

THE ETHICAL STANDING OF FORENSIC CHARACTERS IN PRIME-TIME POLICE
PROCEDURALS: PRINCIPLED, COMPASSIONATE, AND HUMAN

by
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DEDICATION

For my parents, Dale and Nancy Brown, who believed God could call a 12-year-old to be a television producer.

For my beloved husband, Derek, who now knows as much about Cultivation Theory as I do.

EPIGRAPH

The Lord asked Cain, “Where is your brother, Abel?” He answered, “I don’t know. Am I supposed to take care of my brother?” Then the Lord said, “Why have you done this horrible thing? Your brother’s blood is crying out to me from the ground, like a voice calling for revenge.”

Genesis 4:8-10 (Good News Translation)

ABSTRACT

Only a small percentage of Americans have direct contact with law enforcement or the criminal justice system. Much of our understanding of criminal justice comes from media consumption, with an increasing contribution from fictional crime procedurals. Many of these programs are ensembles which include forensic scientists. Previous studies have examined how the science of forensics is conducted and interpreted on these series. This study contributes to the existing research by examining how the moral and ethical code of the forensic scientist is portrayed on television. It aims to address the question: Are these characters as depicted trustworthy? A message system analysis was conducted of 80 episodes, 20 from each of four prime-time American ensemble crime dramas. Quantitative coding recorded the number and types of violations. Qualitative content analysis examined justifications given by characters of their own violations and their reactions to the violations of others. Forensic scientists were significantly less likely to commit violations than traditional investigators, such as detectives and special agents. Compared to traditional investigators, forensic scientists were more likely to focus on interpersonal rather than procedural justifications, and more likely to express personal concern for the impact of committing violations on the physical and emotional health of their colleagues.

Keywords: CSI Effect, Cultivation Theory, forensic science, criminal justice.

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The Ethical Standing Of Forensic Characters In Prime-Time Crime Dramas: Principled, Compassionate, And Human

A 2017 Gallup poll noted that after a decline in 2014-2015, public confidence in police returned to its 25 year average, with 57% of Americans having “a great deal” or “quite a lot” of confidence in police (Norman, 2017). The 2014-2015 decline coincided with the acquittal of George Zimmerman and the initial rise of the Black Lives Matter movement. While confidence in police has increased among whites, Republicans, and people over 60, it has declined among African Americans, Hispanics, and younger people.

Police misconduct is not the only area of the criminal justice system to be scrutinized. Crime labs at the local, state, and federal level are under scrutiny (Hansen, 2013). Qualifications vary widely, and no uniform accreditation standard yet exists. Shoddy lab procedures are disturbingly common. Outright fraud, while less common, does occur. While not examining views of forensic scientists specifically, a 2016 Pew Research study found that while public confidence in scientists in general has remained fairly consistent since the 1970’s, that trust is fairly low, with only 4 out of 10 respondents reporting a great deal of confidence in the scientific community (Funk, 2017).

The purpose of this paper is to examine the moral and ethical standing of forensic scientist characters in prime-time broadcast crime dramas, and how they compare to their traditional counterparts: the “cop on the beat,” the detective, and the special agent. The study conducts a quantitative content analysis of measures of trustworthiness: adherence to laws and procedures, inclusion of the interests and perspective of the accused, and avoidance of

conflict of interest. Then, a qualitative study was conducted of the justifications given by characters for violations, and reactions of characters to a colleague's misconduct.

According to the U. S. Department of Justice, in 2015 (the latest figures available) only about 21% of Americans had any contact with police in the preceding year (Davis, Whyde, & Langton, 2018). Thus, most Americans form their view of the criminal justice system without first-hand experience. Donovan and Klahm (2015) note that media exposure is consistently noted in academic studies as a shaper of public perceptions of crime and of the fairness of the criminal justice system. Also, as viewership of local news declines, more of that exposure comes from fictional dramas. Since forensic work takes place primarily in a lab setting, even fewer members of the public have direct experience with forensic science. After completion of formal schooling, most adults gain their information about current science from free-choice learning, with a large contribution coming from media use (Falk & Needham, 2013).

Cultivation Theory was first advanced by George Gerbner in his Cultural Indicators Study beginning in the 1960's (Morgan, Shanahan, & Signorielli, 2009). Cultivation proposes that television is the primary storyteller of American society, providing a consistent set of messages across all programming to a broad audience. The more time a viewer spends inside the world of television, the more their view of social reality will converge with that of television, independent of differences due to demographics. While a wide range of social phenomena have been considered, violence (including crime) has been examined deeply. Gerbner found that although about one percent of Americans are victims of violent crime each year, heavy television viewers will greatly overestimate their chances of being a victim, resulting in a "mean world" syndrome (Campbell, Martin, & Fabos, 2017). Violence is "a

demonstration of power in the world of television, with serious implications for social control and for the confirmation and perpetuation of minority status” (Morgan, Shanahan, & Signorielli, 2009, p. 35). Previous studies have examined the use of coercive force by law enforcement, and how that use is situated ethically (Dirikx, Van den Bulck, & Parmentier, 2012). This study extends that examination to forensic scientists, whose work often provides support for the progress of investigations toward an arrest. Podlas (2006) notes that traditional cultivation theory emphasized the broad effect of all types of programming, but more recent research has taken into account the increased diversity of outlets which allow for more varied viewing and the possibility of genre specific effects. This new conception of cultivation is similar to what criminal justice and psychology researchers describe when they define the CSI Effect.

Cole and Dioso-Villa (2007) discuss six categories of effects from forensic dramas. The Strong Prosecutor’s Effect and Defendant’s Effect have been subject to the most academic research. The Strong Prosecutor’s Effect is an incorrect acquittal of a guilty person due to little or no forensic evidence being presented, or when the jury expects certain types of evidence because this type of crime in “CSI” usually produces such evidence. The Defendant’s Effect is the concern expressed by defense attorneys that juries place too much trust in forensic evidence, weighting it more heavily than circumstantial or eyewitness evidence. These two are often viewed together and termed “The CSI Effect.” Several studies have demonstrated that heavy viewing of forensic dramas increases a desire to see forensic evidence, regardless of the type of crime (Podlas, 2006) (Shelton, Kim, & Barak, 2006) (Kim, Barak, & Shelton, 2009). However, studies generally find that while heavy viewers may be more confident of their verdict, viewing has little impact on the direction verdict

rendered (Kim, Barak, & Shelton, 2009) (Schweitzer & Saks, 2007) (Mancini, 2011) (Hayes-Smith & Levett, 2011).

Previous studies of the CSI Effect have examined the impact of heavy forensic science viewing on expectations for physical evidence, and on beliefs about the science of forensic investigation. Cultivation studies have examined what television says about the character of the scientist in general. But the character of the forensic scientist, their motivations, their ethics, and the reliability of their moral compass, has yet to be examined. Rick Workman, a Las Vegas crime scene investigator who consulted with “CSI” creator Anthony Zuiker, noted that, “...when all is said and done, the integrity of the police officer or detective, and of the CSI handling the evidence, is more important than the presence of physical evidence itself (2009, p. 25).”

This study adds to the research by examining series in which forensic scientists and investigators who use traditional techniques work together on the same team. How do their perspectives on the ethics of investigation interact? Who is more worthy of trust, the cop or the scientist? This will provide a foundation for cultivation studies of trust in forensic characters, and a path to examining further the “CSI Effect.”

Literature Review

Development of the Police Procedural

Early literary origins. Today’s television procedurals have their origins in the literary tradition of the detective novel, itself a sub-genre of the mystery. Perhaps the earliest mystery is the Biblical apocryphal book “Of Bel and the Dragon,” where Israelite captive Daniel reveals the deception of the priests of Bel. The story introduces the “locked-room”

formula, but more importantly, it establishes two elements of the protagonist: a rational, rather than superstitious, mindset and a cynical view of institutional corruption (Powell, 2006). The detective novel emerged in the mid 1800's, with the formation of centralized investigative units within the police force, the Sûreté Générale in France and Scotland Yard in Great Britain. Edgar Allan Poe's "Murders in the Rue Morgue," published in 1841 is the earliest example.

Kirby (2012) notes that while early literary investigators leaned heavily on physical evidence and emerging science, a shift in the methodology occurred in the 1940's and 50's, with the rise of the hard-boiled detective novel, with the hero moving from police detective to private eye. These protagonists relied on interpersonal methods, such as interviews and interrogations, to solve crimes. Physical evidence served a confirmative role, or in some cases, a way for dishonest detectives to cover their tracks.

Radio. The detective genre moved into the new medium of radio in the 1920's. Pre-WWII dramas focused on plot and procedure, but in the 1940's characterization became more prominent (Mittel, 2000). Whether the hero was a private detective, or increasingly a "beat cop" (Kirby, 2012), these dramas shared certain elements: action, violence, and first-person narration (Mittel, 2000).

One of the most influential examples of the genre was "Dragnet", which premiered in 1949. Producer Jack Webb called upon his experience acting in a small role as a forensic artist in the semi-documentary film "He Walked By Night" to create the series, directly borrowing his famous tagline "the story you are about to see is true, only the names have been changed to protect the innocent," as a claim to authenticity. It was on the set of this film that he met Sgt. Marty Wynn, an LAPD consultant frustrated by the inaccurate portrayal of

cops in radio dramas. Wynn offered to provide access to case files and expertise in return for a more accurate portrayal of police on “Dragnet” (Dixon, 2013). Webb abandoned the violent exposition of the crime and the court case as final act, focusing instead on the police officer and his role in the institution of criminal justice (Palmer, 2008).

Television. Dragnet moved to television on NBC in 1951. Webb located the series in the real world through the use of location footage and the narration, “This is the city, Los Angeles, California,” (Calhoun, 2014), and incorporating details of real locations into studio sets, down to casting doorknobs from city hall (Palmer, 2008). Webb continued to work closely with LAPD consultants. His goals generally converged with those of LAPD Police Chief William H. Parker. Both wished to show the department as an independent, professional force (Calhoun, 2014). Thus, from its earliest incarnation, the police procedural was a highly conservative genre, with police as the custodian, protector, and enforcer of social values.

The production style of “Dragnet” supported the assertion that the police perspective was the proper or correct way to view the moral lessons of the narrative. The narrative was told through the eyes of Detective Joe Friday. The audience is meant to identify with him. We only know what he knows, and only when he knows it. Police lingo is used without an explanation. We are assumed to be a knowledgeable insider (Mittel, 2000).

Kirby (2012) notes that the television cop maintained the highly developed interpersonal skills of the hard-boiled detective. But Arntfield (2011) argues that as the genre developed, the cop became more and more removed from the society he protected. “Dragnet’s” cop walking the beat, became “Adam-12’s” cop encased in a high-tech squad car. The ‘80’s and ‘90’s saw the police squad room looking more and more like a factory

floor. At the same time, undercover dramas, like “Miami Vice” became popular, where police essentially lost their own identity. In those same decades, police in films showed a strong trend toward the vigilante cop, with the “Die Hard” and “Lethal Weapon” series. In the post-Rodney King era, the genre shifted back to a more conservative moral view, with the heroes being “good cops” who restrained, unmasked, or violently eliminated “bad cops” (King, 2006). However, on the small screen, police were fundamentally honest and fair, only stepping over the line or violating procedures to gain justice for victims, and often only after the system had failed. The violations generally took the form of aggressive interrogations, rather than physical violence (Dirikx, Van den Bulck, & Parmentier, 2012).

As the 1990’s dawned, police procedurals on the big screen began to include a wider range of characters and voices, with greater variety in age, nationality, body types, and fighting styles, as in the popular “Rush Hour” franchise (Gates, 2012). This diversity of voices was reflected to some extent in small screen procedurals. Manis (2009) notes that “Law & Order,” which premiered in 1990, maintained many of the elements of the traditional conservative police drama. The police and the district attorney are distinct yet working in tandem to bring justice. Each episode follows a predictable formula of crime, investigation, prosecution, and (usually) conviction. Yet, each episode also contains almost predictable missteps and misidentifications, bringing an element of fallibility to these authority figures. Perpetrators are often situated in a societal context which partially explains (although not always excuses) their actions. Prosecutors and defense attorneys do not always follow the political or philosophical positions on the conservative to liberal spectrum we might expect.

The post-9/11 era brought an additional layer of complexity to procedurals with the introduction of anti-terrorism investigations. “24” is perhaps the earliest and most explicit

example. Jack Bauer is engaged in a “ticking time bomb” style scenario, in which the lives of many innocents are balanced against the civil rights of a single suspect. The protagonist tries regular channels to the extent possible given the limited time, but ultimately violence is necessary. This not only justifies irregular techniques, but serves to normalize them (Nikolaidi, 2011).

Donnelly proposes that “Dexter” is also an outgrowth of America’s struggle to cope with the new complexities of a post-9/11 world. Dexter is a blood-spatter analyst by day, and a vigilante serial killer of killers by night. Unlike the anti-hero serial killers of the 1980’s, Dexter harkens back to traditional vigilante characters of early-American legend and Westerns. Dexter’s code may not correspond to traditional morality, but it is a code. Smith contends that Dexter also draws upon elements of superhero fiction, both graphic novels and film, particularly Batman, the Dark Knight. Both characters are work outside law and convention toward a self-defined moral end, yet can masquerade as a typical citizen. Dexter allows us to grapple with the blurring line between justice and vengeance. However, given the mixed-genre nature of the series, “Dexter” represents an outlier in forensic character behavior.

The emergence of alternate distribution channels, such as premium cable and streaming, allowed for smaller audiences for a profitable run, which permitted more explicit diversity of voices in small screen procedurals. HBO’s “The Wire” is one example. Hanson (2012) notes that, like “Dragnet” before it, “The Wire” employed police jargon. But, “The Wire” also faithfully reproduced the lingo of other sub-cultures, such as drug dealers and users. The series portrayed these characters in a nuanced manner, and drug users in particular with significant sympathy. Characters in the series frequently misunderstand each other, and

the audience is aware that it may also misunderstand the characters, both police and criminals.

The Forensic Procedural

By the close of the 20th century and into the 21st, the crime procedural was a popular and thriving genre on prime-time television, with a well-established tradition of protagonists who protected and served society, only violating established rules and ethics to further those goals or to restrain the rare bad actors among their own. However, a new sub-genre was emerging, the forensic procedural. These series had a distinctive new type of protagonist, the forensic investigator.

Kirby (2012) notes that scientific observation and forensics have been part of detective fiction since its earliest print incarnation. Poe's detective Dupin rejects conflicting eyewitness evidence and identifies the murder solely from physical evidence. In Doyle's Sherlock Holmes stories, the police detectives are led astray by eyewitnesses, while Holmes' attention to physical evidence combined with observation of human behavior leads to the solution of the crime.

As noted above, in the 1980's crime narratives in movies included increasing diversity in protagonists. Greater numbers of female detectives entered the genre. Since they could not contend with male criminals in physical confrontations, they tended to adopt other methods, with forensic investigation providing a convenient toolkit (King, 2006).

Science entered the crime genre on the small screen as well. Jermyn (2012) asserts that medical dramas and surgical reality shows provided a visual lexicon for the emerging forensic procedural. "Quincy M.E." (1976-1983) was the first program to feature a medical examiner as its protagonist, but Jermyn contends that the first true forensic procedural was

British network ITV's "Prime Suspect," which premiered in 1991. The series established a visual pattern of graphic crime scenes and violated bodies. In the narrative, science itself was a co-equal star of the show alongside an unflinching human protagonist.

The forensic drama came to American television with the premiere of "CSI" in 2000. As Jermyn suggests, science is a character in this drama. But increasingly, physical evidence is also a character, one that is both truthful and infallible (Kruse, 2010). The character of physical evidence in the forensic drama is further defined by Bilandsic, et. al., (2009). Physical evidence is always present. It predominates over other types of evidence. It is not subject to bias. Most importantly, it always gets its man.

The evidence speaks, but only the forensic investigator may hear and interpret. Forensic investigators are a highly educated, elite group, in a long tradition of science (Kruse, 2010). They "possess the intellect, insight, discipline, and understanding that the police officers lack" (Kruse, 2010, p. 83) Real world forensic professionals note the unrealistically perfect performance of forensic investigators. Mistakes are rare in these dramas, any mistakes are discovered early, and the criminal is caught far too often. Many of the techniques are cutting-edge, available to only the most advanced labs, and while the realism of the techniques is fairly high, the assessment of their accuracy is low (Patry, Stinson, & S.M., 2008).

Arntfield (2011) noted that traditional cops had become more separated from their community. Harriss (2011) observes that in the forensic procedural, the forensic investigator is completely separated from the general public. Crime scene tape rings them in the field. They collect the evidence, then return to the lab. The lab in these dramas is bright, clean, and technologically advanced (Jermyn, 2012), quite removed from the dirty, worn "factory floor"

squad room of the traditional cop (Kirby, 2012). Whether in the field or the lab, personality quirks and misanthropic tendencies further isolate the forensic investigator (Harriss, 2011). Cavender and Deutsch (2007) note that forensic investigators also wear lab coats rather than uniforms and employ specialized jargon. Lab equipment substitutes for the gun as a weapon. Harriss (2011) observes that the forensic investigator is employed by the police, and yet is not a police officer; and thus, is one step removed from the repressive power of the law.

Cavender and Deutsch's (2007) examination of the "CSI" franchise found that the forensic investigators displayed greater involvement by female characters, while still preserving the idea of special feminine insights. Persons of color were as professional as their counterparts, but assimilated into a white world. Overall, "CSI" characters reinforced moral authority in society much as police officers did in traditional (non-forensic) procedurals. Cavender and Deutsch did not note instances of unethical behavior, however they did not code for this.

While Gerbner (1987) did not study forensic scientists specifically, he did examine the portrayal of scientists on television in general. He found that scientists were overwhelmingly good characters, with a 5:1 ratio.¹ But this was lower than for other

¹ One ambiguous example within the forensic procedural genre is Showtime's cult hit, "Dexter". Donnelly (2012) proposes that "Dexter" is an outgrowth of America's struggle to cope with the new complexities of a post-9/11 world. Dexter is a blood-spatter analyst by day, and a vigilante serial killer of killers by night. Unlike the anti-hero serial killers of the

professions, such as police, with a 40:1 ratio. Scientists were more likely to fail than their police counterparts. They were more likely to be old, foreign, and odd, and both more likely to murder and to be murdered than any other profession. Nisbet, et. al. (2002) noted that scientists were often shown as insane and as pawns of corporate powers. Scientists were not frequent characters, but "what is clear is that when science and scientists do appear, they tend to be shown as unusual, whether in positive or negative ways. The implication is that science is not "common knowledge (p.588)." This parallels the observations above that the forensic investigator is a special sort of law enforcement professional. The contrast between police and forensic scientists here generates the following research questions:

RQ1: How often do forensic investigators commit violations of procedure or ethics compared to traditional investigators?

1980's, Dexter harkens back to traditional vigilante characters of early-American legend and Westerns. Dexter's code may not correspond to traditional morality, but it is a code. Smith (2011) contends that Dexter also draws upon elements of superhero fiction, both graphic novels and film, particularly Batman, the Dark Knight. Both characters work outside law and convention toward a self-defined moral end, yet can masquerade as a typical citizen. Dexter allows us to grapple with the blurring line between justice and vengeance. However, given the mixed-genre nature of the series, "Dexter" represents an outlier in forensic character behavior.

RQ2: For what reasons do forensic investigators commit violations of procedure or ethics, and how does this compare to traditional investigators?

Previous literature largely examines series where the main cast, that is characters listed in the main credits, are predominantly traditional investigators (police detectives and special agents), such as in “Law & Order”, or are predominantly forensic investigators, such as in “CSI”. A Wikipedia summary of top 30 ratings by season (Wikipedia, 2019) examined against Internet Movie Database (imdb.com) shows an increasing number of series which feature more balanced casts, such as in “NCIS”. Cavender and Deutsch (2007) note that police dramas frequently structure their ensemble as a family unit. Dirikx, et. al. (2012) note that while traditional investigators rarely suffer consequences, their colleagues will comment on ethical lapses. Crime fighting ensembles that feature both traditional and forensic investigators would provide the opportunity for the two methodological orientations to interact. This generates the following research question:

RQ3: How often do forensic scientists in ensemble prime time dramas challenge others on their violations of procedure or ethics, and how does this compare to traditional investigators in the ensemble?

Methods

The first step in cultivation study is message system analysis, the examination of a sample of programming to determine recurrent features and themes (Morgan, Shanahan, & Signorielli, 2009).

This study looks to the Dirikx, et. al. (2012) examination of police as a social moral agent. That study examined a selection of American prime time police dramas using both quantitative and qualitative methods to determine the extent to which police characters

upheld social values of procedural fairness. This study extends that examination to forensic science characters and investigates how both disciplines critique themselves and their counterparts.

Sample Selection

Dirikx, et. al. (2012) limited their selection universe to American police dramas, since they are the most viewed worldwide and provide a pattern for other countries' products. This study will retain that limitation.

Since the Valenti School of Communication does not currently have access to Nielsen ratings, a Wikipedia summary of top 30 ratings by season was used to draw up an initial list of candidates (Wikipedia, 2019). The ratings for the past ten years were examined. Since the research questions include a comparison of traditional and forensic characters, the initial list included all police procedurals that feature at least one traditional investigator and one forensic character in the opening credits.

Police procedurals often reflect current events, issues, and high-profile cases. Selecting series with an overlapping run will ensure that the writing teams were responding to a similar legal, political, social, and scientific environment. The series selected for examination are: "NCIS" (CBS, 2003-Present), "NCIS-NOLA" (CBS, 2014-Present), "Rizzoli and Isles" (TNT, 2010-2016), and "Bones" (FOX, 2005-2017). The examined episodes are drawn from the period when all four series were running concurrently, September 23, 2014 (the premier of "NCIS-NOLA") to September 5, 2016 (the last episode of "Rizzoli and Isles").

In keeping with Dirikx, et. al. (2012), the unit of analysis is the episode, and twenty episodes from each series were selected, for a total of eighty episodes. An online random

number generator was used to select episodes, counting from the first episode in the time period. Not every episode in a series features every character that appears in the main credits. If an episode selected via the random number generator did not feature both traditional and forensic characters, that episode was rejected and another selected.

Variables

This study looks to Dirikx, et. al. (2012) for some of its major variables. However, in this study, traditional investigator and forensic scientist characters will be coded as separate divisions. The codebook notes which characters for each series are considered forensic or traditional.

For traditional investigative characters, seven variables from Dirikx are coded. Five variables represent violations of law or professional practice: basic violations (stealing, traffic violations), Civil Rights violations (trespassing, violence), abuse of power (corruption, taking bribes), violation of procedures (ignoring orders, refusing to share evidence, breaking chain of evidence), and verbal disrespect toward citizens. The variable of voice is primarily concerned with providing an opportunity for citizens to participate in the justice process. This is measured by noting inquiring vs accusatory approach in interrogation. The inquiring approach, which encourages voice, is marked by empathy, finding common ground, and allowing the suspect to tell their story. The accusatory approach, which restricts voice, starts from an assumption of guilt, and allows only for negotiation of the negative consequences. Finally, bias is measured by noting the involvement of the investigator themselves in the crime in question, or the presence of a loved one or colleague in the crime in question.

For forensic science characters, this study retains the variables of Dirikx, et. al which would be applicable to forensic scientists. A forensic scientist is able to commit a basic

violation. They could commit a Civil Rights violation by the collection of evidence by trespassing or by obtaining physical evidence from a subject without proper legal authorization (Yadav, 2017). They could also commit a violation of procedure. This would likely take the form of contaminating a crime scene, failure to follow lab procedures, and falsification or “dry-labbing” (the reporting of results without conducting a lab procedure) (Yadav, 2017). They could also be subject to bias. In addition to being involved personally or having a family member or friend involved, a forensic scientist could have multiple relationships with a person of interest. For example, a forensic psychologist could be asked to testify about a person for whom they serve as a therapist (Yadav, 2017).

Two variables are unique to forensic characters. Yadav (2017) notes the challenge forensic scientists face in maintaining a sense of autonomy necessary for unbiased scientific analysis. In an examination of real-world forensic investigations, Judson (2017) notes that forensic scientists can experience role effects, the feeling that they are a part of the criminal justice system and must support their team members, the police officers. A forensic scientist that sees themselves as an independent actor in the process is more likely to approach the evidence with an unbiased view, balancing the interests of the police and the accused citizen, than one who sees themselves as supporting the efforts of officers. This challenge faced by forensic scientists is measured by the variable of autonomy. An example of a character exercising autonomy would be “I’ll have to wait until after the autopsy until I can tell you the cause of death.” An example of a character violating autonomy might be “If there’s DNA here, I’ll find it for you.”

Yadav (2017) discusses the complicated nature of forensic science. The field of forensics draws upon a wide range of disciplines, each with its own ethical traditions which

are themselves different from the ethics of law enforcement or the legal profession. Also, forensic science is a rapidly developing field, and law enforcement officers, legal professionals, and the public must often trust forensic scientists to help them understand the meaning of evidence. This provides an opportunity for unscrupulous persons to mislead the uninformed. The variable of misrepresentation covers the misrepresentation of credentials or misrepresenting the scope or certainty of the procedure or the result. This misrepresentation may be to any party: traditional investigators, judges, lawyers, the public, or the media.

All violation variables are combined in a new variable, `Violations_Total`. A regression is conducted on `Violations_Total` with the independent variables of Character Type, Episode, Character Name, Character Gender, Season, and Series.

In addition to the above quantitative variables, the sample was examined qualitatively for justifications of violations and reactions to violations. Each time a violation for any character was noted in the quantitative coding, any explicit justification, a direct spoken reason for the violation from the person committing it, was noted. If no explicit justification was given, a justification was inferred from the circumstances of the plot when possible. If any character reacted to the violation, the character reacting and that character's type (traditional or forensic) was noted. If the reaction was verbal, the exact phrase was noted. If the reaction was a gesture, facial expression, or action, this was noted. The justifications and reactions were sorted into broad categories and listed in tables by character type.

Coders and Reliability

The coders are the author, and the author's spouse. One episode was coded by the author as a training example. After training, two episodes were randomly chosen and coded separately then discussed to clarify the process. The author coded all 80 selected episodes.

The author's spouse coded 20 episodes randomly selected from the 80, 5 from each series, 20% of the total sample. Krippendorff's Alpha was calculated online (dfreelon.org/utis/recalfront). Alphas for each variable are reported in the table below.

Table 1: Intercoder Reliability Krippendorff's Alpha

Krippendorff's	
Violation	Alpha
Abuse	0
Autonomy	0.652
Basic	0
Bias	0.782
Civil Rights	0.379
Consequences	-0.026
Disrespect	0.549
Misrepresentation	N/A
Procedural	0.574
Reactions	0.569
Voice	0.827

Misrepresentation could not be calculated due to lack of variability. The violation did not appear in the 20-episode sample. A number of variables had low alphas. This may be due to their low incidence in the sample.

Results

Quantitative Results

In the 80-episode sample, 167 incidences of a character committing at least one violation were found. All violation variables were combined in a new variable, Violations_Total. A regression was conducted on Violations_Total with the independent variables of Character Type, Episode, Character Name, Character Gender, Season, and Series. Three variables were significant ($p < .05$ $R(165) = .091$): Series, $p = .001$ $\beta = 2.099$, Character Name, $p = .001$ $\beta = -1.777$, and Character Type, $p = .007$ $\beta = 0.338$.

Table 2: Regression on Total Violations

	Beta	p	
(Constant)		0.739	
Series	2.099	0.001	*
Character Name	-1.777	0.001	*
Character Type	0.338	0.007	*
Character Gender	-0.116	0.185	
Season	0.368	0.311	
Episode	0.046	0.553	
* $p < .05$			
N = 167 R Squared = .091			

Traditional characters committed 79.6% of total violations while forensic characters accounted for 20.4%. The significance of character type indicates support for forensic science characters being more ethical than their traditional counterparts.

Out of a total of 28 characters, 6 characters accounted for over half of the total violations (52.2%): Jane Rizzoli (10.2%), Dwayne Pride (9.6%), Sealy Booth (9.6%), James Aubrey (9.6%), Temperance Brennan (7.2%), and Leroy Gibbs (6%). Brennan is the sole forensic character among these frequent offenders. Brennan is also the only forensic character in the sample that conducts interrogations; thus, unlike most forensic characters,

she can commit a voice violation. Of Brennan's 17 violations, 10 were voice. The significance of character name with the prominence of traditional characters among the top violators bolsters the observation that, in general, forensic characters are significantly less likely to commit violations.

Table 3: Total Violations by Character Name

		Total Violations	
		N	%
Traditional			
	Jane Rizzoli	17	10.2
	Seeley Booth	16	9.6
	James Aubrey	16	9.6
	Dwayne Pride	16	9.6
	Leroy Gibbs	10	6
	Vince Korsack	9	5.4
	Meredith Brody	9	5.4
	Timothy McGee	8	4.8
	Ellie Bishop	8	4.8
	Christopher LaSalle	8	4.8
	Anthony DiNozzo	6	3.6
	Leon Vance	3	1.8
	Frankie Rizzoli	3	1.1
	Sonja Percy	3	1.8
Forensic			
	Temperance Brennan	12	7.2
	Abby Sciuto	4	2.4
	Maura Isles	4	2.4
	Nina Holiday	3	1.8
	Donald Mallard	2	1.2
	Camille Saroyan	2	1.2
	Jack Hodgins	2	1.2
	Loretta Wade	2	1.2
	Jimmy Palmer	1	0.6
	Angela Montenegro	1	0.6
	Sebastian Lund	1	0.6
	Patton Plame	1	0.6
Total		167	100

The series *Bones* accounted for 29.3% of total violations (49 violations), NCIS at 25.1% (42 violations), NCIS-NOLA at 24% (40 violations), and Rizzoli & Isles at 21.6% (36 violations).

Table 4: Total Violations by Series

		Total Violations	
		N	%
Series	Bones	49	29.3%
	NCIS	42	25.1%
	NCIS-NOLA	40	24.0%
	Rizzoli & Isles	36	21.6%
Total		167	100.0%

The significance of series name suggests an additional factor in the presence of violations in a series. Kirby (2012) discusses the concept of a “franchise,” a set of characteristics across a series that includes genre, tone, and subtext. He describes a thought experiment where one takes the same set of initial facts about a case and imagines how various forensic intensive series would solve the crime. Kirby notes:

(E)ven shows that seem identical in the centrality of physical evidence to solving crimes and whose main characters are forensic scientists, like CSI and Bones, will actually use forensic science differently in their stories. (p. 97)

If the mechanics of forensic science in an investigation varies by franchise, it is conceivable that decision making around professional ethics might also vary by series independently of character types.

Qualitative Results

Justifications. In their study of traditional characters, Dirikx, et. al. found that

Most cases of procedurally unfair behavior in our sample were conducted because police officers believed it was the only way to get the job done or because they were so repelled by the actions of criminals. When police officers were shown to commit

violations out of irritation or self-interest, this was always represented as a small, harmless misstep. (2012, p. 50)

In the mixed ensemble programs viewed, forensic characters are much less likely to commit violations than traditional counterparts, but when they do their justifications are similar. However, the order of those justifications varies between the two groups.

Explicit justifications, where a character directly said why they were committing the violation, occurred in a total of 16 cases, 8 by traditional characters and 8 by forensic characters.

Operational necessity was the most common reason for violations explicitly given by traditional characters, 4 out of 8 occurrences. The following exchange represents a typical example from NCIS Season 13 Episode 2, where the team needs information from a case file of another organization. (All characters are traditional.)

Bishop – Since it was a joint operation, we’ll need clearance from British SIS.

Vance – Gibbs?

Gibbs – I’d rather not wait, Director.

Vance – Me neither. (To Bishop) Go.

Bishop – Just to be clear, you want us to hack into the case files?

(Vance nods.)

Two of the remaining occurrences were explicitly motivated by mercy. In *Bones* Season 10 Episode 12, FBI agent James Aubrey conducts an interrogation of a child without his legal guardian, his older brother, present. Aubrey suspects the older brother is not providing an alibi because in doing so he would admit engaging in illegal activity. The

younger brother confirms that the older brother was robbing a store to provide food for the family. Aubrey explains to the boy that that by interviewing him alone, the alibi is established, but because the interview would be inadmissible, he avoided sending the child's older brother to prison for life on a three-strike rule. In NCIS NOLA Season 1 Episode 21, Special Agent LaSalle explains his illegal search is motivated by a strong desire to find justice for the victim. He states:

You know me. You know how I work. Even though every bone in my body says Cade (his brother) didn't do this, I don't speak for him. I don't speak for NOPD or NCIS. Alright? I speak for that dead girl. Windi. More than anyone, I want justice for her.

The two remaining justifications were from bias, both to protect a colleague accused of a crime.

The most common reason given by forensic characters was related to bias, a desire to help a loved one or friend involved in the case, or what might be termed bias-related, to assist a colleague who was trying to exonerate themselves or a loved one. For example, in NCIS-NOLA Season 1 Episode 21, Medical Examiner Wade and lab tech Sebastian run additional toxicology screenings to help clear LaSalle's brother. Sebastian notes that they "went rogue" indicating that he is aware this is outside of standard procedure. The desire for mercy occurs once. In NCIS Season 13 Episode 19 lab tech Abby also uses NCIS resources to assist Agent DiNozzo and his father in their quest. When the younger DiNozzo notes that running prints would be against policy in this case, she states, "A poor homeless woman in need of medical

care? That's a no brainer." The two remaining cases were related to operational necessity, obtaining evidence by unorthodox or illegal means that could not be obtained through normal channels in time.

In 22 incidences, a justification may be inferred from the character's actions or the circumstances of the plot. This is more common in traditional characters, with 19 incidences, than in forensic characters, with 3.

Among traditional characters, the most common implied justification was bias. Of the 8 bias related cases, 6 involved violent civil rights violations, physically attacking a suspect, such as NCIS Season 12 Episode 11, where Special Agent Gibbs beats Mishnev, who murdered his ex-wife. In the non-bias justifications, 6 cases were from operational necessity. Sometimes this is in a ticking clock situation such as NCIS Season 12 Episode 23, when Gibbs threatens to deport the mother of an arms dealer to force the dealer to be an informant, because there was no other path to the information that could be pursued in time to prevent a terrorist attack. Other circumstances for operational necessity stem from inability to gain evidence through traditional channels of permission or warrant. In NCIS NOLA Season 1 Episode 1, LaSalle spills a bottle of tattoo ink and wipes it up, keeping the wipe, to get a sample for analysis. Two cases appeared to be motivated by ego, NCIS Season 12 Episode 7, when Agent Bishop disobeys Gibbs' order to wait for backup out of a desire to impress him with capturing the suspect, and Bones Season 10 Episode 15, where FBI Agent Booth continues to play poker with a suspect, endangering his own gambling addiction recovery, because he wants to prove he can win the game. In one case, bias was the implied justification. In Rizzoli & Isles, Season 6 Episode 5, Detective Jane Rizzoli breaks chain of evidence by giving her mother lab results to leave visible in Medical Examiner Maura Isles'

home, circumventing Maura’s recusal from the case, the murder of Maura’s assistant. One incident appeared to be related to mercy, as DiNozzo uses NCIS resources to help his father identify a homeless Navy veteran (NCIS Season 13 Episode 19). One implied justification involved emotion. In Rizzoli & Isles Season 6 Episode 9, when his interview failed to provide any context or information about the crime, Detective Korsak appears to be motivated by frustration to call a witness an idiot within his hearing.

Among forensic characters’ implied justifications, operational necessity occurs twice (NCIS Season 12 Episode 9, Bones Season 10 Episode 10), both times to obtain evidence not available through normal procedure. Bias related justification occurs once, in Rizzoli & Isles, Season 6 Episode 1, when Nina violates autonomy by exploring an unlikely path of investigation to please Rizzoli, who was attempting to apprehend a stalker.

Table 5: Justifications

	Type of Justification	Forensic	Traditional	Total
	Explicit			
	Bias/Bias Related	5	2	7
	Operational Necessity	2	4	6
	Mercy	1	2	3
Total		8	8	16
	Implied			
	Bias/Bias Related	1	8	9
	Operational Necessity	2	6	8
	Mercy	0	1	1
	Ego	0	2	2
	Emotionally Motivated	0	1	1
	Loyalty	0	1	1
Total		3	19	22

Reactions. Traditional characters were more than twice as likely to react to a colleague's violation than forensic characters, 22 versus 10 occurrences. Both traditional and forensic characters are more likely to critique a character from the same orientation than to critique across disciplines. Since forensic characters are less likely to commit violations, this may account for the lower frequency of critiques. Just as with justifications, reactions were similar between groups, but the frequency varied.

The most common reason for reaction among traditional characters was displeasure that the violator endangered the investigation. NCIS Season 12 Episode 11 provides an unusual example of a subordinate rebuking a superior, as DiNozzo criticizes Gibbs for going into a scene without backup. Gibbs was overwhelmed by one of multiple suspects, and the mastermind they were pursuing escapes. In NCIS Season 12 Episode 7, Agent Bishop enters a building in direct defiance of a direct order out of a desire to excel and impress Agent Gibbs. This episode highlights the difference between the two discipline groups. While the traditional characters mildly haze Bishop and Special Agent Gibbs rebukes her, Medical Examiner Ducky gives gentle counsel on how to recover from the incident and move forward in getting back into Gibbs good graces. The second most common reaction among traditional characters is personal concern for the emotional or physical health of the violator, such as in Rizzoli & Isles Season, Season 6 Episode 14, where Korsak expresses concern over Jane's pursuit of her stalker, saying, "You can't keep burning the candle at both ends." In four cases, traditional investigators warn colleagues of a procedural violation. In two cases, they express displeasure at exposing oneself or others to physical danger, such as in NCIS Season 12 Episode 7 where Gibbs chides Bishop for entering a building without backup in disobedience of his direct command noting that she could have been killed.

Forensic characters most often expressed personal concern. In Rizzoli & Isles Season 6 Episode 4 and Season 7 Episode 2, Detective Rizzoli obsessively pursues a disgruntled former Police Academy classmate who is extracting revenge on Rizzoli and her friends and family. In both episodes, Medical Examiner Isles urges Rizzoli to step back from the investigation out of concern for her health, both physical and emotional. In Season 7 Episode 1, Maura receives similar advice to step away and rest from her forensic team when she is injured. Perhaps the most poignant expression of concern occurs in NCIS-NOLA Season 1 Episode 14. Agent Meredith Brody is haunted by a past mistake that is affecting her performance on the case. Medical Examiner Wade encourages Brody to confide in her in the privacy of the morgue. Wade says, “How I see this space, it’s my temple. And all who enter here are afforded solace and protection. And that goes for both the dead as well as the living.”

Forensic characters also express displeasure at endangering the investigation and make procedural violation warnings.

Table 6: Reactions

	Type of Reaction	Forensic	Traditional	Total
	Warning of Procedural Violation	1	4	5
	Exposure to Physical Danger	0	2	2
	Endangering the Investigation	2	9	11
	Personal Concern	7	7	14
Total		10	22	32

Additional Findings

Comic Relief. An interesting group of violations that might be termed comic relief emerged in the forensic characters. In NCIS Season 13 Episode 3, Abby is briefly shown taking an online defensive driving course to excuse a traffic ticket (a Basic violation). In

Bones Season 10 Episode 15, Hodgins uses Jeffersonian Institute equipment for personal experiments, breaking several beakers. In Rizzoli and Isles Season 7 Episode 12, Nina uses police computer resources and modifies a facial recognition algorithm to enter multiple sweepstakes to win a honeymoon trip. All three violations are unrelated to the case, but rather grow from the character's personal interests or private life. The personal business work does not seem to impinge on the ability of the character to conduct official business, nor does it endanger the investigation in any way. Any reaction to these violations is mild and tinged with indulgent affection. Only Hodgins' activity costs the organization money. He is docked pay for the damaged gear, and he moves his experiments to his home. When the input from his colleagues leads to an invention that could make him considerable money, he formalizes their participation in patent paperwork, intending on sharing profits. Gerbner (1987) notes that while scientists on television are usually portrayed as morally good, they are frequently odd characters. These violations serve to highlight quirks and humanize the forensic scientist. In the cases of Abby and Hodgins, their actions to atone for the minor violation emphasize a submission to legitimate authority.

Advocating scientific autonomy. Dirikx (2012) found that Voice violations among television law enforcement officers were nearly universal. Accusatory interrogations were the rule, revealing an inherent adversarial outlook for traditional investigators. The analogous variable in forensic characters is a scientific autonomy. Violations of Autonomy are found only 7 times across the 80-episode sample, compared to 88 Voice violations, revealing an inherent dispassionate or open-minded outlook.

Across all four series, forensic characters explicitly indicated a desire to follow the evidence where it led and to not make suppositions until fully supported by evidence. For

example, In NCIS Season 13 Episode 3, Ducky notes several injuries on the body at the scene, but says, “*As always*, I’ll know more when I get him back to the table. (Emphasis added.)” The adherence to scientific autonomy is perhaps most striking in *Bones*. The Jeffersonian Institute serves as a training facility in forensic anthropology. In most episodes, Brennan admonishes her interns to not range beyond what can be determined from the physical evidence.

The dispassionate orientation is often humorously noted by the traditional characters. In NCIS-NOLA Season 1 Episode 19, while examining a body at the scene Medical Examiner Wade says, “There’s no way to know until...” Special Agent Pride interrupts, “You get him on the table? (I) Ought to have you a tee shirt made up with that.” In *Rizzoli and Isles* Season 6 Episode 11, the following exchange takes place between Detective Jane Rizzoli, Medical Examiner Maura Isles, and the medical examiner of another jurisdiction, Dr. Hart.

Rizzoli: So, they were killed by the same person?

Isles: It’s possible. But it’s also possible that the two victims were killed by two left hand dominant people.

Dr. Hart: Of approximately the same height and physical build.

Rizzoli: Because they were killed by the same person.

Dr. Hart: I wouldn’t speculate.

Rizzoli: There are more of you.

Several episodes in the sample directly concerned scientific objectivity. In NCIS-NOLA Season 2 Episode 11, Loretta Wade's foster son is implicated in a murder. While she maintains contact with the team as they investigate the case, she completely recuses herself from participating. Her only input is to note to lab technician Sebastian, who is uncomfortable with the possibility of finding evidence against the young man, that physical evidence can exonerate as well as convict. Wade's behavior is in contrast to the NOPD detective on the case whose partner was almost killed by the foster son's father. The officer does not recuse herself from the case.

In Rizzoli and Isles Season 6 Episode 5, Maura Isles assistant, Susie Chang, is murdered and evidence found in her apartment suggests she was corrupt. Isles initially recuses herself from the autopsy, but not from the investigation. When forensic examiner Kent Drake suggests that someone could have placed Chang's fingerprints on the money found in her room, Isles notes, "Conjecture won't help us. We need proof." She then steps back from the case, no longer participating, only observing as Drake takes the lead. "What if you don't like what I find," Drake asks. She replies, "Just find the truth. I am confident that will exonerate Susie." Isles is eventually ordered to completely recuse herself and remain at home. However, she is provided information on the case, and her unauthorized consultation leads to finding evidence that does exonerate Chang. This is not commented upon, discovered or punished.

In Bones Season 11 Episode 20 the body of an explorer who disappeared in an Alaskan expedition is discovered and brought to the Jeffersonian Institute. When intern Dr. Clark Edison notes that he was a participant in the expedition, head forensic anthropologist Brennan immediately orders Edison to leave the lab, as he is now among the potential

suspects in the case. From this point forward, Edison remains at a distance from the investigation, answering only the questions directly asked in interrogations by the agents, even refusing to speak informally with his closest friend on the team. Brennan maintains her scientific autonomy throughout the episode. When FBI Agent Booth suggests that an anthropology professor on the expedition would have the knowledge to hide his crime, Brennan notes that Edison, as an anthropology student, would have the same knowledge. The remainder of the team struggle with remaining dispassionate. Intern Wendell Bray states that he believes Edison to be innocent. Forensic tech Hodgins agrees. “Which is now why we have to find some hard evidence in order to prove it. Angela Montenegro, another forensic tech, states,” I just wish that we could say something, publicly, and...and...and stand up for Clark.” Brennan admonishes her that this would be counterproductive, as it would call their evidence into question. Edison is found innocent of the murder after he admits to covering up another expedition member’s error and the falsification of the expedition’s findings. Only then does Brennan publicly show support for Edison, by writing an editorial urging the academic community’s understanding and forgiveness of his youthful error.

Discussion

The Forensic Scientist: Principled, Compassionate, and Human

In a content analysis study as part of an examination of media use and science attitudes, Nisbet, et. al. (2002) noted a complex, contradictory, and threat-laden image of fictional scientists. They were typically moral people, but often meddled with dangerous powers and frequently became pawns of evil corporate entities. Harriss (2011) notes that in crime dramas where forensics is prominent, such as CSI, forensic scientists are often socially

awkward or misanthropic, separated from the general public by crime scene tape and differentiated from their traditional counterparts by lab coats, technological tools, and jargon.

By contrast, in the present study, the image of the forensic scientist in mixed ensemble dramas is less foreboding and isolated.

The forensic scientist is certainly quirky. They apply intense attention and creativity in pursuit of the case, while adeptly balancing their obscure personal interests and outside projects with their professional duties. This is contrasted with their traditional counterparts, who are more likely to develop a bias driven focus on the case at hand, a physically and ethically risky tunnel vision often noted by forensic characters.

The forensic scientist is fully engaged with their traditional counterparts. They graciously accept ribbing from their law enforcement teammates. This interaction leads to a strong interpersonal bond that fosters trust, allowing them to offer concern and support across the boundaries of professional discipline and reporting structure.

In Dirikx, et. al. (2012), traditional investigators step outside procedure in time-sensitive situations and when the system in which they work breaks down. This study found a similar pattern in traditional investigators. When procedure does not work, the traditional investigator feels a responsibility to make justice happen through their own actions.

Cavender and Deutsch (2007) note that forensic dramas position physical evidence and science as the source of absolute truth, both in the sense of leading to the perpetrator of a crime and in a philosophical sense. This study demonstrates that forensic characters in mixed discipline ensembles also use the truth of science to define their ethics and to direct their moral decisions. For the forensic scientist, science will always get its man, so they have little need to proactively drive the investigation themselves. On the contrary, imposing perceptions

blurred by personal bias is thought to endanger both the progress of the investigation and the utility of their findings in court. Faithful service of science is the path that leads to justice.

The forensic scientist in these dramas then is a charmingly quirky individual of deep compassion, with strong convictions about scientific objectivity, a belief in the unerring truth of science, and professional ethics that they only violate when necessary for justice, and generally after considerable internal debate.

This portrayal is at odds with the reality of forensic science, where scandals of shoddy lab practices and outright misconduct occur with a frequency that has led some to advocate for a system of accreditation and review (Gilna, 2016). Previous literature on the CSI Effect demonstrates that for heavy viewers of the genre, inaccurate portrayals of the technology in crime dramas does have an impact on expectations for the evidence they will see in real-world courts. Experimental studies have yet to be done specifically on expectations jurors have of the ethics of the forensic experts that present that evidence. The first step toward constructing these studies is understanding the image of the ethics of the forensic scientist as presented in crime dramas. This study begins to paint that picture.

Limitations

Like the Dirikx (2012) study noted, 80 episodes is a relatively small sample. Since forensic characters are less likely to commit violations, a larger sample could refine the difference between traditional and forensic characters' rates of violations and provide more generalizable insight into the frequency of various types of violations in forensic characters.

NCIS, NCIS-NOLA, and Rizzoli & Isles contained a number of episodes that were part of multi-episode arcs pitting one of the traditional protagonists against an archenemy.

The emotionally charged nature of these episodes may contain more violations than the typical “case-of-the-week” episode.

Several of the variables that had poor reliability scores may have been affected by the very low rates of their occurrence. Mixed ensemble crime dramas usually restrict forensic scientists to the crime scene or lab, limiting their interaction with suspects. These series also do not follow the forensic scientist into the courtroom, where some real-life ethical violations occur. If the series selection criteria were changed to allow series with exclusively forensic casts where forensic characters regularly interacted with suspects, such as CSI, voice violations might be more common, as they were with Bones. If series with forensic characters in the courtroom, such as Law & Order (even if those characters were recurring rather than main credits cast) were included, misrepresentation violations might appear more often.

Future Directions

This study examined mixed ensemble crime dramas. As noted in the results above, Brennan in Bones conducted interrogations alongside the traditional characters, and had a violation profile that more closely matched that discipline. In forensic crime dramas, such as CSI, forensic characters conduct interrogations and affect arrests, like law enforcement officers in traditional dramas, like Law & Order or Blue Bloods. A study of ethics in forensic prominent dramas could clarify the image of the forensic scientist across the broader crime procedural genre.

More recent crime dramas on premium cable and streaming services, such as The Wire and Dexter, show a more ambiguous world of light and dark, with a more complicated moral code. Do these series show differences in justifications and reactions from these

broadcast series? Does the difference in moral compass and ethical focus between traditional and forensic investigators persist?

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