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## **Stemming the Tide: The Presentation of Women Scientists in *CSI***

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### **ABSTRACT**

This paper evaluates the role of Sara Sidle played by Jorja Fox in *CSI: Crime Scene Investigation (CSI)* for 15 years, and her female co-stars, allowing us to discuss specific rewards and punishments (Fiske, 1987) assigned over the course of many episodes. We reviewed three of the 15 years of *CSI: Crime Scene Investigation* to understand the media presentation of women scientists. We found that *CSI* did present stereotypical views of the female investigators and that the female characters playing these roles were often punished by the script. However, we also found that the show provided an opportunity for the story of women to be told by these female characters. Accordingly, our examination of the character of Sara Sidle and the other forensic scientists found that the portrayal was more complex than previously literature suggests.

### **KEYWORDS**

STEM; *CSI*; female scientists; media representation

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## **Stemming the Tide: The Presentation of Women Scientists in *CSI***

This paper evaluates the role of Sara Sidle played by Jorja Fox in *CSI: Crime Scene Investigation (CSI)* for 15 years, and her female co-stars, allowing us to discuss specific rewards and punishments (Fiske, 1987) assigned over the course of many episodes. We have focused on Sidle because she appeared in Season 1, Episode 1 and stayed with the show until its conclusion in 2015, but we also have considered the presentation of other female characters on the show. This evaluation of the female scientists in *CSI* points to ways that *CSI* affirms stereotypical views of women scientists. Yet the *CSI* scientists are not just female nerds. They are women with power and prestige who struggled in their television lives to be friends, lovers and mothers.

As recent scholarship indicates, many women in STEM are seeking to find a positive work-life balance. That need for work-life balance is created when work achievement requires a sacrifice of a woman's private life or the demands of private life prevent a woman from achieving her full potential at work. This is a struggle for the female characters on *CSI* and an issue often raised by women in STEM fields. Over its long history *CSI* female characters dealt with work-life balance within the plot lines, promising rewards and warning of potential punishments for women who chose a career specifically in forensics and more generally in any STEM field. In this way *CSI* contributed to the cultural dialogue on women entering STEM fields.

### **WOMEN IN STEM CAREERS**

A recent special issue of the *International Journal of Gender, Science, and Technology*, noted that "the gap between the participation of women and men in STEM fields has only slightly diminished within the last decade," (Lazarides & Ittel, 2015, p.107). In fact, the number of women receiving STEM college degrees has increased, but that has not led to more women in the field (Weisgram & Diekman, 2016). In the male dominated workplaces commonly found in STEM disciplines, "women perceive workplace climates to be cold and unwelcoming... and report feeling isolated and experiencing intentional and unintentional discrimination and gender-based microaggressions." (Archie, Kogan & Laursen, 2015, p.344). These workplace issues begin early: Girls often decide by high school to avoid careers in STEM fields. "Gendered choice behaviors start to solidify in adolescence when girls, despite gender equal performance levels in mathematics and science, report less motivation to learn, lower competence belief and higher levels of anxiety in regard to mathematics than boys," (Lazarides & Ittel, 2016, p.1).

Many reasons are cited for why women do not seek STEM positions or why they do not stay in those careers. Trübswetter and colleagues suggest that "culture and climate" are determining factors. "Many different studies indicate that inflexible work schedules and predominantly male working environments make it difficult for women to fit in, and contribute to high career drop-out rates among them," (Trübswetter, Hochfeld, & Schraudner, 2016, p.47). Their research found that

women seek working hours that provide time for family. Women want strong relationships with their colleagues. They want their careers to result in personal growth and opportunities, and they are less motivated by salary than are men. A negative culture and a hostile work climate may lead to career changes. "Lack of autonomy, leadership responsibilities, and opportunities for professional development were the most often selected reasons for considering a job change," (Trübswetter et al. 2016, p.59). Moreover, women want careers that offer a "work-life balance" that allows them to have a family (Weisgram & Diekman, 2016, p.41).

Change in the workplace may not be enough to attract women into STEM careers. Efforts need to be made to publicize positive female work environments, (Weisgram & Diekman, 2016). Trübswetter et al.(2016) believe change is necessary in the public perceptions of women in STEM. Their opinions are consistent with those scholars whose research indicates the negative aspects of STEM stereotypes (Banaji and Dasgupta, 1988; Dasgupta, Banaji, & Abelson, 1999; Greenwald, Nosek, & Banaji, 2003; Dasgupta & Asgari 2004, Stout, Dasgupta, Hunsinger, & McManus, 2011; Cheryan, Siy, Vichayapai, Drury, & Saenam, 2011). As Trübswetter et al. (2016) conclude, "The spirit of equality, however, can only ever truly be promoted by challenging underlying basic assumptions including stereotypes and social expectations" (p.61).

One of the first television series to tackle these issues of the workplace for women in STEM was *CSI*. Considering the need to publicize (Weisgram & Diekman, 2016) and to promote (Trübswetter et al., 2016) the STEM workplace, an analysis of the workplace through the lens of *CSI* women scientists allows a comparison of women scientists in the real world and in the reel reality. A critical analysis of ideology and semiotics in the texts of *CSI* provides a mythology for comparing the two realities. Fiske (1987) suggests one way of evaluating the ideology of a television program is to determine how the script assigns punishments and rewards based on the behaviors demonstrated by the characters. When a character's behaviors affirm the dominant ideology, the character is rewarded. Violating the dominant ideology leads to punishments. Male heroes are assigned the respect of other males, the love of the woman who demonstrates proper behavior, and often receive some kind of financial reward. Characters who violate the dominant ideology are often victimized, which is a direct result of their behaviors. In *CSI* we found a similar pattern of rewards and punishments. Accordingly, *CSI* participated in the cultural dialogue on women working in STEM fields.

### **SEMIOTICS AND CRITICAL STUDIES**

The literature is long established on the use of semiotics and cultural deconstruction in the evaluation of women characters in film and television. Fiske (1987) explains the value of semiotics and cultural criticism as providing a means of revealing ideology by deconstructing the "naturalness" of ideological constructs (p.6). Derrida (1986, 1989, 1997) argues that the resolution of binary oppositions in a text is one place in a culture where the arbitrary creation of meaning reveals ideological fractures. Another fracture is when signifiers are selected to convey a meaning because that process of selecting one signifier automatically means that other options were not selected. The resolution of binary oppositions and the

selection of signifiers reveals the preferred meaning and, therefore, the preferred ideology of the text. "It is behind the screen of the word that the truly fundamental characteristics of human language often appear," Derrida explains (1997, p.32). In simple terms, many actresses were available to play parts in *CSI*, but Jorja Fox and Marge Helgenberger were selected for Season 1 roles, which they continued to play for several seasons. Accordingly, all other actresses in the potential pool of actresses willing to play the role of *CSI* scientist were not selected because these two actresses resolved binary oppositions in the ways that the show's producers preferred. Generally, the preferred meanings and ideology are consistent with the audience preferences, explains Macdonald (2004). The goal of the media is to make us "comfortable" with the ideology of the television culture so that the television truths become "important truths about our lives" (p.51). *CSI* creators selected thousands of signifiers over 337 episodes; therefore, they preferred not to select millions of others. Their choices reflect their ideological preferences.

### **Female Ideology in film and television**

The analysis resulting from deconstructing the texts reveals how "gender identity" positions women in a subordinate position to "dominant patriarchal social arrangements" (McLaughlin, 1991, p.249). Arthurs (2004) contends that a cultural approach to television criticism reveals "the gender politics of sexual representations on television, and, as a means to identify the influence of feminist cultural critique on these 'popular' discourses of gender" (p.13). "Postmodern discourses are all deconstructive in that they seek to distance us from and makes us skeptical about beliefs concerning truth, knowledge, power, the self, and language that are often taken for granted within and serve as legitimation for contemporary Western culture," (Flax, 1990, p.41). Therefore, a critical approach to analysis can challenge the presumption that men are the "universal" and women are just "sex" and "the other," continues Flax (p.45). By opening up new discourses, we are no longer restricted to discussing women as sexual beings, writes Flax, but we can explain how women function in the work world. The discussion changes, because the focus is no longer on the difference between women and men, but on how men and women fit together in the work place (Di Stefano, 1990, p.67). *CSI* told the story of men and women in the workplace, and these storylines tended to present the binary oppositions of concern to women with STEM careers.

### **The Semiotics of Women in Television and Film**

It can be argued that Mulvey (1988) began the discussion of the semiotics of women in the media by contending that the camera in the use of the production of film always objectifies the woman's body as a sexual object for the male gaze. The impact of the male gaze is significant. The gaze is going to emphasize a woman's legs, breasts, voice, buttocks, lips, and the exposure of flesh (Cortese, 1999, p.20-23). "[T]he female is also positioned in the films of classical cinema as spectator-subject; she is thus doubly bound to that very representation which calls on her directly, engages her desire, elicits her pleasure, frames her identification and makes her complicit in the production of (her) woman-ness," explains De Lauretis (1984, p.15). As Mayne (1989) points out, "If a female character 'resists' the power and authority of the male gaze, that resistance may well be nothing

more than a temporary distraction, a brief interlude that serves to reinforce the conquest of the female body" (p.30). On the other hand, if the woman complies with male desire, then she is rewarded. "The ultimate pleasure is to see how the hero's masculine defence mechanisms crumble beneath the love of the heroine," writes Van Zoonen (1994). "The transformation of the reserved and indifferent male into a warm and loving human being signifies a victory of female values of care and nurture" (p.109). In effect, argues Fromm (1997) women are being asked to give up their intellectual side and subject intellect to their "natural and biological values...." (p.23). Accordingly, women must be "glamorous, beautiful, feminine, and graceful--but not tough," explains Inness (2004, p.123). When these "natural" images of women and her place are performed for the culture on television, the irony of the situation, argues Denzin (1991), is that the television image becomes the culturally understood reality. "[T]he sign...masks the fact that there is basic reality" (p.7).

### **The Semiotics of Women in the Culture.**

The sexualized image of women is almost ubiquitous in American culture. Early films eroticized women (Cubitt, 2004; White, 2002). Advertising (see the essays in Reichert & Lambiase, 2003) often presents pornographic representations of women, as do magazines (see Kitch, 2001) websites (Burlingame-Lee & Canetto, 2005; Jordan, 2003), films (Oliver & Kalyanaraman, 2006), videos (Pitcher, 2006), music videos (Andsager, 2006), video games (Smith and Moyer-Guse, 2006), web sites (Ramirez, 2006) and of course pornography sexualizes women (Kipnis, 1992, 1996; Loftus, 2002; Williams, 1989). Female sportscasters are sexual commodities (Skerski, 2006). Sexualized images are so common that Caputi (2003) describes it as "everyday pornography" (p.434). Sexualization is powerful, explains Doane (1987), because "the ultimate commodity...is the body adorned for the gaze" (p.156). The gaze inherently makes the woman part of the text for the "narcissism and voyeurism" of the male (Steeves, 1987, p. 112). As a commodity a woman becomes the subject of "fantasy," which makes the woman's body "inseparable" from her as an "object" (Rapaport, 1994, p.87).

### **Ideological Placement of Women on Television**

Television plot lines revolve around the actions of the males, which means the camera semiotics also revolve around the actions of the male characters. . "Rarely do our stories get to matter," notes feminist writer Roxane Gay (2014, p.1). "There are so many terrible shows on television representing women in sexist, stupid, silly ways," she continues. "There are all kinds of television shows and movies about women, but how many of them make women recognizable?" (p.58-59). Long, Boiarsky, and Thayer (2001) researched 122 films and television shows and found that women were always paired with a lead male partner. In short, the authority rests with males and the plot lines are the story of men. The proper role of women is to support the male character by accepting the male power and authority, implying male power over female characters. The common and proper roles for women are as "mothers, daughters, sisters, and girlfriends" who have males to protect them (Donald and MacDonald (2014, p.11). Stereotypical roles were the only ones available to women in television for a long time (Meehan, 1983; Butsch, 1992). "You've seen her before: the sweet, innocent, supportive healer who carries

a magic staff and fights from the back row," explains Kyle (2014, p.137). While some of these character traits could be positive, the ideological positioning of women as caregivers brings with it negative ideological positions. "[W]omen stand for the side of life that seems to be outside history--for personal relationships, love and sex--so that these aspects of life actually seem to become 'women's areas'" (Williamson, 1986, p.101). Women characters who do not meet these definitions are 'prostitutes' and 'unfaithful' to their men, they explain (p.85). When women lose the protection of men, they are going to be punished:

they are going to be disrespected (p.156),  
her accomplishments are not recognized (p.163),  
she will become the bitch (p.165),  
she will be unprofessional (p.168),  
she will show fear and panic (p.169),  
she may have to sacrifice her children (p.171); see also Grady (2014),  
women must "dress, act, and speak more like men" (p.172),  
women will be rescued by men (p.178),  
she may be required to perform sexually to survive (p.188),  
she may be tortured (p.189),  
she may even be killed (p.164).

One of the most common punishments assigned to women is rape, writes Brown (2014), because "the possibility of rape is always an underlying current for action heroines" (p.53). Often Hollywood films assign blame for the rape to the woman. "The ongoing tendency in Hollywood is to suggest that female victims are somehow complicit in their rape because they have been flirtatious or hypersexual," explains Brown (p.55). Even when the woman is not blamed for her rape, the story is about the police detective that is her "caretaker and avenger" (Cuklanz, 1998, p.431). In *Thelma and Louise* the women regain their control from men after rape by committing suicide (Cooper, 1999). Rape is so effective at showing the weakness of women, argues Tasker (1998) because rape expresses "the vulnerability of the female body" (p.110). Women who challenge male authority can be expected to be objectified by the camera, by the actions of the males, and victimized for their claim to autonomy. Roberts and Goodman (2013) demonstrated how the movie *Dirty Harry* punished women for improper sexual behaviour by having the sexual pervert Andy Williams murder them while the camera sexualized them.

### **Dynamic Female Characters.**

Lotz (2006) points out that female characters were not regularly written with multi-dimensional personalities until the 21<sup>st</sup> century. Lindsey (2003) discussed several new television programs that presented the story of professional women as told by the female characters. Each program she analyzed lasted at least four seasons, indicating there was an audience for the shows.<sup>1</sup> One of the most successful series in the genre was *Sex In The City* (Arthurs, 2003). When women are telling their own stories, Armstrong (1990) explains, the value of the female character resides in "her femaleness," which means the character demonstrates "emotional depth" and "the very qualities that differentiated her from the male" (p.73). Defining women by their intellect instead of their reflected image of the male gives women

"political, economic, and social" power, which is demonstrated by their achievements and leadership roles, explains Mitchell (1990, p.260). Providing the audience with female stories and allowing female characters to have what Moore (2005, p.195) calls "voice" empowers and gives authority to both the characters and the audience members that identify with the television character. Even the presentation of these women is limited, argue Zuckerman and Dubowitz (2005), because "the vast majority of actresses on TV are thinner, younger, and more beautiful than women in real life" (p.63).

While the mediated presentation of women may be telling a feminine story, female characters are often punished for choosing success at work over appropriately serving men. In 1980s-1990s programs like *Cheers*, *Northern Exposure*, and *Moonlighting* women characters were presented as being in "egalitarian relationships" with their male love interests. The plot lines led "the spectator to view the male as superior," which leads to a love relationship when the female is "tamed" (Scodari, 1995, p.25-27). The female character is "driven, serious about her work and her principles, making it in a man's world by forgoing a lot of social and leisure time, and showing the strains of her choices of her periodic crying spells" (Rapping, 1994, p.25). A drive of independence leads to female characters leaving their children, only to regret the decision (Livingstone & Liebes, 1995). Another effect on the female character is "a rather extreme case of sexual repression" (p.26).

Following this line of cultural logic, there is no cultural common sense in women becoming scientists, because women in the lab are not visual commodities, although some women scientists report sexual harassment in the lab (Bell, 2014; Jagsi et al, 2016).

### **Ideological Placement of Women Scientists**

How women generally are presented culturally, and more specifically as scientists, is important because of the influence the mass media has on creating cultural meanings and ideological positioning. As Gendron (1986) explains, there is always a "conflict" between the "alternative meanings" that might be generated by an individual and the images mediated in the culture. However, Gendron adds, "these standardized components probably evoke the entrenched codes of the dominant culture much more powerfully than do the non-standardized components" (p.35). When the audience accepts the entrenched codes, Fiske (1987) points out, "The dominant ideology and its patriarchal, capitalistic viewpoint is legitimized when the codes create a unified set of meanings" (p.13). The entrenched codes become "dominant," explains Hall (1993), because "the institutional/political/ideological order imprinted in them" becomes institutionalized and so the social order understands and shares the dominant meaning (p.98). Janus (1996) makes the argument this way: "Women appear as housewives and sex objects in the mass media because the men who make the films, the ads, or TV like to see them in those roles" (p.5). Women are almost always cast in the mass media as caregivers, continues Janus. "A critical perspective will demonstrate not only that the women in the media are inferior to men, but also the limited and demeaning image of women are structurally related to the functioning of capitalism" (p.9). If

the media presentation of women is dominated by sexualized images of women, then sexualized images are the entrenched codes.

When the same ideological presentations occur over and over through the process of media viewing, then the ideology positions become "the habits of thoughts, tastes and dispositions," explains Fiske (1992, p. 155). The result of encouraging the audience to accept these ideological positions is that "the experiences of women" are being defined by the domination of the white patriarchy (p.165). The ideological presentations are so strong that most women conform to some degree (D'Acci, 2000; De Lauretis, 1984; Haskell, 1979; Kuhn, 1982; Kaplan, 1997; Lindsey, 2003; McNeil, 1975; Meehan, 1983; Signorielli, 1982; Signorielli & Bacue, 1999).

These punishments affirm the position that women do not belong in the work world, and that is particularly the case in science, argues Harding (1990). As Lievrouw (1990), explains, "It is argued here that the scientific community employs various communication processes and structures in a strategic manner that help the community preserve the privileged status of scientific knowledge in American culture." Women scientists challenge the premise that men create pure science while women insert female and feminism into the empirical process of science, resulting in "badly done science" (Harding, 1990, p.90).

Even when the quality of the female scientists is recognized, she is reaffirmed back into patriarchal ideology. Fahy (2015) looked at the newspaper coverage of British neuroscientist Susan Greenfield. "In those two decades, she has also been called 'Britain's most famous living female scientist' by *The Independent*, a 'mini-skirted media celebrity' by *The Daily Mail*, and 'a dolly-bird boffin of tabloid fame' by *The Sunday Times*," writes Fahy. Many others (Olson, 2000; Gregory and Miller, 1998; Friedman and Dunwoody, 1988) also have been critical of the way the media presents scientific reports written by women and how the press presents female scientists. Nelkin (1995) concludes: "The overwhelming message in ... popular press accounts is that the successful female scientist must have the ability to do everything—to be feminine, motherly, and to achieve as well" (p.19).

Newspaper coverage only reflects the general cultural presentation of females in science. Haynes (1994) makes the case that women scientists are negatively presented in literature and Shepherd-Barr (2006) discussed the negative presentation of female scientists in theater. Flicker (2012), in her research, found women scientists playing the following stereotypes: old maid, gruff women's libber, the naive expert, evil vamp, the daughter or assistant, lonely heroine, clever but digital beauty (p.247). After Colatrella's book (2011) criticized the sexist toy selections available to girls, toy makers widened their options (e.g. Goldieblox, Thames & Kosmos). Television in the 20th Century reinforced the perception that science is a male world. Steinke and Long (1996) found that only one third of the roles of television for scientists were played by women. Of those roles, 68 of the 86 female scientists were assistants to male scientists. "Most people have little access to the world of science; consequently, the images of science that they see in the mass media shape their understanding of science and scientists," point out



Steinke and Long (1996, p.93). Long, Boiarsky, and Thayer (2001) indicate that the cultural stereotypes of scientists are established in the minds of children by second grade.

### **Some Positive Portrayals**

Unlike Steinke and Long (1996), Long, Boiarsky, and Thayer (2001) found that the educational programs they viewed presented male and female scientists equally. "[F]emales were just as likely to be labeled as scientists, just as likely to be older, and they were also accorded the same status as male scientists, i.e., they were just as likely to answer questions, correct other characters' misstatements, and wear the vestments of science," they report (p.264). Kirby (2013) details the frequent use of women scientists as film consultants and actresses playing the role of scientists in films. Trends in forensic science contradict the general ideological perception that women do not belong in science. Rushton and Debela found that 78% of the students enrolled in college forensic programs were women.<sup>2</sup> A *Washington Post* article (Chandler, 2012) credits the interests of women in forensics to television shows depicting women as forensic scientists. "Today's shows are populated with female role models, including real-life professionals or fictional characters such as Temperance Brennan in *Bones* and Sara Sidle on *CSI*," reports the article.

A few current television shows<sup>3</sup> feature women in STEM positions. Excluding the presentation of women as doctors, TV often belittles STEM girls and women. For example, *Bones*, on ABC since 2005, is about the criminological discoveries and social missteps of Dr. Temperance Brennan. She is a brilliant scientist, unmatched in her field, but is almost completely devoid of anything one might consider feminine. The show revolves around her lack of ability to understand basic interpersonal relations based on the premise that they are not explainable by concrete scientific facts. She is portrayed as being cold and calculating throughout the early seasons; she only begins to embrace emotions when her male co-star pursues her romantically. This show presents Dr. Brennan's involvement in science to be a crutch she relies on to make up for her lack of ability to connect with others. Thus, while she is a respected scientist, that part of her persona is predominately viewed as negative when her character as a whole is evaluated. *The Librarians*, a 2014 show on TNT, includes "math girl" as part of an ensemble cast. Lindy Booth plays an awkward, strangely dressed teenage girl who can solve amazing mathematical problems, but she has difficulty with social situations and talking to boys. Abby on *NCIS* is a 30s something, child-like scientist, who dresses like a Goth and wears pigtails. None of these characters have been a regular in the homes of television viewers as long as Sara Sidle of *CSI*.<sup>4</sup> Sara describes herself first and foremost as a "scientist," who searches forensic evidence for traces left by the perpetrators of evil crimes. In each episode she is joined by one or two other female scientists.

Steinke (2005) looked at 23 films produced between 1991 and 2001. In these films male colleagues treated women in non-STEM careers with respect and demonstrated consistent professionalism; most of the women leads were attractive. However, in those 23 films the women scientists were punished by their male

colleagues, who degraded their work and hindered their effectiveness. Haran, Chimba, Reid, and Kitzinger (2008) suggested using scenes from *CSI* as a learning tool for high school classes because *CSI* presented a more realistic and diverse portrayal of female scientists (p.88).

### **CSI: BACKGROUND**

*CSI: Crime Scene Investigation (CSI)* remained one of the top-ranked dramas on U.S. television for 15 years until its conclusion in 2015.<sup>5</sup> *CSI* was our choice for analysis because we could view episodes on DVD over many seasons. *CSI* gave us an opportunity to consider how women in STEM were being portrayed. Specifically, we could see how *CSI* presented Sara Sidle in her first season, then again about half way through the series in season 7, and then towards the end of the show's run seven years later in season 14. We viewed all episodes (69 total) in those three seasons, providing us with an opportunity to see how the female scientists, specifically Sidle, were presented on the series over time.

Specifically, we were interested in the semiotics of the female scientists: makeup, clothing, body language. We also looked at how the script writers assigned female characters' rewards for properly fitting into the dominant patriarchal ideology and punishments for violations of the dominant patriarchal ideology. Finally, we were interested in whether their gendered behavior or sexual behaviors were assigned punishments or rewards.

Jorja Fox portrays the character of Sara Sidle in all 15 seasons, minus the pilot. We paid particular attention to how her character evolves over time on the series. Another advantage of using *CSI* is that the ensemble cast always includes Fox's character and at least one other woman in STEM, giving us an opportunity to compare and contrast the roles. From season one (2000) until season 12 (2011) that second female crime scene investigator was Catherine Willows (played by Marge Helgenberger). Since 2012, Elisabeth Shue played Julie Finlay, the second female lead on the show. William Petersen played team director Gil Grissom for the first 11 years of *CSI*. Ted Danson, who played D.B. Russell, became the director of *CSI* in Season 12.

For seasons one and seven, *CSI* most often features a double crime plot line. The major plot line begins the episode on the hour and is followed by the theme song and credits. The second plot line is introduced after the break. Most plot lines focus on murder as the crime being investigated. Gil usually leads the investigation of the first murder story line. Either Catherine or Sara leads the investigation in the second story line, meaning the script writers have assigned at least one of the female character's authority in each episode, but that authority is assigned by Gil. Usually Catherine is teamed with Gil in the first story line while Sara leads a team, which includes one of the male supporting roles, investigating the second crime. Some episodes have plot variations. For example, in Season 1, Episode 7 (*Blood Drops*) the whole team investigates the murder of a family. Sara begins the episode working with Gil at the crime scene. Gil assigns her to stay with the youngest surviving daughter, so Sara leads this new story line. Meanwhile,

Catherine takes over the continuing investigation at the crime scene.

Season 14 has a different plot development. The investigation of the opening crime leads to investigation of an ensuing crime connected to the first. D.B. Russell does not receive as much airtime as Gil Grissom, opening up more time for the other males to head an investigation. Generally, either Sara or Finlay lead the second investigation. Morgan Brody (played by Elisabeth Harnois) becomes a supporting, female investigator.

In each episode, one of the main characters lays out a theory of the case and how the forensic evidence supports that theory. During this discussion, the audience watches a flashback of the commission of the crime. This scene allows the audience to understand the crime. The scene also assigns power to the *CSI* person explaining the crime scene because the person who developed the theory has the knowledge. Gil usually explains the theory for the main plot line, making him the most powerful character in the episode. Whoever leads the second investigation is the character that explains the theory of the crime. This is often Sara, assigning her with the authority to explain the crime to the audience, even though that authority is assigned to her by the male leadership. Characters may also demonstrate the power of knowledge during the autopsy or while in the *CSI* lab examining the evidence for clues.

Catherine and Sara share some common qualities. Both are strong women in positions of leadership. They lead teams of men. They rarely work together on a case, nor do they have many scenes with just the two of them. However, when they are together in a scene, they seem to work well together and they rarely speak about men, meaning they passed the Bechdel test (see Hickey, 2014). Both females are assigned power as the person who develops the theory of the crime or explains a piece of evidence. While both have power, they also defer to the ultimate authority of their supervisors, first Gil and by season 14 D.B.

Sara and Catherine are consistent with the roles played by women on network television by the year 2000. Female audience members became important to the networks by the late 1990s because cable networks like Oxygen were pulling women away from the major networks, explains Lotz (2006). Lotz points out that by the end of the 20<sup>th</sup> century a large amount of programming was targeted at women. These targeted women were "white, heterosexual, single, employed in highly professionalized careers, and live in upper-middle-class, if not upper-class, worlds" (p.6). In the 1980s most female characters on television were secondary characters to the male lead. "Prior to the late 1990s, U.S. network television primarily had confined complex representations of women to situation comedies... and to individual characters placed in male-dominated dramatic settings," explains Lotz (p.2). By 2000 the networks needed more complex female characters to keep women who had professional careers watching television, continues Lotz. In the context explained by Lotz, Catherine and Sara are not just the professional sidekicks of Gil Grissom. They are characters with independent judgments and responsibilities. In being so presented, they broke the stereotypes placed on female television characters since the 1950s.

The differences between the characters of Sara and Catherine also provide insight into the job performance and life experiences of women in STEM. We found differences between the two in terms of relationships, appearance, sexuality, victimization, spokeswoman for victims, motherhood, and caregiver roles. Explaining these differences points out how the creators assigned rewards and punishments to the female characters.

### **CSI:ANALYSIS**

**Relationships:** Sara is single and may be in her late 20s in season 1; Catherine is divorced with a teenage daughter and in her 30s. Sara in Season 7 is in a secret, romantic relationship with Gil; Catherine finally divorces her manipulative husband Eddie, but her boyfriends turn out to be either emotionally or physically abusive.

**Appearance:** Sara has a thin build, resembling a pre-adolescent male. She wears dark pants, often a sleeveless shirt with a jacket over the top. She rarely applies much makeup in Season 1, but usually wears makeup in Season 14. She also wears a necklace sometimes. Catherine is full-figured. She wears low cut shirts which bring focus to her cleavage. She always wears makeup and keeps her hair styled.

**Sexuality:** Sara is not particularly attractive; being sexually attractive is typical for Catherine.<sup>6</sup> Sara indicates in one episode that she once had a sexual encounter on an airplane (Season 1-9). Once, one of the *CSI* technicians makes an awkward attempt to ask Sara out. Many times Sara shows up at crime scenes because she was awake in the middle of the night and heard the police scanner. Sara has no private life and her time off is often interrupted by being called to work. Catherine is a former exotic dancer, a point often made and remade by the script writers. Work interferes with Catherine's private life, limiting Catherine's time with her daughter and making her appear as a bad single mother.

**Victimization:** Sara is kidnapped, tied up, and left in an abandoned car by a disturbed woman at the end of season 7, but she manages her own escape in the first episode of season 8. Catherine is slipped a rape drink and wakes up naked in a motel room (Season 7-1). Catherine's victimization is sexual while Sara's is not.

**Motherhood:** Catherine has a difficult time finding child care for her daughter (Lindsay), which promotes child welfare services to investigate her fitness as a mother in season 1. In Season 7-2 Catherine misses a dance performance by Lindsay because Catherine had to work. Then Lindsay is kidnapped and threatened with sexual violation. Catherine is a working mother, and the person who pays the price for her work success is her daughter. Sara is awkward around children. Sara is assigned to stay with a young girl who survives when most of her family is killed (Season 1-7). Sara proclaims: "I don't see why I have to take her. I am a scientist. Catherine is the mom. I am not good with kids."

**Caregiver:** Sara brings Gil a blanket and coffee as he studies flesh deterioration over several hours (Season 1-14). She then stays with Gil. Sara provides comfort

for *CSI* investigator Greg Sanders as he lies in the street after being beaten up (Season 7-4). Sara often becomes personally involved in the cases she works, finding it to be her personal job to speak for the victims. Except for scenes with her daughter, Catherine is not a caregiver, and she rarely becomes personally involved in her cases.

**Voice:** Sara is often the person who speaks for female victims, particularly those who have been brutalized by men. Sara protects the little girl she is charged with watching (Season 1-7) from social services. Sara speaks for the murdered wife (Season 7-4). In the 300<sup>th</sup> episode (Season 14-5), Sara finally solves the murder of a young woman. D.B. criticizes her: "Sara sometimes you push too hard and you know it." He later admits that it was Sara's persistence that leads to the prosecution of the murderer. Sara explains herself in that 300<sup>th</sup> episode as she speaks to the dead body: "Terrible, unspeakable things happen to all of us." Her voice cracks and she is overcome by emotion. As stated above, Catherine is the methodical investigator in search of the truth, but she does not speak for the victims.

We conclude that *CSI* uses the characters of Catherine and Sara to tell the story of professional women from two perspectives. Sara is the woman married to her career, despite her relationship with Gil. Social life, motherhood, and domestic life are sacrificed so she can care for her fellow workers on occasion and to speak for women brutalized by men. Sara is their advocate and the person who pushes to find their murderers. Catherine is torn between work and domestic life. Being a *CSI* investigator is better than working as an exotic dancer at a nude bar, but in the process she loses her husband. Any attention she gives to Lindsay comes at the expense of work, and work often requires her to sacrifice her daughter. Work wrecks her social life, but at least she has one.

From the perspective of voice, *CSI* featured at least two female leads per episode, but the production of the show was male dominated. Of the 337 episodes over its 15 seasons, women directed 10 of them; women received screen writing credit for 169 of the scripts.<sup>7</sup>

### **Sexualized victims of crime**

On *CSI*, often the female murder victims do not practice proper sexual behavior. Usually their impropriety is revealed during the re-enactment flashback. Here are some examples of sexual behavior defining the victim. In one episode, a mother finds the son she gave up for adoption when she was a teen. Her son works at an escort bar; he murders his mother when he finds out that she was the woman he was flirting with for months (Season 7-14). In another episode, a man slashes the throats of several Vegas showgirls after one of the victims shows too much cleavage at a bar, attracting the killer's attention (Season 7-18). A prostitute, developing feelings for Nick Stokes, one of the *CSI* investigators, is murdered (Season 1-13). Sexual obsession leads to the death of three people - a cheerleader, a football star and a photography teacher (Season 7-17). Finlay almost becomes a rape victim when she picks up a married man in a bar and rejects his advances (Season 14-10).

Each of these female victims is viewed through the voyeur camera of the male gaze (Mulvey, 1988; Kuhn, 1982; Kaplan, 1997; Lindsey, 2003; Williams, 1989; Roberts & Goodman, 2013) as the flashback reenacts the crime. The sexual behavior that led to their demise is revealed for the audience's viewing pleasure while the pleasure derived by the murderous man is acknowledged. Not every episode features a sexualized, female victim; many victims are males. However, female victims are generally defined by their sexual appeal and their sexual behaviors as they are presented through the eye of the lens.

As we have already discussed, female *CSI* investigators are sexualized, meaning they are defined by their sexuality in these scenes and not by their intellectual or professional activities. Catherine is the former exotic dancer, who wears low cut blouses and lots of makeup. Finlay engages in an erotic dance with a man in the bar, and, when she leads him to a motel room and rejects his advances, she ends up killing him. In that same episode the camera presents the male gaze of Brody's body while she sings on the bar stage. Then there is Sara, dressed in dark pants and sleeveless shirt, sitting at a table alone, sipping a beer, and watching her colleagues sexualize themselves.

In Sara's first episode (Season 1, Episode 1) she flirts with Gil as the two of them figure out how a crime occurred. Gil is her former teacher, current boss (through season 9) and by season 7 it becomes clear they are lovers. Sara admits that she has had sex while on an airline flight (Season 1-9). Greg Sanders, then one of the *CSI* techs, awkwardly flirts with Sara in Season 1. Besides these limited scenes, Sara does not demonstrate sexual behavior, even though she becomes Gil's lover. Sara's dress is masculine. Her body language is masculine. She controls the scenes that she is in, and in the process controls behaviors of male *CSI* investigators as well as those of people on whom she is collecting evidence. Sara goes nose-to-nose with a husband who killed his wife (Season 1-14). She berates a fraternity man for not helping a victim (Season 1-4). In the most intimate scene with Gil, she shaves his beard with a straight razor after asking him, "Do you trust me?" He responds, "Intimately." (Season 7-8). Even when Sara is the victim, she is victimized by a woman and Sara saves herself from impending death (Season 8-1).

Sara's character is a geek without any sense of fashion or much knowledge of men as potential masculine partners. The only men attracted to her are male geeks. Her social life is work; her worklife is overtime and weekends. Even when Sara dares to date, she limits her dating pool to the office. She's boring. Not cool. She sits alone in a crowded bar, just her and the bottle of beer.

From a feminist perspective, however, Sara is liberated. She is defined by her intellect and her abilities to solve crimes. She is good at it and usually successful. Sara does not need a family, a man, or children to be fulfilled. Sara Sidle's 15 years on *CSI* is a story of a woman who wants to be successful in a man's field. In the words of Kyle (2014), Sara tells her own story. From the perspective of the show, Sara more importantly tells the story of the women who have been sexualized, brutalized, and murdered by men. From this perspective, Sara tells the

narrative of a female who has made decisions about work and family, and she is happy with her choices because her work fulfills her intellectually and helps her to bring her sense of morality into the world.

Sara, Catherine, and the other *CSI* female scientists present the conflicts described in the research of Lazarides and Ittel (2015, 2016), Weisgram and Diekman (2016), Archie et al. (2015), and Trübswetter et al. (2016). The female scientists on *CSI* receive the honor, responsibilities, and opportunities that women seek in real life. But, like the women surveyed in those studies, Catherine cannot find a balance in her work-life.

## **CONCLUSIONS**

After reviewing every *CSI* episode over three seasons (1, 7, and 14), we found that the women investigators—scientists within the concept of STEM—have terrible social lives. They sacrifice a personal life to the demands of their career. Sara Sidle fits the cultural presumptions that women in STEM fields are intelligent but socially awkward and not particularly attractive. Sidle sometimes is a caregiver. She is reluctant to care for children, but male scientists confide in her. Only nerdy males—like Gil—seek a relationship with her. First Catherine, and then later female investigators on *CSI*, are attractive and they seek the attention and receive the attention of men. These female scientists are punished by the scriptwriters for their career choice. They are threatened with rape and sexually assaulted. Catherine, the former stripper, is drugged and stripped; her daughter is kidnapped; she is turned into social services for being an absent mother; her husband divorces her. But, Sara, Catherine, and Julie are top investigators, using their scientific knowledge to solve crimes.

These stereotypical depictions do not tell the whole story. *CSI* plot lines consistently tell the story of the female characters. Sara, Catherine, and Julie voice the victimization of the female characters murdered in that week's episode. Accordingly, the female *CSI* characters are consistently assigned power, prestige, and authority. These are the things that women in STEM value based upon the research data, but on *CSI* they are warned that the price is high.

## ENDNOTES

<sup>1</sup>*Judging Amy*, 6 seasons; *Family Law*, 4; *Any Day Now*, 5; *Strong Medicine*, 6; *The Division*, 4.

<sup>2</sup> <http://www.marshall.edu/forensics/files/Rushton-STEM-Poster-10-Feb-CR-edit.pdf>

<sup>3</sup> As of August, 2016.

<sup>4</sup> Abby on *NCIS* has been on the air since 2003; *CSI*'s first season was 2000.

<sup>5</sup> <http://tvbythenumbers.zap2it.com/2015/01/12/csi-has-biggest-adults-18-49-viewership-increases-in-live-7-ratings-for-week-14-ending-december-28/349265/>

<sup>6</sup> Jorja Fox played a similar asexual role on *West Wing* as a Secret Service agent. On *Grey's Anatomy*, she was a lesbian doctor. In real life Fox keeps her private life private. According to the Internet Movie Database, Marg Helgenberger often has played the love interests in her film and television career.

<sup>7</sup> <http://www.imdb.com/title/tt0247082/fullcredits/>

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