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Popular Television's Health and Safety Message: What Has Changed in the Past Generation?

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**POPULAR TELEVISION'S HEALTH AND SAFETY MESSAGE:
WHAT HAS CHANGED IN THE PAST GENERATION?**

by

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B.S. December 2016, Old Dominion University

A Thesis Submitted to the Faculty of
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ABSTRACT

POPULAR TELEVISION'S HEALTH AND SAFETY MESSAGE: WHAT HAS CHANGED IN THE PAST GENERATION?

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Old Dominion University, 2020
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The assertion that television has an impact on viewers is well-supported in theory and empirical research. Hundreds of researchers have conducted hundreds of studies focused on limited, specific programming content or specific effects to contribute to this evidence. However, far fewer researchers have conducted broad, comprehensive programming content analysis. One exception is a 2005 study from Will et al. examining multiple health and safety behaviors including sexual activity, driving behaviors, intoxicating and unhealthy substance use, and violence depicted in the 1997/1998 primetime television season. Results of their research showed overall that primetime television promoted the perception that the observed health- and safety-compromising behaviors were more common than in reality, and that they were largely inconsequential. Their unique research contribution was an inventory and analysis of popular television programming content that influenced viewers' attitudes and behaviors in multiple health- and safety-related ways.

The current study expounded upon Will et al. using 2017 popular television programming as a sample. The same observations were conducted on this updated content, using the same methods, but adding streaming video to the sample to better reflect modern television viewing. Furthermore, observations related to sleep, diet, and exercise habits, diversity, and sexual harassment were also added, reflecting expanding knowledge about factors affecting health outcomes.

Major findings included a significant and large increase in seatbelt use portrayal that, nonetheless, did not approach real-world use rates. Two of seven measures of diversity – race/ethnicity and disability – also increased compared to the previous study. The updated programming was also determined to be more violent and to depict more traditional tobacco use than in the previous study – two findings that directly oppose real-world behavioral trends. Finally, safety- and health-risking behaviors were still portrayed as largely inconsequential, as they were in the previous study. Recommendations are made for mitigating potential negative effects on television programming viewers.

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This thesis is dedicated to my husband whose intelligence, humor, optimism, love, support, tolerance, and chicken, bacon, and avocado croissants have sustained me.

Te quiero, mi amor.

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TABLE OF CONTENTS

	Page
LIST OF TABLES	ix
Chapter	
I. INTRODUCTION	1
PREVIOUS RESEARCH	2
WILL ET AL.'S (2005) STUDY	7
WHAT HAS CHANGED?	10
WHY IS TELEVISION IMPORTANT?	18
SOCIAL COGNITIVE THEORY	19
PURPOSE, HYPOTHESES, AND RESEARCH QUESTIONS	23
II. METHODS	27
SHOW SELECTION	27
MATERIALS	31
PROCEDURES	37
III. RESULTS	39
CHAPTER OVERVIEW	39
PRELIMINARY ANALYSIS	39
INTEROBSERVER RELIABILITY	40
HYPOTHESES AND RESEARCH QUESTIONS	42
IV. DISCUSSION	65
SUMMARY OF RESULTS	65
2017 PROGRAMMING AND THE REAL WORLD	67
LIMITATIONS AND RECOMMENDATIONS	70
FUTURE DIRECTIONS	73

V. CONCLUSION.....	73
WHAT DOES THIS MEAN?.....	73
WHAT CAN BE DONE?.....	75
REFERENCES	79
APPENDICES	98
A. CHARACTER PROFILE	98
B. DRIVING WORKSHEET	100
C. SUBSTANCE USE WORKSHEET	102
D. SEXUAL ACTIVITY WORKSHEET	104
E. PHYSICAL VIOLENCE WORKSHEET	106
F. EATING WORKSHEET.....	109
G. SLEEPING WORKSHEET	111
H. EXERCISING WORKSHEET	113
I. SEXUAL HARASSMENT WORKSHEET.....	115
VITA.....	118

LIST OF TABLES

Table	Page
1. Popular Streaming Video and Television Series Selected for Observation.....	28
2. Summary of Selected Results	43

CHAPTER I

INTRODUCTION

US adults spend an estimated average of 65% (11 hours) of their days actively or passively consuming at least one form of media. Approximately half of those 11 hours are spent consuming media through a television, either through cable/broadcast, Blu-ray or DVD, or on internet-connected devices such as gaming consoles and streaming services (Katsingris, 2018). Children ages 2-11 watch approximately 3.5 hours of this content daily and older kids and teens ages 12-18 watch just over 2.5 hours daily (Katsingris, 2018). Given television's age, hundreds, if not thousands of researchers have studied its effects, one of the most famous of whom was Albert Bandura, beginning at least 55 years ago and continuing today (Bandura, Ross, and Ross, 1963, Bandura, 2019). Television programming is certainly not a new form of media, but it remains the most prevalent and its content and delivery have evolved greatly over the past several years. Furthermore, research has advanced regarding health effects of the human social environment, of which the media is a part. Despite television's pervasiveness, its recent transformation, and its potential for widespread impact, other, typically newer forms of media have attracted the bulk of recent research attention. Changes to the nature of television and its impact have largely failed to attract renewed research focus. A growing understanding of the social determinants of health, the advent and ubiquity of streaming video, multi-screen homes, and delayed program viewing warrant an update to research on television content and its potential impact to viewers. In answer to this requirement, the current study attempted to refresh and expound upon previous research from Will et al. (2005) which focused on the potential effects of health- and safety-related behaviors portrayed on popular television approximately two decades ago.

This chapter will begin with a review of some of the most contemporary and major conclusions of television research and its relevance to the current study, concluding with a detailed description of Will et al. (2005), upon which the current research is based. It will continue with an inventory of important changes in relation to television, society, and health since that study, and a basic description of the theoretical basis for why television content merits research focus. The aim of this section is to provide justification for the current research and to specify relevant hypotheses and research questions. The chapter concludes with a complete, consolidated list of hypotheses and research questions before transitioning to research methods.

Previous Research

Will et al. (2005) are exemplary of many researchers who have addressed the question of whether and how media exposure may influence society's health and wellbeing. Many have found evidence associating media consumption with changes in cognition, physiology, and behavior. For example, Bushman and Huesman (2006) meta-analyzed 431 studies of short- and long-term media violence effects on aggression, helping behaviors, aggressive thoughts, anger, and physiological arousal (e.g., blood pressure). The study encompassed laboratory and field experiments and longitudinal and correlational studies and included over 50,000 children and 18,000 adult participants (Bushman & Huesman, 2006).

In their study, the authors hypothesized that adult responses (aggression, anger, etc.) to media violence in the short-term would be more prominent than for children. This expectation was based on the concept that adults would have established aggression-related schemas and normative beliefs that would more efficiently trigger a primed response to violence. Bushman and Huesman further hypothesized that long-term effects of media violence on children would be greater than for adults. They posited that observational learning frequently serves as children's

sole source of information about many behaviors, making children relatively more vulnerable to novel schemas and desensitization. Comparatively, adults' beliefs and behavioral tendencies are more habituated and require time, effort, or both to be altered.

One of the study's overall findings was a significant and modest positive correlation between media violence exposure and subsequent aggressive behavior, angry feelings, physiological arousal, and reduced helping behavior (Bushman & Huesman, 2006). Furthermore, consistent with their hypotheses, the researchers observed that media-related aggression in (short-term) laboratory studies was higher for adults than for children, but in longitudinal studies media-related aggression was higher for children than for adults. They suggested that compared to children, adults have well-established perceptions of behaviors such as violence and substance use and are less likely to be persuaded by media to initiate such behavior. Conversely, children, who do not have such strongly established perceptions may be more susceptible to such influence (Bushman & Huesman, 2006). This review is one of very few relatively recent studies that includes television as a media source and it demonstrates the nature and persistence of the relationship between media consumption and behavior for adults and children.

Using a neurocognitive approach, Stockdale et al. (2015) conducted a media violence study focused on the process of violence desensitization. In it, the authors used electroencephalography (EEG) to measure event-related potentials while participants responded to stimuli after viewing a violent or non-violent film clip. They found that film violence exposure led to decreased cognitive resources allocated to inhibitory control processes used for processing emotional facial expressions. They termed this effect *emotional anaesthetization* and suggested that the process may be connected to behavioral changes associated with the dehumanization of others (Stockdale et al., 2015).

Researchers in media violence note that violence depicted in media is not a sufficient nor necessary cause of aggressive cognitions or behavior but that it can be a contributing factor (Anderson et al., 2003). Although the media is certainly not directly and solely *responsible* for violent behavior, it likely has an appreciable effect on consumers' perceptions of the normality, social acceptability, and outcomes of health- and safety-compromising behaviors. Furthermore, the impact of media, unlike many other contributors, is one that can be managed to reduce negative outcomes and even promote positive outcomes (Anderson et al., 2003; Bandura, 1977, 1986, 2016; Glanz, 2015).

Although violence is a primary and frequent focus of media research, some researchers do go beyond this issue. An example of such research is from 2008 when Common Sense Media, an independent, nonprofit organization, published a review of media's effect on youth outcomes focusing on health (Nunez-Smith, 2008). Of the 127 quantitative studies included in the review, 80% found an association between increased media exposure and a negative health outcome. A much larger percentage – 93% – found negative health outcomes when they focused on specific media content such as smoking or specific types of music. Most of the included studies concerned television, movies, and music, and the health outcomes evaluated included attention deficit hyperactivity disorder, obesity, substance use, academic achievement, and sexual behavior. The strongest evidence associated media consumption with obesity and smoking. Of the 73 studies that evaluated childhood obesity and increased media exposure, 86% found a statistically significant relationship between the two, and 82% of the 22 longitudinal studies identified a predictive relationship between increased media exposure and increased weight over time. For smoking, 88% of the 24 included studies found a statistically significant relationship between increased media exposure and increased smoking, and 84% of 19 studies

that evaluated media content found a relationship between media-portrayed tobacco use and greater tobacco use among viewers (Nunez-Smith, 2008). One important feature of this study is that the reviewers explicitly excluded advertising from their definition of media, meaning the effects they found were largely independent of overt efforts to sell products such as tobacco. This is a notable parallel to streaming television content, which is frequently commercial-free, and to television content in general where tobacco advertising is prohibited. This research illustrates that even in the absence of an overt effort to influence, children may learn unhealthy behaviors through observation.

Another review that illustrates the same point focused on tobacco, drug, and alcohol effects on youth in all media types except advertising. In it, 88% of tobacco studies found a statistically significant association between increased media exposure and increased smoking behavior, 80% found a statistically significant association between media exposure and increased alcohol use, and 71% found a statistically significant association between media exposure and drug use. There were 17 studies in this review that supported a causal link between exposure and behavior (Nunez-Smith, et al., 2010). An additional study provides evidence that adults are also influenced by substance consumption in media. A study published in 2009 from Engels, et al. showed that adult men who were exposed to higher frequencies of alcohol consumption in a movie or during commercial breaks consumed higher amounts of alcohol in a bar lab setting. When advertising is used exclusively, additional research provides evidence that it promotes tobacco use and alcohol consumption.

Multiple meta-analyses and reviews have shown that exposure to alcohol-related advertising, television, film, and print is associated with under-age drinking initiation and, for those who already drink, increased alcohol consumption (Anderson et al., 2009; Smith &

Foxcroft, 2009; Walsh-Childers, 2016). An exemplary review from Anderson et al. (2009) included 13 longitudinal studies involving over 38,000 individuals in the US and UK. Of the 13 studies reviewed, 7 measured alcohol advertising and promotion exposure and detected a dose-response relationship between exposure and drinking initiation (Anderson et al., 2009). A study in this review from Snyder, et al. (2006), with a sample of 15-26-year-old drinkers and nondrinkers ($N = 4,420$) concluded that the number of drinks consumed increased by 1% for every additional advertisement viewed, and by 3% for every additional alcohol advertising dollar spent per capita (Snyder et al., 2006). Furthermore, Sargent, et al.'s (2006) two-year study revealed a linear relationship between alcohol consumption in movies and alcohol use onset among viewers in 5th through 8th grades. Starting from no alcohol consumption and no exposure, alcohol consumption increased to 20% for viewers after 11 hours of exposure to movie alcohol consumption, controlling for several confounding variables (Sargent et al., 2006). Although movies are not television, they are essentially the same delivery method and their effects can likely be assumed to be the same for television. Furthermore, movies released in theaters eventually become available through streaming, cable, and broadcast television, highlighting this study's relevance to the current research.

Some researchers argue that the relationship between television content and viewer behavior is not causal, but that research associating violent behavior with violent television content, for example, is a reflection of violence-prone individuals who prefer such programming. Few studies have addressed this argument directly, but an example of one that has is from Bleakley, et al. (2008). Their research examined the association between sexual content in the media and sexual behavior among 14-16-year-olds, with longitudinal analysis that closely examined causality. They found that sexually active adolescents in the study were more likely to

seek sexual media content. Separately, they found that adolescents who sought sexual media content were more likely to progress in their sexual activity. These findings were true after controlling for sexual activity predictors including parental monitoring, parental approval, peer approval, physical maturity, relationship status, and age. The two findings, combined, suggest that the relationship between exposure to sexual media content and sexual behavior is mutually reinforcing (Bleakley et al., 2008).

The previous discussion presented some of the most current research on television's potential effects on viewers. To summarize, it has shown that television may have modest effects on aggressive behavior, angry feelings, and physiological arousal and that these effects may be more pronounced in the short term for adults and in the long term for children. It has also shown that television and advertising may increase risk for obesity, smoking, increased alcohol consumption, and accelerated sexual activity. Finally, it has shown, by virtue of its limitations, that updated and broader research is necessary. It is difficult to find contemporary television content research that does not narrowly focus on a specific type of content such as violence, or a specific outcome such as obesity. Indeed, the last such broad and comprehensive research may have examined television content from approximately 20 years ago, before digital video recording, streaming video, and the V-chip, and immediately after television parental guidelines were introduced. That study was conducted by Will, et al. (2005) and it is detailed in the next section.

Will et al.'s (2005) Study

Will et al.'s study, published in 2005, examined several health- and safety-related behaviors portrayed in 1997/1998 primetime programming (hereafter referred to as PTP 97/98) with the aim of analyzing the overall health and safety messages portrayed. This study combined

concerns about media portrayals of violence, health-, and risk-related behavior to estimate an overall impact on primetime television consumer behavior, with social cognitive theory as a theoretical basis. In it, researchers observed 24 television series consisting of 242 episodes of top-rated primetime television shows during the 1997/1998 season for a selection of behaviors based on national health objectives published in *Healthy People 2010* (US Department of Health and Human Services, 2000). They recorded specific behaviors including those related to driving, substance use, sexual intercourse, and violence, and any outcomes that followed. They then compared their observations to previous studies and real-world statistics and discussed implications for public health. They found that primetime television did not depict healthy and safe behavior, and that it also did not depict health and safety norms, relative to population behavior statistics (Will et al., 2005).

In driving situations, Will et al. (2005) looked at seatbelt use, moving violations, intoxicating substance use, and behavioral outcomes. They found the overall safety belt use rate depicted on PTP 97/98 was 26%. This was low compared to the 69% national use rate in 1998, and only slightly higher than the 22% use rate cited in a previous study of 1986-era television (Geller, 1988a, 1988b). Just one driver was depicted drinking, and the behavior met with severe consequences, which was a positive finding. The authors noted that media consumers who observe negative outcomes following behaviors are less likely to emulate the behaviors associated with such outcomes, according to social cognitive theory. Driving scenes depicting other moving violations (20%) were followed with consequences only 6% of the time, and these included injury, crash, police involvement, and one death (Will et al., 2005).

A total of 255 substance use scenes (alcohol, tobacco, cannabis, illicit drugs, prescription drug misuse) were observed within the 242 episodes, with 78% of scenes showing alcohol use,

18% showing tobacco use, and 13% showing illegal drug use or prescription drug abuse. Negative consequences followed 11% of these scenes, and all resulted from drug or alcohol use, not tobacco use. Negative consequences included arrest, social or professional conflict, sex-related problems, addiction, overdose, and personal property damage (Will et al., 2005).

There were 219 violent scenes within the 242 episodes – a 90% chance of viewing violence in an episode. There were no consequences after 40% of these scenes, but the second-most common outcome of violence was death, also at the rate of 40%. Injury or illness followed 12% of violent scenes, followed by arrest (6%), threat (< 1%), and property loss (<1%) (Will et al., 2005). This was an improvement in comparison to DePasquale et al.'s observations from 1994 in which 100% of episodes contained violence and 65% of violent scenes were not followed by consequences.

Sex scenes totaled 111 in the study. Condom use occurred in only 3% of these scenes as did discussions of sexual history, while discussions of potential consequences occurred in 6% of scenes. Relationship problems (14%), legal difficulties (5%), pregnancy (3%), death from AIDS (< 1%), and sexually transmitted diseases (< 1%) were consequences that followed 25% of the sex scenes. Will et al.'s (2005) comparisons with previous data showed mixed results for this behavior. The rate of sex scenes decreased between 1994 and 1998 from 60% to 46%, and the rate of scenes that depicted consequences increased from 0% to 25%. However, the condom use rate was at a low 5% in 1994, and just 3% in 1998 (Will et al., 2005).

The overall study finding was that PTP 97/98, with its four depictions of potentially health-compromising behaviors per hour, sent risky behavioral messages to media consumers and also failed to portray societal norms. Will et al. concluded by recommending popular television play a role in meeting national health objectives by presenting healthy role models

who engage in safe behaviors and by limiting risky behaviors to anti-heroes. They also recommended following portrayals of risky or health-compromising behaviors with undesirable consequences and following portrayals of health-promoting behaviors with rewarding outcomes. Finally, they recommended actively promoting healthy norms and incorporating health-promoting themes into show plots (Will et al., 2005).

Will et al.'s (2005) study examined television content from over a generation ago. Since then, television programming delivery and ubiquity have changed, possibly along with content. Furthermore, medical researchers have determined that social aspects of the environment – which can be influenced by television – play a meaningful role in human health. Finally, society has changed in terms of health- and safety-related behaviors as a result of laws, education, and social movements. The following section presents a review of how television programming, society, and our understanding of health has advanced since Will et al.'s study. It also provides the basis and justification for the current study's hypotheses and research questions introduced in the next section.

What Has Changed?

Television Has Changed

Although researchers have looked at individual types of television programming and content since the 1997/1998 television season Will et al. (2005) observed, few, if any, reviewed general television programming for an overall analysis of programming content. Television programming and delivery have undergone several changes since 1998 that are likely to affect content in meaningful ways. First, in 1998 the Federal Communications Commission (FCC) formalized parental guidelines and in 2000, the organization made the V-chip mandatory in all televisions 13 inches and larger, allowing parents to use those guidelines to manage television's

influence on their children (FCC, 1998, 2017). Another change is the advent and widespread adoption of streaming video services such as Netflix, Hulu, and Amazon Prime Video. Some of these changes have made it difficult to define and easily understand the term “television.” For the purposes of this research, the terms “television,” “television content,” and “television programming content” were used to refer to any series-type audio-video entertainment media available on cable, broadcast, or streaming subscription services.

As of November 2017, approximately 60% of US homes had access to at least one internet-connected video streaming device (Nielsen, 2017a). Streaming video content is not subject to FCC regulations that constrain content on cable and broadcast television. Therefore, health- and safety-compromising behaviors such as violence, risky driving, and substance use may be modeled more frequently by central characters in streaming video content. The introduction of parental guidelines and the advent and widespread adoption of streaming video alone warrant a renewed examination of television programming’s potential impact on viewers. However, changes in health and safety behavior trends in US society and health and safety research developments also call for a renewed look at possible effects.

Previously Studied Behaviors Have Changed

The nature and frequency of the behaviors Will et al. (2005) studied approximately 20 years ago have changed in US society. Each of them and the ways they have changed are detailed in the following paragraphs.

Driving. The 2017 national seatbelt use rate was 89.7% (Li & Pickrell, 2018). This is over 20 percentage points higher than the 1998 national use rate and over 60 percentage points higher than what Will et al. (2005) observed in PTP 97/98. It would be reasonable to expect that trend has continued. However, despite increases in seatbelt use and television content regulation

since 1998, there are no indications that public, government, or industry actions have prompted changes to risky driving-related consequences depicted in television programming.

Substances. For the purpose of this study, *substance use* was defined as alcohol, tobacco, vaping, e-cig, cannabis, or illicit drug use, and prescription drug misuse. It is possible, based on legal, social, and behavioral trends and research, to hypothesize about whether specific substances may be more frequently portrayed on popular television today compared to television of the previous generation. However, it is unknown whether overall substance use, including alcohol, tobacco, and prescription and illicit drugs would have increased.

Moving to specific substances, recreational cannabis use has been legalized in 10 US states and the District of Columbia and medical use is legal in 24 states (National Organization for the Reform of Marijuana Laws, 2019). Cannabis use rates have increased since these changes. The national past-month cannabis use rate for those 12 and older in 2017 was 9.6% (Substance Abuse and Mental Health Services Administration [SAMHSA], 2018). It is possible current television will reflect this societal change.

Regarding illicit drug use and prescription drug misuse, more dramatic change has occurred. Drug overdose deaths more than tripled between 1999 and 2016 to an age-adjusted rate of 19.8 per 100,000. Overdose deaths specifically from opioids were nearly six times higher in 2016 than in 1999 (Centers for Disease Control and Prevention, 2018a; Hedegaard et al., 2017). Television may reflect such an issue in its storylines; however, this issue alone is unlikely to significantly increase overall drug use portrayed. Aside from opioid use and overdose, overall drug use remained consistent between 2002 and 2016.

Continuing with substance use, traditional tobacco use has declined. In 2017, 7.6% of high-schoolers and 24.7% of adults were traditional tobacco smokers. Although traditional

smoking has declined, vaping/electronic cigarette use has increased substantially since its introduction (Centers for Disease Control and Prevention, 2018b; Levy et al., 2019). Research on vaping/e-cigarettes is limited, and estimated use rates vary widely by methodology, but available data indicate up to 8.5% of those over age 18 in the US were e-cigarette/vape users in 2017 (Levy et al., 2019). In representing modern society, it is possible television series have shown characters using vapes/e-cigarettes.

Alcohol consumption among those 12 and older has decreased slightly among males but has slightly increased among females since 2002. The overall national past-month alcohol use rate among those 12 and older was 51.7% in 2017 and has remained relatively consistent since 2002 (SAMHSA, 2018). Additionally, the legal and social status of alcohol and its utility as a dramatic plot device for television are unchanged.

Sexual Activity. Condom use among sexually active high school students decreased from 58% in 1999 to 53.8% in 2017, but birth control pill use increased from 16.2% to 20.7% (Centers for Disease Control and Prevention, 1999; 2018b). This may indicate a declining concern for sexually transmitted infections/diseases along with increased attention to pregnancy prevention. However, sexual activity within this age group, which was defined as having had sex with at least one person in the previous three months, also declined significantly between 2013 and 2017 from 34% to 28.7%, after a smaller decline between 1991 and 2013 from 37.5% to 34% (Centers for Disease Control and Prevention, 2018b).

For adults, research shows sexual frequency also declined by about nine times per year in the early 2010's compared to the late 1990's (Twenge et al., 2017). Unlike adolescents, adult condom use has increased, though only among men. Women's condom use was at 23.8% for

those aged 15-44 in 2015, but men's condom use increased to 33.7% from a lower 29.5% in 2002 (Copen, 2017).

Despite the overall decline in sexual activity in society, the advent of streaming video and its freedom from regulation are an opportunity for an overall sexual activity increase on current television. Furthermore, although the peak of the HIV/AIDS epidemic in the US has long passed, likely reducing concern over this STD, rates of chlamydia, gonorrhea, and syphilis have increased for the past five years (Centers for Disease Control and Prevention, 2019; Huang et al., 2015) – a fact that has not escaped media attention and may have influenced television programming narratives. These contradictory factors make sexual activity on current television unpredictable.

Violence. Perhaps the most remarkable are changes are related to violence. Violent crime, as the Federal Bureau of Investigation defines it, decreased by over 18% between 1998 and 2017 (Federal Bureau of Investigation, 2017a). These data comprise violent crimes frequently portrayed on dramatic television shows, including murder, aggravated assault, rape, and robbery. Despite violent crime decreases, the apparent value of violence to television drama combined with the introduction of unregulated streaming content suggest little reduction in violent programming content. Conversely, the introduction of parental guidelines and public concern over violent television content may have curbed such content over the past generation.

Health Priorities Have Changed

Change has not only occurred with regard to the behaviors Will et al. (2005) studied, but also in relation to national health research and priorities. Advances in health research have revealed the increased importance of exercise, diet, sleep, and social environment to overall wellbeing and lifespan. Consequently, objectives related to these health aspects have been

incorporated into national health goals and objectives which, for the year 2020, include: promoting a healthful diet and body weight; increasing the proportion of people of all ages who engage in the minimum recommended amount of physical activity for health, fitness, and quality of life; increasing the number of high school students and adults who get sufficient sleep; and “creating social and physical environments that promote good health for all” (Healthy People 2020, 2018). These goals and objectives, from the national Office of Disease Prevention and Health Promotion, provided definitions for some of the healthy behaviors that were used in the current study and are described in the following paragraphs.

Exercise. According to *Healthy People 2020*, children and adolescents ages 6 through 17 years should engage in at least one hour of moderate-to-vigorous exercise per day, which should consist primarily of moderate to vigorous aerobic activity at least 3 days per week, should include muscle-strengthening activity at least 3 days per week, and should include bone-strengthening activity at least 3 days per week. At a minimum, adults should engage in at least 2 and a half hours per week of moderate-intensity aerobic activity and should also engage in muscle-strengthening of at least moderate intensity for all major muscle groups at least two days per week. Older adults should engage in the same adult activities, with the addition of balance training and adjusting for chronic conditions and fitness level (Health.gov, 2018).

Diet. *Healthy People 2020* advises all Americans to eat “a variety of nutrient-dense foods within and across the food groups, especially whole grains, fruits, vegetables, low-fat or fat-free milk or milk products, and lean meats and other protein sources.” It also recommends avoiding saturated and trans fats, cholesterol, added sugars, salt, and alcohol and limiting calories to the minimum necessary for energy needs (Healthy People, 2020, 2018).

Sleep. *Healthy People 2020* defines sufficient sleep for young people in grades 9-12 and for those aged 18-21 as at least 8 hours per night. For adults, sufficient sleep is defined as at least seven hours of sleep per night (Healthy People, 2020, 2018).

Social Determinants. *Healthy People 2020* highlights the importance of social and economic opportunities and social interactions and relationships to health and wellbeing. Specific mention is made of job opportunities, social support, discrimination, and racism, which are timely research foci, considering current social concerns and movements. These are discussed in the next paragraphs, along with how they were addressed in the current research.

Society Has Changed

In addition to changes in health- and safety-related behavior trends and national health priorities over the past generation, society has changed and shared various experiences and movements. First, society has become more diverse by every measure. For example, racial and ethnic diversity are broader than ever and projected to increase. In relation to age, by 2019 millennials were expected to comprise the largest age cohort, followed by Baby Boomers, which is a considerable contrast. Religious affiliation is decreasing and the only organized religions with increasing membership are non-Christian (Pew Research Center, 2016). Finally, the percentage of adults who identified in a survey as LGBT rose from 3.5% to 4.5% between 2012 and 2017 (Gallup, 2018). These changes and others are likely to have affected television content significantly since 1998 and possibly its effects on viewers.

Terrorism. In terms of experiences and movements, possibly the most widely shared experiences since 1998 were the terrorist attacks of September 11th, 2001. These events affected the nation's sense of national and personal security, and specifically increased fear of terrorism

and anti-Muslim sentiment and violence (Public Broadcasting Service, 2019). All of these factors have the potential to change television content and effects on viewers.

Active Shooter Events. Another social phenomenon that may affect television content and viewer effects is the overall increased frequency of active shooter events since the year 2000 (Advanced Law Enforcement Rapid Response Training Program, n.d.). An active shooter event is defined as one or more individuals actively engaged in killing or attempting to kill people in a populated area (Blair & Schweit, 2014). It was necessary to use this terminology and definition rather than the term *mass shooting* because *mass shooting* definitions vary widely by data source. Though these events are statistically rare, they are highly publicized, emotionally troubling to media consumers, and traumatizing to victims and loved ones, giving them a substantial impact on society and possibly television content.

Hate Crime. Somewhat related to active shooter events is the increase in hate crime since its measurement began in 2011. Although FBI-defined violent crime has decreased over the past several years, race-, religion-, sexual identity-, and sexual orientation-motivated hate crime has increased across the country, and this crime can be violent or non-violent (Federal Bureau of Investigation, 2017b), which is another recent societal development that may manifest in current television content and viewer effects. Accordingly, a hate crime measurement was added to the violence measurement in the current study.

Black Lives Matter. Relatedly, #blacklivesmatter was first used in 2013 and the associated anti-police brutality movement engaged in nationwide activism at least as early as August 2014 and has been prominent since that time (Gallagher, 2018). It is possible police brutality incidents have become a more prominent feature of television content as a reflection of

this social movement. This issue was also addressed by the addition of the hate-crime measure to the current study's violence observation.

Sexual Harassment. Sexual harassment awareness in general, as an aspect of discrimination, and the #metoo movement specifically, are additional social movements and phenomena that may have affected television. Although #metoo did not go viral on the internet until late 2017 (Chicago Tribune, 2019), it was established in 2006 and sexual assault and harassment were major topics of social concern at least as early as the 2016 presidential campaign (Lemire, 2016). This issue may have been incorporated into television content.

Why is Television Important?

Previous paragraphs have discussed television's contents and effects on viewers and how television has changed over the past approximately 20 years. The following section will discuss the relationship between television and viewers and the theoretical basis for television's impact on viewers.

Television Reflects Society

Anecdotal wisdom in the phrase "art imitates life" (Aristotle, c. 330 BCE) suggests an influential relationship from viewers to television. Indeed, anyone who watches popular television can recognize society's influence in references to current events and popular culture. Further evidence of this influence is the common advice given to writers to write what they know. What writers know is *life*, and what some writers write is television. Not all television presents typical human thoughts and behavior, but it does present a broad range of possible humanity, which is influenced partly by society.

Television Influences Society

On the other hand, television also influences society. This is not only shown by the previously discussed research, but also through evidence-based theory (Bandura, 1965, 2019; Bandura, Ross, & Ross, 1963; Bandura, Ross, Ross, and Katz, 1963). Albert Bandura's social cognitive theory (1977, 1986) states that learning frequently occurs through role model observation and can be influenced by whether rewards or punishments follow observed behaviors from these role models. The theory addresses both the cognitive and social aspects of individual learning, mood, motivation, and behavior. It also emphasizes that the causal relationship between observational learning and action is a *triadic reciprocal* one, with the environment, individual characteristics, and behavior co-acting to lead to new behavior (Bandura, 2012). Based on this theory, the current study hypothesized, as did Will et al. (2005) and numerous other researchers, that media portrayals of role models engaging in unsafe, unhealthy, and anti-social behaviors that are not followed by undesirable consequences are likely to promote such behaviors in society.

Social Cognitive Theory

There are numerous components comprising SCT, however the following theoretical components are particularly essential and/or relevant to the current research.

Observational Learning/Social Learning

Observational learning occurs when an individual learns a behavior by observing another person (a *social model*) engaging in that behavior, along with the outcomes that follow it. The observer is more likely to adopt the new behavior when it is modeled by a peer or role model and when the behavior is rewarded. The observer is less likely to adopt the behavior when undesired outcomes follow it and when the social model is less relatable or admirable to the observer

(Glanz, 2015). Bandura's research reveals several ways in which observational learning through social modeling influences behavior more specifically. Its initial effect is to present observers with new ideas and behaviors. Social models also provide information on the functional value of a behavior, based on the behavior's outcomes. In this way, behavioral outcomes guide observer motivation and self-regulation in relation to the behavior. Another way observational learning occurs is through an emotional response. The emotional component facilitates persistent impressions of the modeled situations and people. Lastly, media facilitates observational learning about people, places, things, and experiences, with which the observers would otherwise have no contact or opportunity to experience. This can be positive, providing otherwise unavailable learning opportunities. But it also affords media a disproportionately influential role in observational learning – one that has the negative potential to proliferate generalizations, prejudices, and misperceptions (Bandura, 2016). This particular impact on society is a primary reason media-focused research is perpetually relevant. Adults and children learn from the media through observation, and children, partly by virtue of their lack of experience with many of the people, places, and things portrayed in the media, may be more susceptible to media influence (Bushman & Huesman, 2006).

Normative Beliefs

Normative beliefs are an individual's perception of the prevalence or social acceptability of a behavior. These perceptions are commonly inaccurate, leading individuals to believe unhealthy habits, such as smoking among adolescents, are more prevalent than they are (Glanz, 2015). This construct is particularly relevant to the current research because normative beliefs form through social learning, which occurs partly through media observation.

Self-Efficacy

Bandura (2017) defines self-efficacy as “the core belief that one has the power to affect changes by one's actions” (p. 1). It can be a belief in one’s ability to successfully complete a specific behavior or to make a lifestyle change. Cognitive, motivational, affective, and decisional aspects of behavior are affected by an individual’s perception of self-efficacy. Specifically, an individual with high self-efficacy is more inclined to act because of higher motivation, higher expectations of success, an inclination toward decisiveness, and positive affect. Conversely, individuals with low self-efficacy are less likely to act as a result of lower motivation, indecisiveness, lower expectations of success, and negative affect. Self-efficacy is not a personality trait; it varies in relation to the specific behavior being considered, the environment, and intrapersonal factors (Bandura, 2017). This is relevant to the current study in that television viewers observing relatable role models are theoretically more likely to perceive themselves as capable of a behavior when those relatable television role models engage in that behavior.

Outcome Expectations

Related to self-efficacy, outcome expectations are the expected consequences, positive or negative, of actions. Such outcomes can be physical (increased fitness), social (peer approval), and self-evaluative (personal satisfaction) (Glanz, 2015). Television presents examples of potential outcomes to viewers who may accept or reject them as likely or unlikely for themselves and who may be encouraged or discouraged to engage in a behavior based on the perceived likelihood of those expected outcomes.

Knowledge

Knowledge is the information necessary to maintain or improve health behaviors, including health risks and benefits and accurate health information. It can include information such as the keys to a healthy diet, or information about one's personal risk of developing breast cancer (Bandura, 2012). This is relevant to the current study as television content contributes to a viewer's knowledge by providing accurate or inaccurate information on healthy/safe and unhealthy/unsafe behaviors.

Reinforcement and Punishment

Reinforcement and punishment are ways in which behaviors are encouraged or discouraged. They can be tangible or intangible. Tangible reinforcements and punishments include gaining or losing money, valuable items, and physical health. Intangible reinforcements and punishments include outcomes such as social approval and disapproval (Glanz, 2015). This is clearly relevant to the current study as television role models are often portrayed experiencing (and not experiencing) tangible and intangible reinforcements and punishments following healthy/unhealthy and safe/unsafe behaviors.

Though there is some debate regarding the degree of impact and the practical significance of research findings, the conclusion that television affects viewers through observational learning is widely accepted, and statements and policies regarding media content and exposure guidelines have been published at an increasing frequency (Anderson & Bushman, 2002; Bloom, 2002; Bushman & Anderson, 2001; Bushman et al., 2015; Elson et al., 2019; Ferguson, 2002; Kiselica, 2002). It appears, though, that the most recent public statements, policies, and guidelines have been issued without the benefit of comprehensive and current data on television programming

content. This is the reason the current study was necessary and a gap the current research aims to correct.

Purpose, Hypotheses, and Research Questions

The purpose of the current research was to conduct a comparative study and extension to Will et al.'s (2005) study. The study first examined how behavior depicted on television has changed since Will et al. (2005) by conducting the same behavioral observations of current popular television. To account for changes in television delivery and content since the previous study, these behaviors were observed within the most popular shows on both traditional (cable/broadcast) television and on streaming video-on-demand television, as determined by all ratings based on both on-time and delayed/recorded viewing. Per *Healthy People 2020* (2018), this study also incorporated new health-related behavioral observations, including eating, sleeping, and exercising. Furthermore, behavioral measures were added to account for contemporary social issues such as sexual harassment (US Equal Employment Opportunity Commission, n.d.), hate crime (FBI, n.d. a), terrorism (FBI, n.d. b), and active shooter incidents (FBI, 2018). Also consistent with *Healthy People 2020* (2018), the current study included measures of show diversity in the form of main character occupation, gender, sexual orientation, race/ethnicity, age, disability status, and religion.

Data from the current study were analyzed and presented in the same manner as in Will et al.'s (2005) research for results that could be accurately compared to determine the trajectory of television's depiction of health- and safety-related behavior between the two time periods. Where possible and appropriate, findings were also compared to real-world data to determine how closely television represented real-world behavior. Finally, implications of the findings for media consumers were assessed and recommendations for productive change were offered.

In accordance with this purpose, the proposed hypotheses and research question(s) were as follows:

Hypothesis 1

Current television would more accurately reflect real-world seatbelt use through significantly higher seatbelt use frequency compared to Will et al.'s study.

Hypothesis 2

Negative outcomes resulting from seatbelt non-use and moving violations would be portrayed at a similar rate to the previous study.

Hypothesis 3a

Cannabis use would be significantly less common on cable/broadcast television compared to streaming television.

Hypothesis 3b

Outcomes related to cannabis use would be primarily neutral or positive.

Hypothesis 4

Drug use frequency would be similar to that portrayed on television from the previous generation.

Hypothesis 5a

Traditional tobacco smoking would be portrayed significantly less frequently on current popular television than in the previous study.

Hypothesis 5b

Nicotine vaping/electronic cigarette use would represent a proportion of tobacco use portrayed on current popular television.

Hypothesis 6

Alcohol consumption on current popular television would be statistically similar to that observed in Will et al.'s (2005) study.

Hypothesis 7

Streaming television would feature more frequent sexual activity than cable/broadcast television.

Hypothesis 8

Current television would portray significantly more diversity in the form of gender, race/ethnicity, sexuality, age, religion, disability, and occupation.

Research Question 1

Would streaming television portray health- and safety-compromising behaviors and negative outcomes more frequently than cable/broadcast series?

Research Question 2

How would substance use frequency and associated outcomes on current popular television compare to television from the previous generation?

Research Question 3

How would current popular television's portrayal of the frequency of sexual activity, STI prevention behavior, and sexual activity outcomes compare to television from the previous generation?

Research Question 4

How would violence frequency, perpetrators, and outcomes in current popular television compare to those Will et al. (2005) observed?

Research Question 5

Would current popular television set the example of healthy exercise habits?

Research Question 6

Would current popular television set the example of healthy eating habits?

Research Question 7

Would current popular television set the example of healthy sleeping habits?

Research Question 8

Would current popular television portray sexual harassment, negative or positive consequences for subjects of harassment, and negative or positive consequences for harassment perpetrators?

CHAPTER II

METHODS

Show Selection

Television shows were identified from the top 10 digital original series (streaming video on-demand, or “SVOD”), and the top 10 television shows (broadcast and cable) of the 2017 viewing season. In keeping with Will et al. (2005), and because they do not feature scripted behavior, the three sports and reality shows were excluded from observation. To maintain equal top 10 lists for both streaming video and cable/broadcast television, these shows were replaced. Published ratings lists only reach to 10, making it impossible to replace the excluded shows with the next-most popular series. Therefore, three replacement series were selected from a different list (from the same source) of the most popular series based on the largest time-shifted viewing audience (e.g., digital video recording). This resulted in 20 total series comprising 305 total episodes being included in the study. The complete list of series observed is provided in Table 1, in ranked order. Asterisks denote the three sports and reality show broadcasts that were excluded from observation and tildes denote the series that replaced those shows.

Table 1*Popular Streaming Video and Television Series Selected for Observation*

	Streaming Video	Cable/Broadcast Television
1	Stranger Things	Sunday Night Football*
2	13 Reasons Why	The Big Bang Theory
3	Star Trek: Discovery	The Good Doctor
4	Mindhunter	Young Sheldon
5	Marvel's The Punisher	NCIS
6	Ozark	This is Us
7	Marvel's Iron Fist	America's Got Talent (Tuesday)*
8	Orange is the New Black	The Walking Dead
9	The Crown	America's Got Talent (Wednesday)*
10	Marvel's Runaways	Bull
		~ Game of Thrones
		~ Designated Survivor
		~ Will & Grace

Notes. * Reality and sports shows excluded from observation. ~ Replacements for excluded reality/sports shows.

Identifying the most popular shows was best accomplished through two sources which focus on specific types of media consumption. The most popular cable/broadcast television shows were identified through Nielsen ratings for the 2017 television season (Nielsen, 2017b). Nielsen measures ratings for traditional television and has focused on doing so for nearly 70 years (Nielsen, 2018), making it the best resource for this type of information. At the time this research was initiated, the 2017 season was the most current published ratings data. Rankings were based on live viewing plus delayed viewing within seven days after broadcast. Rankings for the three shows that replaced the sports and reality shows were based on time-shifted viewing

only and were determined by the absolute increase between live viewing and delayed viewing (within seven days after broadcast). The most popular streaming video series were identified through data termed *demand expressions* from the media consumer demand analysis company, Parrot Analytics (2018). Parrot Analytics uses audience *demand expressions* to rank television show popularity across viewing platforms (e.g., Netflix, Amazon Prime, Hulu). *Demand expressions* are measures of consumer demand for content which are conveyed in forms that range from actual video streaming, social media activity, fan and critic ratings, and file-sharing platforms, for example. Demand expressions are also weighted, with monetary investment, creative participation, and active consumption weighted higher than activities such as subscribing to show updates (Parrot Analytics, 2018). Although Nielsen is making efforts to measure streaming video consumption, Parrot Analytics appears to be the organization most effectively and accurately accomplishing this task at this time, and is therefore, the best-known source for this information (Huddleston, Jr., 2017).

This show selection method was necessarily different from Will et al.'s, given the significant changes in television viewing since that study. To observe the most popular television shows, overall, it was important to ensure broadcast, cable, and streaming shows were included in the research. According to Nielsen, nearly 60% of US homes with televisions also had at least one internet-enabled device capable of streaming to a television as of June, 2017 (Katsingris, 2017). Furthermore, Parrot Analytics' top 10 overall (digital and broadcast) show rankings included at least one digital original in every month of 2017 (Parrot Analytics, 2017a-1). Both factors illustrate streaming video's relevance to the current research. However, Nielsen reports 47% of 25-54-year-olds in the US with a streaming device watched traditional television exclusively on a typical day in November 2017, and only 7% watched entirely streaming content

(Laporte, 2018). Additionally, a review of Parrot Analytics' top 10 overall show rankings throughout 2017 confirms traditional television shows had much higher consumer demand than did streaming shows, indicating that although streaming video is relevant, traditional television remains dominant (Parrot Analytics, 2017a-1). Combined, these factors illustrate that streaming, broadcast, and cable television are all prominent in US television consumption.

The format and amount of data available from Nielsen and Parrot Analytics, as well as resource limitations, provide a second justification for two top 10 lists. Parrot Analytics' annual report provides a top 20 list of digital original shows and Nielsen provides only a top 10 list of traditional television shows (cable and broadcast, combined). Including the complete top 20 digital originals would misrepresent streaming media popularity by neglecting traditional television shows that are more popular than several of the top 20 streaming shows. For this reason, the digital originals list was limited to 10. Furthermore, resource constraints also made it prudent to limit observational requirements.

Limiting observations to 20 shows did not degrade comparability to the previous study. Although four fewer series were observed in the current study compared to the previous study, there were more episodes per series in the current study, making the current study's sample size of 305 episodes higher than the previous study's 242 (Will et al., 2005). Additionally, approximately 220 hours of television were observed in the current study, compared to approximately 191 in the previous study (Will et al., 2005). Each behavior category included in Will et al.'s research (driving, substance use, violence, and sexual intercourse) was expected to result in sufficient expected frequencies in the current study for analysis using Pearson's Chi-square goodness of fit tests, which were the primary analyses used in this study. An *a priori* power analysis assuming 80% power using G*Power software indicated a sample size of 88

would be required to detect a medium effect of $w = .3$ at $p < .05$ with $df = 1$ (Faul et al., 2014). The current study's sample sizes were typically determined by 30-minute viewing intervals. There were 440.54 of these 30-minute intervals in the current study and 382 in the previous study, meaning most analyses comparing these studies were expected to be more than sufficient to meet power requirements. Cable/broadcast 30-minute intervals totaled 235.9 and streaming 30-minute intervals totaled 204.64, so these comparisons were also expected to exceed this requirement.

Materials

As Will et al. (2005) did in their study, observers used behavioral worksheets to record specific behaviors depicted in each television episode, in addition to a character profile for each main character in each series. Worksheets were used for the same behaviors that were observed for Will et al.'s (2005) study, which included driving, substance use, violence, and sexual activity. Will et al.'s (2005) worksheets were partially based on *Healthy People 2010*, federal goals and initiatives designed to improve Americans' health (US Department of Health and Human Services, 2000). Accordingly, the current study incorporated additional measures based on the latest version of these initiatives, *Healthy People 2020* (2018). These additional measures included character profiles to evaluate diversity, and additional worksheets to observe eating, sleeping, and exercising (Healthy People 2020, 2018). A final worksheet for sexual harassment was included, as it related to *Healthy People 2020* by addressing social determinants of health, and directly related to contemporary social movements. Finally, additional measures were added to characterize types of violence, including self- and others' defense, self-inflicted, hate crime, terrorism, and active shooter events.

In completing each worksheet, observers assigned a scene number for each behavior recorded, noted the scene start time and names of involved characters, and record desired and undesired outcomes of the behavior. If applicable, observers also completed comments sections with relevant information not specifically addressed on the worksheet. These elements were standard data for all behavioral worksheets and will not be repeated in the more specific worksheet descriptions that follow.

Character profiles were completed for all main characters in each series and (Appendix A) were used to gauge diversity. They recorded the episode in which a character was introduced and the character's occupation. Occupation was recorded to explore intersections between demographic characteristics and occupational prestige, so occupations were coded as prestigious or non-prestigious. For the purpose of this research, this determination was made based on show context, societal standards, or a combination of the two. For example, without show context, a lawyer would normally be considered a prestigious occupation. However, if the majority of characters in a series were lawyers, with a small number of them in senior positions then, in the show context, the senior lawyers would be considered prestigious and the rest of the characters would be considered non-prestigious, based on hierarchy in the show context. Conversely, if the show was about a family with one spouse employed as a store manager and the other employed as a doctor, show context would be irrelevant and the doctor would be coded as prestigious while the store manager would not be.

As in Will et al.'s (2005) study, a main character was a character who was always or frequently involved in the show's primary storyline and there could be multiple main characters in a show. For example, in the show *Orange is the New Black*, Piper, Red, Suzanne, and Taystee were considered main characters, while Officer Joel Luscheck was considered an "other"

character. Additionally, character profiles recorded gender identity (nonbinary, transgender female, transgender male, female, male, unknown), sexual orientation (asexual, pansexual, bisexual, lesbian, gay, heterosexual, unknown), race (Pacific Islander; Alaskan Native; American Native; More than one race; Asian; Black; White; Person of Color, but unknown race), whether the character is or is not Hispanic or Latinx, whether the character is disabled (yes, no, unknown), the character's age range (0-12, 13-17, 18-24, 25-34, 35-44, 45-64, 65+), and religion or nonreligion (Atheist, Agnostic, Rastafari, Sikh, Hindu, Buddhist, Muslim, Jewish, Christian, unknown) (Healthy People 2020, 2018). All recorded data were based on show observation, meaning that if the character was not clearly portrayed with a specific identity, that character did not represent that particular aspect of diversity.

A driving scene worksheet (Appendix B) was used to record all car driving activity. In addition to the standard data, observers recorded whether each character was the driver or a passenger, each character's seatbelt use (Y/N), and any driver electronic use without a hands-free device (Y/N). Moving violations and intoxicating substance use prior to or while driving was also recorded (Healthy People 2020, 2018).

Substance use was defined as tobacco use, vaping, e-cigarette use, alcohol use, cannabis use, illegal drug use, or prescription drug misuse. If any of these activities were portrayed in an episode, observers recorded the substance(s) used, how many main and other characters were in the scene, how many main and other characters were using a substance, name(s) of character(s) using, how many main and other characters appeared intoxicated, and where the activity occurred (e.g., home, bar), in addition to the standard data (Healthy People 2020, 2018). Only substances used, not merely handled or shown in the scene, were recorded, and even if more than one substance was used simultaneously. However, substance use was recorded and coded per

scene, and not per individual, as it was impossible to count every individual in a bar or party scene. See Appendix C for the substance use worksheet.

Both implicit and explicit sexual activity (sexual intercourse, anal sex, oral sex, and any other sexual behaviors that could result in STI or pregnancy) were recorded on a sexual activity behavioral worksheet (Appendix D). For scenes depicting such activity, observers documented the characters names, whether the sex was explicit or implied (e.g., actual sex vs. sex initiation followed by scene change or camera fade), whether the sexual partners dated more than once before sex, and whether condom use was clearly implied (Y/N). Observers also noted whether the participants discussed sexual history (Y/N) and undesired outcomes along with the standard worksheet data (Healthy People 2020, 2018). Scenes were coded and counted per scene, not per individual, meaning that if participants included main and other characters, the scene was coded as main character sexual activity.

For physical violence, observers used a worksheet (Appendix E) to name character(s) involved, describe the violence, record whether the perpetrator(s) and subject(s) of violence used weapons and, if so, what type(s), and to describe any desired and undesired outcomes for perpetrator(s) and subject(s). Determinations were also made regarding whether the violence was committed in self-defense or others' defense, was self-inflicted, or none of the above (select any that apply), and whether the violence was a hate crime (Federal Bureau of Investigation, n.d. a), terrorism (Federal Bureau of Investigation, n.d. b), active shooter event (Blair & Schweit, 2014), or none of the above (select all that apply). Observers provided explanations for how these determinations were made. Physical violence was defined as it was in Will et al. (2005), as any type of hitting, slapping, pushing, tackling, assault with a weapon, or sexual assault, and did not include threats or verbal abuse. *Hate crime*, *terrorism*, and *active shooter* events were defined as

they are in the references cited, and those definitions were provided on the worksheets for observers to reference.

The eating worksheet (Appendix F), in addition to the standard data, was used to note when healthy or unhealthy foods were consumed in an episode, and whether any desirable or undesirable outcomes of that food consumption were discussed or depicted. Unhealthy eating was defined as consuming soda, energy drinks, candy, fast food, chips, pastries, ice cream, deep-fried foods, meat/deep-dish pizza, and binging. Healthy eating was defined as consuming fruits, vegetables, whole grains, lean meats, fish, legumes, low-fat dairy, grilled/steamed/roasted/smoked preparations, and moderate portions (Healthy People, 2020, 2018). Foods that did not fall squarely within the unhealthy category were deemed healthy. Meals that consisted of multiple, primarily healthy foods were also recorded as healthy. Eating was recorded only when characters consumed food, not when it was merely present in the scene or held in the hand or on a utensil. Meal scenes involving multiple characters were coded/counted per scene, not per individual, meaning any such scenes involving a main character eating counted as main character eating activity.

Observers used the sleep activity worksheet (Appendix G) to log when a character appeared to have slept, and whether the amount of sleep was adequate (Y/N/unknown), in addition to the standard worksheet data. Napping was not recorded. Sufficient sleep was defined as at least seven hours of sleep per night for adults aged 22 or older, and at least eight hours of sleep per night for those aged 21 and younger (Healthy People 2020, 2018). Because 7 to 8 hours of sleep is obviously impractical to depict on television, insufficient sleep was recorded when a night's sleep was clearly disrupted and sufficient sleep was recorded when a night's sleep appeared to have occurred, as indicated by a planned or voluntary morning wake-up.

Exercise was defined as any physical activity undertaken with the intention of maintaining or improving health, physical performance, or appearance. When observers witnessed a character exercising in an episode, they used the exercise worksheet (Appendix H) to record the standard worksheet data, along with the type of exercise observed (e.g., strength training, aerobic activity), and whether any desirable or undesirable outcomes of exercise were discussed or depicted. Like sleep, sufficient exercise was defined as it is in *Healthy People 2020* (2018). However, exercise in sufficient frequency and duration is impractical to portray on television. For this reason, the exercise measurement was for exploratory purposes, to examine whether any characters could be perceived as regular exercisers. This would be indicated by being shown exercising multiple times and/or engaging in multiple types of exercise.

Observers recorded any incidents of sexual harassment that occurred in an episode on the sexual harassment worksheet (Appendix I). Specifically, observers noted the location and goal of the harassment, and how the harassment subject(s) responded. Observers noted whether there were desirable or undesirable outcomes for the harasser(s) and for the harassment subject(s). These could include outcomes such as submissive responses to quid-pro-quo harassment, supervisor reprimands, or intimidation, for example. In the case of both positive and negative outcomes of similar magnitude, outcomes were coded as neutral/none. Observers also provided a description of the incident. For the purposes of the current research, sexual harassment was defined as:

Unwelcome sexual advances, requests for sexual favors, and other verbal or physical harassment of a sexual nature...[which] can include offensive remarks about a person's sex. For example, it is illegal to harass a woman by making offensive comments about women in general. Both the victim and the harasser can be either a woman or a man, and the victim and harasser can be the same sex (US Equal Employment Opportunity Commission, 2018).

Although there is no known legal recourse for sexual harassment outside the work environment, for the purposes of the current research, the Equal Employment Opportunity Commission's (EEOC's) definition for sexual harassment was more broadly applied to settings outside the work environment. Street harassment, for example, that met the EEOC definition was recorded as sexual harassment (US Equal Employment Opportunity Commission, 2018).

Procedures

Worksheets were developed and refined with advice from authors who conducted research upon which this project was based (i.e., authors of Will et al., 2005), and through pilot testing prior to formal data collection.

Observers were solicited through the study author's social contacts. Four observers were trained, but three continued past training to conduct observations. The remaining observers' ages ranged from 42-49; races/ethnicities included White, Non-Hispanic/Latinx, Native American, and White Hispanic; two were cisgender women and one was a cisgender man; sexual orientations included heterosexual and bisexual; religions included Christianity and Atheism; observers were with and without disabilities; and all observers were 7-20 year military veterans.

Observer training included completing behavioral worksheets and a character profile for the first episode of the show, *Mad Men* and behavioral worksheets for the first episode of the

show *Peaky Blinders*. These shows were selected because they provided an extensive range of behaviors and characteristics measured in this research, enabling thorough training. Furthermore, the shows were not part of the research and were therefore, not expected to affect the results. Following this guided training session, observers independently completed behavioral worksheets and a character profile for the first episode of the show, *Narcos* for training effectiveness evaluation. Upon completion, findings were compared, challenges were discussed, and worksheets were refined to ensure coding clarity. Upon full training completion and worksheet refinement, shows selected for official data collection were assigned to observers, with two observers assigned to 10% of the same episodes for interobserver reliability check.

Throughout the formal data collection phase, data collectors observed the selected shows and recorded behaviors using hard-copy worksheets. Progress was monitored to resolve any additional challenges and data was coded, entered into an excel worksheet, and then independently verified by a second researcher for accuracy.

Will et al. (2005) conducted an interobserver reliability check of 6.6% of their episodes. Interrater agreement percentages were calculated by matching two observers' recordings of each variable of a scene. Interrater agreement percentages for each individual variable ranged from 78% for those within the substance use worksheet, to 91% for motor vehicle scenes. They also calculated Cohen's kappa (κ) values and found them to be at least satisfactory for all scenes, with safety belt use and alcohol use in a vehicle at the excellent level. For the current study, 10% of the 305 episodes (31 episodes) were subjected to interrater agreement check. Interobserver reliability was calculated in the same manner as in Will et al. (2005). Specific analysis methods and results for interobserver reliability and for all hypotheses and research questions are provided in the next chapter.

CHAPTER III

RESULTS

Chapter Overview

This chapter begins by describing the data preparation, strategy, and analysis plan in the preliminary analysis section and then provides interobserver reliability results. Next, a portion of results are provided in tabular form, followed by complete results in hypothesis and research question order. Each of these results descriptions begins with an indication of whether the hypothesis was supported, where applicable, then continues with the general conclusion of the findings, and ends with full analytical details.

Preliminary Analysis

Prior to analysis, data were categorically coded, entered, and checked for accuracy. The current study consists of frequency observations of categorical data, with hypotheses focused on examining and directly comparing frequencies. Descriptive statistics and Pearson's chi-square tests are appropriate for such analysis and Will et al. employed this strategy for their research, as do many other researchers analyzing behavioral/event inventory data (Dickter, 2006; Fraboni et al., 2018; Harris et al., 2015; Page et al., 2019; Sharpe, 2015; Vilaro et al., 2017). Because Pearson's chi-square analysis is well-supported in the literature and, more importantly, because results from this study were to be directly compared to Will et al.'s (2005), all hypotheses for the current study used this method. To ensure proper weighting that accounted for viewing time differences in goodness of fit tests, expected values were determined by multiplying the combined observed frequencies of the two behaviors being compared by their respective proportions in the larger applicable population. For example, assume the streaming and cable/broadcast combined total number of 30-minute increments of television was 100, and

streaming accounted for 60% of the total and cable/broadcast accounted for 40%. Next, assume the goal is to compare violence frequencies between streaming and broadcast/cable and that there were 10 violent scenes on cable/broadcast and 15 on streaming for a combined total of 25. To determine the expected value for cable/broadcast, you would multiply the total of 25 by the cable/broadcast proportion of 30-minute increments of television, which was 40%, equaling 10. For streaming, you would multiply the total of 25 by streaming's proportion of television; 60%, which would equal 15. These calculations would provide the expected values for the chi-square goodness of fit test comparing these two frequencies.

Although Bonferroni alpha correction is commonly used for multiple comparisons and was used for the previous study, contemporary statisticians judge it to be conservative and less accurate than more recently developed methods. For this reason, the more powerful and precise Holm-Šidák sequential alpha correction, which corrects for familywise error, was used for all post-hoc pairwise comparisons in the current study (Abdi, 2010). The following paragraphs describe specific analysis methods and results for interobserver reliability and each hypothesis and research question.

Interobserver Reliability

Interobserver reliability was conducted and analyzed as in Will et al. (2005) with the exception that a higher proportion of episodes were assigned second observers in the current study (10% vs. 6.6%). Two methods were employed to determine reliability. The first, percentage agreement, is regularly used for field observations. It was calculated by counting the number of scenes for which the paired observers recorded the same data for all scene variables, dividing by the total number of scenes coded by the two observers, and multiplying by 100 (Will et al., 2005).

The second method used was Cohen's κ , which can range from 0, indicating no agreement, to 1, meaning perfect agreement (Agresti, 2007). Cohen's κ was calculated separately for each scene variable (e.g., for driving: main or other character, driver or passenger, seatbelt use, moving violations, electronic use, outcomes, etc.). According to Landis and Koch (1977), Cohen's κ values of .8 and higher are nearly perfect, those from 0.6 to 0.79 are substantial, those from 0.4 to 0.59 are moderate, and values from 0.2 to 0.4 are fair. Fleiss (1981), however, suggested values below 0.4 should be considered poor and any above 0.75 are excellent. These were the standards applied to the previous study and to the current study.

Percentage agreement for the current study ranged from a low of 62.5% for sexual harassment scenes, to highs of 100% for sexual activity and substance use scenes. Percentage agreement for driving scenes was 81.36%, for eating scenes it was 70.8%, and it was 66.67% for violence scenes.

All Cohen's κ values were above 0.4, and all but five exceeded Fleiss's (1981) cutoff of 0.75 for excellent agreement. Cohen's κ values ranged from highs of 1.0 for 16 variables, to lows of 0.47 and 0.50 for characterizing outcomes (positive, negative, or neutral) for sexual harassers and sexual harassment subjects, respectively. The remaining variables ranged from 0.65 to 0.97.

Interobserver reliability was not analyzed for character diversity measures. Although these analyses were originally intended, they were ultimately not possible because of how the reliability protocol was implemented. Reliability checks were assigned by pairing observers to randomly selected individual episodes totaling 10% of the sample. This meant that, for reliability checks, secondary observers watched small numbers of episodes from a large selection of series, but not entire series. However, some character variables, such as religion (most often) or disability status, required viewing a large number of episodes or a full season of a series for

accurate determination, potentially doubling the watch time for each secondary observer. Because of study resource constraints, this was not feasible, and it precluded reliability analyses for character observations.

Hypotheses and Research Questions

For conciseness, acronyms will replace some frequently used terminology in the remainder of this manuscript. The acronym PTP 17 represent results from the current study and replaces the phrase *2017 popular television programming*, and PTP 97/98 represents data from Will et al.'s study and replaces the phrase *1997/1998 primetime television programming*. The acronym C/B PTP 17 represent combined cable and broadcast programming data from the current study and replaces the phrase *2017 cable/broadcast popular television programming*, and Str PTP 17 represents streaming programming data from the current study and is used for the phrase *2017 streaming popular television programming*.

Table 2 provides a summary of results for hypotheses and research questions suitable for display in tabular form. The paragraphs following Table 2 provide complete study results in text format.

Table 2*Summary of Selected Results*

H/RQ #	Primary Measure(s) of Interest	Result	Hypothesis Supported?	<i>n</i>	χ^2	ϕ	diff
2017 Cable/Broadcast vs. Streaming							
H3a	Cannabis use frequency	Str	Y	10	N/A	N/A	N/A
H7	Sexual activity frequency	Str*	Y	51	4.212	.287	6.7
RQ1	All behaviors and outcomes		N/A				
	Seatbelt use	C/B****	--	271	29.282	.328	35.6
	Moving violations	Str**	--	44	8.067	.428	14.1
	Neg. outcomes - risky driving	C/B**	--	21	7.794	.609	2.8
	Overall substance use	ns	--	582	.000	.000	N/A
	Neg. outcomes - substance	ns	--	28	1.279	.213	N/A
	Sexual activity frequency	Str*	--	51	4.212	.287	6.7
	Violence frequency	ns	--	511	2.568	.115	N/A
	Neg. outcomes - violence	C/B*	--	110	4.137	.194	8.4
	Sexual harassment frequency	ns	--	19	3.687	.441	N/A

Table 2 Continued

H/RQ #	Primary Measure(s) of Interest	Result	Hypothesis Supported?	<i>n</i>	χ^2	ϕ	diff
2017 vs. 1997/1998							
H1	Seatbelt use frequency	2017***	Y	310	33.930	.331	28.6
H2	Negative outcomes - risky driving	ns	N	25	2.139	.293	N/A
H4	Overall drug use frequency	1997/1998***	N	59	21.438	.275	2.7
H5a	Traditional tobacco use frequency	2017**	N	193	8.132	.042	21.3
H6	Alcohol use frequency	ns	Y	609	0.144	.001	N/A
H8	Diversity						
	Gender	ns	N	300	3.296	.105	N/A
	Race/ethnicity	2017*	Y	69	5.153	.311	12.7
	Sexual orientation	ns	N	21	2.495	.345	N/A
	Age	ns	N	300	6.853	.151	N/A
	Disability	2017***	Y	228	18.574	.814	15.3
RQ2	Overall substance use frequency	2017***	N/A	838	86.377	.321	65.6
RQ3	Sexual activity frequency	1997/1998***	N/A	162	31.744	.443	17.5
RQ4	Violence frequency	2017***	N/A	730	79.336	.330	58.7

Notes. Results presented are those from chi-square analyses only; results that did not come from chi-square are descriptive data and are discussed in the text. The result column indicates which category compared was found to have a statistically higher frequency of the given behavior. C/B = cable/broadcast; Str = streaming; ns = no significant difference; diff = the relative frequency difference between compared categories, listed in percent points.

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

Hypothesis 1

Hypothesis 1 predicted that 2017 popular television programming (PTP 17) would more accurately reflect real-world seatbelt use through significantly higher seatbelt use frequency in comparison to 1997/1998 primetime television programming (PTP 97/98). Results of the analysis supported this hypothesis. Seatbelt use was significantly higher in PTP 17 compared to programming of the previous generation.

In the current study, there were 571 characters observed in moving vehicles within 267 driving scenes. Seatbelt use was indeterminable for 68 (11.9%) vehicle occupants. Less than half of vehicle occupants (47.8%, $n = 273$) clearly used seatbelts, and 40.3% of vehicle occupants did not. Main characters were shown not wearing seatbelts 42.2% ($n = 160$) of the time and other characters were shown not wearing seatbelts 56.5% ($n = 70$) of the time when seatbelt use was determinable. When indeterminable seatbelt users were removed from analysis, the seatbelt use rate increased to 54.3%. Some series, hereafter referred to as historic series, were set in a time period when seatbelts did not exist, were not standard vehicle equipment, or were uncommonly used (Centers for Disease Control and Prevention, 2015). When historic series and indeterminable seatbelt users were excluded from calculation, 425 vehicle occupants remained, resulting in a seatbelt use rate of 54.6% ($n = 232$), and a non-use rate of 45.4% ($n = 193$). These adjustments ensured comparability with Will et al. (2005) in which there were no historic television series and seatbelt use was calculated by excluding indeterminable seatbelt use. Will et al.'s (2005) seatbelt use rate was 26%, which was a 28.6 percent point difference from the 54.6% use rate of the current study. With historic series and indeterminable seatbelt use data removed, a Pearson's chi-square goodness of fit test showed significantly higher seatbelt use in the current study compared to Will et al. (2005), $\chi^2(1, n = 310) = 33.930, p < .001 (\phi = .331)$.

Hypothesis 2

Hypothesis 2 predicted that negative outcomes resulting from seatbelt non-use and moving violations (risky driving) would be portrayed at similar rates in PTP 17 and PTP 97/98. This hypothesis was supported, with results showing similar rates of negative outcomes following risky driving behavior. There were, however, significantly less frequent moving violations in the current study.

Drivers used electronic devices without hands-free assistance 13 (2.3%) times. Will et al. (2005) did not report electronic device usage. Drivers committed moving violations such as excessive speeding or failing to yield 44 (7.7%) times in the current study and 34 (20%) times in the previous one. Drivers committing moving violations were main characters 63.6% ($n = 28$) of the time and other characters 36.4% ($n = 16$) of the time. The distinction between main or other character moving violations was not reported in Will et al. (2005). In the current study, undesirable consequences of risky driving behavior occurred in 21 (3.7%) driving scenes, compared to 10 (6%) in the previous study. In each study, one incidence of intoxicating substance use before or while driving was observed, however negative consequences followed this behavior only in the previous study.

A Pearson's chi-square goodness of fit test showed significantly less frequent moving violations in the current study compared to Will et al. (2005), $\chi^2(1, n = 55) = 5.977, p = .014$ ($\phi = .330$). There was no significant difference between the two studies in negative outcomes following risky driving behavior (moving violations and seatbelt non-use), $\chi^2(1, n = 25) = 2.139, p = .144$ ($\phi = .293$).

Hypothesis 3a

Hypothesis 3a stated that cannabis use would be significantly less frequent on 2017 cable/broadcast popular television programming (C/B PTP 17) compared to 2017 streaming popular television programming (Str PTP 17). Results supported this hypothesis. There were 10 cannabis use scenes out of 312 substance use scenes on Str PTP 17 compared to 0 cannabis use scenes out of 271 substance use scenes portrayed on C/B PTP 17. Statistical comparison was not possible with these low frequencies.

Substance use, which included alcohol, tobacco, vaping, e-cigarettes, illicit drugs, and prescription drug misuse, was the most common targeted behavior observed in PTP 17, with 583 scenes portrayed throughout 305 episodes. On average, substance use was portrayed approximately every 23 minutes of viewing. Alcohol was the most frequently portrayed substance use (70.3%, $n = 410$), followed by tobacco products (25.2%, $n = 147$), cannabis (1.7%, $n = 10$), prescription drug misuse (1.7%, $n = 10$), and illicit drug use (1%, $n = 6$). Main characters were involved in substance use more frequently (71.5%, $n = 417$) than other characters alone (28.5%, $n = 166$) and undesirable outcomes followed 4.8% ($n = 28$) of substance use scenes.

Hypothesis 3b

Hypothesis 3b specified that outcomes related to cannabis use in the current study would be primarily neutral or positive. Consistent with this hypothesis, there were no negative outcomes and one positive outcome was portrayed (fun, laughing) following cannabis use.

Hypothesis 4

Per hypothesis 4, drug use frequency (cannabis, illicit drugs, prescription drug misuse) was expected to be similar between PTP 97/98 and PTP 17. This outcome did not materialize. Overall drug use frequency was higher in the previous study, $\chi^2(1, n = 59) = 21.438$, $p_{\text{Šidák}} < .001$ ($\phi = 0.275$).

There was no differentiation between specific drug use observed in PTP 97/98, but a Pearson's chi-square test of independence did indicate a global significant difference in substance use type (alcohol, drug, and tobacco) between the two studies, $\chi^2(2, n = 861) = 21.438$, $p < .001$ ($\phi = .158$). Post-hoc pairwise comparisons with Holm-Šidák p value corrections pinpointed specific differences with significantly higher tobacco use in the current study, $\chi^2(1, n = 193) = 8.132$, $p_{\text{Šidák}} = .001$ ($\phi = 0.042$) and significantly higher drug use frequency in the previous study, $\chi^2(1, n = 59) = 21.438$, $p_{\text{Šidák}} < .001$ ($\phi = 0.275$). The percent point difference in relative frequencies of overall drug use comprising each study's substance use was 2.7. There was no significant difference in alcohol use frequency between the two studies.

Hypothesis 5a

Based primarily on decreasing societal tobacco use, hypothesis 5a predicted that traditional tobacco use would be depicted more frequently in the previous study than in the current one. The results countered this hypothesis. As previously mentioned, current television more frequently portrayed traditional tobacco use than did television observed in the previous study, $\chi^2(1, n = 193) = 8.132$, $p_{\text{Šidák}} = .001$ ($\phi = 0.275$). The relative frequency difference between the two studies in tobacco use portrayed per half-hour of watch time was 21.3 percent points.

Hypothesis 5b

Hypothesis 5b predicted that nicotine vaping/electronic cigarette use would represent a proportion of tobacco use portrayed. This hypothesis was not supported by the results. There were no portrayals of vaping/e-cigarette use observed in the current study.

Hypothesis 6

Hypothesis 6 predicted that alcohol consumption portrayed on current television would be statistically similar to that observed in Will et al.'s (2005) study. Results supported this hypothesis. There was no significant difference in alcohol use frequencies between the two studies, according to a Pearson chi-square test of independence with post-hoc comparison of substance type and Holm-Šidák alpha correction, $\chi^2(1, n = 609) = 0.144, p_{\text{Šidák}} = .705 (\phi < .001)$.

Hypothesis 7

Based on differences in content regulation, hypothesis 7 predicted that streaming television would feature more frequent sexual activity than cable/broadcast television. Results of the analysis supported this hypothesis. There were 31 sexual activity scenes observed on streaming series, 19 of which were explicit, and 20 on cable/broadcast series, of which 3 were explicit. A comparison of media sources using Pearson's chi-square goodness of fit tests showed a higher frequency of sexual activity, $\chi^2(1, n = 51) = 4.212, p = .040 (\phi = .287)$ and a higher frequency of explicit sexual activity, $\chi^2(1, n = 22) = 6.039, p = .014 (\phi = .524)$ portrayed in streaming series compared to cable/broadcast. The proportion of sexual activity scenes per half-hour increment of viewing time on C/B PTP 17 was 8.5% and on Str PTP 17, it was 15.1%, for an approximate relative frequency percent point difference of 6.7% (when numbers are not rounded). Sexual activity-related outcomes were limited to relationship problems and were

portrayed in 3 episodes of each of the 2 media types –insufficient frequencies for statistical comparison.

Hypothesis 8

Hypothesis 8 anticipated that current television would portray significantly more diversity in the form of gender, race/ethnicity, sexual orientation, age, religion, disability, and occupation. Results for this hypothesis were mixed and are presented in the following paragraphs.

Gender. Regarding gender, results were inconsistent with hypothesis 8. The data showed that since 1998, there has been no significant increase in main character gender diversity neither in terms of full gender representation nor in the proportion of cisgender men to women. Main character ($n = 168$) gender representation was limited to cisgender men (53%) and women (47%) in the observed shows, with no apparent main character representation of transgender or other gender individuals. Will et al. (2005) did not gather character data, but this data was researched for the current study through sources including the Internet Movie Database, official TV show websites, and by observing the actual shows (Internet Movie Database, 2019). Will et al.'s (2005) study comprised 132 main characters who were also exclusively cisgender men (57.6%) and women (42.4%). No significant difference in gender representation between the two studies was detected using the Pearson's chi-square test of independence, $\chi^2(1, n = 300) = 3.296, p = .069 (\phi = .105)$.

Race/Ethnicity. Regarding race/ethnicity, study results supported hypothesis 8, showing more racial diversity in the current study compared to the previous study. Low cell counts and expected frequencies precluded individual race/ethnicity group comparisons. However, dichotomizing race into "White, non-Hispanic/Latinx" and "People of Color" enabled a

Pearson's chi-square goodness of fit test to compare the two studies. Results revealed PTP 17 included a higher frequency of People of Color as main characters than did PTP 97/98, $\chi^2(1, n = 69) = 5.153, p = .023$ ($\phi = .311$). The relative frequency difference in People of Color who comprised each study's main characters was 12.7 percent points.

Main characters ($n = 168$) were primarily depicted as non-Hispanic/Latinx White (71.4%) in the current study. People of Color, including those of Hispanic/Latinx ethnicity, were 11.3% Black/African American, 6% Asian, 1.2% unspecified race, and 1.2% Multiracial. There were no main characters identified as American Native, Native American, American Indian, or Alaskan Native. A total of 8.9% of main characters were of Hispanic/Latinx ethnicity (separate from race; e.g., White or Black Hispanic).

The racial/ethnic makeup of Will et al.'s (2005) main characters were 84.1% ($n = 111$) non-Hispanic/Latinx White, 12.9% ($n = 17$) non-Hispanic/Latinx Black/African American, 1.5% ($n = 2$) White Hispanic/Latinx, 0.8% ($n = 1$) unspecified race, and 0.8% ($n = 1$) Multiracial.

Sexual Orientation. Analysis examining main character sexual orientation did not support hypothesis 8. No significant statistical difference was detected in LGBTQ representation between the current study and Will et al.'s (2005) using a Pearson's chi-square goodness of fit test, $\chi^2(1, n = 21) = 2.495, p = .114$ ($\phi = .345$).

Sexual orientation was not apparent for all main characters in the current study but was recorded where specified ($n = 153$). A large majority (90.2%, $n = 138$) of main characters were portrayed as heterosexual, but 15 main characters (10.2%) identified as LGBTQ.

In Will et al.'s series, 93.2% ($n = 123$) of main characters whose sexual orientations were specified were portrayed as heterosexual, and 4.6% ($n = 7$) were portrayed as LGBTQ.

Age. The current study was no more diverse in terms of age than the previous study, which challenged hypothesis 8. A Pearson's chi-square test of independence indicated no significant difference in age group representation between the current and previous study, $\chi^2(3, n = 300) = 6.853, p = .077 (\phi = .151)$. Low cell counts in some age groups precluded group-by-group comparison as they were originally recorded, so ages were consolidated as follows for analysis: 0-17, 18-34, 35-44, 45+.

In the current study, the largest percentage of main characters' ages were between 35 and 44 (37.3%), followed by the 25 to 34-year-old age group (25.9%). The smallest age group was 12 and younger (1.2%). The 13-17-year-old age group comprised 10.7% of main characters. A total of 14.5% of main characters were 45 or older and 1.8% of those characters were 65 or older.

Will et al.'s (2005) series comprised 54 (40.9%) main characters in the 35-44 age group, 45 (34.1%) in the 25-34 age group, 23 (17.4%) in the 45-64 age group, 5 (3.8%) in the 0-12 age group, 4 (3%) in the 13-17 age group, and 1 (.8%) main character in the 65+ age group.

Religion. Religion was uncommonly specified or portrayed for main characters in either study. Given this low representation, a statistical comparison of these data was not possible. However, in both studies only Christianity, Judaism and Atheism were portrayed. In the sense that the range of represented religions did not increase between studies, these results contradict hypothesis 8.

When religion was indicated in the current study ($n = 19$), forms of Christianity were most common (68.4%, $n = 13$), followed by Judaism (21.1%, $n = 4$). Two main characters were depicted as Atheists (10.5%). Main characters did not explicitly represent any other (non-fictitious) religious or spiritual beliefs.

Religion (or atheism) was specified for only eight of Will et al.'s (2005) 130 main characters and, like the current study, beliefs represented included forms of Christianity ($n = 4$), Judaism ($n = 3$), and Atheism ($n = 1$).

Disability. Individuals with disabilities were more frequent in the current study compared to the previous one, which supported hypothesis 8. In the current study, main characters were portrayed with physical or mental disabilities, including treatable mental illness such as post-traumatic stress, at a rate of 16.1% ($n = 27$). Will et al.'s (2005) study included one main character with a disability out of 132 main characters – a rate of 0.8%. The Pearson's chi-square goodness of fit test confirmed a higher frequency of characters with disabilities portrayed in PTP 17, $\chi^2(1, n = 28) = 18.574, p < .001 (\phi = .814)$, with a relative frequency difference in main characters with disabilities of 15.3 percent points.

Occupation. Occupation was explored in conjunction with other demographic characteristics including age, gender, race/ethnicity, and sexual orientation to study the intersectionality of diversity and discrimination. Research results did not support hypothesis 8. Since the previous study, the range of main characters portrayed holding prestigious occupations did not increase in terms of age, gender, race/ethnicity, or sexual orientation.

When occupations were specified for main characters ($n = 158$), prestigious occupations (e.g., FBI agent or doctor) were more common (54.4%, $n = 86$) than non-prestigious occupations (45.6%, $n = 72$; e.g., student). Of the main characters with prestigious occupations, more were men (64%, $n = 55$) than women (36%, $n = 31$) and more were White (69.8%, $n = 60$) than People of Color (30.2%, $n = 26$). In terms of age, most characters with prestigious occupations were in the 35-44-year-old age group (49%, $n = 42$), followed by the 25-34-year-old age group (27.9%, $n = 24$). Consistent with traditional career trajectories, 2 of 17 characters in the 18-24-year-old age

group and 14 of 19 characters in the 45-64-year-old age group held prestigious positions. All three characters older than 65 were employed in prestigious occupations. In relation to sexual orientation and gender minorities, 4 of the 14 LGBTQ individuals whose professions were specified were employed in prestigious occupations.

The majority of main characters in Will et al.'s (2005) study, 69.7% ($n = 92$) were employed in prestigious occupations, while 30.3% ($n = 40$) were not. As in the current study, more characters with prestigious occupations were men (58.7% vs. 41.3% women) and White (83.7% vs. 16.3% People of Color) and most were in the 35-44-year-old age group (40.2%, $n = 37$). Pearson's chi-square tests for independence revealed associations between gender and occupation in both studies. In the current study, more men held prestigious occupations and more women held non-prestigious occupations, $\chi^2(1, n = 316) = 9.202, p = .002$ ($\phi = .171$), and the same was true in Will et al.'s (2005) series, $\chi^2(1, n = 264) = 4.271, p = .039$ ($\phi = .127$). These associations were small but at somewhat similar magnitudes, and no statistically significant difference was detected between the two studies through a Pearson's chi-square goodness of fit test, $\chi^2(1, n = 69) = 0.317, p = .573$ ($\phi = .068$). An examination of race/ethnicity and occupation also showed no significant difference between the two studies in the frequency of People of Color portrayed in prestigious occupations, $\chi^2(1, n = 41) = 2.614, p = .106$ ($\phi = .252$).

Research Question 1

Research question 1 sought to explore whether streaming television series would portray health- and safety-compromising behaviors and negative outcomes more frequently than cable/broadcast television series. The overall conclusion to this question is that for the health- and safety-related behaviors of interest, neither media source appears to present a comparatively more or less safe or healthy portrayal, overall. To summarize the findings, significant differences

between the two media sources were discovered in driving behaviors (moving violations, seatbelt use, and negative outcomes), exercise frequency, sexual activity (sexual activity frequency and explicit sexual activity frequency), and violence (negative outcomes). For all other behaviors, frequencies were statistically similar, related behaviors (e.g., STI prevention behaviors) were also statistically similar, and associated outcomes were either similar and/or negligible. Details are provided in the following paragraphs.

Driving. Results for driving behavior suggested C/B PTP 17 more frequently depicted safe behaviors and safety-promoting outcome expectations. More frequent moving violations were shown on Str PTP 17 compared to C/B PTP 17 and more frequent seatbelt use and negative outcomes associated with risky driving were portrayed on C/B PTP 17.

Although historic series were excluded in the analysis when comparing the previous and current studies, there was no need to ensure equivalence in comparing streaming to cable/broadcast television, so these series were included in the analysis. Indeterminable seatbelt use, however, was excluded as it does not explicitly model health- or safety-related behavior. A Pearson's chi-square goodness of fit test indicated characters more frequently wore seatbelts on C/B PTP 17 than on Str PTP 17, $\chi^2(1, n = 273) = 29.282, p < .001$ ($\phi = .328$). The relative frequency difference between the two media sources in seatbelt use per total vehicle occupants observed was 35.6 percent points. Moving violations were also more common on Str compared to C/B, $\chi^2(1, n = 44) = 8.067, p = .005$ ($\phi = .428$), with a relative frequency difference between the two media sources of 14.1 percent points in driving scenes that included moving violations. Negative outcomes following risky driving behavior were more frequently portrayed on C/B than on Str, $\chi^2(1, n = 21) = 7.794, p = .005$ ($\phi = .609$), with a relative frequency difference in negative outcomes per risky driving scene of 2.8 percent points.

Substance Use. Results for substance use (alcohol, tobacco, vaping, e-cigarette, illicit drugs, prescription drug misuse) showed no difference between the two media sources. A Pearson's chi-square goodness of fit test showed no significant difference in substance use frequency between Str and C/B series, $\chi^2(1, n = 583) = .000, p = .988 (\phi = .000)$. Another Pearson's chi-square goodness of fit test showed no significant difference in substance use-associated negative outcomes, $\chi^2(1, n = 28) = 1.279, p = .258 (\phi = .213)$.

Sexual Activity. As previously discussed, sexual activity was more frequently portrayed on Str PTP 17 than on C/B PTP 17, $\chi^2(1, n = 51) = 4.212, p = .040 (\phi = .287)$ as was explicit sexual activity, $\chi^2(1, n = 22) = 6.039, p = .014 (\phi = .524)$. In comparing the two media sources' relative frequencies of sexual activity scenes per half-hour viewing time, there was a difference of 6.7 percent points. On C/B and Str series combined, characters discussed sexual activity-related outcomes in 3 scenes and concerns did not include pregnancy or sexually transmitted infection (STI). Sexual activity-related outcomes were limited to relationship problems and were portrayed in 3 episodes of each of the 2 media types. Sexual partners did not discuss sexual history in any scene and one scene in a streaming series portrayed intended condom use. Consequently, there were insufficient frequencies to compare the two media sources on any of these datapoints.

Eating. C/B PTP 17 and Str PTP 17 depicted eating habits similarly. A Pearson's chi-square goodness of fit test comparing media sources showed no significant difference in unhealthy meal/food frequency among characters on cable/broadcast or streaming series, $\chi^2(1, n = 139) = .296, p = .586 (\phi = .046)$. There were insufficient outcomes to compare between media sources.

Exercise. A Pearson's chi-square goodness of fit test comparing Str PTP 17 to C/B PTP 17 illustrated that streaming series featured more exercise scenes than did cable/broadcast series, $\chi^2(1, n = 21) = 5.267, p = .022 (\phi = .501)$. There were insufficient exercise-related outcomes to compare between the two media sources.

Sexual Harassment. A Pearson's chi-square goodness of fit test showed no significant difference in sexual harassment scene frequency between C/B and Str series, $\chi^2(1, n = 19) = 3.687, p = .055 (\phi = .441)$. There were insufficient negative or positive outcomes for a meaningful statistical comparison.

Sleep. A Pearson's chi-square goodness of fit test found no significant difference in insufficient sleep frequency between the two media sources, $\chi^2(1, n = 61) = 1.249, p = .264 (\phi = .143)$. Insufficient frequencies precluded a statistical comparison between sleep-related outcome data.

Violence. No significant difference in violence frequency between C/B PTP 17 and Str PTP 17 was revealed with the Pearson's chi-square goodness of fit test, $\chi^2(1, n = 511) = 2.568, p = .109 (\phi = .115)$. Weapon use frequency was also statistically similar between the two media sources, $\chi^2(1, n = 349) = 3.023, p = .082 (\phi = .093)$, as was the frequency of firearms discharges, $\chi^2(1, n = 189) = 1.597, p = .206 (\phi = .092)$. A final Pearson's chi-square goodness of fit test indicated negative outcomes for violence perpetrators were more frequent on C/B PTP 17 compared to Str PTP 17, $\chi^2(1, n = 110) = 4.137, p = .042 (\phi = .194)$. A comparison of the relative frequencies in each media source of negative outcomes to total violent scenes showed a difference of 8.4 percent points.

Research Question 2

Research question 2 sought to determine how substance use frequency and associated outcomes on PTP 17 would compare to PTP 97/98. Compared to PTP 97/98, overall substance use was higher and related outcomes were less frequent. Characters engaging in substance use were most frequently main characters in the current study, but there were no corresponding character data from the previous study for comparison.

As previously mentioned, there were 583 substance use scenes observed throughout 305 episodes in PTP 17, compared to 255 scenes within 242 episodes in Will et al.'s (2005) research. In both studies, alcohol was used most frequently, followed by tobacco and all drugs combined (cannabis, illicit drugs, misused prescription drugs). Main characters engaged in substance use more frequently (71.5%, $n = 417$) than other characters alone (28.5%, $n = 166$) in the current study, but these data were not reported for the previous study. For both studies, undesirable outcomes associated with substance use followed 28 substance use scenes. A comparison of overall substance use frequency between the two studies using a Pearson's chi-square goodness of fit test demonstrated a higher frequency of substance use in PTP 17, $\chi^2(1, n = 838) = 86.377, p < .001$ ($\phi = .321$). The relative frequency difference between the two studies in substance use scenes per half-hour of viewing time was 65.6 percent points. An additional Pearson's chi-square goodness of fit test indicated characters in PTP 17 experienced substance use-associated negative outcomes less frequently than in PTP 97/98, $\chi^2(1, n = 56) = 10.131, p = .001$ ($\phi = .425$).

Research Question 3

Research question 3's focus was to examine how PTP 17 sexual activity, STI prevention behavior, and sexual activity outcome portrayal would compare to PTP 97/98. Sexual activity frequency declined significantly compared to PTP 97/98, but health-preserving behaviors such as

condom use and sexual history and undesirable outcome discussions either plateaued or also declined. Sexual activity-related outcomes portrayed were primarily relationship-focused and were statistically similar between studies.

In the current study, main and other characters engaged in sexual activity in 51 scenes and main characters (86.3%, $n = 44$) were involved in this behavior more frequently than only other characters (13.7%, $n = 7$). Sexual activity was more frequently implied (56.9%, $n = 29$) rather than explicit (43.1%, $n = 22$) and sexual encounters were between previous strangers in 12 (23.5%) of the 51 scenes. Characters discussed expected outcomes from sexual activity in three (5.9%) of the scenes and these were limited to negative relationship outcomes and professional complications. None of these discussions included pregnancy or sexually transmitted infection (STI). Sexual activity-related outcomes were portrayed in six episodes and were also limited to relationship problems. Sexual history was not discussed between sexual partners in any of the scenes and intended condom use was portrayed in one scene.

Will et al. (2005) observed 111 sex scenes, of which 64 were between previous strangers, 3 involved condom use, 3 were preceded by sexual history discussions, and 6 were preceded by discussions of unspecified potential negative outcomes. Sex-related outcomes portrayed included relationship issues ($n = 16$), pregnancy ($n = 3$), legal troubles ($n = 6$), sexually transmitted infection ($n = 1$), and death from AIDS ($n = 1$). A Pearson's chi-square goodness of fit test showed sexual activity was significantly more frequent in PTP 97/98 compared to PTP 17, $\chi^2(1, n = 162) = 31.744, p < .001 (\phi = .443)$. The percent point difference between the two studies in their relative frequencies of sexual activity scenes per half-hour viewing increment was 17.5.

Will et al. (2005) did not report differentiating between implied and explicit sex scenes, which prevented a comparison of these data. Regarding undesired outcomes following sexual

activity, a Pearson's chi-square goodness of fit test showed no significant frequency difference between the two studies, $\chi^2(1, n = 34) = 3.017, p = .082 (\phi = .298)$. Low cell counts and expected frequencies precluded a statistical comparison of STI prevention behaviors.

Research Question 4

Research question 4 aimed to answer, "How will violence frequency, perpetrators, and outcomes in current television compare to those observed by Will et al. (2005)?" Violence was significantly more frequent in PTP 17 than in the previous one. Although other characters, rather than main characters, more frequently initiated violence in both studies, main character violence initiation frequencies were statistically similar.

Violence was the second most common targeted behavior observed in PTP 17, with 511 scenes in 305 episodes, averaging one act of violence every 26 minutes. Violence initiators were more often other characters (56.6%, $n = 289$) than main characters (43.4%, $n = 222$) and violence was in self-defense 12.9% ($n = 66$) of the time and others' defense 8.8% ($n = 45$) of the time. Active shooter events comprised 5.3% ($n = 27$) of violent scenes, and terrorism (2.2%, $n = 11$) and self-inflicted violence (1.8%, $n = 9$) were more rarely portrayed. None of the observed episodes featured hate crimes. Perpetrators used various types of weapons in a majority of violent scenes (68.3%, $n = 349$), but firearms were discharged in a minority of violent scenes (37%, $n = 189$). Violence perpetrators experienced negative outcomes, including death, injury, arrest, or property damage, for example, in 21.5% ($n = 110$) of episodes.

Will et al. (2005) also found violence to be the second-most common observed behavior after substance use, with 219 violent scenes throughout 242 episodes in PTP 97/98. Similar to PTP 17, a majority (65%) of violence initiators were other characters rather than main characters. Self-defense was uncommon in this study (4%), and violence in others' defense was not

specifically reported. Main characters used weapons 19% of the time and other characters used them 39% of the time. Firearms discharges were not measured separately from weapon use.

Negative outcomes followed 59 violent scenes.

Pearson's chi-square goodness of fit tests showed significantly more violence in PTP 17, $\chi^2(1, n = 730) = 79.336, p < .001 (\phi = .330)$. The relative frequency difference between the two studies in violent scenes per half-hour viewing increment was 58.7 percent points. To explore the violence frequency difference more thoroughly, a review of PTP 17 cable/broadcast data was conducted to identify high violence frequencies by series. *The Walking Dead* comprised approximately 61% ($n = 125$) of the cable/broadcast series violence and 24.5% of the total violence within the current study. For exploratory purposes, *The Walking Dead* violence frequencies were removed from the dataset and the test was recalculated with the remaining data from PTP 97/98 and PTP 17. This modification did not change the overall conclusion, which still showed significantly more violence on PTP 17 compared to PTP 97/98, $\chi^2(1, n = 605) = 33.227, p < .001 (\phi = .234)$.

Both studies featured other characters as the most frequent violence initiators. However, when comparing frequencies of main character violence initiation between the two studies, no significant difference was discovered, $\chi^2(1, n = 299) = 2.569, p = .109 (\phi = .093)$. Lastly, a Pearson's chi-square goodness of fit test revealed no significant difference in violence-associated negative outcomes, $\chi^2(1, n = 169) = 1.941, p = .164 (\phi = .090)$.

Research Question 5

The question of whether current popular television programming sets the example of healthy exercise habits was the topic of research question 5. Research results strongly suggest that current popular television does not set such an example.

Main and other characters exercised in 21 scenes in the series observed and main characters engaged in exercise more frequently (71.4%, $n = 15$) than other characters (28.6%, $n = 6$). Three characters were portrayed exercising twice while the rest exercised once. Characters discussed exercise-related outcomes in 14.3% ($n = 3$) of the episodes and these expectations were exclusively negative (e.g., soreness, injury). Series portrayed actual exercise-related outcomes in 4 episodes (19%). One episode showed a woman fitting into a dress after exercising, two episodes showed men being injured, and one showed a teen boy experiencing soreness.

Research Question 6

Research question 6 inquired, “Does current popular television programming set the example of healthy eating habits?” Current study results show that popular television does not portray healthy eating habits. Main characters consumed unhealthy foods or meals more frequently than healthy ones, and food-related outcomes neither encouraged healthy food consumption nor discouraged unhealthy food consumption.

Eating occurred in 258 scenes and unhealthy meal or food consumption (46.1%) was slightly less frequent than healthy (53.9%) consumption. Main characters were more frequently portrayed eating unhealthy meals/foods ($n = 121$) than healthy ones ($n = 106$). Positive expectations of healthy food consumption (e.g., hangover alleviation) were discussed in two scenes, and negative expectations of unhealthy food consumption (e.g., digestive issues) were discussed in three scenes. One negative outcome following food consumption (disgust) was portrayed, but the food was fictional (in a sci-fi series) and neither the food content nor the scene context provided indications of its healthfulness.

Research Question 7

Research question 7 sought to examine whether PTP 17 set the example of healthy sleeping habits. The findings illustrated that PTP 17 did not provide a positive example of healthy sleeping habits. A large majority of sleep portrayals were of unhealthy sleep habits by main characters and these unhealthy habits were rarely consequential.

Main and other characters were portrayed sleeping in 88 scenes. Sleeping scenes included main characters 93.2% ($n = 82$) of the time and only other characters 6.8% ($n = 6$) of the time. Sufficient sleep was depicted in 30.7% ($n = 27$) of these scenes and insufficient sleep was portrayed in 69.3% ($n = 61$) of them. Undesirable outcomes followed insufficient sleep in 8% ($n = 7$) of episodes.

Research Question 8

Research question 8 focused on whether and PTP 17 represented sexual harassment and its outcomes. More specifically, did it depict negative or positive consequences for harassment perpetrators, and negative or positive consequences for harassment subjects? Generally, results showed PTP 17 suggested that sexual harassment subjects experience negative outcomes as frequently as harassment perpetrators and rarely experience positive outcomes following harassment.

There were 2 discussed and 17 actual sexual harassment scenes portrayed in the series observed. Harassment perpetrators were more frequently other characters (73.7%, $n = 14$) rather than main characters (26.3%, $n = 5$). Harassment subjects were more frequently main characters (57.9%, $n = 11$) rather than other characters (42.1%, $n = 8$). For harassment perpetrators, negative outcomes were rare (21.1%, $n = 4$), while negative outcomes for harassment subjects

were just slightly more frequent (26.3%, $n = 5$). No positive outcomes were recorded for harassers or harassment subjects.

CHAPTER IV

DISCUSSION

The following section begins with a concise summary of the current study's results, first summarizing the comparison between 2017 cable/broadcast popular television programming (C/B PTP 17) and 2017 streaming popular television programming (Str PTP 17) and then between 2017 popular television programming (PTP 17) and 1997/1998 primetime television programming (PTP 97/98). It concludes with a consideration of how PTP 17 behavior frequencies compared to real-world behavior norms. This topic is separated into two segments, one detailing where PTP 17 frequencies were accurate or better than societal norms and one specifying where PTP 17 frequencies were worse than societal norms. Overall findings are characterized as consistent or inconsistent with healthy/safe behavior.

Summary of Results

Cable/Broadcast and Streaming Programming

There was no prediction regarding whether C/B PTP 17 would portray more health- and safety-compromising behaviors and negative outcomes compared to streaming popular television programming Str PTP 17. However, industry regulations applied to cable/broadcast media did not make its content largely safer and/or healthier than streaming content. Although there were a few differences between the two media sources, frequencies were similar in several major behavior categories; substance use, STI prevention, eating habits, sexual harassment, sleep habits, and violence. Str PTP 17 programming had higher moving violations and exercise frequency compared to cable/broadcast. C/B PTP 17 featured more (explicit) unsafe sex than streaming, but also more seatbelt use and negative outcomes resulting from risky driving and violence. As social cognitive theory explains, negative outcomes can discourage adoption of

associated behaviors (Glanz, 2015). Negative outcomes followed less than 25% of all violent scenes on the two media sources combined. The frequency of violence and the low frequency of negative outcomes associated with that violence in both types of media provide the overall impression that violence is a normal, nearly inconsequential behavior. Overall, in terms of social cognitive theory, neither cable/broadcast nor streaming media provide comparatively healthier or safer behavioral social models or outcome expectations beneficial for observational learning.

2017 and 1997/1998 Programming

With two exceptions, main character diversity, as it was measured in this study, did not differ between PTP 97/98 and PTP 17. In terms of gender, cisgender men continued to outnumber cisgender women, and there was no increase (from zero) in transgender or gender non-conforming representation. Age proportions were unchanged, with most main characters in the 35-44 range, and LGBTQ representation also statistically stable. Cisgender men and White people continued to be portrayed more often than cisgender women and People of Color in prestigious occupations, and religion and religious diversity was and remained largely unrepresented. The two exceptions to almost complete stability between the two studies were more People of Color and people with disabilities.

Changes in health- and safety-related behaviors portrayed on PTP 17 included decreased (risky) sexual activity and fewer moving violations in driving scenes and increased seatbelt use. Additionally, violence, overall substance use, and tobacco use increased, and negative outcomes associated with these unsafe/unhealthy behaviors did not increase to model consequences. Despite some more frequent health and safety behaviors relative to the previous study, the overall image portrayed by PTP 17, through characters and storylines, remains a rather

homogeneous, unsafe, unhealthy society where safety- and health-risking behaviors are rarely consequential.

2017 Programming and the Real World

Given the comparisons between 1997/1998 and 2017 programming, it may be of interest to consider how 2017 observations do or do not represent the real world. The following paragraphs place these research results in a larger context, detailing and considering how these observations compare to diversity and behavior in US society. This comparison notes where television portrays a realistic, better, or worse image of US society to note any change and also how television and behavioral norms do or do not overlap.

Where 2017 Programming is Accurate or Better

In most ways, (with the caveat that in some comparisons smaller sample sizes limit conclusion strength) diversity on 2017 programming did not change over the past generation, but there are a few ways in which PTP 17 matched or exceeded population diversity. For example, the proportion of LGBTQ individuals portrayed (10.2%) was higher than that estimated in the US population – up to 4.5% (Gates, 2011; 2017). Also, the proportion of main characters portrayed with disabilities (16.1%) was higher than the national rate of 8.7% for people under age 65 (US Census Bureau, 2018). (All characters with disabilities were between ages 18 and 64.) People of Color were underrepresented overall, but the proportion of Asians was accurate, per census data (US Census Bureau, 2018).

Statistics on prestigious occupations similar to those collected in this study are difficult to find, but analogous data from the Bureau of Labor Statistics (2018) provide a suitable comparison. The Bureau's data on occupation by sex, race, and ethnicity show that Black/African American and Hispanic/Latinx (of all races) employees are generally concentrated

in low wage/low prestige occupations. Women are also generally concentrated in low wage/low prestige occupations, but to a lesser extent. Asian employment is somewhat mixed (Bureau of Labor Statistics, 2018). This is generally consistent with the current study's findings, which were that People of Color and women were employed in less prestigious occupations than White individuals and men.

In terms of substances, tobacco use may have been accurately portrayed. Tobacco use comprised 25.2% of all substance use depicted on television. As of 2017, 7.6% of high-schoolers and 24.7% of adults were smokers (Centers for Disease Control and Prevention, 2018b). If those individuals were series characters, they could be expected to account for at least a quarter of substance use scenes, meaning their smoking would equate to at least 25.2% of substance use observed.

Where 2017 Programming is Worse

The major ways in which PTP 17 portrayed a less diverse, more unsafe and less healthy world than in reality are discussed in the following paragraphs. In terms of religious diversity, Christians make up approximately 65% of the US population, while Jews comprise an estimated 2%, and Atheists approximately 4%, compared to the 68.4%, 21.1% and 10.5% respectively portrayed in PTP 17. This programming also did not account for the numerous other beliefs found in US society (Pew Research Center, 2019). Although organized religion's role in US society is declining, it is not as insignificant as PTP 17 portrayed it (Pew Research Center, 2019).

One of the most inaccurate behavior portrayals was the violence frequency. Violence was portrayed an average of every 26 minutes of viewing time and negative outcomes occurred for just over one-fifth of violent perpetrators. This presented a more violent and seemingly inconsequential environment that is not reflective of reality. In 2017, an FBI-defined violent

crime (murder, rape, armed robbery, aggravated assault) occurred every 24.6 seconds, averaging to 73 violent crimes every half-hour (Federal Bureau of Investigation, 2017c). While this figure may initially seem high, those violent crimes were distributed across a population of over 325 million people and an area of over 3,500,000 square miles (US Census Bureau, 2010, 2019), not a population of a series' character cast over an area of the show location setting. Studies have demonstrated a dose-response relationship between television viewing and increased real-world violence perceptions despite decreased real-world violence (Gerbner et al., 1980; Hawkins et al., 1987; Shrum et al., 1998). This may explain persistent beliefs in high crime rates despite a precipitous drop in property and violent crime since 1993 (Gramlich, 2016).

Seatbelt use portrayals increased since the previously cited study, but even after 20 years, the PTP 17 use rate did not catch up to real-world use. Will et al.'s (2005) use rate was 26%, and the current study found a 54.6% use rate. The 2018 national seatbelt use rate was 89.7% (Li & Pickrell, 2018).

In addition to misleading violence and seatbelt use, PTP 17 inaccurately portrayed sleep habits. Poor sleep is already a common problem in society, with a quarter of adults sleeping insufficiently 15 out of every 30 days (Healthy People 2020, 2018). However, the current study found that those who were portrayed sleeping did so insufficiently nearly 70% of the time. This is at least partially explained by the nature of television; characters are often shown sleeping only for the purpose of being somewhat dramatically awakened. However, viewers may or may not consciously register this and if they do, this knowledge may not mitigate the impact of poor sleep norms portrayed on television.

PTP 17 content was far from reality in regard to STI prevention behaviors. If and when television viewers engage in sexual activity, health organizations recommend they assume much

less risk in their sexual behaviors than that portrayed on television (Centers for Disease Control and Prevention, 2018b; Healthy People 2020, 2018). Sexual activity observed in the study, which was a frequent observance, involved condom use only once and was never preceded by discussion of sexual history or possible undesired consequences. These behaviors are recommended particularly between previously unacquainted partners, which occurred in nearly a quarter of the scenes portrayed. In reality, 33.2% of high school students, 12.6% of adult women, and 20.2% of adult men use condoms most or all of the time (Centers for Disease Control and Prevention, 2018b; Copen, 2017).

Finally, PTP 17 presented an unrealistic image of substance use (alcohol, tobacco, vaping, e-cigarette use, cannabis, illicit drugs, prescription drug misuse), with a higher frequency compared to PTP 97/98, an average of one substance used in every 23 minutes of viewing, and few consequences following this behavior. Societal alcohol use has remained fairly consistent since 2002 at approximately a 51.7% past-month use rate for those 12 and over, but illicit drug-induced deaths have increased significantly – consequences that were not portrayed in the observed series (Healthy People 2020, 2018; SAMHSA, 2018). Tobacco use has drastically declined over the past 20 years, but the results of this study gave the opposite impression. Like PTP 97/98, PTP 17 showed few behavior frequencies at rates similar to real-world rates, suggesting continued inaccurate portrayals of many health- and safety-related behavior norms.

Limitations and Recommendations

One limitation of the current study is that, due to resource constraints, it was not possible to evaluate more than the top ten streaming and top ten cable and broadcast television shows. Although observing more shows would have resulted in a more comprehensive content appraisal, this may or may not have resulted in a more accurate account of the average viewer's television

consumption. Nevertheless, this lack of breadth remains a limitation. Furthermore, television program viewers are not limited to series, often choosing movies and documentaries, and binge-watching complete seasons and limited/mini-series. Future research would benefit from a more accurate sample of real-world viewing habits.

A second limitation is that although most primary behaviors and many sub-behaviors met the minimum sample size indicated by power analysis ($n = 88$), several did not. For example, although there were 583 substance use scenes in the current study, there were only 28 outcomes, and 28 outcomes in Will et al.'s (2005) study. Comparing outcomes between the two studies provided a sample size of only 56, which was less than the required 88, reducing power for that analysis and increasing the likelihood of Type II error. For analyses with sample sizes smaller than 88, it is possible effects existed that were not detected due to this reduced statistical power. This limitation is one with the potential to be addressed in future research.

A third limitation is that the current study necessarily focused on a single television programming season. This was deliberate for the purpose of direct comparison and, again, due to resource constraints. However, future research would benefit from a longitudinal approach which would facilitate in-depth character and series familiarization, a more complete estimation of content, and a more accurate imitation of viewing habits.

Next, observers' biases may have impacted data collection in this study in that some observations may have required specific cultural experience or knowledge and/or perspective-taking. For example, the two non-Hispanic/Latinx observers may have been less able than the Hispanic observer to distinguish Black Hispanic/Latinx from Black/African American characters. Given their similar ages, all observers may have struggled with the same groups when classifying characters by age. Also, the male observer may have found it more difficult than the

female observers to recognize a woman being sexually harassed, or to characterize the outcome(s) of such an event as neutral, positive, or negative for the woman. These are just some examples to illustrate how observers' personal characteristics could have influenced data collection. Observers' previous military responsibilities included annual race/ethnicity and gender discrimination and harassment training and regular collaboration with people of multiple cultures and identities. This may have somewhat mitigated this limitation relative to observers without such training and experience, however training and experience may not eliminate bias. Where possible, future content analysis research should employ numerous observers with a greater range of diversity to reduce potential data collection bias.

Finally, a limitation related to the previous one is that interobserver reliability was not conducted for character diversity measures. Although these analyses were originally intended, reliability analyses on character variables were ultimately not possible because of how the reliability protocol was implemented. Reliability assignments were made by pairing observers to randomly selected individual episodes totaling 10% of the sample. This meant that secondary observers watched small numbers of episodes from a large selection of series, but not entire series, for reliability checks. However, some character variables, such as religion (most often) or disability status, required viewing a large number of episodes or a full season for accurate determination, precluding reliability analyses for these observations.

The absence of these interobserver reliability measures contributed to the problem of potential observer bias by forgoing an opportunity to identify such bias. Future research would benefit from detailed pre-planning to identify and allocate sufficient time and/or personnel to ensure all series can be watched by a primary and secondary observer and the additional data produced can be coded and analyzed.

Future Directions

To summarize recommendations for additional work in this chapter, future research could consider how to improve statistical power to strengthen conclusions for measures in this study that had smaller sample sizes, such as analyses of behavioral outcomes. Though there were more than sufficient opportunities to observe the presence of numerous behaviors; outcomes of those behaviors were much more rarely scripted. Based on sample sizes in the current study, researchers may be required to double series samples or complete work over two seasons for sufficient power to test outcome portrayal differences. The addition of extra series or episodes over multiple seasons would also broaden sample content, addressing the potential limitation of the sample consisting of just 20 series from the same season.

A second future direction from this study is to consider the role of observers. It is clear that a larger number of diverse observers, working together to conduct reliability for more than the reasonable standard practice of shows conducted here would be necessary to alleviate or at least identify biases in data collection resulting from observer characteristics. Such a future direction is not robustly linked to the problem studied here (health and safety behaviors portrayed in television programming), but would strengthen future conclusions from these studies by determining whether the scripts and portrayals are being perceived by a diverse audience in the same or similar ways.

The preceding chapter summarized the findings of the current study, concluding with a summary of study limitations and recommendations and recommendations for future directions. The next and final chapter will present implications of the study's findings along with recommendations for television programming viewers and parents and guardians of young television viewers concerned with those implications.

CHAPTER V

CONCLUSION

With popular television's diversity, health, and safety data evaluated, specific findings detailed, and limitations noted for future consideration, it is constructive to identify the broad meaning of these findings and how their implications might be addressed. These are the topics of the following final paragraphs. They begin with the overall conclusions drawn from the full results and conclude with four specific recommendations for addressing the implications of those conclusions.

What Does This Mean?

PTP 17 was slightly more diverse, was more violent, portrayed more overall substance use (alcohol, tobacco, vaping, e-cigarette use, illicit drugs, prescription drug misuse), and specifically more tobacco use than primetime television did approximately 20 years ago, and it showed few consequences to such risky behaviors. Separate from comparisons to older programming, PTP 17 promote a generally unsafe, unhealthy, homogeneous representation of the world that was not reflective of reality. In sum, through its content, and on the basis of social cognitive theory, PTP 17 had the potential to negatively affect viewers' health and safety. Though some researchers debate the practical meaningfulness or direction of causality, a large consensus of experts agree that such media content negatively affects consumers in several cognitive and behavioral ways (Anderson & Bushman, 2002; Bloom, 2002; Bushman & Anderson, 2001; Bushman et al., 2015; Ferguson, 2002; Kiselica, 2002; Martins et al., 2013). For those who are satisfied with this consensus and who seek actionable information, this study provides updated content data useful for next-step decision-making.

What Can be Done?

Public Health Interventions

The comparison in the previous chapter between current television content and the real world raises the question of whether reality is a standard to which television content should be compared. Would a realistic portrayal of diversity and health and safety behaviors benefit viewer health and wellbeing? Social cognitive theory suggests that it would. According to the theory, normative beliefs – an individual’s perception of behavioral norms – are formed through social model observation which frequently leads to beliefs that unhealthy behaviors are more common than they are (Glanz, 2015). The social norms approach to health promotion adopts social cognitive theory’s construct of normative beliefs and assumes that, through the influence of media and other social actors, people estimate a *higher prevalence of risky behaviors and attitudes* and a *lower prevalence of protective behaviors and attitudes* than in reality. As a result, individuals inhibit their own judgment and often adopt risky behaviors and attitudes, despite initial personal misgivings. The social norms approach to health promotion corrects misperceptions of others’ social, health and safety attitudes and behaviors, freeing individuals to express their own pro-social, -health, and -safety attitudes and behaviors (Dempsey et al., 2018; World Health Organization, 2009).

Examples of successful interventions using the social norms approach include those aimed at preventing sexual violence and violence against women, improving diet, reducing teen distracted driving, and reducing alcohol, tobacco, and drug use to specify only a few (Anderson, 2011; Bewick et al., 2013; Eriksen, 2015; Hawkins, 2005; Merrikhpour, & Donmez, 2017; Robinson & Higgs, 2012). Given that US society is more diverse and that seatbelt use, violence, drug use, and unprotected sexual activity are less frequent in the US than on popular television

programming, a more accurate portrayal of these matters is one way television's potential effects on health- and safety-related cognition and behavior could be improved.

Limit or Block Television Content

Barring such interventions, there are other ways television's potential effects could be mitigated, one of which is limiting or blocking specific television content. This strategy of parental media control is referred to as *restrictive mediation* (Collier et al., 2016). For broad indications of content, the TV parental guidelines are a starting point for consideration. These were implemented in 1998, and the V-chip, which can be used to electronically block specific programming, was mandated on all televisions larger than 13 inches in the year 2000 (FCC, 1998, 2017). The guidelines are codes that appear in the first 15 seconds of a program and following commercial breaks that denote recommended viewing ages and content descriptors. For example, a show rated TV-MA, L, V is recommended for a mature audience (MA) because it contains a high frequency of mature language (L) and violence (V). More information on these ratings is available on the FCC's web site. There are advocates who argue that parental guidelines are inconsistent from program to program or over time, making them unreliable. To complement and/or replace parental guidelines, numerous web sites are available, and they provide more in-depth information on show and other media content. Many are designed for parents and guardians and some are also for adults interested in avoiding or finding specific program content. All are easy to find through search engines using terms describing the media content sought.

Restrictive mediation can be effective in influencing children and adolescents, but effects vary depending on multiple factors (Collier et al., 2016). TV content restriction can decrease child consumption of violent and pornographic content and increase prosocial and educational

content. Child and adolescent behaviors and attitudes are also affected when parents restrict media content and consumption time. However, study results are inconsistent. For example, some suggest that restrictions to TV, movies, and videogames are associated with decreased verbal and physical aggression among children and adolescents. However, other studies show that TV content restrictions, specifically, are associated with increased aggressive behavior imitation (Collier et al., 2016). Such mixed results suggest that additional research is required to identify the effective applications for restrictive mediation.

Counteract Television Content's Influence

Content ratings do not address all health- and safety-related behaviors modeled in television programming. Furthermore, parents and guardians can only restrict viewing time and content in their own homes and on devices they control. An alternative or complementary way to address media influence is to watch programs with children and critically discuss the issues portrayed, a strategy called *active or instructive mediation* (An & Lee, 2010; Collier et al., 2016). The term *coviewing* is sometimes used interchangeably with active or instructive mediation, but other sources more narrowly define coviewing as parents watching TV with children *without* interaction. This distinction is an important one because effects can be very different between coviewing (without interaction) and instructive mediation (American Academy of Pediatrics [AAP] Council on Communications and Media, 2016; Arnett, 2007; Collier et al, 2016).

Though children can learn new ideas and behaviors from social models on television and other media, the parent or guardian can be a more important and influential social model who can counteract media messages (An & Lee, 2010; Collier et al., 2016). In other words, the parent or guardian can take a social norms approach to health promotion, correcting attitudinal and behavioral misperceptions portrayed on television and educating the child on more realistic

behavioral and outcome expectations. Parents/guardians can also counteract overt and covert advertising by educating children about advertising agendas and tactics. For behaviors such as drug use and sexual activity, research regarding instructive mediation's effectiveness have been inconsistent and sometimes depend on gender, age, and other factors. However, research supports instructive mediation's role in reducing adolescents' and children's aggression, reducing violent content viewing, and increasing informational and pro-social program content viewing (Collier et al., 2016). Parent/child interaction during media consumption is also one of the American Academy of Pediatrics' recommendations for families to manage children's media use (AAP Council on Communications and Media, 2016).

Change Content

Finally, through consumer demand or media initiative, television content could change to exert a more beneficial influence on viewers. First, it could portray increased diversity, not just with the presence of individuals with singular marginalized identities, but also with individuals with intersectional marginalized identities, in positions of power, fully exercising agency and autonomy and defying stereotypes. Additionally, television could depict characters – particularly main characters who serve as social models – engaging in fewer unhealthy, unsafe behaviors. Alternatively, characters engaging in unhealthy, unsafe behaviors could be shown expecting and/or experiencing unpleasant consequences. As social cognitive theory explains, this would discourage viewers from perceiving such behaviors as attractive and worth learning (Bandura, 2016). Through multiple efforts, including public health interventions, parental content limitations, instructive mediation and/or content change, popular television programming could provide social modeling that not only avoids negatively influencing viewers, but possibly even benefits them by providing valuable observational learning/parental teaching opportunities.

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APPENDIX A

CHARACTER PROFILE

APPENDIX B

DRIVING WORKSHEET

Observer Name: _____ Date: _____

Pg. _____ of _____

Show Title: _____ Season #: _____ Episode #: _____

Driving (list driver and all passengers for each scene)

Scene #	Start Time (00:00)	Character Name(s)	Driver or Pass. (D/P)	Seat-belt use? (Y/N)	Driver electronic use (w/out hands-free)? (Y/N)	Moving violations? (Y/N, describe)	Driver used intoxicating substance prior to or while driving? (Y/N, name substance[s])	Any desired or undesired outcomes of risky behaviors depicted in episode? (Y/N, describe)	Comments

APPENDIX C

SUBSTANCE USE WORKSHEET

Observer Name: _____ Date: _____

Pg. _____ of _____

Show Title: _____ Season #: _____ Episode #: _____

Substance Use (tobacco/vaping, alcohol, cannabis/marijuana, illegal drugs, misuse/abuse of prescription drugs)

Scene #	Start Time (00:00)	Substance(s) used	# of main/other characters in scene	# main/other characters using	# main/other characters intoxicated	Name(s) of character(s) using	Location (e.g., home, bar)	Any desired or undesired outcomes of substance use/abuse depicted in episode? (Y/N, describe)	Comments
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APPENDIX D

SEXUAL ACTIVITY WORKSHEET

Observer Name: _____ Date: _____

Pg. _____ of _____

Show Title: _____ Season #: _____ Episode #: _____

Sexual Activity (implied or implicit, including sexual intercourse, anal sex, oral sex, and any other sexual activity that could result in STI or pregnancy)

Scene #	Start Time (00:00)	Names of characters in scene	Partners dated more than once? (Y/N)	Implied or explicit?	Condom use clearly implied? (Y/N)	Sexual history discussed (Y/N)	Possible undesirable consequences discussed? (Y/N, describe)	Any desired or undesired outcomes from sexual activity depicted in episode? (Y/N, describe)	Comments

APPENDIX E

PHYSICAL VIOLENCE WORKSHEET

Observer Name: _____ Date: _____

Pg. _____ of _____

Show Title: _____ Season #: _____ Episode #: _____

Physical Violence (hitting, slapping, pushing, tackling, assault with weapons or explosives, sexual assault; does not include threats or verbal abuse)

Scene #	Start Time (00:00)	# main/ other characters in scene	Name(s) of perpetrator(s)	Weapon used, if any	Positive or negative outcomes for perpetrator(s) in episode? (Y/N, describe)	Name(s) of subject(s)	Weapon used, if any	Positive or negative outcomes for subject(s) in episode? (Y/N, describe)
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APPENDIX F

EATING WORKSHEET

Observer Name: _____ Date: _____

Pg. _____ of _____

Show Title: _____ Season #: _____ Episode #: _____

Eating (healthy: fruits, vegetables, whole grains, fish, lean meats, legumes, low-fat dairy, grilled/steamed/roasted/smoked preparations, reasonable portions; unhealthy: soda, energy drinks, candy, fast food, chips, pastries, ice cream, deep-fried foods, meat/deep-dish pizza, large portions)

Scene #	Start Time (00:00)	Name(s) of character(s) eating?	What healthy or unhealthy food(s) was/were consumed?	Possible desirable or undesirable outcomes discussed? (Y/N, describe)	Any desired or undesired outcomes from healthy/unhealthy eating depicted in episode? (Y/N, describe)	Comments

APPENDIX G

SLEEPING WORKSHEET

APPENDIX H

EXERCISING WORKSHEET

APPENDIX I

SEXUAL HARASSMENT WORKSHEET

VITA

Name:

Heather Ann Leon

Address:

Department of Psychology
Old Dominion University
Norfolk, VA 23529

Education:

Old Dominion University, Norfolk VA
Bachelor of Science in Psychology
Major: Psychology
Graduated December 2016, with distinction - GPA: 3.87

Old Dominion University, Norfolk VA
Master of Science in Psychology
Degree in progress
Graduation date: May 2020
Current GPA: 3.79

Research Groups

Spring 2016	Undergraduate Research Apprentice Program, Old Dominion University Supervisor: Konstantin Cigularov, Ph.D.
Spring 2016 - Spring 2017	Safety Management and Applied Research Team Supervisor: Konstantin Cigularov, Ph.D.
Fall 2017- Present	Behavioral Psychology Research & Analysis Team, Old Dominion University, Supervisor: Bryan Porter, Ph.D.

Publications and Presentations

Leon, H. A. & Porter, B. E. (2018, May). *Predictors of bicycle helmet use among a sample of college students*. Poster session presented at the Virginia Academy of Science Annual Meeting, Longwood University, Farmville, VA.