jordan</i> (NBC)	33(3.2)	51(5.0)	103(10.0)	142(13.8)	670(65.2)
<i>CSI / CSI Miami / CSI New York</i> (CBS)	126(12.3)	107(10.4)	196(19.1)	132(12.9)	448(43.6)
<i>In Justice</i> (ABC)	8(.8)	11(1.1)	41(4.0)	75(7.3)	863(84.0)
<i>NCIS</i> (CBS)	56(5.5)	24(2.3)	84(8.2)	89(8.7)	756(73.6)
<i>Numb3rs</i> (CBS)	39(3.8)	29(2.8)	75(7.3)	98(9.5)	769(74.9)
<i>The Evidence</i> (ABC)	6(.6)	13(1.3)	34(3.3)	73(7.1)	885(86.2)
Forensic Documentaries					
<i>Cold Case Files</i> (A&E)	40(3.9)	48(4.7)	139(13.5)	127(12.4)	661(64.4)
<i>Forensic Files</i> (Court TV)	27(2.6)	46(4.5)	85(8.3)	81(7.9)	774(75.4)
<i>The First 48</i> (Court TV)	19(1.9)	12(1.2)	61(5.9)	76(7.4)	842(82)
<i>The New Detectives</i> (Discovery)	12(1.2)	28(2.7)	59(5.7)	89(8.7)	823(80.1)
<i>Trace Evidence</i> (Court TV)	9(.9)	11(1.1)	33(3.2)	65(6.3)	892(86.9)

General Crime Documentaries					
<i>48 Hours Mystery</i> (CBS)	17(1.7)	29(2.8)	134(13.0)	129(12.6)	699(68.1)
<i>American Justice</i> (A&E)	21(2.0)	34(3.3)	91(8.9)	95(9.3)	764(74.4)
<i>America's Most Wanted</i> (FOX)	28(2.7)	56(5.5)	175(17.0)	204(19.9)	549(53.5)
<i>COPS</i> (FOX)	41(4.0)	65(6.3)	188(18.3)	164(16.0)	555(54.0)
<i>The FBI Files</i> (Discovery)	14(1.4)	31(3.0)	85(8.3)	90(8.8)	790(76.9)
<i>The Investigators</i> (Court TV)	9(.9)	19(1.9)	42(4.1)	60(5.8)	880(85.7)
<i>The System</i> (Court TV)	6(.6)	10(1.0)	27(2.6)	49(4.8)	918(89.4)
General Crime or Courtroom Dramas					
<i>Law & Order Criminal Intent / Law & Order SVU</i> (NBC)	124(12.1)	127(12.4)	206(20.1)	136(13.2)	423(41.2)
<i>Medium</i> (NBC)	52(5.1)	37(3.6)	82(8.0)	101(9.8)	739(72.0)
<i>Prison Break</i> (FOX)	26(2.5)	16(1.6)	51(5.0)	84(8.2)	835(81.3)
<i>Without A Trace</i> (CBS)	56(5.5)	51(5.0)	123(12.0)	113(11.0)	668(65.0)
<i>Boston Legal</i> (ABC)	72(7.0)	37(3.6)	89(8.7)	131(12.8)	688(67.0)
<i>Conviction</i> (NBC)	12(1.2)	10(1.0)	32(3.1)	63(6.1)	898(87.4)

As Table 2 shows, 22.7 percent of the respondents watched *CSI* often or regularly, and 41.8 percent watched *CSI* at least on occasion, while 24.5 percent watched *Law & Order* often or regularly, and 44.6 percent watched *Law & Order* at least on occasion. These results are

consistent with 2006 Nielsen ratings during the survey period.³⁴ For other programs, the percentages of respondents who watched often or regularly were far lower than those of *CSI* and *Law & Order*, ranging from 2 percent to 11.7 percent.

A correlation analysis was conducted to examine whether *CSI* watchers also watched other law-related programs.³⁵ All but two correlation coefficients were significant at the $p < .01$ level. The significant correlation coefficients range from .13 to .596. This means that those who watch *CSI* frequently also watch other law-related programs frequently, and those who do not watch *CSI* tend not to watch other law-related programs. Notably, frequent *CSI* watchers tend to watch *Cold Case* ($r = .596, p < .01$), *Without a Trace* ($r = .583, p < .01$), and *Law & Order* ($r = .527, p < .01$) more frequently than non-*CSI* watchers.

Respondent perceptions of the accuracy of law-related programs were also measured. Correlation analyses demonstrate that the more frequently the respondents watch a given program, the more accurate they perceive that type of program to be (General News Magazine: $r = .433, p < .01$; Crime News Show: $r = .504, p < .01$; Forensic Dramas: $r = .327, p < .01$; Forensic Documentaries: $r = .517, p < .01$; General Crime Documentaries: $r = .489, p < .01$; General Crime or Courtroom Documentaries: $r = .237, p < .01$). These results are shown in Table 3.

34. Nielsen Media Research, *supra* note 10.

35. Correlation analysis is an analytical technique used to measure the strength and direction of a linear relationship between two random variables. ALAN AGRESTI & BARBARA FINLAY, STATISTICAL METHODS FOR THE SOCIAL SCIENCES 318-19 (3rd. ed., Prentice-Hall 1997). Correlation coefficient ranges from -1 (perfect negative relationship), through 0 (no relationship), to +1 (perfect positive relationship). *Id.* at 320. Two variables are positively correlated if higher (or lower) value in one variable is related to higher (or lower) value in the other variable. *Id.* A negative correlation means that higher (or lower) value in one variable is related to lower (or higher) value in the other variable. *Id.*

Table 3: Correlations Between TV Watching Patterns and Perceived Accuracy of the Program

Accuracy						
	1	2	3	4	5	6
Watching						
1	.433**	.176**	.149**	.148**	.245**	.127**
2	.149**	.504**	.121**	.262**	.255**	.114**
3	.170**	.159**	.327**	.306**	.303**	.196**
4	.092**	.293**	.221**	.517**	.376**	.133**
5	.166**	.297**	.269**	.453**	.489**	.192**
6	.163**	.151**	.263**	.203**	.258**	.237**

** Correlation is significant at the 0.01 level (2-tailed)

B. Demographic Characteristics of CSI Watchers

To examine how exposure to *CSI* affects juror decision-making, the sample was divided into two groups based on their *CSI* watching pattern: *CSI* watchers and non-*CSI* watchers. The authors defined *CSI* watchers as those who watch *CSI* on occasion, often or regularly, and non-*CSI* watchers as those who never or almost never watch the program. Applying this criterion yielded approximately 42.4 percent *CSI* watchers and 57.6 percent non-*CSI* watchers (see Table 4). A series of chi-square (X^2) tests³⁶ were conducted to examine how *CSI* watching patterns were affected by the respondents' demographic characteristics such as age, gender, race/ethnicity, education, income, victimization experience, political view, and so on. The results show that among ten demographic variables only gender, education, and political view are significantly related with *CSI* watching patterns.

36. The chi-square test is an analytical technique used for testing independence between two categorical variables. *Id.* at 255. "Two categorical variables are statistically independent if the population conditional distributions on one of them are identical at each category of the other." *Id.* at 252. A significant chi-square occurs when two variables are dependent, meaning those two are related to each other. *Id.* at 252-53, 255.

Table 4: Comparison of Demographic Characteristics Between *CSI* Watchers and Non-*CSI* Watchers – Number (Percent)

	Non-<i>CSI</i> Watcher	<i>CSI</i> Watcher	X^2	<i>p</i>
Total	573(57.6%)	422(42.4%)		
Gender				
Female	302(54.3%)	254(45.7%)	5.52	.019*
Male	271(61.7%)	168(38.3%)		
Education				
Less than High School	5(35.7%)	9(64.3%)	17.861	.000***
High School	98(51.0%)	94(49.0%)		
College	246(54.8%)	203(45.2%)		
Post- Graduate	217(66.4%)	110(33.6%)		
Political View				
Very Liberal	51(66.2%)	26(33.8%)	14.072	.007**
Liberal	139(62.6%)	83(37.4%)		
Moderate	215(51.3%)	204(48.7%)		
Conservative	125(57.9%)	91(42.1%)		
Very Conservative	32(69.6%)	14(30.4%)		

* $p < .05$, ** $p < .01$, *** $p < .001$

Female respondents were significantly more likely than male respondents to watch *CSI*: 45.7 percent of female respondents were *CSI* watchers and 54.3 percent were not *CSI* watchers, whereas 38.3 percent of male respondents were *CSI* watchers and 61.7 percent were not *CSI* watchers ($X^2(1) = 5.52$, $p < .05$).

The relationship between education level and *CSI* watching patterns is interesting. Respondents with less education tended to watch *CSI* more frequently than those who have more education. Of respondents with less than a high school education, 64 percent were *CSI* watchers, decreasing to 49, 45.2 and 33.6 percent for those with a high school education, college education, and post-graduate education, respectively ($X^2(3) = 17.86$, $p < .001$).

Finally, the political views of the respondents were related to *CSI* watching patterns. Respondents who had a very liberal or very conservative political ideology were less likely to be *CSI* watchers, whereas respondents who declared a more moderate position tended to watch *CSI* more frequently ($X^2(4) = 14.072, p < .01$).

C. Expectations about Evidence

The authors conducted descriptive analyses to explore general patterns of juror expectations about the types of evidence to be presented by the prosecutor. A substantial proportion of respondents, 46.3 percent, expected to see some kind of scientific evidence in every criminal case. The percent of respondents who expected particular kinds of scientific evidence in every case also seems high: DNA – 21.9 percent; fingerprint evidence – 36.4 percent; and ballistic or other firearms laboratory evidence – 32.3 percent. This is an interesting result because these types of scientific evidence are generally crime-specific. Although many cases might not need or even be appropriate for DNA or ballistic evidence, respondents want to see such scientific evidence in “every criminal case.”

Although a substantial proportion of respondents expected scientific evidence in every criminal case, their expectations about the types of scientific evidence varied according to the types of crime presented. A larger proportion of respondents expected to see DNA evidence in more serious violent offences such as murder or attempted murder (45.5 percent) and rape (72.6 percent) than they did in other types of crimes. Similarly, a larger proportion of respondents wanted to see fingerprint evidence in breaking and entering cases (71.1 percent), any theft case (58.7 percent), and in crimes involving a gun (65.5 percent) than they did in other types of crime. Appropriately, in cases charging a crime involving a gun, most respondents expected to see ballistic evidence (77.0 percent). A relatively small proportion of respondents expected to see scientific evidence in situations where it is usually less relevant to the crime in question. For example, 16 percent expected DNA in a breaking and entering case and 12.2 percent expected DNA evidence in any theft case.

In all of the seven different types of criminal cases, a majority of respondents expected to see non-scientific evidence, such as testimony from the victim or an eyewitness or circumstantial evidence. In a “murder or attempted murder” case, for example, a majority of respondents expected to see testimony from the victim (56.1%) or from other witnesses (63.4%) and to see circumstantial evidence (69.7%), while only a small proportion of respondents did not

expect to see testimony from the victim (25.5%), from other witnesses (18.2%), or circumstantial evidence (11.4%). These two sets of results indicate that while most summoned jurors expect to see non-scientific evidence in almost all criminal cases, their expectations for scientific evidence are more discrete and crime specific.

A series of *t*-test analyses³⁷ were conducted to examine whether exposure to *CSI* affected respondents' expectations about the types of evidence that would be presented at a trial. The authors assigned values of 1 to the "yes" response, 0 to "unsure," and -1 to the "no" response and then compared the mean of *CSI* watchers with that of non-*CSI* watchers. A mean score that is close to 1 would indicate that more respondents expected to see a certain type of evidence in a given criminal case, whereas a score that is close to -1 would indicate that more respondents did not expect that type of evidence in a given case. These results are presented in Table 5.

Table 5: Mean Difference Between *CSI* Watchers and Non-*CSI* Watchers in Evidence Expectations

Type of Evidence	<i>CSI</i> Watcher	Non- <i>CSI</i> Watcher	<i>t</i>	<i>p</i>
Every Criminal Case				
Victim's Testimony	0.35	0.25	-1.786	.074*
Eyewitness Testimony	0.30	0.26	-.825	.410
Circumstantial Evidence	0.53	0.34	-3.828	.000***
Scientific Evidence of Any kind	0.20	0.12	-1.459	.145
DNA	-0.26	-0.31	-1.092	.275
Fingerprint	0.02	-0.09	-1.935	.053*
Ballistic Evidence	-0.04	-0.14	-1.919	.055*

37. *T*-test analysis is used to compare means between two groups. See *id.* at 181-85. Significant *t* statistics means that the difference in means between two groups is large enough so the probability that such difference is produced 'by chance' is very low (i.e. $p < .05$ means that the probability is less than 5%). *Id.*

Murder (Attempted)				
Victim's Testimony	0.33	0.29	-.846	.398
Eyewitness Testimony	0.45	0.47	.329	.742
Circumstantial Evidence	0.65	0.54	-2.483	.013**
Scientific Evidence of Any kind	0.71	0.61	-2.363	.018**
DNA	0.21	0.15	-1.069	.285
Fingerprint	0.46	0.40	-1.028	.304
Ballistic Evidence	0.50	0.38	-2.419	.016**
Physical Assault				
Victim's Testimony	0.80	0.72	-2.164	.031**
Eyewitness Testimony	0.37	0.32	-.958	.338
Circumstantial Evidence	0.41	0.42	.161	.872
Scientific Evidence of Any kind	0.17	0.14	-.522	.602
DNA	-0.07	-0.21	-2.693	.007**
Fingerprint	0.02	-0.04	-1.073	.283
Ballistic Evidence	-0.18	-0.24	-1.107	.268
Rape (Sexual Assault)				
Victim's Testimony	0.71	0.63	-1.743	.082*
Eyewitness Testimony	0.02	0.01	-.285	.776
Circumstance Evidence	0.49	0.48	-.100	.921

Scientific Evidence of Any kind	0.68	0.61	-1.800	.072*
DNA	0.65	0.60	-1.043	.297
Fingerprint	0.12	0.07	-.786	.432
Ballistic Evidence	-0.28	-0.36	-1.711	.087*
Breaking and Entering				
Victim's Testimony	0.07	0.09	.426	.670
Eyewitness Testimony	0.10	0.07	-.431	.666
Circumstantial Evidence	0.58	0.48	-2.163	.031**
Scientific Evidence of Any kind	0.29	0.19	-1.942	.052*
DNA	-0.39	-0.36	.765	.444
Fingerprint	0.65	0.55	-2.279	.023**
Ballistic Evidence	-0.33	-0.32	.137	.891
Any Theft Case				
Victim's Testimony	0.32	0.25	-1.350	.177
Eyewitness Testimony	0.25	0.21	-.689	.491
Circumstance Evidence	0.60	0.49	-2.392	.017**
Scientific Evidence of Any kind	0.05	0.01	-.601	.548
DNA	-0.44	-0.47	-.642	.521
Fingerprint	0.45	0.35	-1.954	.051*
Ballistic Evidence	-0.34	-0.34	-.061	.951

Crime Involving a Gun				
Victim's Testimony	0.54	0.44	-2.047	.041**
Eyewitness Testimony	0.39	0.33	-1.087	.277
Circumstance Evidence	0.47	0.42	-1.145	.253
Scientific Evidence of Any kind	0.42	0.31	-2.050	.041**
DNA	-0.29	-0.34	-.957	.339
Fingerprint	0.58	0.49	-1.881	.060*
Ballistic Evidence	0.76	0.68	-2.093	.037**

* $p < .10$, ** $p < .05$, *** $p < .01$

In general, frequent *CSI* watchers had higher expectations for all kinds of evidence than did non-*CSI* watchers. This means that in all categories of evidence, both scientific and non-scientific, the evidentiary expectations of *CSI* watchers were consistently higher than those of non-*CSI* watchers. *CSI* watchers also had higher expectations about scientific evidence that is more likely to be relevant to a particular crime than non-*CSI* watchers, and they had lower expectations about evidence that is less likely to be relevant to a particular crime than did non-*CSI* watchers. For example, *CSI* watchers showed significantly higher expectations about "scientific evidence of any kind" than non-*CSI* watchers in four out of six specific criminal cases (i.e. murder, rape, breaking and entering, and crimes involving a gun). In addition, *CSI* watchers had a significantly higher expectation than non-*CSI* watchers that they would see ballistic evidence in a murder case ($t(995) = -2.419$, $p = .016$) and in a crime involving a gun ($t(980) = -2.093$, $p = .037$). Also, *CSI* watchers had significantly higher expectations than non-*CSI* watchers of seeing fingerprint evidence in cases of breaking and entering ($t(994) = -2.279$, $p = .023$), theft ($t(993) = -1.954$, $p = .051$) and crimes involving a gun ($t(979) = -1.881$, $p = .060$).

D. Demands for Particular Evidence as a Condition for a Guilty Verdict

Next, the authors examined respondents' potential verdicts in several criminal case scenarios. Respondents were more likely to find the defendant guilty than not guilty, even without scientific evidence, if there was testimony from the victim or other witnesses. The ratios were: 21 percent answering "guilty" versus 16.2 percent "not guilty" in "any criminal case"; 31.7 percent "guilty" versus 17 percent "not guilty" in a murder case; and 41.5 percent "guilty" versus 11.9 percent "not guilty" in a physical assault case. The only exception to this finding was in rape cases. In a rape case, only 14.1 percent of respondents answered that they would find the defendant guilty if the victim's testimony were presented without any scientific evidence, while 26 percent answered that they would find the defendant not guilty without scientific evidence.

In contrast, when presented with a scenario where the prosecutor relied exclusively on circumstantial evidence and presented no scientific evidence, the respondents were more likely to find the defendant not guilty than guilty. The ratios were: 40.4 percent answering "guilty" versus 6.5 percent "not guilty" in "any criminal case"; 39.2 percent "guilty" versus 9.6 percent "not guilty" in a murder case; and 33.5 percent "guilty" versus 12.2 percent "not guilty" in a physical assault case.

For particular types of evidence, respondents were more likely to find the defendant guilty than not guilty with testimony from the victim or eyewitness – even without DNA evidence – in either a murder case (33.2 percent "guilty"; 9.4 percent "not guilty") or a physical assault case (39 percent "guilty"; 9.3 percent "not guilty"). Also, they were more likely find the defendant guilty in specific types of relevant cases even without any fingerprint evidence. The ratios were 31.8 percent "guilty" versus 14.7 percent "not guilty" in a breaking and entering case, and 31.2 percent "guilty" versus 13.4 percent "not guilty" in "any theft case."

To examine whether watching *CSI* affected the respondents' demands for scientific evidence as a condition of a guilty verdict, the authors conducted a series of *t*-test analyses to compare means between *CSI* watchers and non-*CSI* watchers. A value of 2 was assigned to "find guilty", 1 to "would probably find guilty", 0 to "not sure", -1 to "would probably find not guilty", and -2 to "would find not guilty". The results are presented in Table 6.

Table 6: Mean Differences Between *CSI* Watchers and Non-*CSI* Watchers in the Likelihood of Guilty Verdict Without Scientific Evidence

Type of Case	<i>CSI</i> Watcher	Non- <i>CSI</i> Watcher	<i>t</i>	<i>p</i>
Every Criminal Case				
Testimony without Scientific evidence	.10	0.01	-1.895	.058*
Circumstantial evidence without Scientific evidence	-0.39	-0.44	-1.031	.303
Murder (Attempted)				
Testimony without Scientific evidence	0.17	0.14	-.552	.581
Circumstantial evidence without Scientific evidence	-0.36	-0.41	-1.083	.279
Physical Assault				
Testimony without Scientific evidence	0.38	0.32	-1.175	.240
Circumstantial evidence without Scientific evidence	-0.23	-0.30	-1.497	.135

Rape (Sexual Assault)				
Testimony without Scientific evidence	-0.12	-0.19	-1.423	.155
Murder				
Testimony without DNA	0.28	0.24	-.815	.415
Physical Assault case				
Testimony without DNA	0.36	0.30	-1.281	.200
Rape				
Testimony without DNA	-0.06	-0.15	-1.981	.048**
Breaking and entering				
Testimony without Fingerprint	0.24	0.15	-1.763	.078*
Any Theft Case				
Testimony without Fingerprint	0.25	0.16	-1.929	.054*
Any Crime Involving a Gun				
Testimony without Ballistic evidence	0.01	-0.03	.938	.349

* $p < .10$, ** $p < .05$, *** $p < .01$

Significant statistical differences between *CSI* and non-*CSI* watchers exist in only four out of thirteen situations. Three were marginally significant at the $p < .10$ level, and one difference was significant at the $p < .05$ level. *CSI* watchers were actually more likely than non-*CSI* watchers to find a defendant guilty without "any scientific evidence" if eyewitness testimony was presented in "every criminal case" ($t(980) = -1.895, p = .058$), although the mean is close to 0. *CSI* watchers were also more likely than non-*CSI* watchers to find the defendant guilty in "breaking and entering" ($t(991) = -1.763, p = .078$) and in "any theft" ($t(989) = -1.929, p = .054$) without any fingerprint evidence. These findings suggest that even *CSI* watchers consider testimony from eyewitnesses important when they reach a verdict. Particularly as to DNA, *CSI* watchers are *less* likely than non-*CSI* watchers to find a defendant not guilty if there is testimony from a victim even without DNA.

IV. DISCUSSION

A. Generally, Juror Expectations of Being Presented with Scientific Evidence are High

The results of this survey confirm anecdotal claims that jurors now expect the prosecution to present some scientific evidence. Almost half of the summoned jurors who were surveyed (46.3 percent) expected the prosecutor to present scientific evidence of some kind in *every* criminal case. As the seriousness of the charge increased, so did the expectation for scientific evidence. Almost three-fourths of summoned jurors (74 percent) expected scientific evidence of some kind in cases of murder or attempted murder, and a like number (73.4 percent) expected scientific evidence of some kind in cases of rape or other criminal sexual conduct. Even in the less serious cases of breaking and entering or theft, a significant number of summoned jurors (49.2 percent and 37.8 percent) expected some scientific evidence. Specifically as to DNA evidence, the summoned jurors had high expectations in more serious cases, with almost half (45.5 percent) expecting DNA evidence in murder or attempted murder cases and almost three-fourths (72.6 percent) expecting DNA evidence in cases charging rape or other criminal sexual conduct.

B. In Certain Cases, Jurors who Watch CSI Have Higher Expectations of Scientific Evidence than Those who do not Watch CSI

Based on these results, watching *CSI* and related programs may marginally increase the expectation of scientific evidence in certain types of cases. *CSI* watchers were slightly more likely to expect scientific evidence of some kind in cases charging murder or attempted murder, rape or other criminal sexual conduct, breaking and entering, and cases involving a gun. They were also slightly more likely to expect DNA evidence in cases charging physical assault and rape or other criminal sexual conduct. *CSI* watchers were also slightly more likely to expect fingerprint evidence in cases charging breaking and entering, theft, or cases involving a gun. Finally, *CSI* watchers were slightly more likely to expect ballistics evidence in gun cases than those who did not watch *CSI*.

The significance of these slightly increased expectations by *CSI* watchers is not clear. It may be that those who watch crime shows on television simply have been better educated about criminal justice investigative procedures than those who do not watch such shows. Although the reliability of investigative technologies such as fingerprints and DNA evidence is often overstated,³⁸ for the most part the expectations of summoned jurors for scientific evidence in particular types of cases is reasonable and comports with the reality of investigation procedures. Respondents emphasized the expectation of fingerprint evidence in cases of breaking and entering or theft where police investigations often include a search for such evidence. In cases involving a gun, the *CSI* watchers appear to better understand that tests for fingerprint and ballistics evidence would be a normal part of the police investigation. Even the increased expectation of DNA evidence in assault and rape cases may reflect knowledge that such cases are more likely to involve the presence of body fluids in the investigation that are susceptible to DNA testing.

38. See Jason Schklar & Shari Seidman Diamond, *Juror Reactions to DNA Evidence: Errors and Expectancies*, 23 LAW & HUM. BEHAV. 159, 160 (1999) (discussing the possibilities of a “random match” of two DNA profiles and human error as two ways in which DNA reliability is undermined); Rebecca Parrott Waldren, Note, *Expectations and Practical Results in Fingerprinting Technology: Where is the Line Drawn?*, 31 J. LEGIS. 397, 405 (2005) (discussing constitutional concerns raised by new fingerprint technology that creates a full fingerprint image from partial prints).

C. Juror Demands for Scientific Evidence as a Condition of Guilt is High in all Rape Cases and in all Other Types of Cases that Rely on Circumstantial Evidence

The real test of any perceived prejudgment about evidence is whether jurors are able to put aside preconceptions and expectations of evidence and follow the judge's instruction about the burden of proof. An essential part of this study was to give the summoned jurors the instruction regarding reasonable doubt that they would actually receive in a criminal trial. Optimally, when asked before trial to choose their likely verdict in cases, jurors should select the option "I am not sure what I would do" regardless of the presence or absence of scientific evidence. In fact, in each of the thirteen scenarios presented in the survey, roughly half of the respondents did just that. This in turn means that half were willing to make a decision about guilt or innocence based solely on descriptions of cases with and without scientific evidence.

Interestingly, however, in most of the scenarios the respondents' increased expectations of scientific evidence did not translate into demands for such evidence as a prerequisite for a finding of guilt or innocence. With two prominent exceptions, the absence of scientific evidence did not appear to make the respondents any less likely to convict a defendant regardless of their expectations.

The two exceptions are significant. First, in every scenario where the prosecutor relied on circumstantial evidence and presented no scientific evidence, respondents were much more likely to say that they would acquit the defendant. For example, in "any criminal case" where the prosecution relied on circumstantial evidence without scientific evidence, 41.7 percent of respondents said they would probably acquit. A similar result was obtained for murder (40.1 percent) and assault cases (34.4 percent) where the prosecutor relied only on circumstantial evidence. In scenarios with eyewitness testimony, the absence of scientific evidence was not outcome determinative. This may be simply a reflection of the well-documented misplaced reliance on the reliability of eyewitness identification.³⁹ Although juries are instructed that circumstantial evidence can be

39. See EYEWITNESS TESTIMONY (Gary L. Wells & Elizabeth F. Loftus, eds., 1984) (cataloguing the dangers posed by legal reliance on the accuracy of eyewitness testimony to prove guilt); John C. Brigham & Robert K. Bothwell, *The Ability of Prospective Jurors to Estimate the Accuracy of Eyewitness Identifications*, 7 LAW & HUM. BEHAV. 19 (1983) (discussing whether jurors properly evaluate eyewitness evidence in light of the well-documented problems in the accuracy of eyewitness testimony); Tyler, *supra* note 2, at 1069-70.

used to prove the elements of a crime,⁴⁰ summoned jurors apparently want more evidence, especially scientific evidence of some kind.

Second, in cases charging rape or other sexual misconduct, a significant number of respondents (26.5 percent) stated that they would find the defendant not guilty if there was no scientific evidence, even where the alleged victim testifies to the assault. Further, in such cases a significant number of respondents (21.5 percent) said that they would acquit the defendant unless the scientific evidence specifically included DNA evidence. This is an interesting finding. The issue in most rape or sexual misconduct cases is not the identification of the perpetrator where scientific evidence and especially DNA evidence could be very important. Most rape cases involve questions about consent or lack of consent. This finding may reflect a general hesitancy to find guilt in what jurors perceive as a “he said / she said” situation.

Numerous studies have found that jurors often ignore the evidence in rape cases and make their decisions on the basis of

40. The Michigan Instruction, *CJI2d 4.3: Circumstantial Evidence*, MICHIGAN CRIMINAL JURY INSTRUCTIONS 4-7 (2d ed. Supp. 2002/2003), reads:

(1) Facts can be proved by direct evidence from a witness or an exhibit. Direct evidence is evidence about what we actually see or hear. For example, if you look outside and see rain falling, that is direct evidence that it is raining.

(2) Facts can also be proved by indirect, or circumstantial, evidence. Circumstantial evidence is evidence that normally or reasonably leads to other facts. So, for example, if you see a person come in from outside wearing a raincoat covered with small drops of water, that would be circumstantial evidence that it is raining.

(3) You may consider circumstantial evidence. Circumstantial evidence by itself, or a combination of circumstantial evidence and direct evidence, can be used to prove the elements of a crime. In other words, you should consider all the evidence that you believe.

A typical federal instruction is along the lines of the *Pattern Criminal Federal Jury Instructions for the Seventh Circuit*, which reads:

1.05 DEFINITION OF “DIRECT” AND “CIRCUMSTANTIAL” EVIDENCE

Some of you have heard the phrases “circumstantial evidence” and “direct evidence.” Direct evidence is the testimony of someone who claims to have personal knowledge of the commission of the crime which has been charged, such as an eyewitness. Circumstantial evidence is the proof of a series of facts which tend to show whether the defendant is guilty or not guilty. The law makes no distinction between the weight to be given either direct or circumstantial evidence. You should decide how much weight to give to any evidence. All the evidence in the case, including the circumstantial evidence, should be considered by you in reaching your verdict.

United States Court of Appeals, Seventh Circuit, *Pattern Criminal Federal Jury Instructions for the Seventh Circuit*, <http://www.ca7.uscourts.gov/Rules/pjury.pdf> (last visited Dec. 20, 2006).

extraneous factors.⁴¹ In a recent study, Professor Kimberlianne Podlas attempted to examine the existence of the "CSI effect" using a rape case scenario where the sole issue was consent and not identification.⁴² She gave 306 college students a choice of a "guilty" or "not guilty" verdict and then sought to determine whether there was any relationship between watching *CSI* regularly and the reasons given for "not guilty" verdicts.⁴³ On the basis that the only "legally correct" verdict was "not guilty"⁴⁴ and that scientific evidence was irrelevant to the verdict, Professor Podlas analyzed the not guilty verdicts that were based on a lack of scientific evidence, such as fingerprints or DNA.⁴⁵ She found no difference in those results between students who frequently watched *CSI* and those who did not.⁴⁶ Because of the nature of juror perceptions about rape cases, the rape scenario used by the Podlas study may have simply yielded the same type of demanding results of the rape case questions presented in the current study. Regardless of any connection with *CSI*, it appears that many jurors in rape cases want the reassurance of scientific evidence, including DNA, whether it is legally relevant or not.

41. See Vivian Berger, *Man's Trial, Woman's Tribulation: Rape Cases In the Courtroom*, 77 COLUM. L. REV. 1, 12-32 (1977) (discussing the "victim on trial" phenomenon in rape cases); Hubert S. Field, *Juror Background Characteristics and Attitudes Toward Rape: Correlates of Jurors' Decisions in Rape Trials*, 2 LAW & HUM. BEHAV. 73 (1978) (finding that a juror's background affects his decision-making in a given case); Hubert S. Field, *Rape Trials and Jurors' Decisions: A Psycholegal Analysis of The Effects of Victim, Defendant, and Case Characteristics*, 3 LAW & HUM. BEHAV. 261 (1979) (finding "extraevidential factors had significant effects" on jurors' verdicts in rape cases).

42. Podlas, *supra* note 14.

43. *Id.* at 455-56. The use of college students to predict juror behavior has some inherent problems. See Hubert S. Field & Nona J. Barnett, *Simulated Jury Trials: Students vs. "Real" People as Jurors*, 104 J. SOC. PSYCH. 287 (1978).

44. There are problems with the Podlas study beyond questions of whether a survey group of college students is representative of a typical jury venire. Its analysis there is premised on the assumption that since the scenario presented solely a case of credibility "it was not possible . . . for guilt to be proven beyond a reasonable doubt." Podlas, *supra* note 14, at 458. Respondents were not given a verdict choice of "not sure" to indicate that they needed to see the witnesses or have more information, and Podlas did not include guilty verdicts in the analysis. See *id.* at 457-58. While Podlas may be technically correct about the legal application of the presumption of innocence, jurors clearly do not apply the reasonable doubt and burden of proof instruction in such a legally literal sense. In our study of actual jurors, we thought it crucial to give respondents the choice of "I am not sure what I would do" and to analyze all of the responses.

45. *Id.* at 457-61.

46. *Id.* at 461.

D. There is no Significant Difference in the Demand for Scientific Evidence as a Condition of Guilt Between Those Jurors who Watch CSI and Those who do not

Most significantly, the survey results did not show that the demand for scientific evidence as proof of guilt was related to watching crime related television programs. There was certainly no statistical relationship between the respondents who specifically watched the *CSI* program and those who insisted upon some scientific evidence for conviction.

If the term “*CSI* effect” is defined simply as the influence that watching the television show *CSI* has on jurors, these results present no evidence of such an effect on the likelihood of acquittal. Similarly, if the term “*CSI* effect” means the influence that watching crime related television shows in general has on jurors, these results present no evidence of such an effect on the likelihood of acquittal.

E. A Broader “Tech Effect” of Changes in our Culture may More Likely Account for the Increased Expectations of and Demands for Scientific Evidence

However, these results just as clearly demonstrate that there are now significant numbers of summoned jurors who expect scientific evidence in every criminal prosecution. They also demonstrate that, unless the prosecution presents some scientific evidence, there are significant numbers of summoned jurors who will acquit defendants in cases of circumstantial evidence and in rape cases. The cause of those increased expectations and demands cannot simply be laid at the feet of television programs. The use of the term “*CSI* effect” is too crude. This article suggests that these increased expectations of and demands for scientific evidence is more likely the result of much broader cultural influences related to modern technological advances, what we have chosen to call a “tech effect.”

This is an amazing technological age. The last thirty years have brought about such scientific discoveries and developments that some justifiably have called it a “technology revolution.”⁴⁷ The development and miniaturization of computers and the application of computer technology to almost every human endeavor has been a primary force in new scientific discoveries. The ability to understand

47. RICHARD SILBERGLITT ET AL., THE GLOBAL TECHNOLOGY REVOLUTION 2020: IN-DEPTH ANALYSES: BIO/NANO/MATERIALS/INFORMATION TRENDS, DRIVERS, BARRIERS, AND SOCIAL IMPLICATIONS at xvii (2006), available at http://www.rand.org/pubs/technical_reports/2006/RAND_TR303.sum.pdf (last visited Dec. 20, 2006).

the complexity of DNA that is at the source of human "being" by mapping the human genome is a prime example.⁴⁸

At the same time, new technology has been used to create another revolution in information availability and transmission. The Internet is certainly an obvious example, and in many ways is the catalyst for this still-developing information revolution.⁴⁹ The World Wide Web is truly global and extends (at least in our society) into almost half of households in some way.⁵⁰ Developments in voice and video technology have coupled themselves with the Internet and other sources of information so that worldwide communication is literally in the palms of our hands, or maybe even "hands free" and simply hanging over our ears.

These developments in science and information are contemporaneous and feed off of one another. Advancements in science are fostered by the ability to exchange and transfer information among scientists. At the same time, scientific developments almost immediately become available not only to scientists but to the entire world. The information technology system uses its media to grab scientific discoveries and quickly makes them part of our *popular* culture. The dissemination is fast and widespread through the media online, on television fiction and non-fiction, on film (now video transmission of course), and even on traditional "news" sources. DNA, for example, has gone from an abstract concept known only to the small biochemical community to a term that even children recognize and use.⁵¹ Ordinary people know, or at least think they know, more about science and technology from what they have learned in the media than they ever learned in school.⁵²

48. See Donald E. Shelton, *DNA, the Human Genome, and the Criminal Justice System*, JUDGE'S J., Summer 2000, at 47, available at www.washtenawtrialcourt.org/general/judge_profiles/DESresume/DESPubs/dna.html.

49. "Unlike the Industrial Revolution, which has run its course, the Information Revolution is still growing." MICHAEL L. DERTOUZOS, *THE UNFINISHED REVOLUTION: HUMAN-CENTERED COMPUTERS AND WHAT THEY CAN DO FOR US* 15 (2001).

50. Donald E. Shelton, *All Aboard?: Electronic Filing and the Digital Divide*, JUDGE'S J., Summer 2001, at 31, available at www.washtenawtrialcourt.org/general/judge_profiles/DESresume/DESPubs/DigDiv.html (stating that the "share of households with Internet access increased by 58 percent since December 1998 to 41.5 percent in August 2000 . . .").

51. See Thomas G. Gutheil, "What Does DNA Stand For, Daddy?" Or, What Does the Law Do When Science Changes?, AAPL NEWSL. (American Academy of Psychiatry and the Law), Sept. 2000, at 4, available at http://www.emory.edu/AAPL/newsletter/N253_DNA.htm.

52. For an even stronger view of the interrelationship between technology and popular culture, see JENNIFER SLACK & J. MACGREGOR, *CULTURE + TECHNOLOGY* (2005).

It is those ordinary people who constitute the jury system. Every week, this new scientific and information age comes marching through the courtroom door via the psyche of almost every juror that claims a seat in the box. Scholars have recognized the impact of popular culture on the judicial system, and in particular the criminal justice system, for some time.⁵³ Jurors come into court today filled with years of information and preconceptions not only about science but also about the court process itself.

A major flaw in complaints about the “*CSI* effect” is the narrow statement of the issue. As this study has shown, jurors are not influenced particularly by *CSI* or any of the many other television shows of that genre. It is clear, however, that jurors do significantly expect that prosecutors will use the advantages of modern science and technology to help meet their burden of proving guilt beyond a reasonable doubt. This article suggests that the origins of those expectations lie in the broader permeation of the changes in our popular culture brought about by the confluence of rapid advances in science and information technology and the increased use of crime stories as a vehicle to dramatize those advances.

It is too narrow and simplistic to associate that cultural change with the small slice of cultural influences represented by television shows. For example, it may well be that crime stories in the news media focusing on DNA and other new crime investigation technologies have played an even larger role in forging these new juror expectations and demands.⁵⁴ Television crime dramas and documentaries are simply one of the many inputs that jurors experience from the variety of information that is presented to them. It is one small part of the process of agenda-setting that takes place in potential jurors before they are summoned to jury duty.⁵⁵

53. “[T]he intermingling of law and fiction, like the interpenetration of law and popular culture generally, is hardly new.” RICHARD K. SHERWIN, *WHEN LAW GOES POP: THE VANISHING LINE BETWEEN LAW AND POPULAR CULTURE* 4 (2000). See also Sherwin’s recent collections of essays about the impact of postmodernism on the legal process in RICHARD K. SHERWIN, *POPULAR CULTURE AND LAW* (2006).

54. As Professor Barak states,

Mass news representations in the “information age” have become the most significant communication by which the average person comes to know the world outside his or her immediate experience. As for cultural visions of crime projected by the mass media, or the selections and presentations by the news media on criminal justice, these representations are viewed as the principal vehicle by which the average person comes to know crime and justice in America.

Gregg Barak, *Media, Society, and Criminology*, in *MEDIA, PROCESS, AND THE SOCIAL CONSTRUCTION OF CRIME: STUDIES IN NEWSMAKING CRIMINOLOGY*, *supra* note 4, at 3, 3.

55. For example, research into the effect of pretrial publicity indicates that media exposure can play a significant role in influencing a jury verdict. See Margaret Bull

The response of the criminal justice system to these changes has been slow and small. While law enforcement officials have seemingly embraced the use of DNA in some murder and rape cases, they have not adopted it to the extent that the public expects them to in many other cases. Police and prosecutors have not been given the resources to perform the other scientific tests in cases where they could do so. Juries will force them to do so.

F. Such a "Tech Effect" is a Legitimate and Constitutional Reflection of Changes in our Popular Culture, and the Criminal Justice System Must Adapt to Accommodate the Jurors' Expectations of and Demands for Scientific Evidence

Perhaps jurors are right in expecting much more from the prosecution today than they have in the past. Our legal system demands proof beyond a reasonable doubt before the government is allowed to punish alleged criminals. Where there is an available scientific test that would produce evidence of guilt or innocence, and the prosecution chooses not to perform that test and present its results to the jury, it may not be unreasonable for the jury to doubt the strength of the government's case. What constitutes a "reasonable" doubt, as indicated by the common jury instruction, depends on the facts and circumstances of each case.⁵⁶ What is "reasonable" evidence to expect from the prosecution today is very different from what it was twenty or even ten years ago. Ultimately, the legal system leaves the issue of defining "proof beyond a reasonable double" to the jury.⁵⁷ They appear to have decided that today it is reasonable to expect more from the prosecution in the way of scientific evidence than they have expected in the past.

Kovera, *The Effects of General Pretrial Publicity on Juror Decisions: An Examination of Moderators and Mediating Mechanisms*, 26 LAW & HUM. BEHAV. 43, 45 (2002) (finding that media plays a role in how a juror evaluates evidence of guilt); Nancy Mehrkens Steblay et al., *The Effects of Pretrial Publicity on Juror Verdicts: A Meta-Analytic Review*, 23 LAW & HUM. BEHAV. 219, 228 (1999) (finding exposure to pretrial publicity increased a juror's willingness to find guilt); Tyler, *supra* note 2 (discussing Margaret Bull Kovera's pretrial publicity studies as well as the ability of jurors to put aside pre-existing biases).

56. See *supra* note 33.

57. Note that,

[a]lthough the judge has provided the jury with the legal standard of 'proof beyond a reasonable doubt,' that standard is vague and difficult to define. At best, the judge can tell jurors that there is no formula for deciding what constitutes 'beyond a reasonable doubt,' and that the jurors are to draw from their common sense and everyday experiences as to what it might mean. The jury must *interpret* that legal standard in deciding whether the prosecutor has met its burden in the defendant's case.

In cases where it is impossible to obtain such scientific evidence, or such evidence is irrelevant, prosecutors apparently have not found an effective way to convey these facts to jurors. Based on their own complaints about the *CSI* effect, prosecutors apparently have not consistently been able to show jurors that in a particular case it is not “reasonable” to demand scientific evidence.⁵⁸ Instead, many participants in the legal system seem to have concentrated their efforts on complaining about juror expectations and trying to find ways to convince jurors that they should ignore everything they have “learned” about the courts and modern science. Jurors will not, and indeed cannot, do this. If it is to be effective and continue to be relevant, the justice system must at least try to keep pace with the dramatic changes in society. The technology and information revolutions are thoroughly integrated into popular culture. Popular culture in turn is directly reflected in the courts, which is as it should be in a system that puts its faith in the people to decide the outcome of cases.

The jury system reflects this country’s historical constitutional commitment to be governed by the mass of the population. The insistence on trial by jury, especially in criminal cases, was one of the strongest demands of the framers of the Constitution.⁵⁹ As de Tocqueville observed, “[t]he system of the jury, as it is understood in America, appears to me as direct and as extreme a consequence of the dogma of the sovereignty of the people as universal suffrage.”⁶⁰ Our justice system, like the rest of our constitutional framework, is designed to be “by the people,” and in the justice system those “people”

58. See Maricopa County Prosecutors CSI Effect Study, *supra* note 13, at 5 (noting that 38 percent of Maricopa County prosecutors felt they had experienced at least one acquittal where sufficient non-forensic evidence existed to convict the defendant, and citing a Florida study where up to 50 percent of prosecutors surveyed felt that way).

59. See *Duncan v. Louisiana*, 391 U.S. 145 (1968) (discussing the place of the jury trial in American history and finding it to be “among those ‘fundamental principles of liberty and justice which lie at the base of all our civil and political institutions’”); see generally JEFFREY ABRAMSON, *WE THE JURY: THE JURY SYSTEM AND THE IDEAL OF DEMOCRACY* (1994) (discussing the historical and current role of the American jury); WILLIAM L. DWYER, *IN THE HANDS OF THE PEOPLE: THE TRIAL JURY’S ORIGINS, TRIUMPHS, TROUBLES AND FUTURE IN AMERICAN DEMOCRACY* (2002) (discussing the lasting merits of the jury system and proposing reforms); *THE FEDERALIST* No. 83 (Alexander Hamilton), available at <http://www.constitution.org/fed/federa83.htm> (last visited Nov. 28, 2006); VALERIE P. HANS & NEIL VIDMAR, *JUDGING THE JURY* (1986) (examining jury decision-making); RANDOLPH N. JONAKAIT, *THE AMERICAN JURY SYSTEM* (2003) (discussing the strengths and weaknesses of the jury system today and suggesting some jury system reforms).

60. ALEXIS DE TOCQUEVILLE, *1 DEMOCRACY IN AMERICA* Part 2, Ch. 6, 261 (Univ. of Chicago Press 2000) (1835).

are the jurors.⁶¹ The constitutional guarantee to a jury is a specific commitment to allow representatives of the public to make decisions about individual guilt. As one of the few vestiges of direct democracy in our system,⁶² some regard it as the quintessential example of this country’s democratic ideals.⁶³

The concept of popular sovereignty in the United States includes a constitutional commitment that decisions about justice in individual cases *should* reflect the values of popular culture. Contrary to complaints about the effects of trends in popular culture on criminal juries – even trends perceived to be the result of a particular television program – the jury system dictates that those trends will be reflected in individual cases. It is the government and the judicial system which must respond and adapt to those trends. Changes in popular culture will continue to have a “tech effect” on juror expectations of and demands for scientific evidence. And so they should.

V. CONCLUSION

This is the first empirical study of juror expectations and demands concerning scientific evidence. To the extent that critics claim that the direct effect of watching *CSI* or other crime-related television programs is to make jurors more likely to acquit guilty defendants, the results of this study do not confirm that any such “*CSI* effect” exists. The results show that specifically watching *CSI* or a similar show did not have a causative impact on juror demands for scientific evidence as a condition of a guilty verdict in most criminal case scenarios. Additionally, a significant percentage of all respondent jurors, regardless of whether they specifically watched *CSI* or its ilk, have high expectations that the prosecutor will present some scientific evidence in virtually every criminal case. And those expectations do translate into demands for scientific evidence as a condition of guilt in

61. “[O]ne constant feature [of the jury] has been its status as a representative of the community being governed.” Paul D. Carrington, *The Civil Jury and American Democracy*, 13 DUKE J. COMP. & INT’L L. 79, 81 (2003).

62. See Alan Hirsch, *Direct Democracy and Civil Maturation*, 29 HASTINGS CONST. L.Q. 185, 187-202 (2002) (discussing juries and other manifestations of the Framers’ belief in direct democracy).

63. “. . . [T]he jury version of democracy stands almost alone today in entrusting the people at large with the power of government.” ABRAMSON, *supra* note 59, at 2. Abramson goes on to say, “Long ago, Aristotle suggested that democracy’s chief virtue was the way it permitted ordinary persons drawn from different walks of life to achieve a ‘collective wisdom’ that none could achieve alone. At its best, the jury is the last best refuge of this connection among democracy, deliberation, and the achievement of wisdom by ordinary persons.” *Id.* at 11.

some case scenarios, particularly where the charge is serious and particularly where the other evidence of guilt is circumstantial.

Rather than any direct “*CSI* effect” from watching certain types of television programs, this article suggests that these juror expectations of and demands for scientific evidence are the result of broader changes in popular culture related to advancements in both technology and information distribution. Those broad and pervasive changes in technology lead jurors to expect that the prosecutor will obtain and present the scientific evidence that technology has made possible. These increased expectations and demands of jurors therefore could be more accurately referred to as the “tech effect.”

The criminal justice system must adapt to the “tech effect” rather than fight against it. The constitutional stature of juries in our system is based on the principle that individual judgments of guilt or innocence, like issues of other governmental representation, should be made by ordinary citizens. It is not only appropriate but constitutionally expected that those jurors and their verdicts will reflect the changes that have occurred in popular culture. To adapt, law enforcement officials will have to commit additional resources to obtaining scientific evidence in many more situations. In the meantime, the law must become better at explaining to jurors why such evidence is not forthcoming.