The "C.S.I. Effect": Legal and ethical issues concerning the impact of televised forensic science on the criminal justice system.

By Georgia S. Chadjitheodorou

Abstract: The increasing use of DNA analysis and other scientific forensic techniques in the criminal justice system has fueled a significant, both public and academic, debate. In recent years, many of those discussions focus on the so called "CSI Effect". The term, in its narrow meaning, represents the supposed influence that television shows, such as C.S.I.: Crime Scene Investigation, have on jurors' and judges' decision making process. According to media reports, the millions of viewers, who watch television series which base crime solving on biometric and other scientific methods of proof, tend to have unrealistic expectations about the true potential of forensics. The present study attempts to fully describe the above phenomenon and define all of its legal and sociological aspects, offering a multi-sided view of the matter. Moreover, the study scopes a number of current academic surveys on the subject whether individuals, such as judges, prosecutors, lawyers, jurors and others, who generally participate in the criminal justice system, are influenced by the mass media portrayal of forensic science and argues on whether an overbelief in the probative value of high-tech scientific evidence truly exists. Finally, the study focuses on the broader matter of the effect of technology and its rapid progress in the fight against crime and the way justice is served as well as the continuing battle between science and the law in search of the material truth.

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1. Introductory notes

In the most recent years, mainly due to the severe financial crisis that has struck many countries and especially Greece, there has been without a doubt an increase of criminality rates. On the other hand, the rates of solved criminal cases seem to be continuously declined. It is noteworthy, that on December of 2011, the FBI announced that the rate of closed homicides cases in the U.S.A. had been declined by 30% in relation to its equivalent almost fifty years ago. In particular, according to the FBI, the percentage of closed homicide cases in 1963 was close to 91%, while in 2011, it was about 64% and in 2008 it was about 63%, almost 30% lower (Durnal, 2010).

That, of course, is the result of many factors, such as the population increase and the proliferation of organized crime and everyone involved in it (Durnal, 2010). However, someone would expect that progress in investigative methods and the new technological potential in solving crimes –from fingerprints to DNA analysis and from surveillance cameras to high-tech computers and smart phones- would deprive criminals from every chance to escape justice (Durnal, 2010). Unfortunately, that's not the case as crime remains an integral part of everyday life and it's not something that can be dealt with easily (Durnal, 2010).

2. Television and Crime

It is a fact that the media have recently made most of us believe that modern technological achievements are capable of solving any crime. But what exactly is the media? The concept of media is a continuously evolving concept. It changes and develops through time and according to technological progress. It is pointed out that the media today can be distinct: (1) either by the way their content is presented, and in particular a) in paper (books, newspapers etc), b) by sound (radio, cd etc), c) visually (television, cinema) and d) new media (internet, social networks, personal digital assistant devices etc) and (2) either by their own content (Surette, 2011). Media content includes the categories of entertainment, advertising, news, infotainment, which is the combination of entertainment and news and it includes news magazines and reality television (Surette, 2011) and edutainment, which refers to .the combination of education and entertainment and includes television shows or motion pictures with educational content, e.g. *Sesame Street* (Paraskeva, Mysirlaki and Papagianni, 2010). In nowadays, television above all is considered to be one of the most influential mediums around the globe. It does so because it projects realistic images into the homes of viewers (Mann, 2006). The problem begins to exist when these fictitious images appear to the public as true.

Over the years the criminal justice system has entered the world of media and especially television. Police and legal television series flooded the screen, making many viewers believe that they were watching an accurate representation of the criminal justice system (Mann, 2006). A typical example of the above was the show "Law and Order", which aired on television in 1990 and produced two spin-offs (*Law and Order: SVU and Law* and *Order: Criminal Intent*), combining both police and legal elements. In 2000, premiered on CBS one of the most well known forensic crime series and one of the most-watched television shows in the world (Harnick, 2012), CSI: Crime Scene Investigation.

CSI portrays science as the ultimate crime-fighting tool and it encourages an overbelief in the value of the sometimes flawed forensic findings. It has been discussed in the literature that the vast majority of individuals base their view and knowledge of the criminal system and criminals themselves on what they watch on television (Surette, 2011). The success of the series is based on the growing need of people to acquire certainty. Thus, on one hand, there are dramatically high expectations among judges, lawyers and juries as far as how fast a crime can be solved while on the other hand, they have given criminals the necessary know-how on how to act and what they have to do to avoid capture (Durnal, 2010). This way, a "myth" has been created around practicalities and the realistic potention of forensics.

High popularity of C.S.I. (Spandoni, 2007 and Harnick, 2012) and innumerable other forensic crime television series, in other words television shows that contain elements of both criminal investigations and forensic evidence (such as NCIS, Cold Case, Bones, Criminal Minds etc) have offered the audience an extremely distorted view of the capacities police authorities have. Physical evidence and especially DNA has captured the viewers' attention, making them believe that any crime can be solved within hours (Cole and Dioso, 2007; Mann, 2006 and Tyler, 2006). CSI-type television shows all follow the same pattern regarding the tracing of a crime, as they all tend to have a steady structure, which is: a) finding a corps, b) examining the crime scene by the forensic experts, c) finding evidence by the police authorities and d) arresting the suspect ·the arrest usually follows the suspect's

confession as he is surrounded by compelling evidence and proof beyond argument (Parker, 2013).

The CSI show was so widely popular globally that a new term, based on it, was created to explain the above phenomenon: the so-called "CSI effect" or "CSI syndrome" (Dowler, 2006 and Durnal, 2010). It is worth mentioning that the CSI show, became popular immediately as soon as it was shown on screen, taking its place distinguishing itself among the five most popular TV series, thus becoming the instigator for the production of another two spin offs, CSI: Miami and CSI: New York, along with the production of a series of toys, clothes etc, inspired by them. But what's more important is the fact that the series has been used for educational purposes e.g. the implication of investigative methods e.t.c, and it has even penetrated the arena of politics. For example, William Petersen, the lead actor of the series, gave a speech in the American Senate, supporting a bill (Paul Coverdell National Forensic Sciences Improvement Act), which aimed to increase the State funding to independent crime labs, where DNA analysis takes place (Shelton, Kim and Barak, 2006).

With what follows, we will try to deal with both the multifaceted content of this term, as well as relative scientific surveys and studies which have been made to understand the phenomenon at its various consequences, if they do exist.

3. Conceptual approach of the term "CSI-effect"

The term "CSI-effect", first appeared in common language around the end of 2002, via an article in "Time" magazine (Kluger, 2002). That article defined the meaning of CSI-effect as "a continuous, evolving public expectation that criminal labs can have the same success as TV labs". Even in those early days, the notion that the jury -and not only them- can be influenced and eroded by that expectation was more than obvious (Cole and Dioso-Villa, 2007). The term remerged from 2003 up to 2004, until it soared up in 2005 amongst the media (Ramsland, 2013). It is characteristic that searching for this term in scientific data bases (for example Lexis Nexis, which contains mostly academic papers of legal interest), today, hundreds of results appears, both in academic publications as well as articles in newspapers and magazines (Google Trends, 2013). In fact, scientific magazines like National Geographic and Scientific American chose this subject as a topic for their cover (Durnal, 2011).

The term "CSI-effect" refers to the potential influence that the above TV shows have in the outcome of a criminal trial (Kim, 2009). In a wider sense, this term refers to the dynamic relation between television and reality and what we most consider as a legal and forensic reality (Mopas, 2007). In any case, it has to be mentioned that the content of the term has not yet been fully explained. As a result, it is difficult for a satisfactory definition to be given. It might also be supported that the term has the characteristics of a *dispositive* concept that cannot be described in detail or with absolute certainty. In other words, CSI effect is an *umbrella* term that covers the multiple ways in which television crime shows may unduly impact juror expectations (Podlas, 2006).The attempt for codification of its multifaceted content can reveal six different typologies of its effect (Cole, 2011; Cole and Dioso-Villa, 2007 and Cole and Dioso-Villa, 2009): a) Strong prosecutor's effect, b) Weak prosecutor's effect, c) Defendant's effect, d) Producer's effect, e) Educator's effect and f) Police chief's effect.

3.1 The ***strong prosecutor's effect***

The most authentic aspect of this phenomenon is the one which refers to the wrongful exoneration of the accused who would have been convicted by the jury in absence of these particular TV series (It is obvious that the CSI effect is most popular in countries which base their criminal justice system in juries). This aspect of the term is the one which is mostly highlighted by the media, particularly in the U.S.A. Investigative forensics often refer to cases that the juries have acquitted the accused from charges just because there was no "real" evidence, such as DNA fingerprints. For example, during a trial in the state of Kansas in the United States the jury acquitted a man accused of breaking into a flat, in spite of the existence of an eye-witness as well as the accused's confession after his persecution by policemen (Cole and Dioso - Villa, 2010). In the meantime, the jury was looking in the rain for fingerprints on a wallet in order to press charges on him. The same way, in Maryland the forensic investigative authorities claimed that the jury acquitted someone who was accused of murdering his girlfriend because a half eaten sandwich, found on the crime scene, was not examined by criminological labs (Walker, 2005). Perhaps, the most distinctive case of this aspect of the above phenomenon is the trial of Robert Blake, leading star of the TV series "Baretta''. Blake was found "*not guilty*" by the jury in 2005 about his wife's murder. This fact led the District Attorney of L.A., Steve Cooley, to state, after the end of the trial that the jury proved to be "*unbelievably naïve*" (Keller, 2005), as Blake was acquitted because no trace of shooting was detected on his body or his clothes!

3.2 The *weak prosecutor's* effect

This aspect comes, in a way, as a consequence of the first one. It has to do with the way forensic and prosecution authorities deal with a case in order to avoid a potential by the jury for lack of evidence. Authorities take preventive measures in order to deter the jury to rely on the expectations deriving from the above TV series· some of these measures include questioning potential jurors about their tv viewing habits, justifying the absence of forensic evidence in a particular case etc. This is the reason why they pay more attention not to the existing evidence but to the explanation of it. That is to say to justify caution for the lack of real scientific evidence. This influence does not, in fact, bring a change to the final result of a criminal trial, but in the way that the prosecutors deal with the case, it changes, in other words, the prosecutor's tactics (Cole and Dioso-Villa, 2009 and Imwinkelried, 2010).

3.3 The *defendant's* effect

This typology is called the *opposite* CSI-effect (Cole, 2007 and Tyler, 2009). It is the version that has been foreseen as the most expected from the authorities and the counsel of the defense as well. Its content relies on the fact that the extremely positive attitude towards the scientists who work at the police criminological labs at the CSI and other similar series can possibly reinforce scientists' reliability who they testify in criminal court as experts.

Furthermore, CSI producer, Elizabeth Devine, claimed that the series turns scientists into heroes (Walker, 2005). TV scientists infallibility -never is the wrong person convicted or the lab wrong- increases the public confidence to expert eye-witnesses thus facilitating advocator's and the attorney's work. This of course can lead to the formation of a one-sided conception of law and justice, as the jury may consider police investigation as the only crucial procedure and when scientific evidence, such as DNA, appears, they may consider that the trial which follows is just a typical procedure· a procedure which only confirms police scientific findings (Tyler,

2009). That is to say, it is noticed a negative side of this influence at the same time which leads to the formation of unrealistic expectations in relation to the potential of scientific police tools used to solve a crime. Many of these programs (at least 40% of them) present techniques which are either on experimental stage or simply non-existent (Durnal, 2011; Braga et al., 2011; Brickell, 2008 and Godsey M. and Alou M., 2011).

3.4 The *producer's* effect

This version refers to the educational value of the TV series meaning that it has awakened the public (and the potential juries) as regard to the content and the multiple potentials investigative science with the result that an assigned juror can estimate more properly when for example technical expert report or an experts testimony are provided on the one hand. One of the CSI writers claimed that "the fact that so many people are so interested in the investigative science may eliminate any negative consequence of the phenomenon, for example on the potential rejection of a strong criminal prosecution'' (Catalani, 2006). However, this version may turn out to be the most dangerous one, when science isn't accurately portrayed (Cole and Dioso, 2007).

3.5 The *educator's* effect

On the one hand this typology refers to the exploitation of the students increasing interest because of the popularity of series such as the CSI among them in the investigative methods. On the other hand it refers to the improvement of students knowledge and their performance or/and criminology. In other words, students correspond positively to the material mentioned above because their interest in the application of investigative methods provides them with an encouraging frame in which they can reinforce their knowledge of chemistry and other similar sciences. It is a fact that in the recent years, the number of students who are interested in the educational area of forensics is increased (Catalani, 2006).

Activities of forensic nature can give students an opportunity not only to make themselves familiar with the science but also to be taught the relative ethical principles which govern it and are related to both scientific truth critical analysis and objectivity as well as justice and professionalism. Of course, there are contradicting opinions which emphasize on the negative consequences of the particular typology. To be more specific they claim that on the one hand the students of such schools as for example biology may quit their studies because of their disappointment when they realize that TV reality is too far away from labs reality and on the other hand, that intense interest in these sciences can even produce crime (Cole and Dioso-Villa, 2007 and Amenden, 2007).

It is particularly noteworthy that towards that direction moves the long term research of Psychology Professor of Stanford University, Albert Bandura (and similar researches carried out by other scientists, such as Eron and colleagues in 1972), which demonstrate that those who watch violent television series tend not only to be less sensitive towards violent behaviour but they themselves become more violent more likely to get involved within the criminal justice system (Bandura, 1963 and Eron, 1972). Bandura's theory, concerning the connection between violent behavior and television-viewing, consists a more specific evolution of his theory about social learning, according to which human attitude is shaped as a response to the environment, however it can define itself thus affecting the environment in turn. That is to say, there is a reciprocal determinism. However, there are many scientists who

claim that viewing of violent television programs can reduce violence as people tend to relax their own violent feelings and thoughts through identification.

3.6 The *police chief's* effect

This version refers to the educational character of these series for criminals (Cole and Dioso, 2007). Criminals seem to be taught to avoid being traced by police authorities while it is rumored that these series are extremely popular in correctional institution for the above reason (Mirsky, 2005). Several policemen report that their work becomes more difficult because criminals mind not to leave traces for example they use bleach to wipe off blood spots and plastic gloves in order not to leave fingerprints while they remove any cigarette-ends and other evidence from the crime sense (Beauregard and Bouchard, 2010; Durnal, 2010 and Huey, 2010).

4. Relative empirical surveys

Even if there is a plethora of academic papers which try to approach the CSI effect issue or in general the influence of television programs on public (Bandura, 2003 and Singer, 1980), most of these works remain on a theoretical level and they are not accompanied by empirical facts. Only a small number of studies have approached the CSI syndrome issue empirically, through the conduction of a survey among students, lawyers, jurors or potential jurors, in other words, individuals who have been called to do juror's duty in a criminal trial but were not selected.

More specifically, Podlas, Associate Professor of North Carolina University, conducted a research among three hundred and six (306) students in relation to their TV habits and asked them to reach a verdict on a hypothetical rape case justifying their decision (Podlas, 2006). The participants in this survey had to estimate whether the sexual act was consensus or not, while it was not examined if that act had really happened. It should be noted that this hypothetical scenario didn't include any information in connection with scientific evidence such as DNA fingerprints etc.

Podlas found out that 86% of the questioned people found the accused not guilty given that the act was considered to be consensus and there was no any statistic differentiation between those who watched TV series such as CSI and those who didn't (Podlas, 2006). Furthermore, the research recorded that both categories of questioned people, regardless whether they were viewers of series similar to CSI or not, relied their verdict on similar number of justifications, which referred to the spirit of such series as CSI (Podlas, 2006). After the above, Podlas came to the conclusion that there didn't exist a "CSI effect" impact on the formation of the final participants' judgment in the research and in particular, one contradictory to the prosecutor's goals (Podlas, 2006 and Kim, 2010).

Sweitzer and Saks of Arizona University carried out research with the participation of students in 2007 (Schweitzer and Saks, 2007). Specifically, they distributed the records of a criminal court to 48 students asking then to evaluate their views on the trial and real evidence. They also rated the students' TV habits considering whether they watched police series such as CSI or simply those of general content. Researchers discovered that TV viewers of CSI like series appeared more skeptical about the acceptance of uncertain probative evidence and tended not to condemn the accused. In other words TV viewers of CSI like series were more reserved with probative material than all the others. This could lead to the conclusion that people who don't watch TV series of CSI – like shows tend to the conviction more even if probative material can be disputed as they are less aware of modern

probative methods and tools. It was also found that viewers of forensic science television programs are more critical of forensic evidence and more confident in their verdicts than those who declare themselves as nonviewers of forensic science type shows. Although forensic science viewers had higher expectations of forensic evidence than nonviewers, this did not have an impact on the decision to either convict or acquit.

In 2008, two different researches, conducted amongst trial attorneys by Stevens (2008) and Thomas (2008) found that a prosecutor would charge a suspect regardless the existence of forensic evidence. The above researchers also found that the prosecutors believed that juries were very much influenced by scientific evidence that would acquit the accused in the absence of them (Stevens, 2008 and Thomas, 2008).

In 2006, Judge Sheldon and Criminology Professors in East Michigan University, Kim and Barak carried out yet another research with people called to be assigned as jurors (Sheldon, Kim and Barak, 2006). They reported that nearly half of all surveyed jurors expected to see forensic evidence in every criminal case, regardless of the charge. They also reported that jurors who were CSI viewers had higher expectations for not only forensic evidence since the inception of CSI-type shows, but also of all kinds of evidence when compared to jurors to were not CSI viewers. Researchers did not find essential differentiations regarding the tendency to conviction of the accused among those who had watched – at least one of the CSI series and those who had never done so. On the contrary, the above researchers referred to a more general technological influence running the whole society thus, increasing jurors' expectations around the results of police investigations for the collection of real probative material.

In 2009, the same researchers (Sheldon and colleagues), realizing the controversial results and the deficiencies of the investigation made until then (the small number of the ones under survey, the investigation of just one case, the failure to take social, economic, cultural and intellectual differences into consideration among the ones under survey), proceeded to a new investigation (Sheldon, Kim and Barak, 2009). This time the number of the participants came up to 1027 people, all of which had been called for juror's duty in criminal court in the country Washtenaw in Michigan of 340.000 total population and the cases which they would be questioned on were three a homicide, a bodily harm and a general case including any crime.

In each one of these cases the people under survey would decide on the guiltiness or not of the accused on the basis of the existence of either eye-witnesses evidence or scientific evidence, such as fingerprints, DNA etc, which would potentially lead to the identification or not of the accused and the following admission or not of his dismissal. This multilevel research showed that the personal characteristics of a juror e.g educational and economic level, age and gender differentiated their final judgment in proportion to the kind of the probative evidence contributed in each case, particularly in case of the existence of scientific evidence. The race, educational level and the problem of the existence of high crime rate in their district were connected with the tendency to conviction while the gender and the age led to conviction each time eye-witnesses were involved (Sheldon et al., 2009).

In reference to the CSI syndrome, the research showed that the participants' exposure to such series didn't play a direct and essential role in the formation of their final judgment. Yet, there was an indirect influence on it through the creation of increased expectations for probative evidence of technological nature which decreased their will to convict (Sheldon et al, 2009). In other words, they postulated

that the CSI effect has little merit, and instead, the increased expectations of forensic evidence at trial can best be explained by a tech-effect, in which rapid changes in technology available to the general public and increased knowledge of technology has brought about a cultural change in which scientific evidence analyzed through the latest technology is expected.

In a recent study of actual jurors that took place in 2011, Hayes-Smith and Levett (Hayes-Smith and Levett, 2011) surveyed one hundred and four (104) dismissed jurors from a courthouse. The jurors were randomly assigned to read one of three felony assault trial vignettes containing either no forensic evidence, either a low amount of it or either a high amount of forensic evidence (Call, Cook, Reitzel and McDougle, 2013). They reported that the television viewing habits of jurors had an effect on decision making in terms of selecting a verdict and confidence in their verdict (Call, Cook, Reitzel and McDougle, 2013). The jurors who watched crime television shows were more likely to support the defense than those jurors who did not watch crime television shows when there was no or low amount of forensic evidence presented in vignette (Hayes-Smith and Levett, 2011).

5. Critical evaluation of the phenomenon: Myth or fact?

After the above, the reasonable arising question is whether the CSI syndrome is real. Many seem to believe that CSI effect is a phenomenon constructed by society itself, as it is the media who distorts the public's expectations of the criminal system and justice in general.

Others seem to claim that the CSI effect is a media fabrication. This case is of particular interest as it is the media itself which produce this social phenomenon (Cole, 2011). Furthermore, many people claim that those who report this phenomenon do so when they lose a case. In this very context, it is argued by many that the jury demand more evidence than what's necessary, in order to be persuaded about the guilt of the accused (Keller, 2005; Roane and Morrison, 2005; Aronson and McMurtrie, 2007 and Cole, 2011). As a result, it is claimed that we can discuss on the influence of the CSI syndrome (Cole, 2011), meaning that the reference to this term in defense of a mistrial, whether it's exonerative or not for one of the litigants, as it is reproduced and showed by the media, is used as a vehicle of promotion for their possible future trials (Aronson and McMurtrie, 2007 and Aronson, 2007).

On the other hand, the researches which have been conducted by now, because of their apparent limitations, pathogens and restrictions, cannot give a specific and widely- accepted answer. The difference between the types of the participants (lawyers, law students, jurors, judges etc), their geographic location, age range, unequal cultural, financial and educational level etc prevent from generalizing the researches' findings and come to an homogenous result. While empirical studies often offer conflicting findings, recent theoretical works suggest that there is theoretical plausibility for the CSI effect. Also, some people suggest that this phenomenon is absolutely in existence, even if doesn't influence each potential juror or judge, but in any case in the shape of total influence on the criminal justice system, whereas others recognize the existence of simply indirect consequences on criminal court (Durnal, 2011 and Sheldon et al, 2009).

What researchers and academics share in common is the realization of an unusual or unreasonably increasing expectation of people in relation to technological probative tools, in other others words, a tech-effect. In particular, Judge Donald Sheldon found that the problem is not specific to CSI or other similar television

programs, but rather shows a general tech-effect, where a high-tech world leads to high-tech expectations and assumptions (Sheldon et al., 2009). This realization leads us to the essence of the examined matter which is the continuous influence of technology on modern societies and consequently its relation with the law (Sheldon et al., 2009), revealing a continuing battle between scientific and legal truth.

In real life, law and science tend to work together, as for example many lawyers seem to turn to science whenever they face difficult problems and science seems to respond by providing the right answers (Cooper, 2012). Although the law and the system of justice had often high expectations in relation to the effectiveness of technology in solving crimes, it is exactly this effectiveness which causes the insecurity of this system (Cole and Dioso, 2009). It is worth mentioning that American jurisprudence seems to be moving towards an opposite direction than the one which regards modern forensic evidence as infallible. Cases such as Daubert v. Merrell Dow Pharmaceuticals, Inc. (1993) and Kumbo Tire Co v. Carmichael (1999) have doubted the credibility of technical and scientific evidence and have regarded as non reliable even long established forensic methods such as fingerprinting etc (e.g. United States v. Hines, 1999 and United States v. Llera plaza, 2002) (Giannelli, 2002; Risinger, 2002; Kaye 2003; Romandetti, 2004 and Giannelli, 2009).

In other words, the CSI syndrome seems to incorporate the concern of the system of justice regarding the question whether technology endangers its reliability or not, revealing a battle between scientific and legal truth (Aronson, 2007). As a result, the system of justice seems to fail to provide those powerful evidence which jurors, judges and even the whole society demand and expect at the same time. The CSI effect clearly demonstrates the need of all people, not only judges, lawyers or juries to have a clear conscience when someone is convicted. It also shows that science can provide a level of certainty and credibility in our decisions, a form of justification of our actions.

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