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An Indirect-Effects Model of Mediated Adjudication: The *CSI* Myth, the Tech Effect, and Metropolitan Jurors' Expectations for Scientific Evidence

*Hon. Donald E. Shelton**, *Young S. Kim***, and *Gregg Barak****

ABSTRACT

Part I of this article defines the “CSI effect,” a phrase has come to have many different meanings ascribed to it. It emphasizes the epistemological importance of first describing the effect of the “CSI

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effect” as observed in juror behavior documented in a new study conducted in Wayne County (Detroit), Michigan, and then looking at causative factors that may be related to an explanation of those observed effects. Part II describes the methodology of the Wayne County study, provides a descriptive analysis of Wayne County jurors, and compares the jurors demographically to the Washtenaw County jurors who were surveyed in 2006. Part III analyzes the Wayne County study results with respect to jurors’ expectations and demands for scientific evidence. The Wayne County study findings reinforce the earlier Washtenaw findings of heightened juror expectations and demands for scientific evidence in almost every respect. This most recent analysis reinforces conclusions from the earlier study that there is no such causative relationship between watching CSI and heightened juror expectations and demands. Part IV explores the nature of the “tech effect” as one causative factor for those heightened juror expectations and demands as an alternative to the “CSI effect.” The results of regression analyses of new data provide some support for the 2006 study’s suggestion of a “tech effect”—that the broader changes in popular culture brought about by rapid scientific and technological advances and widespread dissemination of information about them is a more likely explanation for increased juror expectations and demand for scientific evidence. Part V provides an overview of contemporary perspectives of “mass-mediated effects” on public attitudes, behaviors, and expectations as a prelude to a suggested “Indirect-Effects Model of Mediated Adjudication.” The authors propose an indirect-effects model of juror influences that triangulates the potential interactive effects of a “CSI effect” myth with the likelihood of a “tech effect” in the context of the “mass mediated effects” of law and order or crime and justice news media.

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After a jury acquittal, the prosecutor explains the loss to the assembled media by saying that the jurors demanded too much of the government. They “wrongfully” acquitted the defendant only because the television show, *CSI*, or one of its many spin-offs and copycats, overly influenced them. According to the prosecutor, the jurors could not separate reality from fiction when they did not see the same kinds of advanced scientific evidence during the trial that is commonly depicted on their television screens. This fictional scenario is played out in many criminal cases. The news media quickly coined the term “*CSI* effect” to refer to these common prosecutorial anecdotal complaints and it has been repeated and republished since *CSI* first aired eight years ago. A 2006 study documented that deluge of popular media repetition, finding that the effect was actually broader than the term implied,¹ but the flow of claims of a “*CSI* effect” has continued unabated.² The popular media has almost universally accepted the prosecutor’s explanation for such jury acquittals as true and has helped to construct the *CSI* effect as a serious problem for the criminal justice system and a threat to the sanctity of the jury system.³

1. See Donald E. Shelton, Young S. Kim & Gregg Barak, *A Study of Juror Expectations and Demands Concerning Scientific Evidence: Does the “CSI Effect” Exist?*, 9 VAND. J. ENT. & TECH. L. 331, 335-36 (2006).

2. Most recently, Simon Cole and Rachel Dioso-Villa have collected data documenting the continuing media use of the phrase in what they call “*CSI* effect discourse.” See, e.g., Simon A. Cole and Rachel Dioso-Villa, *Investigating the “CSI Effect” Effect: Media and Litigation Crisis in Criminal Law*, 61 STAN. L. REV. 1335, 1339 (2009) [hereinafter Cole & Dioso-Villa, *Media and Litigation Crisis*].

3. See, e.g., Brian Dakss, ‘The *CSI* Effect’ Does The TV Crime Drama Influence How Jurors Think?, CBS NEWS – THE EARLY SHOW, March 21, 2005, <http://www.cbsnews.com/stories/2005/03/21/earlyshow/main681949.shtml> (last visited Nov. 2, 2009); Jeffrey Heinrick, *Everyone’s An Expert: The *CSI* Effect’s Negative Impact On Juries*, THE TRIPLE HELIX, Fall 2006, available at <http://www.cspo.org/documents/csieffectheinrick.pdf> (last visited Nov. 2, 2009); Dina Temple-

The genesis of the *CSI* effect on jury acquittals was anecdotal and subjective, based primarily on the opinions of prosecutors, judges, and other law enforcement officials.⁴ In 2006, we tested the validity of this popular notion and conducted the first empirical study of the alleged *CSI* effect on summoned jurors (the Washtenaw County Study). The Study involved a survey of 1,027 summoned jurors in Washtenaw County, Michigan about their television-watching habits, expectations for scientific evidence in particular types of cases, and their likely verdicts in those particular cases when faced with scenarios featuring various types of evidence.⁵ The data showed that jurors had increased expectations for scientific evidence and that in cases based on circumstantial evidence, jurors would be more likely to acquit a defendant if the government did not provide some form of scientific evidence.⁶ However, the Washtenaw County Study data also showed no significant correlation between those expectations and demands and whether the jurors watched *CSI* or similar programs on television.⁷ We speculate that the cause of these heightened juror expectations and demands represents a broader change in our popular culture regarding the use of modern science and technology, buttressed by media portrayals of those scientific advances. We suggest that these evolving expectations and demands could more accurately be called a “tech effect.”⁸

As with all quantitative behavioral research, questions about the representativeness of the subjects, and therefore the generalizability of the research findings and their broader implications, are appropriate. For example, Washtenaw County is a suburban county in southeast Michigan with a large university

Raston, *Call For Forensics Overhaul Linked to 'CSI' Effect*, NATIONAL PUBLIC RADIO, February 19, 2009, <http://www.npr.org/templates/story/story.php?storyId=100831831> (last visited Nov. 2, 2009).

4. See, e.g., Heinrick, *supra* note 3; 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); Shelton, Kim & Barak, *supra* note 1, at 335-36.

5. Shelton, Kim & Barak, *supra* note 1, at 337-43.

6. *Id.* at 349-57.

7. *Id.* at 367.

8. *Id.* at 364 (“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.”).

population.⁹ The demographics of the jurors showed a very high educational level consistent with that setting.¹⁰ Controlling for individual demographic characteristics within that population, however, can only provide limited additional information. We thought it important, therefore, to undertake a similar survey, again involving adults summoned for jury duty, but administer it in a different jurisdiction. This follow-up study in 2009 (the Wayne County Study) surveyed jurors in Wayne County, which is centered in Detroit and is the most populous jurisdiction in Michigan.¹¹ It is a metropolitan jurisdiction and the 13th most populous county in the nation, as distinguished from the more suburban, university setting in Washtenaw County.¹² As a result, the demographics of the jurors in Wayne County, namely the racial and educational backgrounds, as well as the income level, are significantly different from the demographics of the jurors in Washtenaw County. Given these differences in the studies' populations, similar results in the Wayne County study would lend support to the findings in Washtenaw County; on the other hand, contradictory results could suggest a need to further examine geographic and demographic characteristics as they relate to the *CSI* effect in order to determine the correlation between geography, demographics, and jurors' perceptions of forensic evidence in trials.

The Wayne County study also explored the suggestion of a broader tech effect rather than a television-based *CSI* effect or even a more general effect of all media sources acting alone or possibly in combination, as the causative agent for the increased juror expectations and demands seen in the Washtenaw County study. Similarly, the juror questionnaire in the Wayne County study included additional questions that were meant to gauge the jurors' technological knowledge, use of modern technology, interest in criminal justice news and development, assumptions about the availability of modern forensic science capabilities in their local police crime laboratories, and expectations about how and when those capabilities would be used.

9. U.S. Census Bureau, 2005 State & County Quick Facts: Washtenaw County, Michigan, <http://quickfacts.census.gov/qfd/states/26/26161.html> (last visited Nov. 2, 2009).

10. Shelton, Kim & Barak, *supra* note 1, at 337-40.

11. U.S. Census Bureau, 2008 State & County Quick Facts: Wayne County, Michigan, <http://quickfacts.census.gov/qfd/states/26/26163.html> (last visited Nov. 2, 2009).

12. "Wayne County is located in southeastern Michigan, encompassing approximately 623 square miles. It is made up of 34 cities, including the city of Detroit, nine townships, and 41 public school districts. Its population of approximately two million makes it the most populous county in the State of Michigan and the 13th most populous county in the Nation." *Wayne County, Michigan*, <http://www.waynecounty.com/> (last visited Nov. 2, 2009).

The tech effect influences jurors' expectations and demands, as does mass media portrayals of crime and criminal justice. However, the belief in *CSI*-related acquittals—often characterized as the “strong prosecutor” version of the *CSI* effect¹³—is predominant among prosecutors, judges, defense attorneys, and other law enforcement personnel.¹⁴ Furthermore, their perception that some acquittals are caused by watching *CSI*, whether justified by empirical evidence or not, affects their trial conduct and therefore may impact eventual juror deliberations or verdicts. We suggest that eventual juror responses to scientific evidence, or the lack thereof, are likely not directly related in a causative, linear fashion to any of these effects alone, but rather to an indirect-effects model¹⁵ of mediated adjudication in which these and many other factors play a part. In other words, a *CSI* effect, a tech effect, a “mass media effect,” or even a combination of these effects represents just a few of the more conspicuous social features that may, in interaction with a variety of other cultural and individual factors, affect the outcomes of criminal adjudication.

Part I of this Article defines the “*CSI* effect” as used throughout, given that the phrase has come to have many different meanings ascribed to it. The first section also emphasizes the epistemological importance of first describing the impact of the *CSI* effect as observed in juror behavior in the Washtenaw and Wayne County studies, and then analyzes the factors that may have caused the observed effects. Part II describes the methodology of the Wayne County study, provides a descriptive analysis of Wayne County jurors, and compares the jurors demographically to the Washtenaw County jurors who were surveyed in 2006. Part III analyzes the Wayne County study results with respect to jurors' expectations and demands for scientific evidence. The Wayne County study findings reinforce the earlier Washtenaw findings of heightened juror expectations and demands for scientific evidence in almost every respect as well as the conclusions from the earlier Washtenaw County study that there is no such causative relationship between watching *CSI* and the heightened expectations and demands of jurors. Part IV explores the nature of the tech effect as one causative factor for those heightened juror expectations and demands as an alternative to the *CSI* effect and

13. Cole & Dioso-Villa, *Media and Litigation Crisis*, *supra* note 2, at 1334.

14. *Id.* at 1352.

15. See Neil M. Malamuth, *Sexually Violent Media, Thought Patterns, and Antisocial Behavior*, in 2 PUBLIC COMMUNICATION AND BEHAVIOR 159, 159-204 (George Comstock ed., 1989), available at <http://www.sscnet.ucla.edu/comm/malamuth/pdf/89Pcb2.pdf> (last visited Nov. 21, 2009).

proposes an indirect-effects model of juror influences that combines the perception of a *CSI* effect with the tech effect of modern scientific advances and the generalized effect of media portrayals about crime. This model triangulates the potential interactive effects of a *CSI* effect myth with the likelihood of a “tech effect” in the context of the “mass mediated effects of law and order or crime and justice news. The results of regression analyses of data from the Wayne County study provides some support for the 2006 study’s suggestion of a tech effect. Part V provides an overview of contemporary perspectives on how “mass-mediated effects” on public attitudes, behaviors, and expectations as a prelude to the indirect-effects model of mediated adjudication.

I. THE *CSI* EFFECT AND THE TECH EFFECT

Although popular media coined the phrase, “*CSI* effect,” to refer to the effect of *CSI*-style television shows on jurors’ expectations and demands, criminal justice professionals and scholars have used it in a number of different contexts and with a variety of meanings. For example, Professor Simon Cole and his colleague have suggested a typology of different causal claims and effects, including a “strong prosecutor’s effect,” “weak prosecutor’s effect,” and “defendant’s effect,” among others.¹⁶ In addition, there have even been suggestions that criminals who watch *CSI* have learned how to avoid leaving trace evidence and thus circumvent police forensic scientists.¹⁷ For the most part, however, the dominant usage of “*CSI* effect” refers to the allegation that jurors who watch *CSI*, or similar television programs, expect and demand scientific forensic evidence as portrayed on these shows and, when such evidence is not produced, that jurors “wrongfully” acquit defendants when such evidence is not produced.¹⁸

To determine the existence of the *CSI* effect, it is necessary to separate and define the claimed effects, including the observable attitudes and actions of jurors with regard to scientific evidence, as well as the potential causes of that juror behavior—such as watching

16. See *id.* at 1339; see also Simon A. Cole & Rachel Dioso-Villa, *CSI and Its Effects: Media, Juries, and the Burden of Proof*, 41 NEW ENG. L. REV. 435, 447-55 (2007). The “defendant’s effect” was originally posited by Professor Tom R. Tyler, who suggested any increased credibility jurors give to scientific evidence may inure to the benefit rather than the detriment of the prosecution. Tom R. Tyler, *Viewing CSI and the Threshold of Guilt: Managing Truth and Justice in Reality and Fiction*, 115 YALE L.J. 1050, 1063 (2006).

17. Cole and Dioso-Villa refer to this as the “police chief’s effect”. See Cole & Dioso-Villa, *Media and Litigation Crisis*, *supra* note 2, at 1344.

18. This is what Cole has referred to as the “strong prosecutor’s effect,” although it includes elements of both cause and effect. *Id.* at 1343.

CSI-type programs on television. With respect to the claimed effects, the 2006 Washtenaw County study showed high levels of juror expectations and demands that the prosecutor would present scientific evidence. The more recent Wayne County study reinforced those observations and revealed even higher levels of juror expectations for scientific evidence in metropolitan jurors. However, as in the Washtenaw County study, the Wayne County study showed that most jurors still appeared to trust, perhaps misguidedly, eyewitnesses and will rely on factual testimony to find that the government has met its burden, even in the absence of scientific evidence. Thus, jurors are not necessarily prepared to acquit defendants due to a lack of scientific evidence alone. In cases where there are no eyewitnesses and the government relies on circumstantial evidence, the observation in Wayne County is consistent with the prior observation in Washtenaw County—jurors are much more likely to acquit if the government’s case does not include some scientific evidence. However, it is not appropriate to characterize such acquittals as “wrongful,” as prosecutors are wont to do when they lose such cases.¹⁹ Researchers have found no evidence of a higher acquittal rate that could be linked to the so-called *CSI* effect in state courts.²⁰ Thus, the *CSI* effect could be more appropriately called the “*CSI* myth.”

Data in the Washtenaw County and Wayne County studies have demonstrated high expectations and demands for scientific evidence amongst jurors. Other scholars and researchers have found similarly high expectations and regard for scientific evidence by jurors.²¹ If these expectations are the effect, then what are the causes? Contrary to the prosecutor- and media-promoted idea, the Washtenaw County study data actually ruled out watching *CSI* or

19. For example, the Vice-President of the National Association of District Attorneys declared, “Prosecutors are increasingly encountering the ‘*CSI* Effect’ among jurors even when they have strong cases, with eyewitnesses and confessions by defendants. If they don’t have forensic evidence there have been jurors who will not convict a defendant even if no such evidence was available, and the defendant was caught ‘red-handed.’ When these defendants are found ‘not guilty’ because of the ‘*CSI* Effect’ and a juror/jurors blind faith and belief in the truth of popular forensic crime shows—they are released back into society to continue in their life of crime.” Posting of Joshua K. Marquis (*The CSI Effect – Does It Really Exist?*) to NDAA Talking Justice, <http://communities.justicetalking.org/blogs/day17/archive/2007/10/16/csi-effect-does-it-really-exist.aspx> (Oct. 26, 2007, 15:50 EST) (last visited Nov. 2, 2009).

20. See Cole & Dioso-Villa, *Media and Litigation Crisis*, *supra* note 2, at 1356–64 (other acquittal rate research cited therein).

21. N. J. Schweitzer & Michael J. Saks, *The CSI Effect: Popular Fiction About Forensic Science Affects the Public’s Expectations About Real Forensic Science*, 47 JURIMETRICS J. 357, 363 (2007); Janne A. Holmgren & Heather M. Pringle, *The CSI Effect and the Canadian Jury*, 69 RCMP GAZETTE, Issue No. 2, at 30, 30-31, available at www.rcmp-grc.gc.ca/gazette/archiv/vol69n2-eng.pdf.

similar programs and showed no causal relationship between jurors' expectations and demands for scientific evidence and television-watching habits. Subsequently, we refined and extended the analysis of the original data pertaining to case with circumstantial evidence cases and eyewitness evidence cases, performing a more sophisticated multivariate regression and path analysis and controlling for individual juror characteristics. This new data analysis reinforced the original analysis.²² Neither the Washtenaw County study data, nor any other studies involving jurors or potential jurors as subjects, have demonstrated a causal relationship between jury verdict behavior and watching *CSI* or other programs in that genre.²³ The Wayne County study reinforced that conclusion—there is no *CSI* effect on jury expectations for scientific evidence that influences their verdicts.

That conclusion, however, merely states the negative. If watching *CSI*-type television programs does not cause juries to acquit defendants in cases without scientific evidence, what could be the cause of the jurors' heightened expectations and demands for scientific evidence? The lack of a correlation between watching *CSI* and jurors' expectations for scientific evidence does not necessarily mean that watching a plethora of forensic science television shows does not play a role in the juror behavior we have documented. After the Washtenaw County study, we theorized that a "tech effect," rather than the more specific *CSI* effect, causes these heightened expectations and demands. This tech effect means that the origins of heightened juror expectations about scientific evidence lay 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."²⁴ The last thirty years have brought about such scientific discoveries and developments that some have justifiably called it a "technology revolution."²⁵ These new

22. Young S. Kim, Gregg Barak & Donald E. Shelton, *Examining the "CSI-effect" in the Cases of Circumstantial Evidence and Eyewitness Testimony: Multivariate and Path Analyses*, 37 J. CRIM. JUST. 452 (2009).

23. See Cole & Dioso-Villa, *Media and Litigation Crisis*, *supra* note 2, at 1371; Kimberlianne Podlas, *The "CSI Effect" and Other Forensic Fictions*, 27 LOY. L.A. ENT. L. REV. 87, 125 (2007); Kimberlianne Podlas, *"The CSI Effect": Exposing the Media Myth*, 16 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 429, 461 (2006) [hereinafter Podlas, *Exposing the Media Myth*]; Shelton, Kim & Barak, *supra* note 1, at 367; Kiara Okita, *The CSI Effect: Examining CSI's Effects upon Public Perceptions of Forensic Science* (Fall 2007) (unpublished M.A. thesis, University of Alberta) (on file with author).

24. Shelton, Kim & Barak, *supra* note 1, at 364.

25. In 2001, a Rand Corporation study concluded that "[b]eyond the agricultural and industrial revolutions of the past, a broad, multidisciplinary technology revolution is changing

technologies have been used to create a further “information revolution” in the wide availability and quick transmission of information.²⁶ These developments in science and information are contemporaneous and interrelated. Advancements in science are fostered by the ability to exchange and transfer information, and scientific developments almost immediately become available not only to scientists but also to the entire world.

The information technology system quickly makes scientific discoveries and advancements part of our popular culture. The dissemination of technological developments is fast and widespread through various media, including the Internet, fiction and non-fiction television programs, film, and traditional news sources like television, newspapers and magazines. Deoxyribonucleic acid (DNA) is a prime example, as it has gone from an abstract concept known only to the small biochemical community to a term that is included in children’s dictionaries.²⁷ 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.²⁸ These ordinary people are the jury system, and they come into court filled with years of information and preconceptions about science in addition to their beliefs about the criminal adjudication process itself.²⁹

Recent research has offered some support for our tech effect hypothesis.³⁰ Kiara Okita’s detailed regression analysis of 1,200 Canadian citizens’ responses to a random telephone survey “suggest[s] that the ‘tech effect’ posited by Shelton et al. may indeed relate to respondents having learned about forensic science from a larger body

the world.” PHILIP S. ANTON, RICHARD SILBERGLITT & JAMES SCHNEIDER, *THE GLOBAL TECHNOLOGY REVOLUTION: BIO/NANO/MATERIALS TRENDS AND THEIR SYNERGIES WITH INFORMATION TECHNOLOGY BY 2015* (2001), available at http://www.rand.org/pubs/monograph_reports/2005/MR1307.pdf; see also J. R. OKIN, *THE TECHNOLOGY REVOLUTION: THE NOT-FOR-DUMMIES GUIDE TO THE IMPACT, PERILS, AND PROMISE OF THE INTERNET* (2005); RICHARD SILBERGLITT ET AL., *THE GLOBAL TECHNOLOGY REVOLUTION 2020, IN-DEPTH ANALYSES: BIO/NANO/MATERIALS/INFORMATION TRENDS, DRIVERS, BARRIERS, AND SOCIAL IMPLICATIONS* (2006), available at http://www.rand.org/pubs/technical_reports/2006/RAND_TR303.pdf.

26. See MICHAEL L. DERTOUZOS, *THE UNFINISHED REVOLUTION: HUMAN-CENTERED COMPUTERS AND WHAT THEY CAN DO FOR US* 15 (2001); Peter F. Drucker, *Beyond the Information Revolution*, *THE ATLANTIC*, Oct. 1999, at 47, 47-57, available at <http://www.theatlantic.com/doc/199910/information-revolution>.

27. See “D is for DNA,” *Little Explorers English Picture Dictionary*, <http://www.enchantedlearning.com/Disfor.shtml> (last visited Nov. 2, 2009).

28. See, e.g., GLENN REYNOLDS, *AN ARMY OF DAVIDS: HOW MARKETS AND TECHNOLOGY EMPOWER ORDINARY PEOPLE TO BEAT BIG MEDIA, BIG GOVERNMENT, AND OTHER GOLIATHS* (2007).

29. Shelton, Kim & Barak, *supra* note 1, at 362-64 (citations omitted).

30. Okita, *supra* note 23, at 75.

of media than *CSI*, one which also includes movies and other fictional television crime dramas”³¹ and that “this larger ‘effect’ may also be a function of respondents’ social location and particular life experiences.”³²

In the Wayne County study, we sought to test that tech effect theory and its underlying assumption that jurors’ expectations are a reflection of broader scientific and technological changes in our society. If that assumption is correct, it is important to understand whether there is a correlation between juror knowledge and use of modern technology, and increased expectations and demands that science and technology will be utilized in the criminal justice system. The Wayne County study data showed that modern technology is widely available to, and used by, potential jurors. This finding resembles national data for the general population.³³ Regression analysis in the Wayne County study of the jurors’ use of sophisticated technology devices showed an impact on jurors’ expectations for scientific evidence in a variety of criminal justice situations. Additionally, an analysis of juror exposure to criminal justice-related television programs generally—as opposed to *CSI*-type forensic science programs in particular—also showed a significant impact on jurors’ expectations for scientific evidence. However, an analysis of the potential jurors’ interest in, and exposure to, crime and justice news and information from a wider variety of mass media sources did not reveal an impact of similar significance.

II. THE STUDY METHOD

A. Participants in the Wayne County Study

The survey was administered to all persons called for jury duty on Wednesdays between December 17, 2008 and February 7, 2009 in the state Circuit Court for Wayne County, Michigan, located in downtown Detroit. In this busy jurisdiction, jurors are summoned to appear almost every day of the week for service in a variety of cases. The Wednesday jury call consists of approximately two hundred

31. *Id.*

32. *Id.* Even more directly, Okita concludes by stating, “I agree with their assertions, and further the argument by contending that forensic science, and by virtue of its content, that *CSI*, may have become emblematic of both the rapid rate of scientific and technological change our society is continually undergoing, and of a desire for a social certainty of justice that continues to wane.” *Id.* at 106.

33. *See infra* Part IV.

jurors, and includes selection for service in criminal jury trials at the felony level. The jury summonses are issued based on a computerized random selection of individuals in accordance with state law.³⁴

Wayne County is the most populous county in Michigan, including the city of Detroit and many surrounding suburban cities and townships. Its estimated population in 2007 was 1,985,101,³⁵ of which approximately 44 percent resided in Detroit.³⁶ The county population was 51.8 percent female, 41.3 percent African-American, and 54.4 percent Caucasian.³⁷ The median household income in 2007 was \$42,529.³⁸ Seventy-seven percent of the population over the age of 25 had completed high school, and 17.2 percent had earned a bachelor's degree.³⁹ These educational levels are below the national averages—84 percent of the U.S. population has a high school diploma and 28 percent has earned a bachelor's degree.⁴⁰

The self-reported demographics of the jurors who participated in the Wayne County survey are shown in Table 1. For comparison purposes, the demographics of the previous Washtenaw County survey participants are shown as well.

34. See MICH. COMP. LAWS ANN. §§ 600.1300-.1376 (West 2009). The list includes all persons who have a driver's license or alternative State identification card. *Id.* Persons less than 18 years old, convicted felons, and persons who have served on jury duty within the last 12 months are excluded. *Id.* Persons over 70 years old are not automatically excluded but may remove themselves from the list upon request. *Id.* Individual jurors may be excused for health or hardship reasons by a judge. *Id.*

35. U.S. Census Bureau, State & County Quick Facts: Wayne County, Michigan, <http://quickfacts.census.gov/qfd/states/26/26163.html> (last visited Oct. 11, 2009).

36. The estimated population of Detroit in 2006 was 871,121. U.S. Census Bureau, State & County Quick Facts: Detroit (city), Michigan, <http://quickfacts.census.gov/qfd/states/26/2622000.html> (last visited Oct. 11, 2009).

37. State & County Quick Facts: Wayne County, Michigan, *supra* note 35.

38. *Id.*

39. *Id.*

40. SARAH R. CRISSEY, U.S. CENSUS BUREAU, EDUCATIONAL ATTAINMENT IN THE UNITED STATES: 2007 1 (2009), available at <http://www.census.gov/prod/2009pubs/p20-560.pdf>.

TABLE 1: DESCRIPTIVE STATISTICS OF DEMOGRAPHIC VARIABLES OF SURVEYED JURORS			
VARIABLE	WAYNE COUNTY FREQUENCY	WAYNE COUNTY PERCENT	WASHTENAW COUNTY PERCENT
AGE (MEAN 48.57)			
LESS THAN 30	150	12.3%	15.4%
30-39	205	16.8%	18.5%
40-49	295	24.2%	24.2%
50-59	330	27.1%	24.4%
60+	179	14.7%	13.4%
UNKNOWN	60	4.9%	4.0%
GENDER			
FEMALE	680	55.8%	54.9%
MALE	495	40.6%	43.4%
UNKNOWN	44	3.6%	2.9%
EDUCATION			
POST-GRADUATE DEGREE	173	14.2%	32.0%
COLLEGE GRADUATE	316	25.9%	44.7%
SOME COLLEGE	411	33.7%	n/a
HIGH SCHOOL	235	19.2%	12.6%
LESS THAN HIGH SCHOOL	27	2.2%	1.4%
UNKNOWN	57	4.7%	2.9%
HOUSEHOLD INCOME			
OVER \$100,000	242	19.9%	28.8%
\$50,000 - \$100,000	440	36.1%	34.3%
\$30,000 - \$49,999	269	22.1%	19.6%
LESS THAN \$30,000	188	15.4%	12.6%
UNKNOWN	80	6.6%	4.8%
RACE/ETHNICITY			
CAUCASIAN	733	60.1%	82.2%
HISPANIC	25	2.1%	0.9%
AFRICAN AMERICAN	296	24.3%	5.6%
ASIAN	28	2.3%	2.5%
OTHER	44	3.6%	3.6%
UNKNOWN	93	7.6%	5.2%

URBANICITY⁴¹			
CITY	454	37.2%	33.0%
SUBURBAN	676	55.5%	38.5%
RURAL	36	3.0%	26.3%
UNKNOWN	53	4.3%	2.2%
NEIGHBORHOOD CRIME⁴²			
VERY SERIOUS	84	6.9%	0.8%
SERIOUS	133	10.9%	5.6%
SOMEWHAT SERIOUS	449	36.8%	31.2%
NOT SERIOUS AT ALL	499	40.9%	61.0%
UNKNOWN	54	4.4%	2.5%
VIOLENT VICTIMIZATION⁴³			
YES	335	27.5%	19.1%
NO	840	68.9%	79.4%
UNKNOWN	44	3.6%	1.6%
PROPERTY VICTIMIZATION⁴⁴			
YES	696	57.1%	45.9%
NO	480	39.4%	52.2%
UNKNOWN	43	3.5%	1.9%
POLITICAL VIEW			
VERY CONSERVATIVE	67	5.5%	4.5%
CONSERVATIVE	265	21.7%	21.2%
MODERATE	568	46.6%	41.7%
LIBERAL	207	17.0%	21.9%
VERY LIBERAL	44	3.6%	7.6%
UNKNOWN	68	5.6%	3.1%
TOTAL			
	1219	100%	100%

With some exceptions, the potential jury members surveyed appear to be fairly representative of the Wayne County population. The percentage of African-American jurors is a notable exception, with only 21.3 percent of jurors being African-American out of 41.3 percent

41. "Urbanicity" refers to how urban the particular area in Wayne County is where the individual juror lives.

42. "Neighborhood Crime" refers to crime in the juror's own neighborhood.

43. "Violent Victimization" refers to whether the individual juror was ever physically assaulted.

44. "Property Victimization" refers to whether the individual juror was ever the victim of a property crime.

in the general population of the county.⁴⁵ In addition, the percentage of Caucasian jurors (60.1 percent) was slightly higher than the 54.4 percent in Wayne County's general population.⁴⁶ The educational attainment level of the jurors appears somewhat higher than the general county population, with 93 percent of the surveyed jurors reporting that they graduated from high school, compared to 77 percent of the general population in Wayne County.⁴⁷ The study sample also included a slightly higher female population (55.8 percent) than the county census showed (51.8 percent).⁴⁸ However, the mean age of the sample (48.57 years) was consistent with county census data.⁴⁹

With respect to their individual experience as crime victims, 68.9 percent of the Wayne County study sample indicated they had not been a victim of a violent crime in the last ten years, but 57.1 percent said they had been a victim of a property crime during that same period. Over half of the summoned jurors in the sample (54.6 percent) described the crime problem in their neighborhood as at least somewhat serious.

B. Survey Materials and Procedures

Most of the survey questions administered in Wayne County⁵⁰ were the same questions that were used in the Washtenaw County study.⁵¹ These questions gathered information about jurors' television-watching habits,⁵² their expectations about whether they would see various types of scientific and other evidence in several

45. State & County Quick Facts: Wayne County, Michigan, *supra* note 35. This disparity between minorities in the population and minorities in the jury venire in Wayne County has been documented previously and was the subject of a study by the National Center for State Courts. PAULA L. HANNAFORD-AGOR & G. THOMAS MUNSTERMAN, THIRD JUDICIAL CIRCUIT OF MICHIGAN JURY SYSTEM ASSESSMENT 1 (2006), *available at* http://www.ncsconline.org/D_Research/cjs/pdf/Michigan_3rd_Circuit.pdf. Essentially, the study concluded that the summons source list and response system have flaws that operate to diminish minority response to summons for jury duty. *Id.*; *see also* NEIL VIDMAR & VALERIE P. HANS, AMERICAN JURIES: THE VERDICT 76 (2007) (suggesting that such “[s]ystem-level bureaucratic problems and the potential jurors themselves create difficulties that lead to less than fully representative juries”).

46. State & County Quick Facts: Wayne County, Michigan, *supra* note 35.

47. *Id.*

48. *Id.*

49. *Id.*

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

51. For a detailed description of the survey questions, see Shelton, Kim & Barak, *supra* note 1, at 340-43.

52. The television program list was revised to reflect current programming differences from the 2006 study.

criminal trial scenarios,⁵³ their likely verdict in each of those scenarios depending on whether their expectations were met,⁵⁴ and a variety of demographic and victimization-related personal information. However, the Wayne County survey also asked jurors for information that was not requested as part of the Washtenaw County study. Using Likert-type scales,⁵⁵ jurors were asked how interested they were in information about crimes and trials and how often they obtained criminal justice information from sources ranging from broadcast and print media to movies, television, and Internet sources. Jurors were asked what crime laboratory resources they thought were available to the local police and when they think those laboratory resources should be used (i.e. in every criminal case, in every felony case, or only in serious crimes such murder, rape, or robbery). In the demographics section, additional questions were added to determine whether jurors had various technology devices available to them, including a computer at work or home, a cell phone with or without text messaging or Internet access, cable or satellite television at home, and a global positioning system (GPS) or other electronic navigation device.

The survey was administered during a six-week period to all persons appearing for jury duty on Wednesdays at the Frank Murphy Hall of Justice, where state felony trials are conducted in Detroit. A judge advised the jurors that it was for academic research purposes only, that their responses would be anonymous and would not impact their potential selection as jurors in any case, and that participation

53. 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, jurors were asked whether they expected 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, and ballistics or other firearms laboratory evidence. The choices for each type of evidence were "yes," "no," or "unsure."

54. Prior to this section, jurors were provided with the reasonable doubt and burden of proof jury instructions used in Michigan. They were then asked how likely they were to find a defendant guilty or not guilty based on certain types of evidence presented in the seven various types of cases. Responses were made 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."

55. The Likert Scale is a typical survey questionnaire format. See Types of Survey Questions, Encyclopedia of Educational Technology, San Diego State University, <http://coe.sdsu.edu/eet/Articles/surveyquest/index.htm> (last visited Nov. 3, 2009). It is an ordered scale from which respondents choose one option that best aligns with their view. *Id.* There are typically between four and seven choices with labels and in scoring, numbers are usually assigned to each choice. *Id.*

was entirely voluntary. Of the 1,257 persons appearing for jury duty, 1,219 completed valid surveys.

III. THE EFFECT OF CSI-WATCHING ON METROPOLITAN JURORS

A. *Expectations for Scientific Evidence are High*

Jurors' expectations that the prosecution would present scientific evidence were high in the Wayne County study, exceeding the level of expectations that the data demonstrated in the Washtenaw County study. In Wayne County, 58.3 percent of the potential jurors expected to see scientific evidence of some kind in every type of criminal case.⁵⁶ A significant number of jurors (42.1 percent) expected to see DNA in every case. This was almost double the number of Washtenaw County jurors who reported two years earlier that they expected to see DNA in every case.⁵⁷ More than half of Wayne County jurors expect to see fingerprint evidence (56.5 percent) and even ballistics evidence (49.1 percent) in every criminal case.

Expectations for scientific evidence varied according to the type of crime involved, but still remained very high overall. In murder or attempted murder cases, jurors' expectations for scientific evidence were consistently high as to each of the various scientific evidence categories. Over four out of five Wayne County jurors in a murder or attempted murder case expect to be presented with scientific evidence of some kind (83.3 percent), fingerprint evidence (84.5 percent), and ballistics evidence (83.9 percent). Almost three-quarters (74.6 percent) of the Wayne County jurors expected to see DNA evidence in murder cases.⁵⁸ In rape cases, the expectations for scientific evidence generally, and DNA evidence in particular, were very high, with 83 percent of the Wayne County jurors looking for some kind of scientific evidence and 88.9 percent expecting to see DNA evidence in a rape case, with only 3.1 percent saying they did not expect it and 4.8 percent being "unsure."⁵⁹ Even in cases involving less serious types of

56. Compared to 46.3 percent of Washtenaw County jurors in our 2006 study. Shelton, Kim & Barak, *supra* note 1, at 349.

57. *Id.*

58. Again, these responses were considerably higher than those we previously recorded in Washtenaw County where, for example, the expectation for DNA in murder cases was 45.5 percent. *Id.*

59. Compared to 72.6 percent of Washtenaw County jurors who expected to see DNA evidence in rape cases. *Id.*

crimes, jurors' expectations for scientific evidence seemed strong. In assault cases not involving murder, attempted murder, or rape, jurors expected: scientific evidence of some kind (55 percent), DNA evidence (48.6 percent), fingerprint evidence (54 percent), and ballistics (44.6 percent). In breaking and entering cases, the expectations were: scientific evidence of some kind (56.8 percent), DNA evidence (31.9 percent), fingerprint evidence (83.8 percent), and ballistics (28.8 percent). In any theft case, the expectations were: scientific evidence of some kind (45.4 percent), DNA evidence (24.2 percent), fingerprint evidence (83.8 percent), and ballistics evidence (28.8 percent). In general, the expectation for fingerprint evidence was high for every type of crime that was asked about in the survey.

B. The Relationship of CSI-Watching to High Expectations for Scientific Evidence

The data collected in the Washtenaw County study led to the conclusion that these high juror expectations for scientific evidence were unrelated to watching *CSI* or similar shows on television. The study of Wayne County jurors reinforced, and indeed strengthened, that conclusion.

A comparison of the impact that watching *CSI* has on the evidentiary expectations of Wayne County and Washtenaw County showed that watching *CSI* affected Wayne County jurors less than it affected Washtenaw County jurors. Thus, the metropolitan jurors seemed to be less affected by the show than the suburban jurors. Using $p < .10$ as the measure of significance,⁶⁰ watching *CSI* made a difference in the expectations for twenty-one of the forty-nine categories of evidence in the Washtenaw County study, compared to only thirteen of the forty-nine categories in the Wayne County study. For example, watching *CSI* made a significant difference in the expectations of Washtenaw County jurors for scientific evidence in murder and rape cases, while there was no such difference noted in Wayne County jurors. On the other hand, *CSI* watchers in Wayne County were more likely than those in Washtenaw County to expect DNA and fingerprint evidence in assault and breaking and entering cases. Applying a lower p-level ($p < .05$) showed a more significant difference between *CSI* watchers and non-*CSI* watchers. Using this p-

60. The "p" value is a statistical measure of probability. For example, a p value of less than .05 indicates that the statistical likelihood that the observed result occurred by chance is less than 5%, $p < .01$ means less than 1%, and so forth. A lower p value indicates a higher statistical significance. See generally Mark J. Schervish, *P Values: What They Are and What They Are Not*, 50 AMER. STATISTICIAN 203 (1996).

level, the suburban Washtenaw County sample showed a significant statistical difference in sixteen of the evidentiary expectations (including four that were almost significant), while the Wayne County sample showed differences in only nine (including one that was almost significant). A complete comparison of the evidence expectation differences between the two groups is shown in Table 2.

TABLE 2:
COMPARISON OF EVIDENCE EXPECTATION DIFFERENCES BETWEEN CSI WATCHERS AND NON-CSI WATCHERS IN WASHTENAW AND WAYNE COUNTIES

	WASHTENAW P VALUE	WAYNE P VALUE
EVERY CRIMINAL CASE		
VICTIM'S TESTIMONY	.074*	.053*
EYEWITNESS TESTIMONY	.410	.034**
CIRCUMSTANTIAL EVIDENCE	.000***	.222
SCIENTIFIC EVIDENCE OF ANY KIND	.145	.869
DNA	.275	.328
FINGERPRINT	.053*	.111
BALLISTIC EVIDENCE	.055*	.132
MURDER (OR ATTEMPT)		
VICTIM'S TESTIMONY	.398	.230
EYEWITNESS TESTIMONY	.742	.068*
CIRCUMSTANTIAL EVIDENCE	.013**	.856
SCIENTIFIC EVIDENCE OF ANY KIND	.018**	.768
DNA	.285	.855
FINGERPRINT	.304	.152
BALLISTIC EVIDENCE	.016**	.112
PHYSICAL ASSAULT		
VICTIM'S TESTIMONY	.031**	.119
EYEWITNESS TESTIMONY	.338	.427
CIRCUMSTANTIAL EVIDENCE	.872	.280
SCIENTIFIC EVIDENCE OF ANY KIND	.602	.692
DNA	.007**	.000***
FINGERPRINT	.283	.017**
BALLISTIC EVIDENCE	.268	.034**

RAPE (SEXUAL ASSAULT)		
VICTIM'S TESTIMONY	.082*	.000***
EYEWITNESS TESTIMONY	.776	.285
CIRCUMSTANTIAL EVIDENCE	.921	.514
SCIENTIFIC EVIDENCE OF ANY KIND	.072*	.256
DNA	.297	.433
FINGERPRINT	.432	.887
BALLISTIC EVIDENCE	.087*	.443
BREAKING AND ENTERING		
VICTIM'S TESTIMONY	.670	.312
EYEWITNESS TESTIMONY	.666	.444
CIRCUMSTANTIAL EVIDENCE	.031**	.768
SCIENTIFIC EVIDENCE OF ANY KIND	.052*	.297
DNA	.444	.006***
FINGERPRINT	.023**	.012**
BALLISTIC EVIDENCE	.891	.063*
ANY THEFT CASE		
VICTIM'S TESTIMONY	.177	.194
EYEWITNESS TESTIMONY	.491	.256
CIRCUMSTANTIAL EVIDENCE	.017**	.867
SCIENTIFIC EVIDENCE OF ANY KIND	.548	.452
DNA	.521	.088*
FINGERPRINT	.051*	.074*
BALLISTIC EVIDENCE	.951	.994
CRIME INVOLVING A GUN		
VICTIM'S TESTIMONY	.041**	.009***
EYEWITNESS TESTIMONY	.277	.248
CIRCUMSTANTIAL EVIDENCE	.253	.830
SCIENTIFIC EVIDENCE OF ANY KIND	.041**	.756
DNA	.339	.506
FINGERPRINT	.060*	.702
BALLISTIC EVIDENCE	.037**	.135

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

C. Demands for Scientific Evidence as a Condition of Finding Guilt

If the jurors followed the jury instruction they were given about the presumption of innocence and the burden of proof, the most rational and legally correct response to questions about their probable verdict would be, "I am not sure what I would do," and almost half of the Wayne County jurors gave some form of that response. The other

half, however, were willing to give their opinion as to their likely verdict both with and without scientific evidence. The results were similar to those recorded in the Washtenaw County study, and in most cases the jurors still appeared to give considerable weight in the testimony of fact witnesses. In the “every criminal case” category, 28.7 percent would find the defendant guilty based on eyewitness testimony even without any scientific evidence, compared to 18.8 percent who said their probable verdict would be “not guilty” in such a situation.⁶¹ On the other hand, when the prosecution relies on circumstantial evidence, the failure to produce scientific evidence of some kind may be fatal to the government’s case, with 41 percent of jurors indicating a probable acquittal and only 9.2 percent indicating a probable guilty verdict.⁶² The willingness to rely on factual witnesses did not extend to rape cases, where the jurors appeared to demand scientific evidence as a condition of finding guilt. When the prosecution relies on the rape complainant or other witnesses, but does not present scientific evidence of some kind, more jurors reported that they would find the defendant not guilty (27.1 percent) than guilty (21.1 percent). When the prosecutor does not present DNA evidence in a rape case, even more jurors surveyed indicated that they would be more likely to find the defendant not guilty, with 24.8 percent of the Wayne County jurors indicating a likely verdict of not guilty as opposed to 18.1 percent indicating a probable guilty verdict.

In other types of cases, a similar pattern of trusting factual witnesses, but demanding scientific evidence where the only other evidence is circumstantial, prevails in the Wayne County study. Even in murder cases where factual witnesses provide testimony, but there is no scientific evidence, 36.8 percent of the jurors indicated a probable guilty verdict as opposed to 18.2 percent who indicated a probable not guilty verdict. In murder cases with factual witnesses, jurors were also less likely to demand DNA evidence, with 38.4 percent indicating a probable guilty verdict without DNA compared to 12.2 percent indicating a not guilty verdict. When the prosecution relies on circumstantial evidence in a murder case and fails to introduce scientific evidence, however, those ratios reversed and 36.1 percent of the jurors indicated a probable not guilty verdict as opposed to 12.2 percent indicating a probable guilty verdict.⁶³

61. Compared to 21 percent and 16.2 percent, respectively, in the 2006 Washtenaw study. *Id.* at 354.

62. The Washtenaw results were very similar for circumstantial evidence cases, with guilty and not guilty verdict percentages at 40.4 percent and 6.5 percent, respectively. *Id.*

63. Again, the Washtenaw County jurors followed a similar pattern of probable verdicts in murder cases. *Id.*

D. The Relationship of CSI-Watching to Juror Demands for Scientific Evidence as a Requisite for Conviction

The more pertinent issue regarding any so-called *CSI* effect is whether jurors who watch *CSI* are more likely to demand that prosecutors present some scientific evidence before they will find a defendant guilty. The Washtenaw County study data showed significant differences between *CSI* watchers and non-*CSI* watchers in only four of the thirteen different crime scenarios. The data therefore tended to disprove the existence of the *CSI* effect as described by prosecutorial anecdotes. The results in the urban Wayne County study were even more pronounced. In the same thirteen scenarios, there were no significant differences in the propensity or reluctance of Wayne County jurors to find a defendant guilty based on whether they watched *CSI*-type programs. Table 3 shows the findings in Wayne County and compares them to the prior Washtenaw County results.

TABLE 3:
COMPARISON OF THE LIKELIHOOD OF CONVICTION WITHOUT SCIENTIFIC EVIDENCE
BETWEEN *CSI* WATCHERS AND NON-*CSI* WATCHERS IN WASHTENAW AND WAYNE
COUNTIES

	WASHTENAW COUNTY VALUE	WAYNE COUNTY VALUE
EVERY CRIMINAL CASE		
WITNESS TESTIMONY IS NECESSARILY INCLUDED	.058*	.957
CIRCUMSTANTIAL EVIDENCE IS SUFFICIENT SCIENTIFIC EVIDENCE	.303	.896
MURDER (OR ATTEMPTED)		
WITNESS TESTIMONY IS NECESSARILY INCLUDED	.581	.143
CIRCUMSTANTIAL EVIDENCE IS SUFFICIENT SCIENTIFIC EVIDENCE	.279	.223
PHYSICAL EVIDENCE IS NECESSARY	.415	.261
PHYSICAL EVIDENCE		
WITNESS TESTIMONY IS NECESSARILY INCLUDED	.240	.189
CIRCUMSTANTIAL EVIDENCE IS SUFFICIENT SCIENTIFIC EVIDENCE	.135	.289

Control		
Witness testimony without scientific evidence	.155	.842
Witness testimony without DNA evidence	.048**	.249
Control		
Witness testimony without fingerprint evidence	.078*	.701
Control		
Witness testimony without fingerprint evidence	.054*	.829
Control		
Witness testimony without ballistics evidence	.349	.458

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

IV. EXPLORING THE “TECH EFFECT”

Having ruled out the *CSI* effect, one explanation for the increased expectations and demands for scientific evidence by jurors is the possibility of a broader tech effect.⁶⁴ The tech effect suggests that jurors’ increased expectations and demands are more likely the result of broader cultural influences related to modern technological advances. It further 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.”⁶⁵

After publication of the 2006 Washtenaw County study, Professor Cole described the article’s suggested tech effect as an interpretation of the *CSI* effect that asserts that “the cause of changes in juror behavior is not *CSI* but rather the real-life technological improvements in forensic science.”⁶⁶ Cole’s description is an accurate, but incomplete, one. In addition to the actual forensic science improvements that have occurred, jurors’ perceptions of those increased forensic evidence capabilities, whether they exist in reality or not, also influence jurors’ behavior. Further, even if the forensic science techniques that the jurors envision actually exist, the local

64. See *supra* Part I.

65. Shelton, Kim & Barak, *supra* note 1, at 362-65.

66. Cole & Dioso-Villa, *Media and Litigation Crisis*, *supra* note 2, at 1347 (discussing the “tech effect” proposed in the Washtenaw County study).

police or prosecutors may not always have access to those techniques for budgetary, policy, or other reasons. It is the perceptions of jurors about scientific evidence that represent the real tech effect with which the criminal justice system must come to grips. An important part of that coping process is the realization that the perceptions do not arise from a single television show or even a genre of television shows, but rather from far-reaching changes in our popular culture relating to science and technology.

The tech effect, as Professor Cole accurately concludes, is “*not* a societal problem.”⁶⁷ It is not a problem in the sense that it is inappropriate or wrongful, which is how prosecutors and the media portray the *CSI* effect. It is simply a cultural reality. In other words, the *CSI* effect should not be fodder for the “faulty criminal justice system frame,” one of the five crime-and-justice “frames” that sociologist Theodore Sasson describes as competing in the United States for both the public’s and the media’s attention.⁶⁸

All five of these frames, including the other four—“blocked opportunity frame,” “social breakdown frame,” “racist system frame,” and “violent media frame”—offer explanations of crime, point to specific causes, and are accompanied by policy-oriented solutions.⁶⁹ The “faulty system frame” argues that crime stems from criminal justice leniency and inefficiency as personified by inadequate DNA laboratories.⁷⁰ The policy solutions have called for the criminal justice system to “get tough” and to emphasize the administration of “crime control” rather than the administration of “due process.”⁷¹ As Professor Ray Surette has elaborated, the faulty criminal justice system frame

holds that crime results from a lack of “law and order.” People commit crimes because they know that they can get away with them because the police are handcuffed by liberal judges. The prisons are revolving doors. The only way to ensure public safety is to increase the swiftness, certainty, and severity of punishment. Loopholes and technicalities that impede the apprehension and imprisonment of offenders must be eliminated, and funding for police, courts, and prisons must be increased. The faulty system frame is symbolically represented by the image of inmates passing through a revolving door of a prison.⁷²

67. *Id.* at 1348 (emphasis added).

68. Theodore Sasson. 1995. *Crime Talk: How Citizens Construct a Crime Problem*. Hawthorne, NY: Aldine de Gruyter, pp. 13-17.).

69. *Id.*

70. *Id.*

71. RAY SURETTE. MEDIA, CRIME, AND CRIMINAL JUSTICE: IMAGES, REALITIES, AND POLICIES 39 (3d ed. 2007).

72. *Id.*

Hence, the rising expectations for scientific evidence are not necessarily due to a *CSI* effect or a faulty criminal justice system exacerbated by unrealistic juror expectations. On the contrary, rising expectations are grounded in a mediated tech effect which has become part and parcel of our criminal justice culture. The only issue stemming from this reality is whether the criminal justice system will adapt.

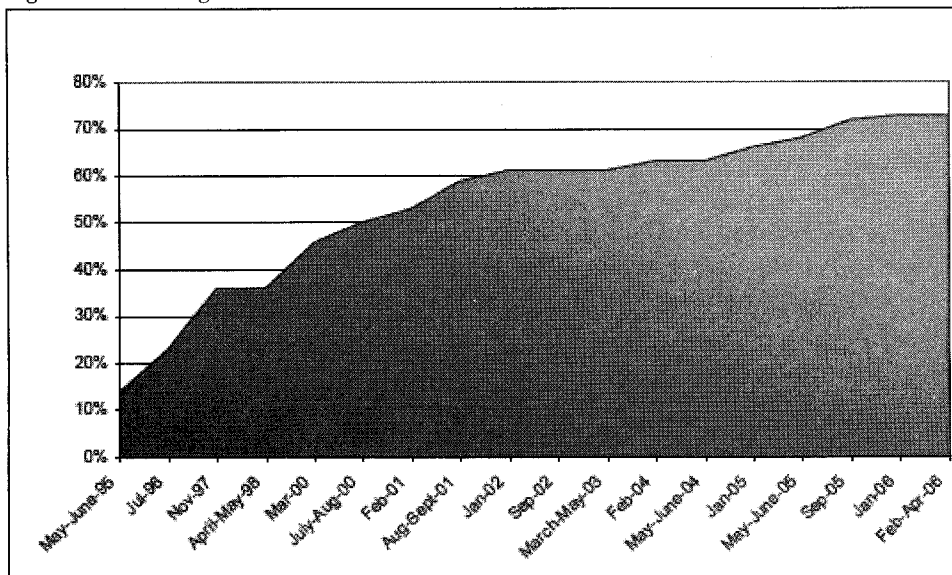
A. Juror Familiarity with Technology and Criminal Justice

Part of the basis for suggesting a tech effect is the idea that jurors have become increasingly technologically sophisticated. They use computers and consumer-level technological gadgets on a daily basis and therefore have an appreciation of the power of modern information technology. From this appreciation, jurors develop an expectation that the criminal justice system will exercise that power as well.⁷³

The Wayne county study expected jurors to have the same level of technology awareness that has been documented in the general population. To that end, the survey included questions designed to determine the level of metropolitan jurors' usage of computers and other technological equipment. Jurors were asked whether they (1) used a computer at work or at home; (2) had cellular telephones and, if so, the capabilities of those telephones; (3) had cable or satellite television access; and (4) had a GPS navigational device. The results are shown in Table 4.

73. See Donald E. Shelton, *Twenty-First Century Forensic Science Challenges for Trial Judges in Criminal Cases: Where the "Polybutadiene" Meets the "Bitumen,"* 18 WIDENER L.J. 309, 376-77 (2009); Shelton, Kim & Barak, *supra* note 1, at 362-65. See generally Sarah Keturah Deutsch & Gray Cavender, *CSI and Forensic Realism*, 15 J. CRIM. JUST. & POPULAR CULTURE 34 (2008).

TABLE 4: TECHNOLOGY FREQUENCIES		
VARIABLE	FREQUENCY	PERCENT
COMPUTER AT WORK		
YES	839	68.8%
NO	260	21.3%
UNKNOWN	120	9.8%
COMPUTER AT HOME		
YES	1057	86.7%
NO	107	8.8%
UNKNOWN	55	4.5%
CELL PHONE		
YES	1124	92.2%
NO	50	4.1%
UNKNOWN	45	3.7%
CELL PHONE WITH EMAIL/TEXTING		
YES	865	71%
NO	283	23.2%
UNKNOWN	71	5.8%
CELL PHONE WITH INTERNET		
YES	610	41.8%
NO	621	50.9%
UNKNOWN	88	7.2%
CABLE OR SATELLITE TELEVISION		
YES	1045	85.7%
NO	117	9.6%
UNKNOWN	57	4.7%
GPS/NAVIGATION SYSTEM		
YES	439	36%
NO	689	56.5%
UNKNOWN	91	7.5%

Figure 1: Percentage of U.S. Adults Online⁷⁴

The data collected from the Wayne County jurors is clearly reflective of survey data from the general population regarding access and usage of the Internet. Such usage may actually exceed some of the data about this issue obtained only a few years ago. For example, the 2006 Pew Internet Research Project revealed a continually expanding penetration of the Internet into the lives of adult Americans.⁷⁵ The Pew study data collected in early 2006 showed that 73 percent of American adults are Internet users, reflecting an increase from 66 percent in a Pew study just one year earlier.⁷⁶ Almost 87 percent of the surveyed Wayne County jurors reported having a computer in their home, and over 40 percent even have Internet access through their cell phones. Given the increased rate of Internet usage documented in the Pew research, the 87 percent reflected in the Wayne County study data may simply be a continuation of the strong trends shown over the last several years.⁷⁷

The surveyed jurors also reported using modern information appliances other than home or office computers. The Wayne County jurors' reported cell phone usage was consistent with the increased

74. MARY MADDEN, INTERNET PENETRATION AND IMPACT 3 (2006), available at http://www.pewinternet.org/~media/Files/Reports/2006/PIP_Internet_Impact.pdf.

75. *Id.* at 1.

76. *Id.*

77. *Id.* at 3.

permeation of cell phone usage that has occurred in the United States.⁷⁸ Over 92 percent of the surveyed jurors have cell phones, compared to the 73 percent nationally that the Pew Internet Project documented in 2006.⁷⁹ In addition, a 2009 Pew study reported that 49 percent of adult Americans consider their cell phones to be a “necessity” rather than a “luxury.”⁸⁰

The Wayne County jurors help to demonstrate how technology and its associated gadgets have dramatically changed our culture. As the Pew Internet Project described it, people have an evolving relationship to cyberspace and all of its information:

[A]t a time when accessing online content no longer necessarily means walking over to a weighty beige box and taking a seat. Lighter laptop computers and high-speed networks (wireless and otherwise) give people the opportunity to get digital content on the go and do new things with computing – such as making a phone call. More versatile “smart devices” make emailing, phone calling, and downloading digital content possible with a very portable device. Pictures – photographs and videos – can be created and shared almost instantly, and Web cameras can put people in touch face-to-face over distance in real-time using broadband connections.⁸¹

While jurors seem to be technologically sophisticated, the question remains: do jurors expect that their local police have, and will use, advanced technological equipment? The Wayne County survey asked jurors whether they thought the police in Southeast Michigan have certain crime laboratory testing available to them, including fingerprint comparison, ballistics analysis, hair or fiber analysis, and DNA analysis. They were also asked in what types of cases (every criminal case, every felony case, or only serious crimes like murder, rape, or robbery) they expected the local police to use those analytical technologies. Overwhelmingly, the Wayne County jurors believe that their local police have the technology available to perform fingerprint, ballistics, hair or fiber, and DNA analysis. For the most part, they expect the police to use that technology in every criminal case. Almost half (45.3 percent) of the jurors believe the

78. A 2007 Harris survey found that

Almost nine in ten (89%) of adults have a wireless or cell phone. This represents a significant increase from 77 percent in October – December 2006 when *The Harris Poll* conducted a similar analysis; Almost eight in ten (79%) adults say that they have a landline phone. This is down slightly from 81 percent in 2006.

Cell Phone Usage Continues to Increase, THE HARRIS POLL, April 4, 2008, http://www.harrisinteractive.com/harris_poll/index.asp?PID=890 (last visited Nov. 2, 2009).

79. JOHN B. HARRIGAN, A TYPOLOGY OF INFORMATION AND COMMUNICATION TECHNOLOGY USERS 12 (2007), available at http://www.pewinternet.org/~media/Files/Reports/2007/PIP_ICT_Typology.pdf.

80. PAUL TAYLOR ET AL., LUXURY OR NECESSITY?: THE PUBLIC MAKES A U-TURN 1 (2009), available at <http://pewsocialtrends.org/assets/pdf/luxury-or-necessity-2009.pdf>.

81. Horrigan, *supra* note 79, at 1.

police should use DNA analysis in every case. The results are shown in Table 5.

POLICE TECHNOLOGY	LOCAL AVAILABILITY				
	Yes	No	Unsure	Missing	
FINGERPRINT ANALYSIS	1044 (85.6)	26 (2.1)	127 (10.4)	22 (1.8)	
BALLISTICS ANALYSIS	984 (80.7)	37 (3.0)	172 (14.1)	26 (2.1)	
HAIR AND FIBER ANALYSIS	843 (69.2)	73 (6.0)	274 (22.5)	29 (2.4)	
DNA ANALYSIS	861 (70.6)	79 (6.5)	250 (20.5)	29 (2.4)	
	CASES IN WHICH TECHNOLOGY SHOULD BE USED LOCALLY				
	Every case	Every Felony	Serious Cases Only	Unsure	Missing
FINGERPRINT ANALYSIS	778 (63.8)	212 (17.4)	109 (8.9)	80 (6.6)	40 (3.3)
BALLISTICS ANALYSIS	603 (49.5)	248 (20.3)	239 (19.6)	89 (7.3)	40 (3.3)
HAIR AND FIBER ANALYSIS	543 (44.5)	189 (15.5)	342 (28.1)	106 (8.7)	39 (3.2)
DNA ANALYSIS	552 (45.3)	188 (15.4)	353 (29.0)	90 (7.4)	36 (3.0)

The popularity of criminal justice programs and news amongst the jurors surveyed also demonstrates a curiosity in criminal justice issues. The Wayne County jurors indicated that they have a fairly high interest in getting news about crime and criminal trials. Almost 70 percent said they were either “very” or “somewhat” interested in getting news about crime and criminal trials. The jurors were asked what sources they use, including radio, newspapers, television, Internet, movies, magazines, and books, to get news about crime and criminal trials and how often they use each source. The results are shown in Table 6.

TABLE 6:
SOURCES FOR NEWS ABOUT CRIME AND CRIMINAL TRIALS – FREQUENCY (PERCENT)

SOURCE	REGULARLY	OFTEN	ON OCCASION	ALMOST NEVER	NEVER	MISSING
RADIO	271 (22.2)	267 (21.9)	335 (30.0)	161 (13.2)	100 (8.2)	54 (4.4)
NEWSPAPERS	260 (21.3)	274 (22.5)	335 (27.5)	179 (14.7)	119 (9.8)	52 (4.3)
TELEVISION	490 (40.2)	349 (28.6)	251 (20.6)	55 (4.5)	29 (2.4)	45 (3.7)
INTERNET	187 (15.3)	228 (18.7)	310 (25.4)	183 (15.0)	229 (18.7)	83 (6.8)
MOVIES	64 (5.3)	114 (9.4)	356 (29.2)	316 (25.9)	291 (23.9)	78 (6.4)
MAGAZINES	34 (2.8)	83 (6.8)	333 (27.3)	357 (29.3)	334 (27.4)	78 (6.4)
BOOKS	30 (2.5)	33 (2.7)	162 (13.3)	235 (19.3)	686 (56.3)	73 (6.0)

The study data showed that print media is not the primary source for news about crime. Television is the clearly dominant medium for criminal justice information in popular culture, with 68.8 percent of jurors indicating that they used television to get such information regularly, if not often. Adding jurors who said that they used television at least on occasion for criminal justice information increases the cumulative percentage to 89.4 percent. Nearly half of the jurors in the Wayne County study reported using newspapers at least “often” and 34 percent of the jurors used the Internet at least “often” to get criminal justice information.

Although the jurors primarily rely on television for criminal justice information, that medium has recently undergone significant changes.⁸² Access to a multitude of sources through cable television has dramatically changed the availability and type of information, including information about crimes, trials, and the criminal justice system, in our popular culture. For example, in 2008, more people reported that they obtained their national news from cable television programs than from traditional television broadcast network news programs, although people continued to rely on local broadcast stations for local news.⁸³ Nationally, 89.1 percent of American households have cable or satellite television access, while only 10.9 percent have broadcast only.⁸⁴ As indicated in Table 6, Wayne County

82. Taylor, *supra* note 80.

83. Press Release, Pew Research Ctr. for the People & the Press, Audience Segments in a Changing News Environment 13 (Aug. 17, 2008), available at <http://people-press.org/reports/pdf/444.pdf>.

84. *Household TV Trends Holding Steady: Nielsen's Economic Study 2008*, NIELSEN, Feb. 24, 2009, http://blog.nielsen.com/nielsenwire/media_entertainment/household-tv-trends-holding-steady-nielsen%E2%80%99s-economic-study-2008/ (last visited Nov. 22, 2009).

jurors reported information consistent with this trend, with over 85 percent indicating that they accessed television through cable or satellite.

Social scientists have long understood that characterizations of our criminal justice system in television and other media influence jurors' perceptions of that system. An early explanation for this influence is the cultivation theory, which Communications Professor George Gerbner posited over thirty years ago.⁸⁵ He theorized that television programs develop or "cultivate" the public's perceptions of societal reality.⁸⁶ Indeed, he regarded television as such a strong force in our society that he believed it was the source of our perceptions of reality.⁸⁷ Gerbner found that one strong message that television communicated to the public was about crime and an overestimated likelihood of becoming a victim of crime in a "mean world."⁸⁸

Gerbner's view of mediated images of crime and justice has been expanded and developed over the past thirty years.⁸⁹ The modern issue with the originally framed cultivation theory as a means of explaining the impact of popular culture on individual perceptions of reality is that it is technologically outdated.⁹⁰ Although it still may be the most important source of criminal justice information, television no longer has the overwhelming media impact on our culture today that it did when Gerbner made his observations.⁹¹ Thirty years has turned out to be an enormous amount of time technologically, as there are many more types of media sources now than there were then.

Television itself has changed dramatically. In her look at the *CSI* effect, Professor Kimberlianne Podlas noted how much the television world has changed:

Researchers, however, have noted that our contemporary television environment differs significantly from that which inspired cultivation theory. In general, when Gerbner began collecting data, in general, viewers could watch only three network affiliates, and, in larger markets, a few independent stations. Therefore, a heavy viewer of television

85. George Gerbner et al., *Growing Up with Television: Cultivation Processes*, in *MEDIA EFFECTS: ADVANCES IN THEORY AND RESEARCH* 43, 43-44 (Jennings Bryant & Dolf Zillmann eds., 2d ed. 2002); George Gerbner & Larry Gross, *Living with Television: The Violence Profile*, 26 *J. COMM.* 173, 191 (1976), available at <http://www.unf.edu/~pharwood/courses/fall05/3075fall05/crimegerbner.pdf>.

86. Gerbner & Gross, *supra* note 85, at 191.

87. *Id.*

88. *Id.* at 193.

89. See Katherine Miller, *COMMUNICATION THEORIES: PERSPECTIVES, PROCESSES, AND CONTEXTS* (2d ed. 2005).

90. See Podlas, *Exposing the Media Myth*, *supra* note 23; *infra* pp. 35-36.

91. *Id.*

watched a homogenous, finite universe of options. This led Gerbner to argue that the themes and conventions of storytelling cut across all programming.

Since that time, television offerings have increased manifold. A heavy viewer can watch both a highly varied and highly specialized array of options. Consequently, many researchers assert that measuring the raw totality of TV viewing is no longer accurate.⁹²

Such assertions, however, should not be read to suggest that Gerbner's conception of the impact of mass media, and television in particular, on perceptions of the criminal justice system are no longer valid. Instead, these assertions should be interpreted to mean that the range of sources of mass media in general, and the range of television sources in particular, is much broader and diverse than when Gerbner formulated the cultivation theory.

Certainly, it remains true that portrayals of crime and criminal justice on television impact the perception of law and, in particular, criminal justice in our popular culture.⁹³ Today, however, the medium of television is one of many more conveyance mechanisms for the messages about crime and criminal justice we receive from the media. Television, while still a dominant media source, is no longer the monopolizing or overpowering media influence in our society that it once was.⁹⁴

While Podlas's observations about television and the increased diversity of media are undoubtedly factually correct, it does not necessarily follow that the messages about crime and criminal justice that the expanded media convey have also changed. The diversity of sources does not necessarily mean that there is a concomitant diversity of themes about criminal justice that those media sources portray. The message that Gerbner saw in the media about crime and the "mean world" is still conveyed, but perhaps now by a much broader and diverse array of media sources, including a more diverse television medium itself. Cultivation theory is still valid, but this

92. Podlas, *Exposing the Media Myth*, *supra* note 23, at 448 (footnote omitted).

93. See Steven D. Stark, *Perry Mason Meets Sonny Crockett: The History of Lawyers and the Police as Television Heroes*, 42 U. MIAMI L. REV. 229, 229-35 (1987); Steven Keslowitz, Note, *The Simpsons, 24, and the Law: How Homer Simpson and Jack Bauer Influence Congressional Lawmaking and Judicial Reasoning*, 29 CARDOZO L. REV. 2787, 2787-98 (2007).

94. See John Dimmick, Yan Chen & Zhan Li, *Competition Between the Internet and Traditional News Media: The Gratification-Opportunities Niche Dimension*, 17 J. MEDIA ECON. 19, 27 (2004) ("[T]he Internet has a competitive displacement effect on traditional media in the daily news domain with the largest displacements occurring for television and newspapers."); Press Release, Pew Research Ctr. for the People & the Press, *Social Networking and Online Videos Take Off 4* (Jan. 11, 2008), available at <http://people-press.org/reports/pdf/384.pdf> (indicating that the number of people who get political information from the Internet, as opposed to television, almost doubled between 2004 and 2008).

theory now applies to a greater diversity or multiplicity of media, including television. More importantly to the issue of demands for forensic evidence, the same limited five frames of Sasson still appear to constitute the themes or messages found in each and all of the media.⁹⁵

B. Correlating the Tech Effect to Juror Expectations for Scientific Evidence

To examine the tech effect, the Wayne County study assumed that modern technological advances would be reflected in personal familiarity with the use of technology and in various popular media, including television, radio, newspaper, or the Internet. The study also assumed that those who use technology regularly or are frequently exposed to popular media would be more aware of the technological and scientific developments in forensics.

The survey first measured the level of juror exposure to various types of criminal justice-related television programs including news, dramas, and documentaries. Juror television-watching patterns for nineteen programs were measured on a five-point Likert scale.⁹⁶ Each juror's set of responses was added to construct an index of the juror's overall exposure to justice-related television programs. With 19 programs and a watching pattern range of 1 to 5 for each program, the index of jurors' overall exposure to various justice-related television programs ranges from 19 to 95.

The second measure was the level of jurors' exposure to various media sources in collecting information about crime and criminal trials. Jurors were asked how often they obtain news or information about crime and criminal trials from radio, newspaper, television, Internet, movies, magazines, and true crime books or crime novels. Jurors' exposure to various media sources was measured on a five-point Likert scale.⁹⁷ With seven media sources and an exposure range of 1 to 5 for each media source, the overall results for each juror range from seven to thirty-five.

The third measure related to the use of technology devices. As stated earlier, the use of technology devices generally was so high that

95. See *supra* text accompanying notes 69-72.

96. Specifically, the question read: How often do you watch these television programs?; 5 = regularly, 4 = often, 3 = on occasion, 2 = almost never, and 1 = never.

97. Specifically, the question read: How often get do you news or information about crime and criminal trials from these sources: radio, newspapers, television, internet at home or work, movies, magazines, true crime book or crime novels?; 5 = regularly, 4 = often, 3 = on occasion, 2 = almost never, and 1 = never.

regression using the full range of devices would not be meaningful. There was a significant break between jurors who had cell phones with an Internet access feature and those who did not. For comparison purposes, that variable was used to distinguish the most active users of technology devices.

Of course, the Wayne County study also measured the jurors' exposure to *CSI* and other related television programs separately, with the same scale used in the first measure to compare potential differences between the *CSI* effect and the tech effect.⁹⁸ The study assumed that higher scores in these indexes would indicate more exposure to technological development in society in general and in forensics specifically. The first three measures were used to examine the tech effect, and the fourth was used for a comparison with the *CSI* effect. In order to examine the tech effect beyond the jurors' individual characteristics, the multivariate regression analysis included jurors' individual characteristics as control variables. Control variables included age, gender, race, educational level, household income, location of residence, neighborhood crime problems, victimization experience, and political views.

Jurors' expectations for seven types of evidence in cases involving seven different offenses were used as dependent variables.⁹⁹ As a result, each of the forty-nine expectations was used as a dependent variable.¹⁰⁰ We conducted three sets of forty-nine multivariate regression analyses. In the first set of analyses, jurors' expectations on each of the forty-nine conditions were regressed on jurors' exposure to various criminal justice-related television programs and control variables. In the second set, independent variables included exposure to various media sources and control variables. In the third set, the independent variable was the jurors' possession of a cell phone with an Internet feature. In order to compare differences between the *CSI* effect and tech effect, we then conducted an additional set of forty-nine multivariate regression analyses, with exposure to the *CSI*-dramas and control variables as independent variables.

98. *Supra* note 97.

99. The seven types of evidence included eyewitness testimony from the alleged victim, eyewitness testimony from at least one other witness, circumstantial evidence, scientific evidence of some kind, DNA evidence, finger print evidence, and ballistics or other firearms laboratory evidence. The seven offenses included every criminal case, murder or attempted murder, physical assault of any kind, rape or other criminal sexual conduct, breaking and entering, theft, and crime involving a gun.

100. Each expectation about evidence was measured on a three point scale and coded as 1=yes, 0=not sure, and -1=no.

The findings of the multivariate regression analyses are shown in Table 7. For convenience purposes, the table shows only the types of evidence in each offense case with which exposure to *CSI* dramas, exposure to various justice-related television programs, exposure to various media sources, and cell phone or Internet usage, respectively, has a significant relationship at least at the $p < .05$ level.¹⁰¹

TABLE 7: TYPES OF EVIDENCE EXPECTED BY JURORS (MULTIVARIATE REGRESSION ANALYSIS)				
	<i>CSI</i>	ALL- TELEVISION	VARIOUS SOURCES	CELL/INTERNET
EVERY CRIMINAL CASE	Victim	Victim	Victim	Scientific evidence
		Circumstantial	Fingerprint	DNA
		Scientific evidence	DNA	Fingerprint
		DNA	Ballistics	Ballistics
		Fingerprint		
		Ballistics		
MURDER/ATTEMPT	Victim	Eyewitness	Fingerprint	DNA
	Eyewitness	Fingerprint		Fingerprint
		Ballistics		Ballistics
PHYSICAL ASSAULT	DNA	DNA		Eyewitness
	Fingerprint	Fingerprint		DNA
		Ballistics		Ballistics
RAPE	Victim	Victim		Eyewitness
		Scientific evidence		Scientific evidence
		DNA		
		Fingerprint		
		Ballistics		

101. *Supra* note 62.

BREAKING/ENTERING	DNA	Victim	Victim	Victim
	Fingerprint	Eyewitness	Ballistics	Eyewitness
		Scientific evidence		Circumstantial
		DNA		DNA
		Fingerprint		
THEFT		Ballistics		
	DNA	Victim		Eyewitness
		Scientific evidence		DNA
		DNA		Ballistics
		Fingerprint		
GUN CRIME		Ballistics		
	Victim	Victim	Victim	Victim
		Eyewitness		
		DNA		
	Ballistics			

The jurors' exposure to various criminal television programs showed significant relationships with their expectations in thirty-two of forty-nine scenarios. In "every criminal case," for example, jurors who frequently watched various criminal justice programs were significantly more likely to expect testimony from the victim, circumstantial evidence, some kind of scientific evidence, DNA, fingerprint, and ballistic evidence than jurors who watched less frequently. In general, exposure to criminal justice programs was significantly related to the expectations in many evidence and offense scenarios.

On the other hand, juror exposure to a variety of media sources produced somewhat different findings. It showed significant relationships with expectations in only eight of forty-nine scenarios. In the "every criminal case" category, exposure to various media sources for information about recent crimes was significantly related to the expectations for testimony from victim, fingerprint, DNA, and ballistic evidence. Also, varied media exposure showed significant relationships with the expectations for fingerprint evidence in a murder case, with victim testimony and ballistics evidence in a breaking and entering case, and with victim testimony in a crime involving a gun. Interestingly, however, media exposure showed no

significant relationship with expectations for any evidence in the cases of physical assault, rape, or theft.

Juror access to and familiarity with technology devices, as reflected in the use of cell phones with Internet features, produced findings in between the other two tech effect measures. This highest level of technology usage had a significant relationship to evidentiary expectations in nineteen of the forty-nine scenarios. The jurors with cell phone Internet access had significant expectations that they would see some form of scientific evidence in six of the seven crime categories.

Jurors' exposure to *CSI* or similar dramas showed a significant relationship with their expectation in only ten out of forty-nine scenarios. As the suburban Washtenaw County study showed in 2006, jurors who watched *CSI*-type dramas more frequently were more likely to expect traditional forms of evidence, such as victim testimony or eyewitness testimony, rather than just strictly scientific evidence, such as fingerprints, ballistics, or DNA. They expected victim testimony in every criminal case, every rape case, and every gun case, and victim testimony and eyewitness testimony in murder or attempted murder cases. They also expected DNA and fingerprint evidence in physical assault and theft cases.

V. "MASS MEDIATED EFFECTS" ON ATTITUDES, BEHAVIOR, AND EXPECTATIONS

Most contemporary scholars of mass media accept the reality that both factual and fictional narratives help to shape the beliefs, values, thoughts, and actions of the general public.¹⁰² In fact, the dominant perspective within contemporary studies of crime, justice, and mass media is that of social constructionism, the belief that reality is not only composed of objective and empirically based knowledge, but also of information that we acquire from social interactions of all kinds. Social constructionism has also adopted the commingling or blurring of factual and fictional accounts as fundamental in shaping what the public comes to regard as crime and justice.¹⁰³ When it comes to the mass media's effects on the public's notions of social reality, there are four models that explain these

102. See, e.g., DORIS A. GRABER, *MASS MEDIA AND AMERICAN POLITICS* (7th ed. 2006).

103. See generally VICTOR E. KAPPELER ET AL., *THE MYTHOLOGY OF CRIME AND CRIMINAL JUSTICE* (1993) ("Myths tend to organize our views of crime, criminals, and the proper operation of the criminal justice system."); MEDIA, PROCESS, AND THE SOCIAL CONSTRUCTION OF CRIME: *STUDIES IN NEWSMAKING CRIMINOLOGY* (Gregg Barak ed., 1994) (analyzing how media coverage has shaped Americans' conception of crime and criminal justice); SURETTE, *supra* note 71.

effects: (1) the hypodermic needle model,¹⁰⁴ (2) the limited effects model,¹⁰⁵ (3) the minimal effects model, and (4) the indirect-effects model.¹⁰⁶

The hypodermic needle model, as the term suggests, assumes that the mass media has a direct and significant effect on the way people perceive social reality.¹⁰⁷ Citizens are assumed to be autonomous consumers of media-generated stories, which they rely on to develop acceptable beliefs and opinions about society.¹⁰⁸ When it comes to the administration of justice in general, or to the trial and adjudication of criminal defendants in particular, this is the most superficial model of the four. Even if it could apply to some aspects of people's views on crime and justice, it has no application in determining the outcome of a criminal verdict.

At the other end of a media-effects continuum is the limited effects model, which argues that, while individuals turn to mass media for information, they do so not as a tabula rasa but rather as people who have experience and knowledge from other sources, such as family, school, and friends.¹⁰⁹ Moreover, people use these accumulated experiences and knowledge to evaluate what they read, see, or hear from the mass media.¹¹⁰ Thus, individuals have prior, long standing beliefs and perceptions that make them susceptible or immune to mass media's content, be it factual or fictional.¹¹¹ As Professor Surette maintains, people possess a social reality that consists of both their "experienced reality" and their shared "symbolic reality."¹¹² As a result, the idea that all viewers of *CSI*-type programs would take away the same lessons is an absurd or untenable proposition to most media theorists.

Somewhere in the middle of the continuum is the minimal effects model, which argues that media effects are neither direct or total nor insignificant or inconsequential.¹¹³ From this perspective, media effects are more general in the sense that they help to establish agendas by telling us what we should be thinking about or what the

104. ROY EDWARD LOTZ, *CRIME AND THE AMERICAN PRESS* 40-41 (1991).

105. SHANTO IYENGAR & DONALD R. KINDER, *NEWS THAT MATTERS: TELEVISION AND AMERICAN OPINION* (1987).

106. *Id.*

107. LOTZ, *supra* note 104, at 40-41.

108. *Id.*

109. *See generally* IYENGAR & KINDER, *supra* note 105.

110. *Id.*

111. *Id.*

112. SURETTE, *supra* note 71, at 33-34.

113. IYENGAR & KINDER, *supra* note 105.

important issues of the day are.¹¹⁴ Media effects also help us to frame discussions either thematically, using data, trends, and context; episodically, using anecdotal, individual, and superficial stories; or both.¹¹⁵

The fourth perspective, or the indirect-effects model, rejects the hypodermic needle model.¹¹⁶ While the indirect-effects model could be located on the continuum between the limited and minimal effects models, it also shares some things in common with each of these models. As Professor Barak has previously argued, whether one is studying the interactions between law and order, crime and justice, or violence and nonviolence, one should simultaneously study the social construction of these phenomena as they are mediated through mass communications and popular culture.¹¹⁷ For example, understanding the construction of newsmaking criminology requires an examination of the conscious and unconscious processes involved in the mass dissemination of symbolic consumer goods. To explain juror responses to forensic evidence issues in criminal cases, we suggest such an indirect-effects model of mediated adjudication and turn to that model in the concluding section of this article.

VI. CONCLUSION: EXPECTATIONS AND AN INDIRECT-EFFECTS MODEL OF MEDIATED ADJUDICATION

The 2006 Washtenaw County study and the Wayne County study clearly demonstrate that jurors very much expect to see scientific evidence in criminal trials. These high expectations result in large part from what we have described as the tech effect, or public awareness of and familiarity with the powers of modern technology coupled with their awareness of the availability of that technology as an important part of the criminal adjudication process. This awareness comes from a variety of sources, especially from mass media, including television with its expanded offerings. *CSI*-type programs are a part of that media environment, but they do not play

114. See Simon Cottle, *Mediatizing the Global War on Terror: Television's Public Eye*, in *MEDIA, TERRORISM, AND THEORY: A READER* 19, 23-35 (Anandam P. Kavoori & Todd Fraley eds., 2006).

115. See *id.*

116. GREGG BARAK, *VIOLENCE AND NONVIOLENCE: PATHWAYS TO UNDERSTANDING* 189 (SAGE PUBLICATIONS 2003).

117. *Id.* at 175; MEDIA, PROCESS, AND THE SOCIAL CONSTRUCTION OF CRIME, *supra* note 103, at xi-xv; Gregg Barak, *Mediatizing Law and Order: Applying Cottle's Architecture of Communicative Frames to the Social Construction of Crime and Justice*, 3 *CRIME, MEDIA, CULTURE* 101, 101-02 (2007); Gregg Barak, *Newsmaking Criminology: Reflections on the Media, Intellectuals, and Crime*, 5 *JUST. Q.* 565, 565-66 (1988).

the significant role in forging jurors' expectations that many have attributed to them.

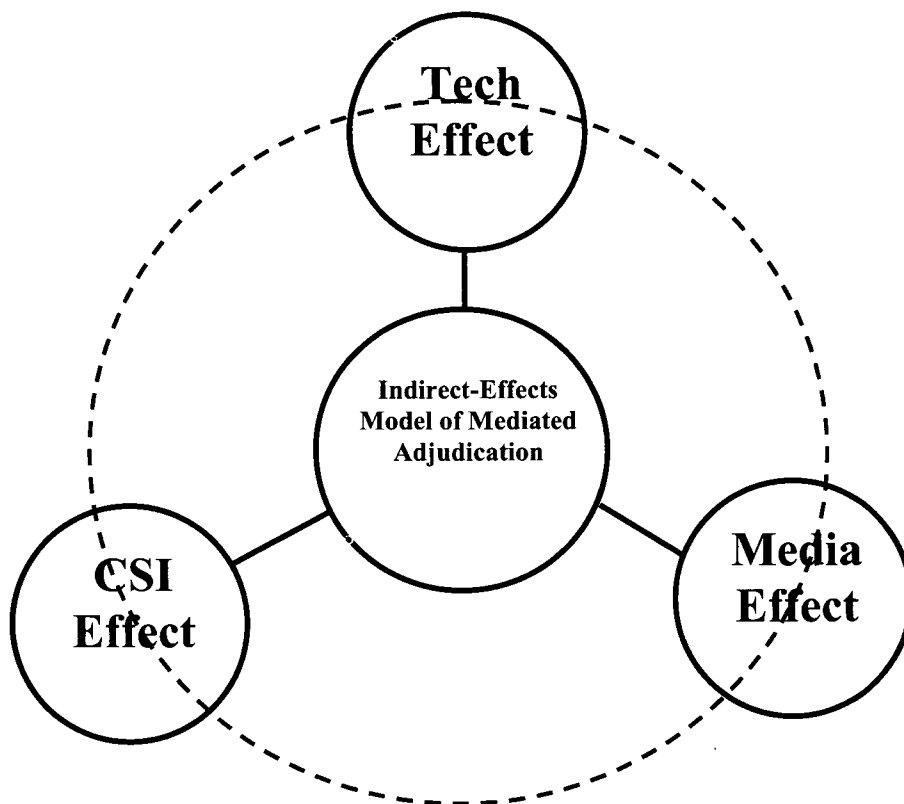
Expectations are one thing, but demands are another. The Wayne County study data also demonstrates that even though these expectations that do not originate in watching *CSI*-type programs, they also do not necessarily result in corresponding jury verdicts. At the very least, there is no factual basis for the "strong prosecutor" version of the "*CSI* effect, which claims that watching *CSI* programs causes jurors to wrongfully acquit defendants, thus the *CSI* effect is a myth. The tech effect, on the other hand, is created by the mass media far beyond the *CSI* genre; however, it still cannot be singled out as the sole causative link to jury verdicts, either for convictions or acquittals. The process by which jurors deliberate on criminal allegations is far too complex and the impact of the media generally on those outcomes is far too diverse to lie at the foot of any one particular cause. Instead, with respect to the importance of scientific evidence, there is a multifaceted media impact on juror verdicts. We therefore propose an indirect-effects model of this mediated adjudication process.

An indirect-effects model of mediated adjudication does not assume a direct or linear cause-effect relationship between criminal trial outcomes and any other variables—including the "*CSI* effect," the "tech effect," and the "mass media effect" included. Nor does this model assume that guilty versus not guilty verdicts can be correlated with selected variables capable of discerning, let alone predicting, the behavior of juries, judges, or attorneys. Rather, an indirect-effects model assumes a reciprocal system of mutually-influencing factors where behavioral outcomes are not overly determined, but may vary considerably, especially in relation to the complexity of the criminal case. In other words, a *CSI* effect, a tech effect, or a mass media effect, alone or in combination, represents some of the more conspicuous social features that may, in interaction with a variety of other cultural and individual factors, affect the outcomes of criminal adjudication.

Thus far, this Article has defined the *CSI* effect and the tech effect, and we have subjected these to a variety of empirical examinations, including path and multivariate analyses, but we have yet to define or test for "mass media" or "media effects." Of course, when we examine a specific dramatic series like *CSI*, more general media sources like radio, films, newspapers, the Internet, or various criminal justice-related television programming, what we are actually

examining are the various groups of mass communication or what may collectively be referred to as mediatized effects.¹¹⁸

Figure 2: Relationships Within Indirect-Effects Model



At the same time, media effects also refer to the increasing ubiquity and complexity by which the material and virtual realities of crime and justice are mediated throughout evolving technologies and mass culture. In a sense, then we have also tested media effects indirectly when we tested for the *CSI* effect and the tech effect. While the data from the Washtenaw County study and Wayne County study have indicated the absence of a *CSI* effect on juror decision making and shown mixed and overlapping support for a combination of technological permeation and criminal justice-related television viewing, any effect whatsoever is proof that a “mass mediated effect.” Thus, in terms of the indirect-effects model, we assume media effects as a given or a constant, and at the same time conceive of media

effects as having their own sphere in a triangulated relation for the mythical *CSI* effect and the tech effect as depicted in Figure 2.

With respect to the two spheres of the indirect-effects model for which we directly tested (the *CSI* effect and tech effect), the Wayne County study data revealed that, while there was a significant increase in the expectations for the presentation of scientific evidence by those jurors exposed to various criminal justice-related television programs, a much smaller increase for those exposed to *CSI*-type dramatic programs, and an even smaller increase for those exposed to various media sources, those expectations alone did not necessarily result in juror demands for scientific evidence as a prerequisite for a guilty verdict. In short, when it comes to juror behavior and the acquittal or conviction of criminal defendants, the *CSI* effect is, in fact, a myth. However, like many other myths circulating throughout the criminal justice system and society in general, the myth may have real consequences.¹¹⁹

Prosecutors, judges, defense lawyers, and other law enforcement actors firmly believe in the “strong prosecutor” version of the *CSI* myth, so much so that they themselves, in collaboration with the news media, manufactured the *CSI* effect.¹²⁰ Survey research of prosecutors, defense attorney, and judges demonstrates that 79 percent of these legal actors perceive that the *CSI* effect is real and that forensic-based television programs have influenced jury decisions.¹²¹ Similarly, research has also demonstrated that, either based on their own perceptions of jurors’ alleged behavior or by actually watching these shows for themselves, prosecutors and defense attorneys have altered their own behaviors during evidentiary evaluations, voir dire, opening and closing statements, and cross-examination of expert witnesses, among others.¹²² This has led prosecutors to introduce “negative evidence”¹²³ to suggest to jurors

119. See DEMYSTIFYING CRIME AND CRIMINAL JUSTICE (Robert M. Bohm & Jeffery T. Walker eds., 2006) (discussing several myths related to crime); HAROLD E. PEPINKSY & PAUL JESILOW, MYTHS THAT CAUSE CRIME (1984) (listing several myths related to crime and their implications).

120. See generally MARICOPA COUNTY ATTORNEY’S OFFICE, *CSI: MARICOPA COUNTY: THE CSI EFFECT AND ITS REAL-LIFE IMPACT ON JUSTICE* (2005) (noting the influence on jurors of *CSI*-type programs); Marquis, *supra* note 19; Thomas, *supra*, note 4.

121. Monica L. P. Robbers, *Blinded by Science: The Social Construction of Reality in Forensic Television Shows and its Effect on Criminal Jury Trials*, 19 CRIM. JUST. POL’Y REV. 84, 91 (2008).

122. See Shelton, *supra* note 73.

123. See *id.* at 378-81.

that the public taxpayers cannot afford to perform scientific tests,¹²⁴ or to ask the judge to instruct jurors that the production of scientific evidence is not necessarily part of the government's burden of proof.¹²⁵ Thus, the myth of the *CSI* effect turns into a reality for the jurors at least insofar as it is reflected in the reactive conduct of the trial actors.

Finally, in terms of an indirect-effects model of mediated adjudication, the same research has supported a weak, rather than a strong, prosecutor effect. Hence, legal actors' belief in the *CSI* myth has had real consequences and, in all likelihood, will continue to do so, regardless of whether these actors learn that the *CSI* effect on jurors' decision-making is actually a myth. This is the case because it is not any one of the mediated effects—*CSI*, tech, or mass media—acting alone that is the actual cause, but rather some kind of relationship as illustrated in Figure 2.

This leads to practical research and conceptual issues alike. For example, one problem with the type of analyses that lay the blame on one "legal actor"—such as defense attorneys, prosecutors, judges, or juries in our case studies—is that the analyses become overly determined by only one of four legal actors that make up the adversarial system, when the legally adjudicated outcome-reality is always the result of the four legal actors interacting. Similarly, it is important that, when examining the impact of other social forces (e.g., mass media, *CSI*, technology), analysts should do so with the understanding that these effects interact with each other, as well as with other variables such as class, race, gender, education, and so on. Lastly, when conceptualizing these interacting relationships, the Indirect-Effects Model of Mediated Adjudication is one viable way of conceptualizing these interacting relationships.

124. See, e.g., *People v. Compean*, No. A111367, 2007 WL 1567603, at *8 (Cal. Ct. App. May 31, 2007).

125. *United States v. Saldarriaga*, 204 F.3d 50, 52-53 (2d Cir. 2000); see *United States v. Mason*, 954 F.2d 219, 221 (4th Cir. 1992); *Evans v. State*, 922 A.2d 620, 632-33 (Md. Ct. Spec. App. 2007).

