THE LIFESTYLE AND VALUES OF FAMILIES PORTRAYED ON TELEVISION: CHANGES FROM 1960 TO 2010

by

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ABSTRACT

The unsustainable lifestyles of North Americans are wreaking havoc on the planet and show minimal evidence of the changes required to combat climate change and the biodiversity crises. In the US, it is estimated that 80 percent of greenhouse gas emissions are linked to supporting the American lifestyle (Bin & Dowlatabadi, 2005). House sizes have increased (US Census Bureau, 2023), while family sizes have decreased (Lesthaeghe, 2010). A preoccupation with wealth has become a defining feature of North American culture (Stolzenberg et al., 2019).

Popular culture is a form of entertainment and a powerful socialization force that shapes our aspirations and pursuits (Greenfield, 2016). In 1960, adolescents reported watching 2.5 hours of daily television, and by 2016, that number had surged to 8 hours (Twenge, et al., 2019). This increased media consumption emphasizes the need to understand its influence on lifestyle choices.

The present study explores television programming over a 50-year period as a cultural model of unsustainable lifestyles and values. To determine whether lifestyles represented on television since 1960 have primarily promoted environmentally unsustainable ways of living, two popular television programs representing American family life were selected for each decade from 1960 to 2010 and analyzed for the ecological footprint (EF) and values portrayed. To explore whether television representations have helped fuel the current culture's desire for more lavish lifestyles, the EF level represented in the programs was compared to (1) a sustainable EF and (2) per capita EF in Canada and the United States for each decade. Lifestyles represented on television were found to be substantially more resource-consumptive than a sustainable lifestyle, more consumptive than the average Canadian lifestyle at the time, but similar to the average American lifestyle. These results suggest that American television might create larger perceived

discrepancies between the “normal” family lifestyles and one’s own lifestyle for Canadian than American audiences. Closer analysis of the EF measure, however, indicated an underestimation of resource use in several domains (e.g., meat consumption). Specific EF indicators, such as house size, were isolated and examined, revealing that seven of the 12 television homes were substantially larger than average American homes of the time. Therefore, with respect to house size, American audiences have been presented with greater luxury than the societal average. In addition, representations of clothing consumption increased from 1960 to 2010, and environmental actions, such as recycling, were absent from the shows.

Representations of material life are one way to examine sustainable messaging within television, but characters' behaviour and dialogue reflect the value priorities of people at the time. Countries known for reducing their EF, such as Norway, embody eco-protective values of environmental and social harmony, whereas the United States and Canada embody eco-consumptive values of wealth and hedonism (Schwartz, 2012). Values analysis of the main characters of programs in 1970 and 2010 revealed that at both time periods, American television characters primarily valued hedonism and wealth and showed no interest in environmental protection. The implications of these findings for popular culture are explored.

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With appreciation and respect,
Kelly Stone

The Lifestyle and Values of Families Portrayed on Television: Changes From 1960 to 2010

The lifestyles of Canadians and Americans are among the most lavish in the world, and over the last 50 years, the extravagance of these lifestyles has increased. Home size is one of the more environmentally impactful aspects of lifestyle (Goldstein, et al., 2020). In the United States, between 1960 and 2010, the average home size increased by 46% from 1500 to 2200 square feet (U.C. Census Bureau, 2023; Comen, 2021; Qualman, 2018; Sarkar, 2011; Wilson, 2024). Endorsing materialism accompanies lavish lifestyles, emphasizing wealth and hedonism. For example, in 1960, the American Freshman Survey indicated that about 40% of American university students endorsed being financially well-off as very important to them (Stolzenberg et al., 2019). Now, financial wealth is important to the vast majority (i.e., over 80%) of incoming university students. The present study explores cultural forces that might have shaped and reinforced the changes in values and lifestyle aspirations since 1960.

Examining the environmental impact of lifestyles over time can help identify forces that contribute to ever-increasing resource demands on the planet. The demands placed on the environment by different lifestyles can be assessed using the Ecological Footprint (EF) calculator (Global Footprint Network, 2020). The EF calculation identifies the number of natural resources required to support a specific lifestyle and represents this impact in terms of the planet's global hectares. Given the Earth's current population, a sustainable lifestyle is 1.7 global hectares of land per person. A lifestyle of 1.7 global hectares is the per capita lifestyle of people living in a country such as Ecuador. Approximately 80% of greenhouse gas emissions in the USA are linked to supporting the American lifestyle (Bin & Dowlatabadi, 2005). One of the most carbon-consumptive aspects of the lifestyles of the rich is the heating and cooling of their large and lavish homes (Goldstein, et al., 2020). The EF for the average citizen in Canada and the USA is

four times more than sustainable (Global Footprint Network, 2020). If more people strive to achieve lifestyles similar to those of Canadians and Americans, the environment will be devastated.

The Ideal Self

Suppose the ideal lifestyle for North Americans includes a luxurious home, a scenic vacation property, multiple vehicles for leisure and commuting, frequent international trips, and a meat-rich diet. *How has this ideal lifestyle come about?* The self-concept is an active system of emotional and cognitive structures extending forward and backward in time (Markus & Nurius, 1986). Envisioning oneself in the future typically includes an image of what one ideally would like to be (ideal self), what one thinks one ought to become (ought self), and an image of what one is afraid one might become (feared self). People are motivated to reduce the differences between their actual and ideal selves; hence, these self-perceptions play a part in self-regulation. Individuals focus on decisions relevant to achieving their ideal self and are driven to recognize the actions and choices necessary to reach their ideal self (Markus & Nurius, 1986).

Popular Media Use and the Shaping of Ideal Selves

Some features of a person's ideal self are consciously selected, for example, the desire to become a clinical psychologist or wildlife biologist; other features, such as one's lifestyle ideal, may be shaped quite unconsciously by the cultural systems in which people are embedded (Bargh & Chartrand, 1999). For North Americans, television and the internet provide an easily accessed platform to learn about the ideals of the sociocultural system in which they live.

Body shape ideals are a prominent and well-studied example of the cultural transmission of ideals. The ideal body shape and weight are examples of a culturally imposed model to which individuals feel they need to conform (Crossley, et al., 2012). An ideal body shape and size for

an English-speaking Commonwealth woman is a BMI of 18.85, a waist of 61.12 cm, and hips of 87.89 cm. This ideal shape differs significantly from the average woman's body shape and size, with a BMI of 21.7, a waist of 72.91 cm, and hips of 99.4 cm (Crossley, et al., 2012). This difficult-to-achieve and unhealthy ideal body shape can preoccupy women as they devote their energy and possibly compromise their health to reduce the discrepancy between their actual and ideal states (Higgins, 1987). Health and well-being, particularly for women, are the costs women bear due to the pressure to conform to culturally imposed body ideals.

The profound impact of television on appearance satisfaction and body image among youth has been extensively studied. Researchers found that watching ten minutes of one of the most profitable television shows in the 1990s (and continues in popularity today) *Friends* significantly affected appearance satisfaction for Canadian undergraduate women (Want, et al., 2009). The ten-minute television segment included thin and physically attractive characters; however, the content did not explicitly state or relate to weight or body image. The consumption of dramatized soap opera television content is significantly correlated with the internalization of cultural beauty ideals and an increased desire for thinness among both boys and girls (Tiggemann, 2005). A survey of 1100 North American girls found that 72% of those who regularly viewed *'reality'* television concentrated on external appearance, and 38% reported believing their value is determined by their looks and preferred to be validated for outer beauty rather than inner characteristics (Girl Scout Research Institute, 2011). These findings highlight the influential role of media, specifically television, in shaping youth's perception of beauty and worth.

Adolescents and Media

The primary developmental task for adolescents is to formulate belief and value systems that integrate messaging from school, media, and parents (Eder & Nenga, 2003). Electronic media provides a unique opportunity to witness the lives and behaviours of others that may otherwise not be accessed. Television has been described as a "super peer" that can shape and influence the beliefs and behaviour of the viewers (Strasburger, et al., 2009). Although television was once only accessible through a stationary device shared within a family and household, personal devices such as cell phones, tablets, laptops, and personal computers allow individual choices and a customizable viewing experience. In Canada and the US, most adolescents between the ages of eight and 18 can readily access various media, such as television, the Internet, video games, printed material, and movies from multiple devices.

Adolescents spend more time engaging with media than any other activity (Brooks-Gunn & Donahue, 2008). Indeed, on average, they spend seven and a half hours on media consumption daily (Rideout et al., 2010). Relative to adults who reported watching an average of 99 minutes of online videos and 44 streams a month, youth aged 12-17 watched significantly more, averaging 132 minutes of videos and 74 streams (Nielsen Media Research, 2023; Wikipedia, 2021). The North American socio-cultural context has evolved due to the increasing saturation of technology in teens' learning environments (Rohan, 2000; Uhls & Greenfield, 2011). These research findings help us understand the influence of media consumption on the cultural changes within North America.

New media sources on the internet beyond television have been shown to reinforce and personalize the pressure on individuals to conform to societal standards. This added pressure has been demonstrated with body shape. In a meta-analysis encompassing sixty-seven empirical

studies investigating the connection between internet usage and body image concerns, researchers identified a strong association between appearance comparison material on social media and the prevalence of endorsements for thin body ideals (Rodgers & Melioli, 2016). *Fitspiration* is one online example of how social media hosts popular fitness and body image content that can influence behaviour and self-regulation. In a study of 180 participants, 59.4% accessed the online content created by athletes and personal trainers who endorsed culturally imposed body ideals, and 42.2% of participants claimed to seek inspiration to improve their appearance (Raggatt et al., 2018). The qualitative portion of that study highlighted four key themes for which the users reported accessing the site: setting the socially constructed body ideal, failure in achieving that ideal, access to community endorsing body ideals, and as a resource for reliable health information (Raggatt et al., 2018). Some participants claimed that they use the body photos shared by personal trainers as reference points for their motivation and to gauge their progress, success, or setbacks. Among the participants, 17.7% were categorized as high risk for eating disorders, 17.4% reported high levels of psychological distress, and 10.3% displayed signs of addictive exercise behaviour. Many Canadians and Americans watch television shows online and connect with associated websites or community groups. As a result, the internet has become a primary way for people to measure themselves against cultural ideals.

Communicating the Ideal Lifestyle and Materialist Pursuits

Like the body-shape ideal, popular media representations of the ideal lifestyle often deviate from the average and represent an extreme. This has been examined primarily in terms of traditional advertising in North America. Throughout the history of advertising, there has been an increase in the promotion of luxurious and extravagant items and a reduction in practical products. Belk and Pollay's (1985) research reported that in 1905, 15% of advertisements

endorsed luxurious items; by 1975, luxury item advertising had increased to 50%. They noted that during this same time period, marketing for functional and practical products decreased from 60% in 1905 to 30% in 1975 (Belk & Pollay, 1985). The evolution of cultural shifts has been identified in advertising trends, from promoting practical living to emphasizing extravagant lifestyles.

Advertising for an ideal lifestyle has evolved beyond traditional promotion to a more nuanced delivery. Documentarian Morgan Spurlock (Ebert, 2011) used his documentary *The Greatest Movie Ever Sold* to expose the complex engagement of product placement and advertising within cinema. As the number of streaming services increases to provide content free from traditional television commercials, marketing and advertising evolved to become an embedded part of the show's content. Advertising has further advanced within social media as the popularity of influencers and targeted digital algorithms across multiple platforms are accessed by teens. Social media influencers boost consumer consumption by presenting their experience as improved, comfortable, and opulent (Lee et al., 2021). Influencers portrayed as "true, altruistic, or good" empower consumers to balance moral hypocrisy with environmental concern (Leban et al., 2021). Imagine a short video showcasing luxurious new clothing, designed with eco-positive messaging, claiming to "plant a tree" or "save a whale," worn by a like-minded peer, flying overseas to protest for clean water. Advertising is no longer limited to famous faces, reviews and personal experiences shared on social media by relatable people, validate and promote the desire for carbon-consumptive experiences such as travel and material belongings (Cohen et al., 2021; Sharma & Mishra, 2020). A carbon-intensive trend has been observed through luxury items advertising, integration of advertising through various media, the

popularity of social media influencers, and the reviews or photos of peers showing off their latest purchases or vacations.

Lifestyle Representations on Television

When attempting to understand factors that contributed to changes in lifestyle extravagance over time in North America, portrayals of normal life or the ideal life on television can be examined. However, there is little to no research assessing representations of lifestyle portrayals in popular media in North America. This type of research has been conducted in Indonesia. Researchers investigated the changes in lifestyle representations within television programming for children from 1980 to 2000, a time of significant social change in Indonesia (Hendriyani et al., 2016). In the 1980s, the Indonesian government had authoritarian control over television content. By 2000, television content had evolved after the country had integrated a liberal and commercial broadcasting system. Researchers were interested in how this social change from state-controlled to free enterprise commercial television influenced lifestyle representations within show content over time.

The Indonesian research identified a variety of notable shifts from a traditional lifestyle to a Westernized lifestyle. They defined lifestyle as living conditions, including the type and interior of the home (modern versus traditional), food choices, clothing worn, and visable wealth of the television characters. Coders used a character analysis methodology to assess the values of television characters (176 characters) in the 1980s, and the 2000s (432 characters. The findings demonstrated that in the 1980s, of the characters for whom homes were shown, 29% lived in smaller, modest, traditional homes, and in contrast 18% lived in more extensive, modern homes with modern interiors. Whereas in the 2000s, only 9% lived in modest, traditional houses, and

28% lived in modern homes. Increasingly, the main characters have adopted a modern Westernized lifestyle and values.

The comparison of Indonesian television content in children's shows between the 1980s and 2000s demonstrated increased depictions of wealth, luxury, and reliance on fantasy. These depictions normalized Westernized unsustainable lifestyles for average Indonesian families. In terms of representations of wealth, in the 1980s, only 7% of characters were wealthy, whereas in the 2000s, 15% lived a wealthy lifestyle. This research also discovered a striking difference in the representation of characters in terms of clothing and travel even when the character had no defined work or employment. In the 1980s, 3% of characters were not employed, and 7% lived comfortably, whereas in the 2000s, 17% of characters did not openly show work, and 16% lived comfortably. Although not an explicit indicator of wealth, researchers found a wealth representation through the characters from the shows in the 2000s. These characters were likelier to rely on magic to solve problems and grant wishes than television characters in the 1980s. The lifestyle messaging of luxury and opulence within Indonesian children's shows has changed over time. The changes in Indonesian television were interpreted by the researchers as a culturally embedded message to the population promoting a Westernized, wealthy, and unrealistic lifestyle to the average Indonesian family.

Summary

In North America, current lifestyles are unsustainable and are destabilizing the planet's climate. The pursuit of wealth and extravagant lifestyles has escalated over the last 50 years, with little evidence of decline. Adolescents are experiencing an exponential increase in the availability and consumption of popular media, where governing policies and regulations have yet to evolve. Researchers have investigated the impact of North American television programs

on youths' weight ideals, (Girl Scout Research Institute, 2011; Tiggemann, 2005; Want, et al., 2009). However, North American television has not been examined to understand the lifestyle portrayals and the values underlying these lifestyles. The present study addresses that gap by exploring the representations of lifestyle and values on North American television over a 60-year period.

The Present Research: Evaluating changes over time in the everyday lifestyle and values portrayed through television aimed at adolescents.

Representations portrayed on television programs can communicate socially acceptable standards. For example, when all the lead female characters are portrayed as thin, this implicitly conveys a thin body standard toward which women should strive. Likewise, when television shows depict families living in large, beautifully designed homes and driving luxury SUVs to their lake houses, this can convey that an environmentally costly lifestyle is a normative desire. The present research examines whether the depiction of North American life on popular television has changed over time to represent increasingly lavish and environmentally unsustainable lifestyles and more wealth-oriented and hedonistic characters. Different and more comprehensive approaches are used to evaluate lifestyle and value representations. An overview of the approach and hypotheses associated with lifestyle representations on television from 1960 to 2010 is provided first. The analysis of values exhibited by television program characters over time is described second.

Lifestyles exemplified in popular American television programs created for teens are examined from 1960 to 2010. The choice of the 1960s as a starting point for the study is significant because it marks a period of substantial changes in family structure. Maternal employment increased by 500% between 1970 and 1990, giving rise to the cultural phenomenon

of latchkey kids (Bell, 1999). In her book, *The After-school Lives of Children*, Bell (1999) identifies several reasons parents allowed children to come home after school and be home alone. These reasons included protecting children from the bullying that was associated with after-school programs, securing safety from stranger danger (sexual assault and kidnapping), and providing an opportunity for children to demonstrate independence. Economic factors were crucial in maternal employment as increasing mortgage demands required dual incomes. Financially, the annual mean income in American households increased over time from $70,000 in 1960 to $130,000 in 2010 (Kuhn, et al., 2020). These shifts in family organization and parenting practices during the 1960s justified solitary television watching after school and created the generation of latchkey kids.

With 1960 as the first year for lifestyle analysis, 2010 was selected as the last year because it marks an important turning point in how adolescents consume media. After 2010, North American teens' media consumption moved to digital handheld devices (Twenge et al., 2019). The acceptance of in-home computers and handheld devices transformed the age of media consumption as families moved away from the era of a single central television shared by the family. By 2011, traditional television viewing diminished significantly as adolescents focused on social media and online streaming services. By the mid-2000s, adolescents spent considerably less time with legacy media such as television, newspapers or magazines, and movies (Twenge et al., 2019). Instead, adolescents were more inclined to use digital media through the internet, such as texting, gaming, and social media. In 1970, teenagers spent an average of 2.5 hours daily watching screens, primarily television, whereas, by 2016, that number had surged to 8 hours of screen interaction, encompassing digital media (Twenge et al., 2019). Adolescent media

consumption had evolved significantly by 2010, marking this decade as an ideal endpoint for this research.

For the lifestyle analysis, two popular television programs were selected from 1960, 1970, 1980, 1990, 2000, and 2010 (see Table 1). For each decade, the two shows selected were considered popular programs in that given decade and represented household family life. Popularity through viewership was regarded as a good index for cultural significance. The popularity of these programs was confirmed by Nielsen Ratings and further compared with three online sites (Ranker, IMDB, and Google Search) that independently rank television popularity through public opinion polls (IMDB. n.d.; Maddock, 2022; Ranker, 2024; Wikipedia, 2021). All websites supported the popularity of each program comparatively within the chosen decades. There was variability in the numerical ratings of the programs as some of the most popular programs in each decade were dedicated to sports, reality television, or contest content. The programs selected for this research met the specific criteria of consistently being identified as popular by Nielson Ratings, confirmed with three online ranking sites, and represented a fictional family household lifestyle.

The Ecological Footprint of Television Lifestyles

Previous research used an ad-hoc set of lifestyle features to assess lifestyles on television programs (Hendriyani et al., 2016). Over the years, several lifestyle calculators have been developed to provide individuals or nations with a method for assessing the ecological impact of their lifestyle. These calculators provide a quantitative estimate of the environmental demand of lifestyles and enable comparisons of individuals among countries and to objective sustainable living criteria (e.g., Global Footprint Network, 2020). The Global Footprint Network estimates the per capita lifestyles of all countries on the planet for the period examined in this study, which

enables comparisons of ecological footprint over time. The present research takes advantage of these calculator tools and historical footprint data to assess and generate estimates of the lifestyles represented on American television shows and to compare these lifestyle estimates against sustainable lifestyle standards and the average lifestyle of Americans and Canadians over the 60-year period.

The Ecological Footprint Calculator was customized for this study to generate a quantitative estimate of the environmental cost of the lifestyles represented in the 12 selected television programs. The EF calculator is a free online tool designed to enable individuals to calculate their personal EF based on features of their housing, travel, food, and clothing (Global Footprint Network, 2020).

Selecting episodes to analyze lifestyle is an important methodological issue in this research. Manganello, et al., (2008) employed various sampling strategies to identify a standard for sampling television content and determined that three episodes of television content are acceptable when there is only subtle content variation. The programs chosen for this research had little deviation in the lifestyle represented by the main family. Therefore, three episodes were deemed adequate for assessing EF. Three episodes from each program's first season were randomly selected for analysis to capture the household lifestyle represented in the program.

Three trained coders, naïve to the study's hypotheses, watched all 36 episodes and rated the Ecological Footprint (EF) indicators for the main family in the show's content. Based on these ratings, an EF was calculated for each episode and averaged for each show.

Features of the EF

The following features are the key aspects of an individual's EF. Housing allows individuals to express or represent the householder's lifestyle (Grundström & Molina, 2016). Over the last 50 years, housing size has increased in the US (U.C. Census Bureau, 2023; Comen, 2021; Qualman, 2018; Sarkar, 2011; Wilson, 2024). The maintenance required to heat and cool a large home is one of carbon consumption's most environmentally impactful lifestyle components (Bin & Dowlatabadi, 2005).

Travel includes commuting to and from work as well as recreational travel options. Normalization of carbon-intensive travel on various media and the importance placed on commuting "experiences," such as new autonomous driving vehicles, may contribute to the socially constructed ideal for lavish and comfortable travel (Carter & Gilovich, 2012; Cohen et al., 2021; Sharma & Mishra, 2020).

Individuals make food-related decisions multiple times a day. Food choice and production are the most important drivers of biodiversity loss (Wilting et al., 2017). Assessing representations of food consumption captures an essential element of an individual's EF. Advertising through media has been shown to have a mediating role in the influence of food on diet behaviour and choice (Van Dooren & Bosschaert, 2013). Goals and behaviours to consume a specific diet may be socially constructed and may explain less anthropogenic choices.

Individual fashion choice is a material way people can express themselves. Following the oil and gas industry, fashion is the second largest contributor to global pollution (Anguelov, 2015; Habib et al., 2022; Sanad, 2021). Excessive fashion consumption behaviour has been associated with positive emotions, social pressure, expectations, and a desire to stay current with ideals presented in media (Simpson, 2019; Kaur & Anand, 2021). Television characters represent

fashion decisions, values, or themes, and their costumes or attitudes towards clothing and shopping normalize fashion consumption behaviour.

The lifestyle choices in housing, travel, diet, and fashion significantly impact carbon consumption and individual EF. Housing plays a significant role in representing individual lifestyles and substantially influences our carbon footprint. Travel, including commuting and recreation, is a crucial component that can be influenced by media representations and societal ideals of extravagant, comfortable, or shared (public transportation) travel experiences. The relationship between food and biodiversity loss is complex; food choices are made multiple times daily, significantly impacting global challenges such as biodiversity. It is essential to recognize that the fashion industry significantly contributes to environmental pollution, even though individual clothing choices serve as self-expression.

When calculating the EF of television episodes over time, I expected that the EF of the shows would increase over time, displaying an upward trend, reflecting the rising environmental impact associated with the lifestyle components portrayed on television.

Hypothesis 1: The ecological footprint depicted by the lifestyle in popular teen television shows will be increasingly unsustainable (i.e., above 1.7 global hectares) over time.

Do lifestyle representations on television follow or lead per capita lifestyle trends?

One question of interest for this research is, *has television been a catalyst for social change or simply a reflection of it?* It can be challenging to determine whether the themes and content of television programs reflect current lifestyles or are creating the cultural desire for increasingly more extravagant and luxurious lifestyles. To determine if the programs reflect the average family's current lifestyle or if they are presenting a more lavish lifestyle and influencing

the cultural lifestyle ideals, the EF of the television programs will be compared to the average EF of North Americans for the same period. If program lifestyle representations are more opulent than real-world EF averages, this will indicate that television created the desire for an increased ecologically expensive lifestyle within the culture.

Hypothesis 2: The ecological footprint of the television programs will be greater than the average Canadian or American EF for the corresponding time period.

Representations of Cultural Values by Television Characters

The ecological footprint provides a numerical measurement of the visual and material representations of lifestyles on television. Although the visual representation of lifestyle provides one indicator of the influence of a lavish lifestyle on popular media, the attitudes and values represented by the characters in the programs can provide additional and different sources of influence on human aspirations. For example, a character could explicitly or implicitly condemn, envy, or celebrate conspicuous wealth. The behaviour and priorities of the character indicate the values held by the character and, by extension, of popular culture.

Assessing Values Portrayed on TV Using Episode Synopses

Other researchers have assessed the values represented in American television programs. Testing Greenfield's (2016) theory of social change, a selection of American television programs from 1967 to 2007 were assessed for community-focused values (community feeling, conformity, and tradition) and personal-focused values (fame, achievement, and financial success) (Uhls & Greenfield, 2011). Greenfield (2016) posited that traditional and community values will diminish as learning environments become more urbanized and technological. Digital technology will increase education and wealth, but it will also cause a shift in the psychology of the culture toward greater individualism. Values related to individualism, such as achievement,

wealth, and fame, will proliferate throughout the culture and be represented through media, education, and interpersonal relationships. Ultimately, these technological changes will impact human development as humans adapt to new conditions.

To test this theory of social change, Uhls and Greenfield (2011) chose two television programs to represent each decade from 1967 to 2007. Participants were given a written synopsis of the overall theme over several seasons and a summary description of one episode. Participants would read five program summaries and corresponding episode synopsis to answer the same four questions about each of the five shows. The first question was, "What do you believe is the main theme of the show?" The second question was, "What do you believe is the main theme of the episode?" In the third question, participants were asked to rate the importance of 17 values on a 4-point scale ranging from 1 (not at all important) to 4 (extremely important) or not applicable. In the fourth question, participants were asked to indicate how central each of the 10 personality characteristics was for the main character or group of characters. Uhls and Greenfield (2011) found that community feeling was ranked as the most important value in the programs until 2007 when it dropped to 11th of the 17 values. The value of fame showed the opposite pattern: it ranked in 15th place over the decades until 2007, when it was ranked the most important value. Researchers attributed the sudden change in value orientations within the selected television shows to the rapid expansion of online communication technologies and media consumption among youth.

Three features of the methods employed by Uhls and Greenfield (2011) may have influenced the value rankings they obtained. First, the shows selected to represent 2007 differed from the previous years. For all other decades, selected programs were situation comedies or family lifestyle-oriented programs (e.g., *Happy Days* and *Alf*). In contrast, the programs chosen

for 2007 were *American Idol*, a reality talent contest, and *Hannah Montana*, a show highlighting a famous teenage pop singer and her lifestyle. Both shows did not emulate average family life. Researchers may have found the sudden importance of fame and reduced community feeling values in 2007 due to the programs they selected rather than a change in values represented on family television programs. In the first four decades, the values rankings remained relatively stable and did not show a linear increase in individualism. For the decades between 1967 and 1997, the individualistic value "financial success," the value most relevant to the present study, ranked 12th (1967), 15th (1977), 10th (1987), and 12th (1997) in importance, but in 2007 it suddenly jumped to fifth most important. It is possible that the differences in values obtained between 1997 and 2007 were not due to changes in values represented in family-oriented television over time but were instead influenced by the selection of shows. For the present study, reality and competition television programs were omitted from the selection, and only programs that featured fictional characters' household and family lives were included.

The second method in the Uhls and Greenfield's (2011) study that might have undermined the accuracy of the value rankings was that the participants rated the values expressed by reading shorted episode synopses rather than watching actual episodes. Nuances insinuating values such as material belongings, character costumes, body language, and physical surroundings would be lost in written descriptions and can only be accurately assessed by viewing the program. Thirdly, value raters reading a large amount of de-contextualized written text describing programs can result in rater fatigue or boredom, which can cause poor accuracy in rating judgments. Reading words describing a show is a different experience from watching the show.

Assessing Values Portrayed Using Coders

Other researchers have assessed values portrayed by characters using trained coders. Indonesian researchers found that from 1980 to 2000, ratings indicated that both personal and community-oriented values portrayed by characters became stronger over time. Individual values of 'showing one's ability,' 'being successful,' and 'making one's own decisions' were significantly higher in 2000. Community-oriented values such as 'being loyal to friends' and 'helping out other people' were also rated to be significantly more embodied by the main characters. However, the exception found within this research was that the environmental value of 'people should care for nature' significantly decreased from 1980 to 2000. In conclusion, the Indonesian study used trained coders to analyze the values expressed by the main characters to carefully identify an intensification in value expression for both individualistic and community-oriented values over time and found a consistent and significant decrease in the expression of environmental care (Hendriyani et al., 2016).

Relations Between Cultural Values and Ecological Footprint

The values investigated in the present research include the values that distinguish countries known for making progress on reducing their EF (e.g., Norway and Sweden) and countries that are not (e.g., Canada and the USA). Norway's EF was higher than Canada's and, over time, has considerably reduced. Canada and the USA have not succeeded in substantially reducing their EF (Global Footprint Network, 2020). The dominant values endorsed by Norwegians are non-materialist values referred to as self-transcendent values, including a focus on the welfare of others and the environment (Schwartz, 2013). In contrast, Americans' dominant values are power values focused on acquiring wealth and authority. In Canada and other commonwealth countries, hedonistic values, such as enjoying life and self-indulgence, are

most important (Schwartz, 2013). Schwartz's value circumplex is a theoretical model that organizes human values into a circular structure (see Figure 1) based on motivational goals, illustrating how values complement or oppose each other. The two opposing clusters, self-enhancement (e.g., power and achievement) and self-transcendence (e.g., universalism and benevolence), highlight the inherent conflict between prioritizing personal success and well-being versus the welfare of others and the greater good. Countries known for making progress on reducing their EF prioritize non-materialistic or self-transcendence values, whereas countries that have higher EF tend to prioritize self-enhancement and hedonistic values.

Hypothesis 3: The values of television characters will embody an increase in eco-consumptive values (wealth and hedonism) and a decrease in eco-protective values between 1970 and 2010.

Summary

In North America, the current lifestyles are unsustainable and destabilizing the planet's climate, intensified by the pursuit of wealth and extravagant living. Popular media exposure to adolescents has greatly increased. While other research has examined the impact of television on youth behaviours with body image ideals, aggression, violence and sexual practices, there has been little to no focus on the exposure to cultural values and lifestyle ideals. My research addresses this gap by analyzing North American television programs from 1960 to 2010 to identify whether they increasingly depict lavish, environmentally unsustainable lifestyles and more wealth-oriented, hedonistic characters. Using the Ecological Footprint Calculator, the research assesses the environmental impact of these lifestyles and compares them to sustainable living standards and average North American lifestyles over time. This research also examines the cultural values portrayed by television characters to understand their influence on audience

aspirations, hypothesizing that television has increasingly exemplified eco-consumptive values and diminishing eco-protective values.

Method

Measures

Ecological Footprint

The Ecological Footprint Calculator is a standardized online tool that estimates the area of land on the planet needed to support a particular lifestyle using 31 questions and was customized for this study (Global Footprint Network, 2020, https://www.footprintnetwork.org/). The 31 questions quantify the resources needed to support a lifestyle based on five aspects of life (food, shelter, mobility, goods, and services) and estimate the waste and pollution (including greenhouse gas pollution) associated with the resource use. The lifestyle's environmental impact is measured as the global hectares required to support it.

To formulate their responses to the EF questions, coders used the lifestyle and home environment displayed within the episode and considered the discussions or decisions portrayed by the characters throughout the episodes. The original EF questions were modified from asking about personal behaviour to asking about general resource use on the television show. For example, the first question in the EF calculator, *"How often do you eat animal-based products?"* was modified to *"How often are animal-based products consumed, or implied consumption?"* When the Ecological Footprint calculator offered a continuous scale (e.g., sliding scale pie chart depicting 0%-100%), it was simplified into discrete categories to simplify the coding task. For example, *"How often are animal-based products consumed, or implied consumption?"* uses a 0 – 100 % sliding scale pie chart option, with additional discrete non-numerical markers of never, infrequently, occasionally, often, and very often. For this research, coders selected only discrete

markers (either the wording associated with the EF recommendation or dividing the 0-100 categories into equal categories. Dividing the rating options into discrete categories was done for all EF questions with sliding scale answers. Table 2 provides the modified questions and rating scales.

Two features of the EF were estimated by the experimenter rather than the coders. For the feature: 'What percentage of the home's electricity comes from renewable resources?' a constant of 50% was used because these estimates vary by the state where a home is located. For the feature, 'What is the size of the home?', the size of the main family home in the program was estimated using the following sources: fan-based websites offering fantasy floor plans, computer-generated house tours, or real-estate information for actual homes used in filming. All information validating the television house size responses can be found in Table 3.

To generate the EF for each television program episode, the coder's ratings for 29 questions plus the appraised house size and 50% renewable electricity were entered into the online calculator, which generated the global hectares value. From each coder, three EF scores from three episodes were averaged to generate the coder's EF estimate for the program overall. Coder reliability was assessed on the program EF scores.

Values

The values were selected from each of the 10 value domains of the Schwartz (1992) value measure and are listed in Table 4. Thirty-three values were selected from The Short Schwartz's Value Survey (Lindeman & Verkasalo, 2005). Eco-consumption values were selected from three of the value domains: hedonism (pleasure, gratification of desire, hedonism, enjoyment of life and self-indulgence), power (wealth and social power), and achievement (ambition, achievement, success, and capability). Eco-protective values were selected from the

universalism domain (protect the environment, world at peace, unity with nature, and beauty of nature).

Coders watched seven episodes. After watching each episode, coders rated the importance of each of the 16 value groups for each of the four main characters using a 5-point importance rating scale: 1 = not important for the character, 3 = important, and 5 = of supreme importance for the character. An example of a coding sheet for one episode is provided in Appendix C. Coders watched the episode and then rated each character for seven episodes. Coders' character value ratings were then averaged across the seven episodes. Inter-rater reliability was calculated on these ratings. Given satisfactory reliability, the three coders' value ratings were averaged for each character. To calculate the importance of each of the 16 value groups for each year, value scores for the eight characters in 1970 were averaged, and then value scores for the eight characters in 2010 were averaged (see Table 8).

Procedures

Two television programs representing family households in 1960, 1970, 1980, 1990, 2000, and 2010 were selected (see Table 1). The programs were chosen by comparing the consistency of popularity from Nielsen Ratings with three online sites (Ranker, IMDB, Google Search) that rank popularity through public opinion polls and depict the family household and lifestyle (IMDB. n.d.; Maddock, 2022; Ranker, 2024; Wikipedia, 2021). All ranking resources confirmed the programs selected as popular within the decades they represent. The television episodes selected for coding were accessed using the following online streaming services: Netflix, Crave, and Disney Plus. Some programs were unavailable through these services and resourced from private collections or purchased. The private collection programs were converted to MP4 files and uploaded to Google Drive, where the coders could access the content.

To assess the EF of the programs, three university student coders watched three randomly chosen episodes from the two programs representing each decade: 1960, 1970, 1980, 1990, 2000, and 2010. Coders then evaluated the material lifestyle portrayed within the episodes based on 31 indicators from the EF calculator. Ratings from the coders were then entered into the EF calculator, which generated an EF score in global hectares for each episode.

The values coding was conducted by the same three coders on four television programs: two from 1970 and two from 2010. Coders assessed the values embodied and expressed by the four main characters in seven consecutive episodes of the programs. After each episode, coders rated the importance of 16 value groups depicted by each character. Seven episodes enabled the coders to understand the storyline and identify broader value themes within the characters' evolution and development (Manganello, et al., 2008).

Coders and Coder Training

Three university psychology students naïve to the hypotheses volunteered to code the television programs for the study. They were selected based on excellent performance in their social psychology courses and received a $100 gift card. Coders received approximately three hours of instruction in a training session that used a sample program (*The Beverly Hillbillies; Clampet's Strike Oil!)*. A complete agenda of the training program can be found in Appendix A. Sample coding sheets can be found in Appendix B and C. Coders were invited to participate in an open forum to learn about the coding measures through group discussion, encouraged to ask questions about the data collection, and practiced the rating by watching the same sample episode. Immediately after viewing the sample episode, coders either assessed the EF indicators shown within the episode or rated the importance of values presented by the characters. Coders

then reviewed and discussed all their ratings to compare accuracy and assure cohesion within their rating process.

After watching and rating all episodes, coders were invited to an individual debriefing, in which an overview of the study's goals was provided, and issues and challenges with the coding were solicited.

RESULTS

First, the EF inter-rater reliability and results across the decades from 1960 to 2010 are provided. Next, the values expressed by television characters are compared between programs from 1970 and 2010. Finally, in a section of supplemental analyses, results are provided for three specific EF items (house size, clothing, and recycling), and problems with the EF measure are analyzed.

The EF results include the EF represented in television programs (hypothesis 1). Then, the EF lifestyle portrayed on television is compared to the lifestyle of the EFs of Americans and Canadians across that time (hypothesis 2). The television portrayal of two specific EF indicators that have increased significantly between 1960 and 2010, house size and clothing consumption, were isolated and descriptively analyzed. Finally, the limitations of using the EF calculator to capture and quantify the representation of lifestyle in popular media are examined.

The study's value results are then presented. The results include an assessment of interrater reliability, statistical analysis, and ranking of values (hypothesis 3).

The Ecological Footprint

Ecological Footprint Coding Interrater Agreement

Agreement for the EF rating among the three coders was assessed using Krippendorff's alpha (Krippendorff, 2004). The total reliability analysis included 36 EF data points; one score from each episode, rated by each coder. The standards for agreement are Kalpha > 0.80, which is a very good agreement; Kalpha between > 0.67 and 0.79, good agreement; Kalpha between > 0.50 and 0.66, moderate agreement; and Kalpha > 0.49, low agreement. One coder found estimating the EF component challenging, and the Kalpha across the three coders was low = 0.40. Two coders achieved moderate agreement, Kalpha = 0.55, and therefore EF estimates were generated by averaging these two coders' scores.

The Sustainability of the Ecological Footprint on American TV Over Time

Hypothesis 1 predicted that the ecological footprint depicted by the lifestyle in popular teen television programs would exceed a sustainable lifestyle of 1.7 global hectares and would show an increase over time. EF estimates of the lifestyle portrayed in the different television programs across time are presented in Table 5 and are graphed in Figure 2. Not surprisingly, all TV programs selected for this study presented a lifestyle substantially higher than 1.7 global hectares.

Figure 2 illustrates no clear upward linear trend concerning an increase in lifestyle opulence over time. The two programs that bookend the timeframe, *The Beverly Hillbillies* (1960) and *Pretty Little Liars* (2010), exhibited the largest EF. The EF of the remaining programs all fell between 8.8 and 10.7 global hectares.

Ecological Footprint on American TV Relative to per capita EF in Canada and USA

Hypothesis 2 predicted that the television programs would present a lifestyle with an EF greater than the American and Canadian average in the corresponding period. In Figure 2, the black solid line represents the per capita EF of Americans, and the dashed line represents the per capita EF of Canadians. Hypothesis 2 was supported for Canadians, with 9 of the 12 programs portraying a larger EF lifestyle than the Canadian average at the corresponding time. Hypothesis 2 was not, however, supported for the USA; only 5 of the 12 programs portrayed an EF lifestyle greater than the American average.

The Values of Television Characters Over Time

Hypothesis 3 predicted that the television characters in the 2010 programs (*Pretty Little Liars* and *The Secret Life of the American Teenager*) will embody more eco-consumptive values (i.e., hedonism, wealth, and achievement) and less eco-protective (unity with nature; environmental protection) than characters in the 1970 programs (*Happy Days* and *All In The Family*).

Values Coding Inter-rater Agreement

The three coders watched the same seven consecutive episodes from each program and provided sixteen value ratings for each of the four main characters within every episode. Coding reliability across the characters was good: Kalpha = 0.74. Value scores were thus averaged across the three coders for each value associated with each character.

Values Portrayed on Television

To generate the importance of each value for 1970 and 2010, value scores were averaged across the eight characters for that year. These ratings are provided in Table 8 and graphed in Figure 7. In Table 8, the values are ordered by the importance ratings for 2010 and the eco-

consumptive values all emerged among the top eight: hedonism 1st, wealth 5th, achievement 7th, and success 8th; whereas the eco-protective values were the least important values expressed by the characters in both 2010 and 1970, with "protect the environment" and "unity with nature" occupying the fifteenth and sixteenth ranks in 1970 and maintaining similar ranks of sixteenth and fifteenth, respectively, in 2010. These rankings illustrate that environmental protection was not an important value in the lives of television characters in either 1970 or 2010.

Statistical tests for value differences across years are exploratory because the tests are based on values for only eight television characters per year (i.e., *n* of 8). Four eco-consumptive values were tested for differences across time: wealth, hedonism, achievement and success. Given the number of analyses conducted, a p-value of 0.01 is used based on a Bonferroni Correction. Contrary to predictions, the importance of wealth in 1970 ($M = 2.08$, $SD = 1.13$) was not significantly lower than wealth in 2010 ($M = 2.21$, $SD = 0.69$), $t\ (14) = -0.28$, $p = 0.39$, 95% *CL* [-1.14, 0.88], high effect size $d = 0.94$. Similarly, hedonism in 1970 ($M = 2.16$, $SD = 1.03$) was not significantly less than hedonism in 2010 ($M = 2.71$, $SD = 0.92$), $t\ (14) = -1.12$, $p = 0.14$, 95% *CL* [-1.59, 0.50], high effect size $d = 0.97$. Achievement stayed relatively the same between 1970 ($M = 1.84$, $SD = 0.48$) and 2010 ($M = 1.92$, $SD = 0.80$), $t\ (14) = -0.24$, $p = 0.24$, 95% *CL* [-0.79, 0.63], medium effect size $d = 0.66$. Success in 1970 ($M = 2.18$, $SD = 0.77$) was not significantly different in 2010 ($M = 1.83$, $SD = 0.69$), $t\ (14) = -0.95$, $p = 0.18$, 95% *CL* [-0.44, 1.14], medium effect size $d = 0.73$.

The importance of eco-protective values represented on television was predicted to decline between 1970 and 2010, but it was not significant. The importance of protect the environment in 1970 ($M = 1.21$, $SD = 0.32$) was similar in 2010 ($M = 1.03$, $SD = 0.05$), ($t\ (14) = 1.58$, $p = 0.16$, 95% *CL* [-0.09, 0.45], small effect size $d = 0.23$). The same result was found for

unity with nature in 1970 (M = 1.06, SD = 0.32), in 2010 (M = 1.04, SD = 0.07), (t (14) = 0.55, p = 0.30, 95% CL [-0.05, 0.09], small effect size d = 0.07).

Supplemental Analyses

Underestimation problems with the EF measure prompted an examination of three separate aspects of EF: house size, clothing, and recycling.

House Size

The size of the homes represented on the television programs was a relatively objective measure generated from the information I obtained within the programs. Furthermore, house sizes represented on television could be compared to the average house size of American homes for each time period (U.C. Census Bureau, 2023; Comen, 2021; Qualman, 2018; Sarkar, 2011; Wilson, 2024). Figure 3 provides the house size of the television program homes, and the black line provides the average house size for that time period. Although there was no linear increase in house size over time, house sizes on television were larger than the average American home for 9 of the 12 programs in every year except 2000. Indeed, two programs depicted enormous homes measuring 25000 and 6438 square feet.

Clothing Consumption

The EF calculator assessed clothing consumption with the question: *What comes closest to new monthly clothing, footwear, and/or sporting goods purchased*? Coders rated the characters' wardrobes and inferred monthly clothing purchases on a scale from minimal to none, not much, average, above average, or a lot. The coder's ratings for the programs are graphed in Figure 4. A trend line added to the graph illustrates the upward trend over time. The trend line in Figure 4, represented by the equation $y = 0.14x + 2.21$, indicates a moderate positive correlation

between time and monthly clothing consumption, with an R^2 value of 0.24 and an *R*-value of 0.50

It is difficult, however, to convey the differences in characters' spending on clothing with these numbers. Therefore, I provide pictures of the characters' wardrobes for *Happy Days* (1970) and *Pretty Little Liars* (2010) in Figure 5. Images of the characters' wardrobes were captured across three random time points. For "*Happy Days*," the characters consistently wear the same wardrobe throughout the episode and across the other episodes selected for the show. The 1970-episode content did not include themes or storylines where the characters shop for new clothes or carry bags related to material wealth. In *Pretty Little Liars* for 2010, the importance of fashionable clothing was part of the theme and storyline within the series. The young women characters' wardrobes varied substantially both within and across episodes. The storylines and settings for this show included scenes where characters were filmed in clothing stores, purchased clothing, and carried many bags of newly purchased clothing.

Recycling

For the EF recycling question "*How much paper/plastic is recycled?*", interrater agreement was very high because only one episode of one program showed recycling. The examination of the recycling indicator revealed that pro-recycling messaging was minimal. Specifically, only one show, *Family Ties* (1980), included a brief 30-second segment addressing recycling, ultimately decreasing EF score as it was recorded as a sustainable behaviour. Conversely, the theme and content of the clip were dismissive and trivialized the portrayal of environmental advocacy.

Evaluation of the EF calculator for estimating EF of lifestyle representations on TV

The low reliability obtained among the coders on the EF questions requires further scrutiny of the measure and the coding procedures used. Table 7 provides an evaluation of each EF question and the potential difficulty associated with using it to assess the EF of the lifestyles represented on television programs.

Discussion

Popular culture is a powerful socialization force shaping individual aspirations and pursuits (Greenfield, 2016; Tiggemann, 2005; Twenge, et al., 2019; Want, et al., 2009). The present study explored the sustainability of lifestyles presented on popular television over time. To determine whether lifestyles represented on television since 1960 have primarily promoted environmentally unsustainable ways of living, the ecological footprint (EF) of the lifestyles represented in popular television programs of American family life since 1960 and the values of the characters on some of those programs were analyzed. With some exceptions, the majority of evidence supports the contention that popular culture does not simply reflect current lifestyles but presents more lavish lifestyles than the current norm and represents eco-consumptive rather than eco-protective values.

To assess whether television is one force that has contributed to increasingly lavish and extravagant lifestyle norms in North America and eco-consumptive values, several forms of evidence were examined, and the majority were in line with this supposition. First, the EFs of television programs were compared to a sustainable EF; that is, an EF of 1.7, which is the lifestyle of people living in Ecuador. Then, television EFs were compared to the historical data of per capita EF in Canada and the United States to determine whether television lifestyles were more extravagant than the current norm. More specifically, the house sizes of the programs were

compared to the American house size average of the same time period. Other supplemental analysis included an examination of clothing consumption and recycling represented in the programs. Finally, the values expressed in the behaviour and dialogue of television characters were analyzed for values that could condone selfish, materialistic and hedonistic pursuits rather than selfless, environmental and social concerns.

Does Popular Culture Promote Lavish Lifestyles? Evidence in Favour.

The analysis of 12 popular American family television programs from 1960 to 2010 revealed that the family lifestyles depicted were significantly more resource-intensive than a sustainable lifestyle of 1.7 global hectares. This finding, of course, is not surprising. A lifestyle with an EF of 1.7 is dramatically different from a North American lifestyle, which ranged in that time period between an EF of eight and 11. If television programs primarily depict family life that is substantially lower than the per capita lifestyle, it might not resonate with television audiences. However, it is worth noting that there are Canadian television programs, such as "*North of 60", Heartland,"* and "*Son of a Critch*," that portray a much more modest and lower consumer-focused lifestyle. If the majority of programs represented modest, more environmentally sustainable lifestyles, including desirable rather than impoverished ones, this might nudge individuals' ideal lifestyles and behaviour in a more sustainable direction.

Television Lifestyle Portrayals More Lavish than Current Norms

To test whether television lifestyles were more lavish than per capita, the EF of the television programs were plotted relative to the EF estimates for lifestyles in Canada and the US over the same period. As predicted, most American family television programs showed lifestyles with a larger EF than the average Canadian lifestyle. The greater popularity of American

television programs than Canadian programs raises the possibility that American television has a larger impact on Canadian values and lifestyle aspirations than Canadian television does.

The geographical representation indicates that 85% of the Canadian population lives within 200 miles of the American border, the foundation of a long-standing digital trading partnership that began with radio and evolved into television (Skinner, 2009). This neighbourly, cross-border cultural exchange has resulted in a blending of values and norms. However, the Canadian media industry is crucial in maintaining a balance. With its higher production values, American television sets the standard for entertainment (Czach, 2013). Canadians, however, are not as "starstruck" as Americans, reflecting the Canadian cultural tendency towards modesty and authenticity over celebrity status (Czach, 2013). This perspective is evident in Canadian television programming, often contrasted with glamour-focused American programs. Unlike the high-budget American media, the Canadian media industry operates in a unique context, producing media that balances cultural identity with the dominance of American media. As a result, Canadian programs often reflect a mix of American influences and local cultural narratives (Czach, 2013). This reassures us that our local cultural narratives are not lost in the face of American influences but are integrated and celebrated.

Home Size

Although the EF rating for the television programs was not higher than the American per capita EF of the time, examining home size more specifically, revealed that most family homes portrayed in the television programs were substantially larger than the American average for the majority of programs. For example, *Beverly Hillbillies* in 1960, *Fresh Prince of Belaire* in 1990, and *Pretty Little Liars* in 2010 all portrayed family lifestyles within large, spacious homes,

surrounded by luxury items known within that time. This finding suggests that popular television programs could have helped fuel growing house sizes in North America from 1960 to 2010.

Large homes often signify higher status, success, and wealth, reinforcing the desirability of achieving and maintaining such a material item. Portrayals on television can normalize excessive house space and resource consumption as an expected part of the culture, further exacerbating the already significant carbon footprint associated with housing. If adolescents continue to be exposed to lifestyles that consistently normalize living in a large, luxurious home, we lose the opportunity to highlight sustainable housing for the next generation.

Clothing Consumption Increased Over Time

The descriptive analysis of clothing consumption of the shows chosen for 1970 and 2010 revealed increased materialism and fashion trends, both in the visual representation and the behaviours and values portrayed by the main character. In "*Happy Days*" from 1970, the main characters typically wore the same outfits throughout the episodes, with little focus on shopping or material wealth and no scenes set in shopping environments. Conversely, "*Pretty Little Liars*" from 2010 prominently featured consumer materialism, with frequent shopping scenes, multiple wardrobe changes per episode, and storylines centred on fashion and material acquisition. The distinction between these shows exemplifies the evolving societal norms towards material consumption and speaks to the increased contribution of the fashion industry to environmental problems (Anguelov, 2015; Habib et al., 2022; Sanad, 2021).

Recycling and Pro-Environmental Action

Sustainable lifestyle messaging has been part of climate science and environmental policy in Canada and the US since the early 1970s (Dunlap, & Van Liere, 1978). Nonetheless, sustainability messaging has not emerged in these television shows focusing on household family

life. An excellent example of a sustainable message that could easily be incorporated into television households is the integration of recycling. When training the coders to measure this indicator, we discussed identifying recycling containers, characters recycling their garbage, and/or plots or storylines of characters talking about recycling. In all the episodes selected for this study, the coders only identified one show, *Family Ties* (1980), that mentioned recycling.

Further investigation of the episode uncovered a concise 30-second segment that all coders identified and rated as evidence for recycling. See Figure 6. The EF measure does not capture the overriding anti-environmental message of this segment. Despite coders identifying and rating a 30-second segment in the episode "I know Jennifer's Boyfriend" as evidence for recycling, the storyline ultimately undermines the environmental message. Jennifer's advocacy for recycling is met with substantial resistance and dismissiveness, epitomized by her brother's contemptuous comment and the audience's laughter, which all together portray environmental advocacy as childish and naïve. This contraindication highlights the complexity between story themes, character dynamics, and represented values, demonstrating how popular characters like Michael J. Fox can influence viewer perception more than the EF score might suggest. Thus, while the EF calculator aims to measure sustainability messaging, it overlooks the nuanced and subjective narrative elements that shape societal attitudes towards sustainable lifestyles.

Television Characters Eco-Consumptive and Eco-Protective Values

Examining whether popular television programs promote environmentally unsustainable lifestyles and behaviour, in addition to focusing on the material aspects of lifestyle presented in programs, the eco-consumptive and eco-protective values of the main characters were also coded for the programs in 1970 and 2010. The values analysis helps overcome the problem identified with the EF measure in the previous section. For example, the Family Ties episode described

above would result in a low importance value rating for environmental values for the Michale J. Fox character.

The values results strongly supported the contention that American family television generally promotes eco-consumptive rather than eco-protective values. Eco-protective values included: protect the environment, unity with nature, and beauty of nature. Coders judged the importance of these values expressed by the four main characters for seven episodes of each of the four programs. In both 1970 and 2010 these eco-protective values were the least important values to the American television characters of all the 16 value groups coded. This result is surprising given that the 1970s was the back-to-the-land and hippie era in the United States (Moretta, 2017), and since then has been a period of increasingly serious environmental problems and growing concern (Dunlap & Van Liere, 1978). However, eco-consumptive values of hedonism and self-indulgence were ranked among the four most important values displayed by these characters in both periods. Consistent with the EF ratings, these results indicate that American television characters are more likely to convey the importance of hedonistic rather than environmental pursuits and activities. These results indicated that as a '*teaching tool'* television is teaching the population to ignore environmental concerns to put their pleasure and enjoyment of life at the top of their priority list.

The Absence of Eco-Conscious Values

Over the last 50 years, adolescents have been a wide-reaching captive audience, and television content has the potential to facilitate and integrate environmental values to foster a sense of stewardship with the environment. The results from this study demonstrate the opposite. Instead, television took on the critical role of reflecting and shaping societal lifestyle values offered to teens through an unsustainable Hollywood-tinted window. The similarity between the

results from this study regarding environmental values and the findings from the Indonesian study, where researchers found a significant decrease in environmental values between 1980 and 2000, strengthens my interpretation. The cross-cultural resonance of television character portrayals who lack values of protecting the environment and unity with nature highlights a global theme in media trends. These results suggest it is time for a global examination of the media's role in normalizing values and impacting our collective environmental awareness.

American Corporate Capitalism and Television

There are several possible explanations for the absence of environmental protection values in American television. One way to explain this historical preference is that television has emulated the American cultural and economic priorities of innovation and industrial progress. Schwartz's (2007) research on cultural and individual values with features of the capitalist economy highlights how capitalist societies prioritize the values of achievement, power, and economic success over environmental and community well-being. In a meta-analysis of perfectionism and self-enhancement, Curran and Hill (2019) revealed increasing trends among the younger generation from 1989 to 2019 due to social pressure to meet high economic and social standards. Consequently, the emphasis on individual success and economic gain in American society might explain television content focused on these themes and help to explain the marginalization of the portrayal of environmental protection values as a central and ongoing theme.

Similar to the present study's findings, corporate capitalism's influence on American television tends to marginalize environmental protection themes in favour of content to promote commercialism, luxury, and economic ambition. Stephen Butler's (2019) model on the impact of advanced capitalism on well-being emphasizes how the capitalist structure fosters an

environment where well-being is closely tied to economic status and consumerism, ultimately at the expense of environmental sustainability. Evaluations of Scandinavian media have shown purposive intent to maintain cultural themes of environmental stewardship, such as unity with nature, reflecting the region's cultural values, and emphasizing sustainability and community well-being (Oxfeldt, 2018). The difference between these two cultural expressions through television portrayals suggests that the underlying economic and cultural framework of American corporate capitalism prioritizes promoting consumer-driven narratives, and as this research also found, shifting focus away from environmental protection.

The Interpretation of Self-Enhancement

Schwartz (2012) defines hedonism as the pursuit of pleasure or sensuous gratification for one's self, which, here in North American, is often portrayed through the acquisition of material goods. This idea is deeply ingrained in American television, as demonstrated by the findings of the present study. The significance of hedonism in American television aligns with Schwartz's cross-cultural value research, which reveals hedonism as the most important value among Anglophone Canadians. Other researchers have also noted the high representation of self-enhancement values on television (Hendriyani et al., 2016; Uhls & Greenfield, 2011). The findings of the present study coincide with those of Uhls and Greenfield (2011), who showed an increase in the importance of fame on television from 1967 to 2007, and with those of Hendriyani et al. (2016), who found an increase in achievement and enjoyment values and a decrease in environmental values in Indonesian television shows. In conclusion, my study suggests that North American television promotes materialistic and hedonistic tendencies, coupled with environmental inaction, a persistent story within Canadian and American cultures.

Several interrelated societal changes, including the evolution of technology, may explain the prominence of materialism and hedonism as central values portrayed within family television. According to Greenfield (2009), urbanization and technological advancements have significantly contributed to societal values shifting towards prioritizing individual pleasure, success, and materialism after the widespread adoption of television viewing. American television portraying family lifestyles reflects and reinforces consumer behaviours; specific to this study, the main characters of *Pretty Little Liars* emulate hedonistic values. Twenge and Campbell (2009) argued that increased and integrated social media and other digital platforms are responsible for amplifying self-enhancement values such as hedonism. They identified that cultural comparison manifests a feedback loop where individuals seek external validation through "*likes and follows*" to experience personal pleasure and material success. Television programming normalizes and perpetuates these values. The constant exposure to unsustainable lifestyles and messages of materialism may contribute to viewers' internalization of eco-consumptive values.

Although some analysts argue that technology is a major driver in the value change towards self-enhancement, self-enhancement values are not dominant in all cultures with high technological adoptions. Scandinavian cultures have experienced a similar rise in technological advances without exhibiting a corresponding increase in hedonistic values or behaviours. According to Hofstede (2001) and Inglehart and Baker (2000), Scandinavia's longstanding values and emphasis on egalitarianism and social welfare may counter the influence of individualism and materialism from urbanization and digital integration. These countries have acknowledged the impact of television on children, and in response, Norway introduced a total ban on advertising for children in 1995, and Sweden adopted a similar policy in 1996 (Buijzen &

Valkenburg, 2003). If technology encourages social change toward hedonistic values, it appears that social policy can counteract that impact.

Does Popular Culture Portray Materialistic and Lavish Lifestyles? Evidence Against

The above evidence was consistent with the prediction that popular television was a force that nudged North America toward unsustainable lifestyles. There was also evidence against this prediction. In hypothesis 1, I predicted that the EF of family television lifestyles would demonstrate a linear increase over the time period studied, consistent with social trends of larger homes and increased fashion consumption. A linear increase in EF was not found. Contrary to predictions, the EFs of television programs were not consistently higher than Americans' average per capita EF; they were often on par with or even slightly less. This result suggests that television programs generally present the expected or typical American family lifestyle. While this conclusion is possible, when house size and clothing consumption were examined independently, there was an upward trend for clothing consumption and of differences in house size on television relative to the average home. These contractions in the evidence and the problems with inter-rater reliability suggest that the EF footprint measure had problems fully representing lifestyles portrayed on television.

EF Measure: Evaluation and Recommendations

Very few studies have attempted to examine lifestyles portrayed on television and assess how these portrayals have changed over time. However, Hendriyani et al., (2016) did just that with Indonesian children's programs from 1980 to 2000. The EF calculator as a holistic measure of lifestyle has notable strengths as a measurement tool relative to the more ad hoc features selected for the Indonesian study: activity of the character, home type, food character consumed, and the clothes the character wore. The EF calculator is designed for real people to rate features

of their lifestyle that use ecological resources and create waste. This study attempted to assess the usability of the EF calculator as a measurement tool for analyzing television content by evaluating the 31 EF indicators for every episode in two shows per decade over the last 50 years. The EF categories permitted comparisons of television content over time in two real-world estimates of per capita EF in the corresponding time period.

There are three main limitations to using this tool for assessing fictional television family EF across time. First, some features of the EF depend on the home's location (e.g. Alberta versus British Columbia) and the fuel source for the electricity of the area (e.g. coal burning vs hydro). The indicator was set at 50% for all television programs and consistent for all episodes. When comparing television programs' EFs to the average EF in Canada or the US, the location selected for all programs should represent the average EF for electricity in the country, and this is difficult to know.

The second and third limitations are associated with the number of features in the EF measure and whether these features are represented in television family lifestyles. Thirty-one features are a lot and can cause coder fatigue. For example, there are eight food-related items. Television lives do not typically display several mundane lifestyle features that contribute significantly to EF, such as the amount of meat in a person's diet or their daily commuting distance. The absence of this information will lower EF scores. Coders were instructed to base their ratings on the content depicted within the episode. For example, the type of food rated within the EF calculator greatly influences the overall EF score. Depending on the content and theme of the episode, food might be rarely shown. Details identifying information about the food source, such as whether it is grown locally, are likely not explicitly provided. When no information was overtly provided within the episode, coders were instructed to select the

smallest footprint rating (e.g., no meat within their diet or a vegan diet) because it was clear there was nothing in the episode encouraging a more resource-intensive diet. This rating, however, would lower EF estimates for television programs relative to the average lifestyle of Canadians and Americans.

Another example of how the episode EF was lowered relative to per capita EFs is the estimation for travel. For example, the distance that people travel has a considerable effect on their EF. Travel and commuting might be rarely shown or discussed within the television episode, and specific information about the type of vehicle or distance travelled is often not explicitly provided. When no information was provided within the episode, coders again selected the smallest footprint rating (e.g., little to none for commuting or inefficient vehicles).

Estimating trash produced is another example of how the episode EF was lowered relative to per capita EFs due to missing context or explicit information. For example, the trash indicator of the EF calculator requires a considered comparison of the amount of trash produced within the household compared to the neighbours, which critically influences the overall EF. Visual or verbal information about trash was rarely shown within the episode, and information about the quantity of trash generated compared to the neighbours was likely not specified. To maintain consistency, coders rated the smallest footprint rating when no information was provided within the episode (i.e., much less than neighbours).

Two questions from the EF calculator that coders found challenging to assess within the episode were the following: "*How often are items purchased (household furnishings, household appliances, electronics & gadgets)*?" or "*What are the monthly clothing purchases*?" These items present challenges for coders as they rated the behaviour visually and verbally depicted, then drew inferences based on the characters' wardrobe or material items presented. Following

the debriefing from the coders, they suggested that future research using this scale should further modify the wording associated with the EF to provide an easier rating scale. Table 7 reveals that several questions were marked as difficult to assess due to their broad nature, and the subjective judgement of coders was required. For instance, the question about household furnishings and appliances was often ambiguous, leading to varied interpretations from coders. Similarly, assessing monthly clothing purchases required coders to make assumptions based on visual cues, which could lead to inconsistency.

Following the debriefing from the coders, they suggested that future research using this scale should further modify the wording associated with the EF indicator to provide an easier rating scale. Analyzing Table 7 shows that some questions were coded consistently and can be retained without modification, such as those that are directly observable, like the presence of recycling bins. However, several questions could be improved by providing specific guidelines or examples to standardize the rating process. For instance, instead of asking about the frequency of household item purchases, the question could focus on the presence of new items or major changes in the household setup within the episode. This adjustment would make it easier for coders to rate consistently. Additionally, some questions may need to be replaced entirely with constraints or more straightforward indicators. For example, instead of asking about monthly clothing purchases, a question could focus on the variety and apparent newness of the clothing or wardrobe displayed. This approach would provide a more objective measure that could be uniformly applied across different episodes.

Due to the above problems, using specific indicators of lifestyle that are clearly portrayed on television, such as house size, more accurately captured important lifestyle features. For this research, the indicators were maintained as close as possible to the original measure with very

little modification to the wording. This involved preserving the exact wording of the rating options that the coders choose from.

Ecological Footprint Calculator for Evaluating Sustainability Messaging

This study assessed the viability of the EF calculator as a measurement tool for analyzing television content. By evaluating the 31 EF indicators for every episode in two shows per decade over a 50-year period, I could better understand the implications of using this globally validated assessment tool outside its intended purpose. The small sample size limited the statistical analysis, which prompted a descriptive analysis, which was a necessary adaptation to address the research challenges. Important findings stemmed from the adapted analysis. By conducting a descriptive analysis on the indicator for house size, results revealed that television has portrayed homes that far exceed the square footage for average American family homes. Concerning real-world housing data over time, this finding suggests that Hollywood has acted as a '*teaching tool*' by normalizing a luxurious and unsustainable lifestyle for adolescents who aspire towards and achieve as adults.

Overview of the Ecological Footprint Calculator as a Measurement Tool

Based on the findings from this study, specific recommendations for future assessments of lifestyles represented on television include refining the EF calculator questions to ensure greater clarity and consistency in coding. One major takeaway is the need for questions that are more specific and directly observable within the context of a television episode. For example, instead of broadly asking about the frequency of household items purchased, the question should be rephrased to focus on more concrete and visible indicators, such as the display of new appliances or major changes in the household décor within the episode. Further modification will reduce the ambiguity and subjectivity that the coders experienced.

Additionally, integrating more explicit guidelines and examples for each question would assist coders in making consistent and objective assessments. For example, the question about monthly clothing purchases could be modified to focus on the variety and apparentness of clothing items displayed. Coders can make more standardized evaluations by providing specific criteria, such as the number of different outfits worn by characters within a single episode. Moreover, it would be beneficial to incorporate pilot testing with a small group of coders to identify any specific difficulties in the questions of interest before conducting the entire study. This process will fine-tune the questions of interest and ensure they are well-understood and easily rated.

In summary, future researchers should focus on creating more detailed and concrete questions, accompanied by clear guidelines and examples, to enhance the reliability and validity of lifestyle assessments on television. This approach will improve the accuracy of the data collected and contribute to a more comprehensive understanding of how television content reflects and influences societal values and behaviour.

Limitations: TV Program Sampling

Although substantial evidence within this thesis supports the conclusion that television representations set a more lavish lifestyle norm than when the programs were shown, this conclusion must be tempered given the limited number of programs examined to draw this conclusion. Two television programs per decade do not begin to comprehensively represent the diversity of content and themes in the broader television landscape to which individuals might have been exposed. Had popular programs written for adults, such as daytime or primetime soap operas (e.g., *Days of Our Lives*, which ran from 1965 to 2022; or *Dallas*, 1978 to 1991), it is very likely that the lifestyles represented would be more lavish than in family programs targeted

toward youth. An interesting alternative approach to this topic could be a within-program analysis comparing lifestyle features, such as house sizes and characters' wardrobes, represented in soap operas over several decades.

Future Research

Little research has explored the sustainability or unsustainability of lifestyle representation in popular media. Having discovered that television in two very different cultures, Indonesia and the United States, similarly lacked representations of ecologically sustainable lifestyles and values, and that this was true over time despite the growing severity of environmental problems, an obvious future direction for research is to explore lifestyle representations of television programs in countries with strong environmental records. Investigating media content curated for children and teens from industrialized countries that are lowering their EFs, such as Norway (10.2 in 1970 and 5.2 in 2020) or Sweden (8.3 in 1970 and 5.0 in 2020) (Global Footprint Network, 2020) can provide insights into the potential influence of television on promoting long-term sustainable living. Researchers can identify effective strategies and messaging techniques by examining how these countries successfully integrate ecological values into their media narratives. Additionally, analyzing these programs' character, portrayal, plot, lines, and visual elements could reveal how environmental stewardship is woven into everyday storytelling, thereby shaping young viewers' perceptions and behaviours toward sustainable lifestyles in adulthood.

Researchers could compare the EF scores of popular television programs with those less popular but known for their environmentally protective themes. Television shows like Beachcomber, Littlest Hobo, Dr Quinn Medicine Woman, North of 60, Corner Gas, and Heartland contain storylines encompassing broader social values. These shows were not selected

for this investigation because they were not highly popular throughout North America. Then, future research could explore why shows that portray heavy carbon lifestyles rank higher in popularity than more eco-conscious programs.

Understanding the alignment between the values and themes in the storylines with sustainability messaging could reveal whether audiences are more influenced by entertainment value over environmental content or if the integration of eco-friendly themes is insufficiently engaging. This comparison could also highlight potential gaps in how the media communicates sustainability and offers strategies for making eco-conscious content more appealing to viewers.

Investigating media consumption's long-term impact on sustainable behaviour is another direction for future research. For example, adult EFs could be compared to their television consumption in childhood. Researchers could explore whether early exposure to environmentally conscious media, or to very little screen media, translates into more sustainable lifestyle choices in adulthood. Such research would also highlight the potential of using television and other media forms as effective environmental education and advocacy tools. This could guide content creators to develop programming that fosters an awareness and commitment to sustainability. Understanding the long-term impact of childhood media consumption on adult behaviours can inform policy decisions related to media regulations and educational programming, ensuring that future generations are better equipped to tackle environmental challenges.

Future researchers can compare methods to address interrater reliability as we explore the practicality and potential for using the EF calculator (or similar measures for sustainability) to discover a reliable and validated measurement tool for this framework. Sustainability is a multifaceted concept; this research has shown that using the EF calculator is a starting point for coding television content and is at the forefront of an interdisciplinary approach. The findings

from this study come to the community at a time when alternative media regulations require an overhaul. By pushing the boundaries of the existing methodology outside of its intended context, I hope to inspire the construction of much-needed measurement tools to address this topic. The purpose of this study was to contribute to and inspire researchers to get creative when analyzing eco-consciousness throughout media content.

Conclusion

This study has brought attention to the gap in the literature and research on measuring and identifying sustainability messaging through media and the potential influence on Canadian and American culture. This study is the first to use the ecological footprint (EF) measure to analyze popular culture, providing an absolute measure of resource consumption based on the lifestyles represented on television. The EF measure allowed for a rough comparison between EF portrayed on television with a sustainable EF and between a specific EF indicator, house size, with per capita house size over time in the US. Examining individual EF indicators and the lifestyle portrayals within television shows over the last fifty years provides some evidence of the longstanding and problematic normalization of resource-intensive lifestyles. The research, however, has also identified the problem of insufficient information about many EF indicators in television programming as a limitation of using the EF measure to assess television lifestyle portrayals.

The value analysis offered a different quantitative assessment of media messaging related to eco-consumptive versus eco-protective values. The detailed examination of the limited selection of programs uncovered a strong bias towards eco-consumptive values. Contrary to predictions, these value trends persisted across the two time periods examined. A sense of connection to the environment and the importance of environmental protection were completely

absent from these popular programs in 1970 and 2010, revealing a portrayal of characters who prioritize consumption and disregard sustainable living. These results provide three indicators (values, EF, and house size) that popular television shows have failed to promote ecological awareness and may have contributed to reinforcing environmentally detrimental lifestyle pursuits.

A global call to action is to address and amend carbon consumption practices. The Canadian Net Zero Emissions Accountability Act of June 29, 2021 (Canada, 2023) outlines Canada's commitment to achieve net zero emissions by 2050 by reducing greenhouse gas emissions. Despite the many advancements in climate science over the past six decades, specifically science expressing the urgency for increased environmental awareness, television continually perpetuates material pursuits over ecological conservation To normalize a more sustainable vision of individual lifestyles, in my view, a multi-disciplinary approach to changing popular media is required.

Previous research has raised concerns about the impact of advertising on materialist values. Marketing and advertising have evolved to become an embedded part of television and media content. An online survey of American parents found that 78% of respondents believed that youth are harmed by advertising, and 79.7% believe that advertising to children should be prohibited (Kasser & Linn, 2004). Public policies regulating advertising toward children and adolescents are outdated and require attention and modernization to keep the welfare of children and the planet at the forefront of ethical marketing (Kasser & Linn, 2004).

Another prong in an interdisciplinary approach to enlisting media to help achieve sustainability goals is an investment in public broadcasting and media regulation. With their influence and reach, public broadcasters are mainly accountable for incorporating environmental

stewardship into their programming. By prioritizing content that promotes sustainable living and reduces ecological footprint, providing disclaimers, or creating a rating system for sustainable messaging, public broadcasting can be a powerful tool for influencing cultural change.

Media regulators have a vital role in ensuring that television and other forms of media do not perpetuate unsustainable values. Regulatory bodies should work closely with organizations that embody responsible media representation, such as the Geena Davis Institute (Davis, 2024) on gender and media, which has successfully advocated for equitable gender representation. A collaborative effort could ensure that environmental sustainability receives similar attention. Through strategic partnerships and informed regulations, the media industry can be guided and supported towards content that entertains, educates, and empowers audiences to embrace sustainable lifestyles. These efforts, supported by public policy and organizational advocacy, could help bridge the gap between media representation and ecological responsibility.

By acknowledging the influence of media and harnessing it as a potential education tool, we can tap into this under-utilized resource and influence the mindset of our future Earth Stewards. Armed with the evidence of widespread unsustainable portrayals in the media over the last six decades, this research calls on us to strengthen and enhance a new narrative, foster innovation, and engage with the next generation– the rightful inheritors of our planet. This proactive stance paves the way for a greener, more sustainable lifestyle.

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Table 1

Selected Television Programs

1960	**1970**	**1980**	**1990**	**2000**	**2010**
The Beverly Hillbillies	Happy Days	Growing Pains	Full House	Malcom in the Middle	Pretty Little Liars
The Andy Griffith Show	All in the Family	Family Ties	The Fresh Prince of Belair	Gilmore Girls	The Secret Life of the American Teenager

Note: Source of Nielsen rating and public opinion polls: ranker.com; imdb.com; googlesearch.com; & wikipedia.org.

Table 2

Ecological Footprint Calculator Questions

Questions	Scales of Measurements
How often are animal-based products consumed, or implied consumption?	(1) Never (vegan) (2) Infrequently -Vegetarian- eggs/dairy, no meat (3) Occasionally- veggies-some meat, eggs/dairy (4) Often (balanced meat/veggies- meat a few times a week, eggs/dairy almost daily (5) Very often (meat daily)
Beef or Lamb	(1) Never (2) Infrequently (once every few weeks) (3) Occasionally (once or twice a week) (4) Often (nearly every day) (5) Very often (nearly every meal)
Pork	(1) Never (2) Infrequently (once every few weeks) (3) Occasionally (once or twice a week) (4) Often (nearly every day) (5) Very often (nearly every meal)
Poultry	(1) Never (2) Infrequently (once every few weeks) (3) Occasionally (once or twice a week) (4) Often (nearly every day) (5) Very often (nearly every meal)
Fish or Seafood	(1) Never (2) Infrequently (once every few weeks) (3) Occasionally (once or twice a week) (4) Often (nearly every day) (5) Very often (nearly every meal)
Egg, cheese and or dairy	(1) Never (2) Infrequently (once every few weeks) (3) Occasionally (once or twice a week) (4) Often (nearly every day) (5) Very often (nearly every meal)
% of the food eaten is unprocessed, unpackaged, or locally grown?	(1) None (2) 25% (3) 50% (4) 75% (5) 100%
% of food that is fresh & unpackaged	(1) None (2) 25% (3) 50% (4) 75% (5) 100%
% of food that is locally grown or produced	(1) None

	(2) 25% (3) 50% (4) 75% (5) 100%
Which housing type best describes the home(s)?	(1) Freestanding, no running water (2) Freestanding, running water (3) Multi Storey apartment (4) Duplex, row or building with 2-4 units (5) Luxury condominium
What material is the house constructed with?	(1) Straw/bamboo (2) Brick/concrete (3) Steel/other (4) Wood (5) Adobe
How many people live in the household?	
Is there electricity in the home?	Yes or No
How energy efficient is the home?	(1) Very inefficient (poor insulation, few LED lamps, heating/cooling system used often (2) Below Average (inefficient lighting, standard appliances) (3) Average (modern appliances, climate controls) (4) Above Average (well insulated, efficient lighting and appliances, careful use) (5) Efficiency-centred design (passive heating/cooling, advanced temperature control, and ventilation, low electricity use)
How much trash is generated compared to the neighbours?	(1) Much Less (2) Less (3) Same (4) More (5) Much More
What comes closest to monthly new clothing, footwear and/or sporting goods purchases?	(1) Minimal to none (2) Not much (underwear and socks) (3) Average (shirts, underwear, socks) (4) Above Average (shoes, pants, shirts, underwear, sock) (5) A lot (several new outfits and shoes every month)
What comes closest to new household furnishings purchases?	(1) Minimal to none (2) Not much (no new decorations in years, only towels or sheets) (3) Average (new bedding, lamp, or table, just to spruce things up) (4) Above average (new couch, bedroom set, change it up)

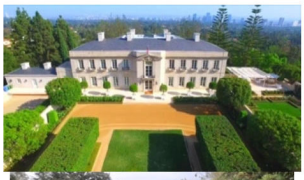
	(5) A lot (Complete refurnish or redecorate often)
How often are there purchases of household appliances	(1) Never, rarely (no appliance purchases) (2) Infrequently (only replacing broken) (3) Occasionally (sometimes replacing out-of-date with new model) (4) Often (Most appliances are replaced with latest models) (5) Very Often (always the latest appliances)
How often are there purchases of electronics and gadgets	(1) Never, rarely (Upgrade mobile phone every few years (2) Infrequently (only replace broken TV's or Computers) (3) Occasionally (replace out of date models and occasional new gadgets) (4) Often (many of the newest models on the market) (5) Very Often (always the latest gadgets)
How often are there purchases of books, magazines & newspapers,	(1) Never, rarely (new book or magazine a few times a year (2) Infrequently (Read news online and borrow books or magazine) (3) Occasionally (some news online and subscribe to a couple of magazines or newspapers) (4) Often (Newspapers, books, magazines weekly) (5) Very Often (Daily newspapers, books, or magazines)
How much paper is recycled?	(1) Little to none (2) Some (3) Half (4) Most (5) All
How much plastic is recycled?	(1) Little to none (2) Some (3) Half (4) Most (5) All
How far is travelled by car each week?	(1) None (2) 200km (3) 400km (4) 600km (5) 800km
How far is travelled by motorcycle each week?	(1) None (2) 200km (3) 400km (4) 600km (5) 800km

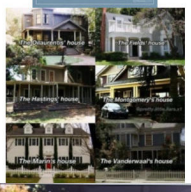
What is the average fuel economy of the car most often used?	(1) Inefficient (2) 37 miles/gallon (3) 75 miles/gallon (4) 111 miles/gallon (5) Electric or Efficient
What is the average fuel economy of the motorcycle most often used?	(1) Inefficient (2) 37 miles/gallon (3) 75 miles/gallon (4) 111 miles/gallon (5) Electric or Efficient
When traveling by car, how often is carpool depicted?	(1) Never (2) Infrequently (3) Occasionally (4) Often (5) Always
How far is public transportation travelled each week?	(1) None (2) 200km (3) 400km (4) 600km (5) 800km
How far is travelled on public Train transportation?	(1) None (2) 200km (3) 400km (4) 600km (5) 800km
How far is travelled on public Bus transportation?	(1) None (2) 200km (3) 400km (4) 600km (5) 800km
How many hours of flying are discussed?	(1) 0 (2) 50 hours (3) 100 hours (4) 150 hours (5) 200 hours

Note: The list of questions represents the questions for Ecological Footprint Calculator. Some questions have been modified to reflect the ideals depicted by the television households (Global Footprint Network, 2020).

Table 3

Fantasy Floor Plan of Television Home

Program	House Size	Description	Image of House
Beverly Hillbillies	25000	Mansion	
Andy Griffith Show	1500	3bdr/1.5 bath	
Happy Days	3904	6 bedroom/ 2 bath	
All In The Family	1490	2 bedroom 1 bathroom Attached Townhouse	
Growing Pains	3600	3 bedroom 3.5 bath	
Family Ties	4000	2 stories 5+ Bedrooms	
Full House	3700	4 bedroom 2 bathroom	
Fresh Prince of Belaire	6438	2 stories 17 rooms	

Malcom in the Middle	1429	2 bedrooms 1 bathroom	
Gilmore Girls	1600	2 bedrooms 1 bath	
Pretty Little Liars	4000sft	Large homes as average	
Secret Life of the American Teen	3000sft	Set in Valley Glen, Los Angeles, California	

Note: Information on house size was collected from fan-based websites.

Table 4

List of Measured Values

Value Dimensions	**Selected Values**	**Label**
Power	Wealth & Social Power*	Wealth
Achievement	Ambition & Achievement*	Achievement
Achievement	Success & Capability*	Success
Hedonism	Pleasure & Gratification of Desire & Hedonism*	Hedonism
Hedonism	Enjoyment of Life & Self Indulgence*	Self-Indulgence
Stimulation	Exciting & Daring Life	Exciting Life
Self-Direction	Creativity & Independence	Independence
Universalism	Protect the Environment & World at Peace**	Protect the Environment
Universalism	Unity with Nature & Beauty of Nature**	Unity With Nature
Universalism	Social Justice & Equality	Social Justice
Universalism	Wisdom	Wisdom
Benevolence	Helpful & Honest	Helpful
Benevolence	Responsible & Loyal	Responsible
Tradition	Respect Tradition & Modesty & Humbleness	Respect Tradition
Conformity	Honour Parents & Obedience	Honour Parents
Security	Social Order & National Security	Social Order

Note: *values that make up eco-consumptive, **values that make up eco-protective.

Table 5

Mean Ecological Footprint for Each Program

Year	Program	Mean Ecological Footprint
1960	Beverly Hillbillies	14.9
1960	Andy Griffith Show	9.7
1970	Happy Days	9.7
1970	All In The Family	8.9
1980	Growing Pains	10.5
1980	Family Ties	10.0
1990	Full House	9.5
1900	Fresh Prince of Belaire	10.7
2000	Malcom in the Middle	10.2
2000	Gilmore Girls	10.1
2010	Pretty Little Liars	11.9
2010	Secret Life of the American Teen	8.9

Note: The Ecological Footprint Means Program Average.

seven

Table 6.

Sample Scoring by Three Coders for One Episode and Evaluation of Coding Consistency for the Question

Show and Episode		**Coders**		**Consistency of Rating**
Beverly Hillbillies E3	Coder_1	Coder_2	Coder_3	Excellent, Good, or Poor
EF Indicators				
How often are animal-based products consumed, or implied consumption?	(5) Very often (meat daily)	(5) Very often (meat daily)	(5) Very often (meat daily)	Excellent interrater reliability
Beef or Lamb	(1) Never	(1) Never	(1) Never	Excellent interrater reliability
Pork	(1) Never	(1) Never	(2) Infrequently (once every few weeks)	Good = 2/3 raters in agreement
Poultry	(1) Never	(1) Never	(3) Occasionally (once or twice a week)	Good = 2/3 raters in agreement
Fish or Seafood	(2) Infrequently (once every few weeks)	(1) Never	(3) Occasionally (once or twice a week)	Poor Rating Reliability
Egg, cheese and or dairy	(1) Never	(3) Occasionally (once or twice a week)	(5) Very often (nearly every meal)	Poor Rating Reliability
% of the food eaten is unprocessed, unpackaged, or locally grown?	(5) 100%	(5) 100%	(5) 100%	Excellent interrater reliability
% of food that is fresh & unpackaged	(1) 0%	(5) 100%	(5) 100%	Good = 2/3 raters in agreement
% of food that is locally grown or produced	(1) 0%	(1) 0%	(5) 100%	Good = 2/3 raters in agreement

Which housing type best describes the home(s)?	(2) Freestanding, running water	(2) Freestanding, running water	(2) Freestanding, running water	Excellent interrater reliability
What material is the house constructed with?	(2) Brick/concrete	(4) Wood	(2) Brick/concrete	Good = 2/3 raters in agreement
How many people live in the household?	4	4	4	Excellent interrater reliability
What is the size of the home?	25000	25000	25000	Excellent interrater reliability
Is there electricity in the home?	yes	yes	yes	Excellent interrater reliability
How energy efficient is the home?	(2) Below Average (inefficient lighting, standard appliances)	(2) Below Average (inefficient lighting, standard appliances)	(2) Below Average (inefficient lighting, standard appliances)	Excellent interrater reliability
How much trash is generated compared to the neighbours?	(2) Less	(1) Much Less	(2) Less	Good = 2/3 raters in agreement
What comes closest to monthly new clothing, footwear and/or sporting goods purchases?	(4) Above Average (shoes, pants, shirts, underwear, sock)	(1) Minimal to none	(4) Above Average (shoes, pants, shirts, underwear, sock)	Good = 2/3 raters in agreement
What comes closest to new household furnishings purchases?	(1) Minimal to none	(1) Minimal to none	(1) Minimal to none	Excellent interrater reliability
How often are there purchases of household appliances	(1) Never, rarely (no appliance purchases)	(1) Never, rarely (no appliance purchases)	(1) Never, rarely (no appliance purchases)	Excellent interrater reliability
How often are there purchases of electronics and gadgets	(1) Never, rarely (Upgrade mobile phone	(1) Never, rarely (Upgrade mobile phone	(1) Never, rarely	Excellent interrater reliability

	every few years	every few years		
How often are there purchases of books, magazines & newspapers,	(1) Never, rarely (new book or magazine a few times a year	(1) Never, rarely (new book or magazine a few times a year	(1) Never, rarely (new book or magazine a few times a year	Excellent interrater reliability
How much paper is recycled?	(1) Little to none	(1) Little to none	(1) Little to none	Excellent interrater reliability
How much plastic is recycled?	(1) Little to none	(1) Little to none	(1) Little to none	Excellent interrater reliability
How far is travelled by car each week?	(2) 200km	(2) 200km	(2) 200km	Excellent interrater reliability
How far is travelled by motorcycle each week?	(1) None	(1) None	(1) None	Excellent interrater reliability
What is the average fuel economy of the car most often used?	(1) Inefficient	(1) Inefficient	(1) Inefficient	Excellent interrater reliability
What is the average fuel economy of the motorcycle most often used?	(1) Inefficient	(1) Inefficient	(1) Inefficient	Excellent interrater reliability
When traveling by car, how often is carpool depicted?	(2) Infrequently	(3) Occasionally	(5) Always	Poor Rating Reliability
How far is public transportation travelled each week?	(1) None	(1) None	(1) None	Excellent interrater reliability
How far is travelled on public Train transportation?	(1) None	(1) None	(1) None	Excellent interrater reliability
How far is travelled on public Bus transportation?	(1) None	(1) None	(1) None	Excellent interrater reliability
How many hours of flying are discussed?	(1) 0	(1) 0	(1) 0	Excellent interrater reliability

Note: Descriptive analysis of all coders rating of EF indicators for one episode; assessing interrater reliability.

Table 7.

Interrater Reliability Rationale for Ecological Footprint Indicators

Indicator	Reliability	Sufficiency of Indicator	Quality of Criterion	Recommendation
How often are animal-based products consumed, or implied consumption? • Beef or Lamb • Pork • Poultry • Fish or Seafood • Egg, Cheese and or Daily • % of food eaten that is fresh and unprocessed, unpackaged, or locally grown • % of food that is locally grown or produced	Good to poor	Insufficient	Some episodes may not include scenes with food, growing, buying, preparing, or eating, which resulted in insufficient evidence for diet analysis.	When no evidence was presented, coders chose the lowest value which may inaccurately suppress the EF result. Assessing the entire season may provide sufficient evidence to determine accurate diet analysis.
Which housing type best describes the home(s)?	Excellent	Sufficient	Stable throughout the episodes.	No recommendations required. The home and family life were often shown throughout the episodes.
What material is the house constructed with?	Excellent	Sufficient	Stable throughout the episodes.	No recommendations required. Housing materials were evident.

How many people live in the household?	Excellent	Sufficient	Stable throughout the episodes.	No recommendations required.
What is the size of the home?	Excellent	Insufficient	Stable throughout the episodes.	This indicator was influential to the overall EF result and challenging to determine as the show was sometimes filmed on a set and did not accurately depict the square footage of the home. To accurately assess the size of the homes required further analysis for accurate rating and can be found in Appendix C.
Is there electricity in the home?	Excellent	Sufficient	Stable throughout the episodes.	No recommendations required.
How energy efficient is the home?	Excellent	Sufficient	Stable throughout the episodes.	No recommendations required.
How much trash is generated compared to the neighbours?	Good	Insufficient	Communities were not accurately depicted.	As a subjective indicator, it is possible to make a guess for this indicator. Two of three coders agreed when making judgement for this indicator. Most episodes provided evidence about the central family and not enough information about the neighbours to accurately compare.
What comes closest to monthly new clothing, footwear and/or sporting goods purchases?	Good	Sufficient	Individual episodes rarely unfold over a month.	Qualitative evidence was further assessed by analyzing costume design and changes found in **Figure 6**. Assessing the entire season may provide enough evidence to determine accurate purchase analysis.
What comes closest to new household furnishings purchases?	Excellent	Sufficient	Furniture or shopping purchases may be part of the storyline.	Assessing the entire season may provide sufficient evidence to determine accurate purchase analysis.
How often are there purchases of household appliances	Excellent	Sufficient	Appliance or shopping purchases may be part of the storyline.	Assessing the entire season may provide sufficient evidence to determine accurate purchase analysis.
How often are there purchases of electronics and gadgets	Excellent	Sufficient	Electronic use or purchases may be part of the storyline.	Assessing the entire season may provide enough evidence to determine accurate purchase analysis.

How often are there purchases of books, magazines & newspapers,	Excellent	Sufficient	Books, magazines, and newspapers may be part of the storyline.	Assessing the entire season may provide enough evidence to determine accurate purchase analysis.
How much paper is recycled?	Excellent	Sufficient	Recycling bins or action may be depicted as a normal part of the household.	Assessing the entire season may provide enough evidence to determine accurate purchase analysis.
How much plastic is recycled?	Excellent	Sufficient	Recycling bins or action may be depicted as a normal part of the household.	Assessing the entire season may provide enough evidence to determine accurate purchase analysis.
How far is travelled by car each week?	Excellent	Insufficient	Commute was often discussed; however, distance or vehicle was not specified.	Commute was influential to the overall EF result and challenging to determine. The show was often filmed on a set focused within the family home and did not accurately depict the distance of car commute. The vehicles used were often not shown or specifically discussed.
How far is travelled by motorcycle each week?	Excellent	Insufficient	Commute was often discussed; however, distance or vehicle was not specified.	Commute was influential to the overall EF result and challenging to determine. The show was often filmed on a set focused within the family home and did not accurately depict the distance of car commute. The vehicles used were often not shown or specifically discussed.
What is the average fuel economy of the car most often used?	Excellent	Insufficient	Commute was often discussed; however, distance or vehicle was not specified.	This indicator was influential to the overall EF result and challenging to determine as the show was filmed on a set within the home and did not accurately depict the vehicles used or specifically discussed.
What is the average fuel economy of the motorcycle most often used?	Excellent	Insufficient	Commute was often discussed; however, distance or vehicle was not specified.	This indicator was influential to the overall EF result and challenging to determine as the show was filmed on a set within the home and did not accurately depict the vehicles used or specifically discussed.

When travelling by car, how often is carpool depicted?	Poor	Insufficient	Carpooling many be discussed or shown.	This indicator is outside of the family home and may be discussed, however, not shown.
How far is public transportation travelled each week?	Excellent	Insufficient	Commute many be discussed or shown.	This indicator was influential to the overall EF result and challenging to determine as the show was filmed on a set within the home and did not accurately depict the how the characters commuted.
How far is travelled on public Train transportation?	Excellent	Insufficient	Commute many be discussed or shown.	This indicator was influential to the overall EF result and challenging to determine as the show was filmed on a set within the home and did not accurately depict the how the characters commuted.
How far is travelled on public Bus transportation?	Excellent	Insufficient	Commute many be discussed or shown.	This indicator was influential to the overall EF result and challenging to determine as the show was filmed on a set within the home and did not accurately depict the how the characters commuted.
How many hours of flying are discussed?	Excellent	Insufficient	Flying was discussed, hours per year challenging to determine.	The discussions about flying were challenging because there was not actual origin or destination stated in the episode, trip details were not accounted, and choices in routes were not considered.

Note: Exploratory analysis of the sufficiency of assessing lifestyle using the EF indicators; addressing interrater reliability.

Table 8

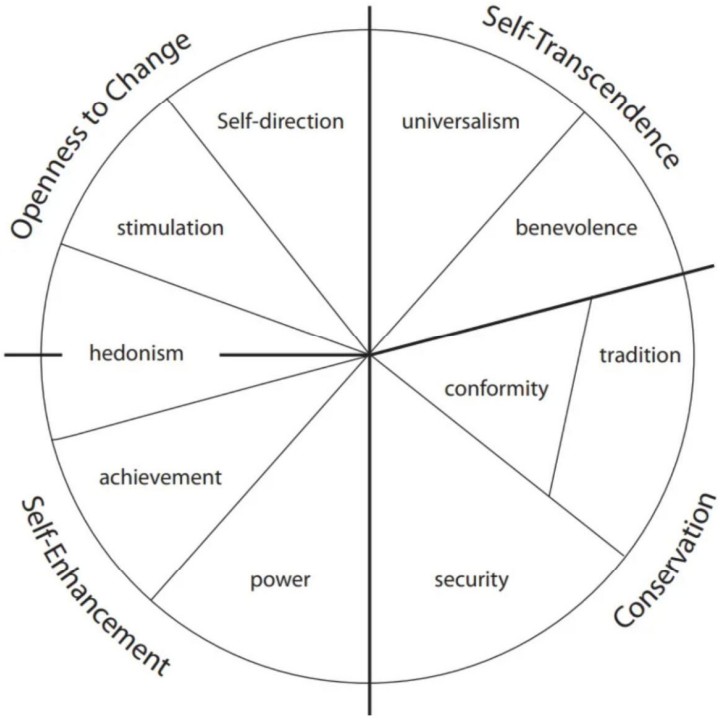
Ranking of Importance of Values (scale of 1-5) Portrayed By Characters

	1970		2010	
Value	**Means**	**Rank**	**Means**	**Rank**
Hedonism	2.16	4	2.71	1
Responsible	2.85	1	2.60	2
Independence	2.05	7	2.46	3
Self-Indulgence	2.23	3	2.39	4
Wealth	2.08	6	2.21	5
Helpful	2.50	2	1.93	6
Achievement	1.84	10	1.92	7
Success	2.18	5	1.83	8
Honour Parents	2.09	9	1.54	9
Exciting Life	2.23	13	1.47	10
Wisdom	1.75	11	1.46	11
Respect Tradition	2.09	8	1.37	12
Social Justice	1.58	12	1.24	13
Social Order	1.44	14	1.10	14
Unity with Nature	1.06	16	1.04	15
Protect Environment	1.21	15	1.03	16

Note: Data was rated from 1 (not important to the character), 3(somewhat important) to 5 (extremely important to the character).

Figure 1.

Schwartz Value Circumplex



Dynamic relations among the ten basic human values (adapted from Schwartz, 2012)

Figure 2.

Ecological Footprint of Television Programs 1960-2010 compared to per capita CAN & USA.

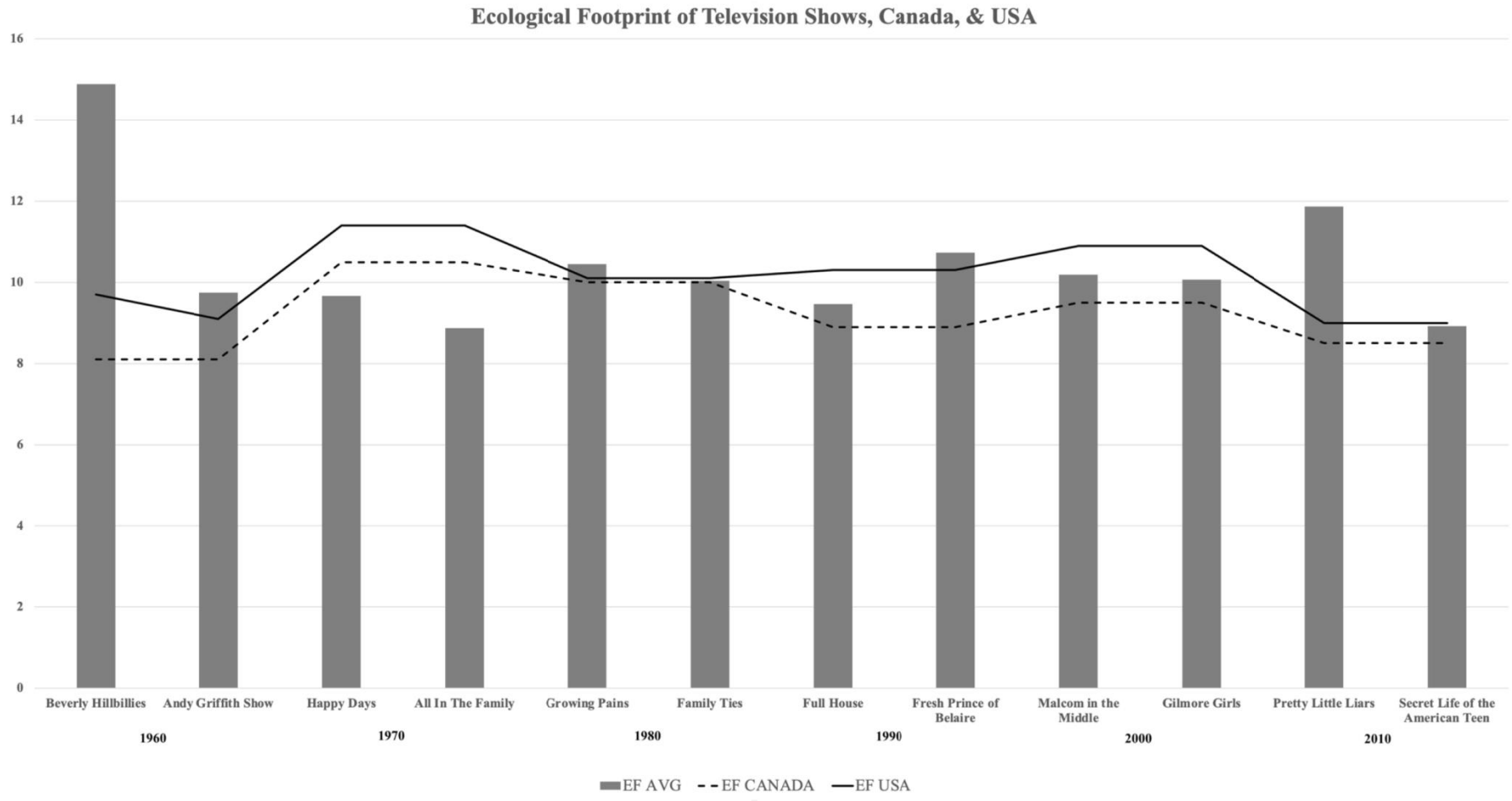


Figure 3.

House Size Changes Overtime in Television and USA

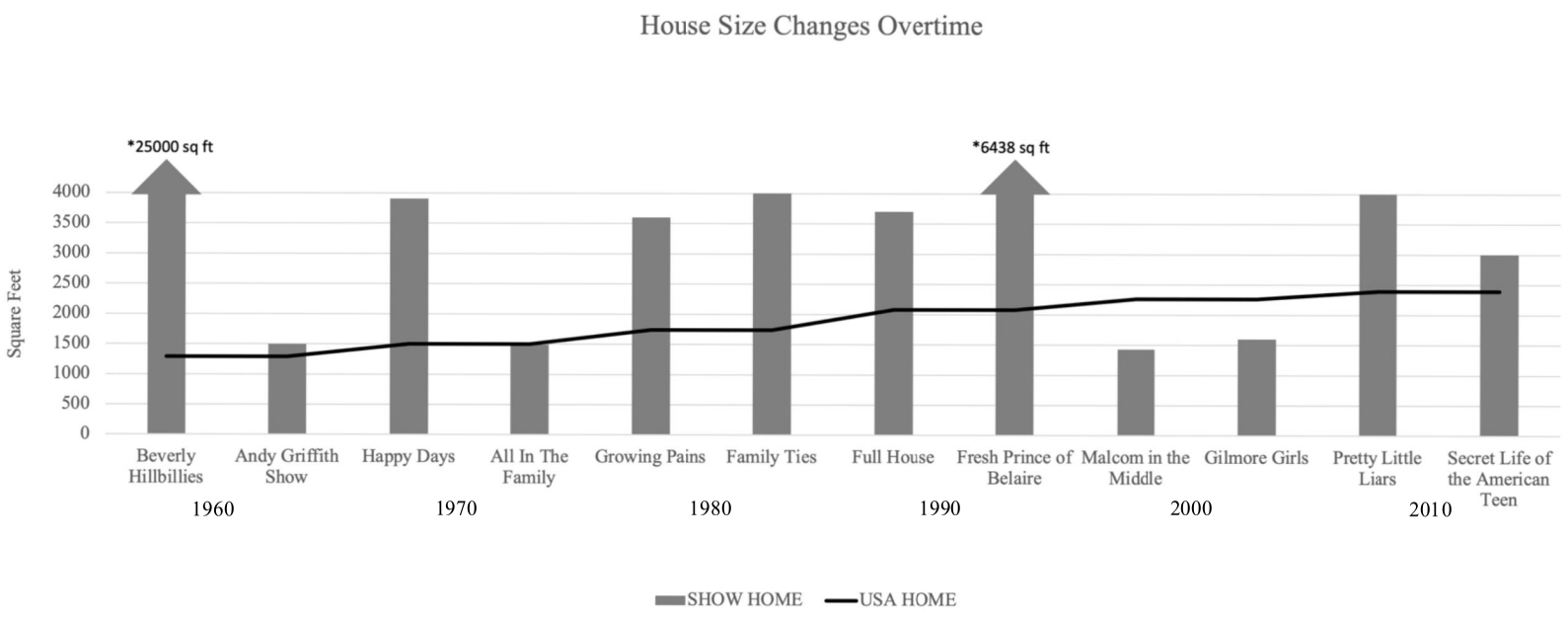


Figure 4.

Average Clothing Consumption Portrayed on Television Overtime

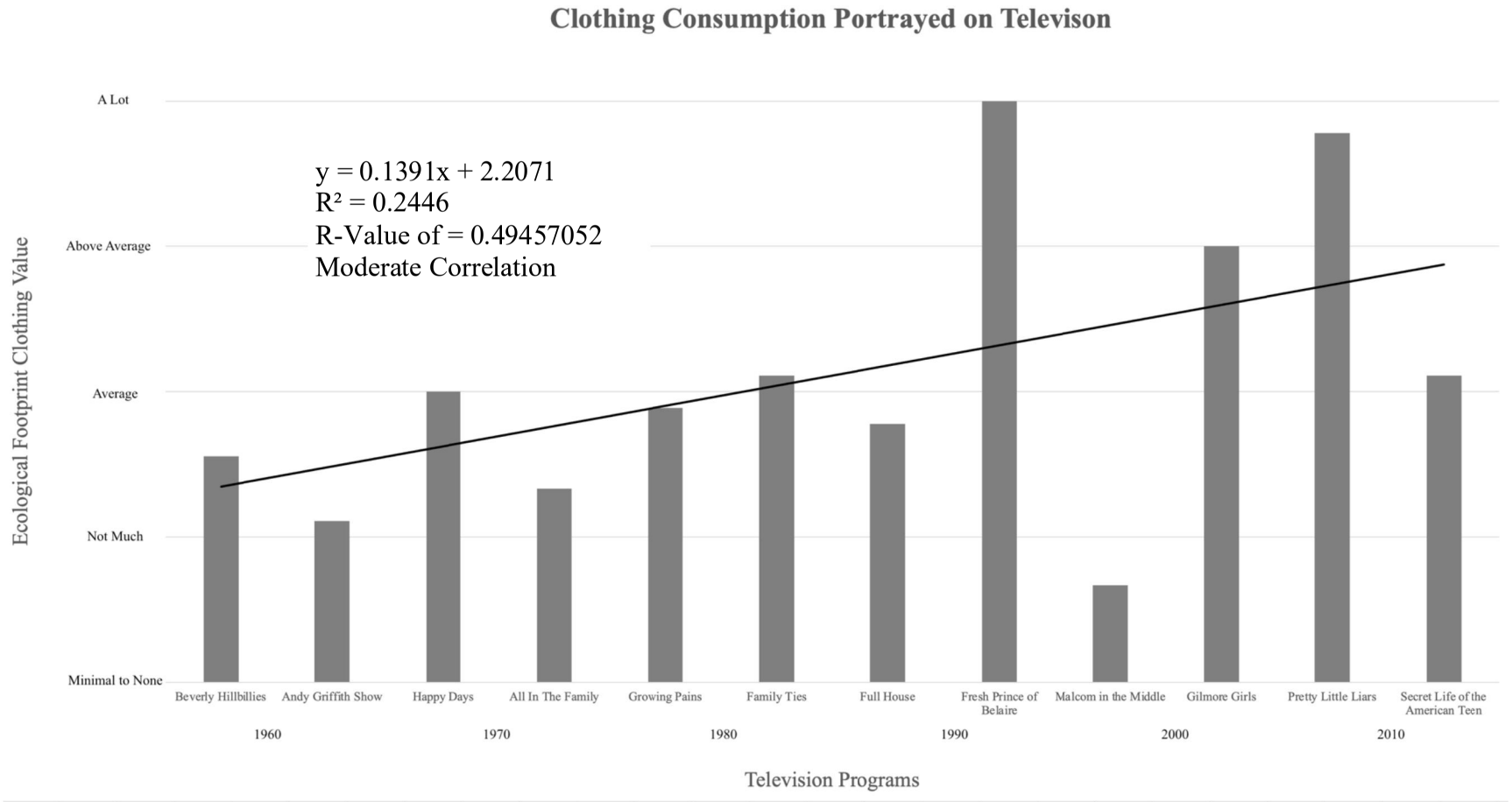
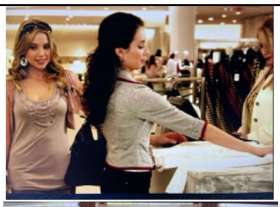
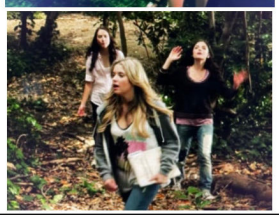


Figure 5.

Representations of Changes in Clothing Consumption from 1970 to 2010

Show & Episode	**Beginning**	**Middle**	**End**
Happy Days E1			
Happy Days E2			
Happy Days E7			
Pretty Little Liars E1			
Pretty Little Liars E2			
Pretty Little Liars E7			

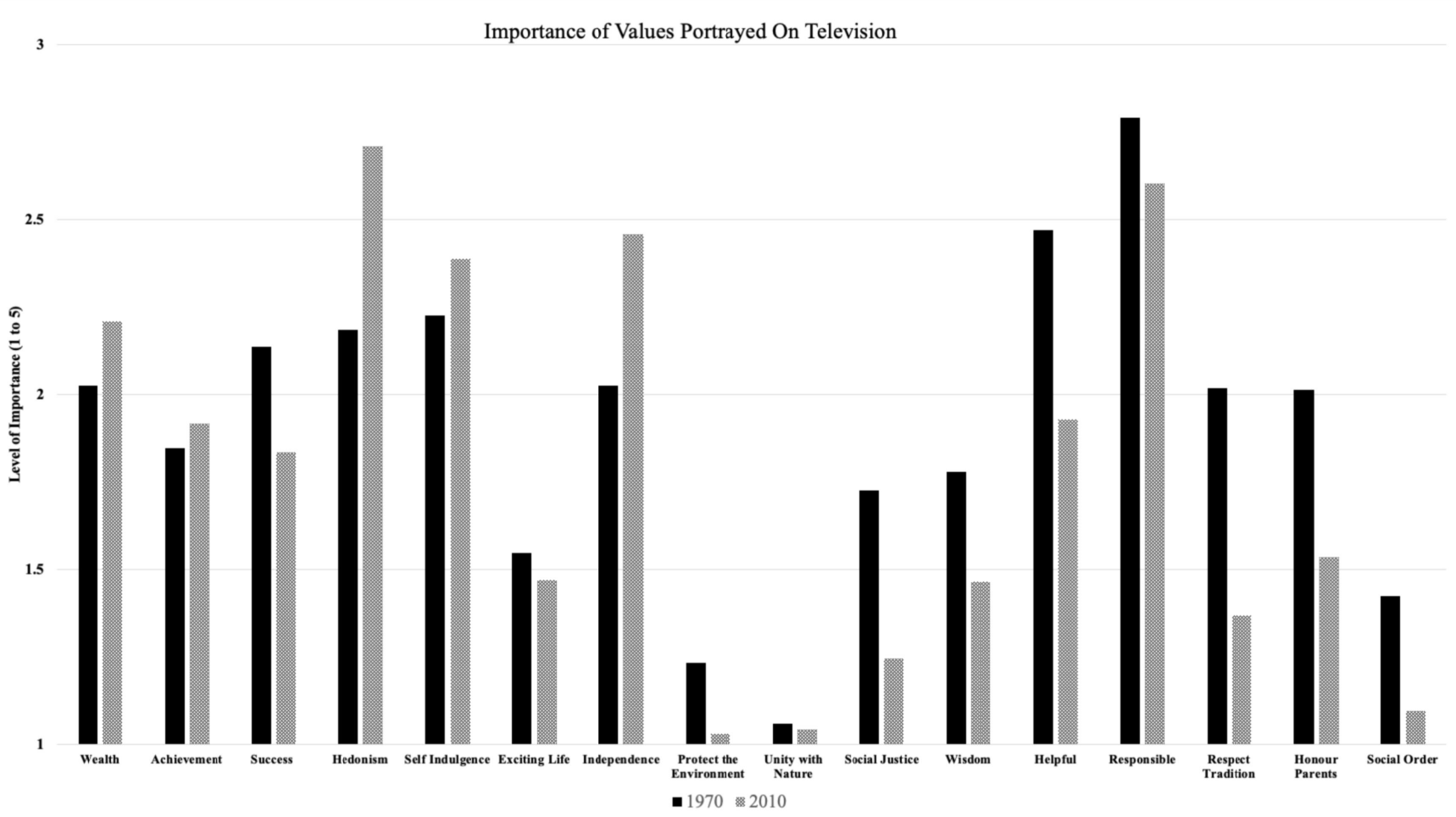
Note: Images were randomly selected from the episode's beginning, middle, and end to visually represent the clothing and costume changes for the characters.

Figure 6.

Family Ties 'I Know Jennifer's Boyfriend' Recycling Clip

Figure 7

The Importance of Values Portrayed on Television 1960 - 2010



Note: Data was rated from 1 (not important to the character), 3(somewhat important) to 5 (extremely important to the character).

Appendix A

Coder Instructions In person and Zoom Meeting Script

Meeting agenda.

Introductions
Questions regarding access to digital devices and media (one drive, smart TV, laptop)
Review the example spreadsheet to review and discuss
Watch 20-minute video
Practice rating the video
Discussion about the ratings
Questions

Introductions:
Name
Where do you live?
What year are you in?
What are you the most passionate about regarding your education?
Something interesting about yourself outside of school

Throughout this entire project, you will require access to Netflix, Crave, Disney + and a private collection of shows stored online, shareable through my one-drive
Does everyone have access to Netflix?
Does everyone have access to Crave?
Does everyone have access to Disney +?

I want to learn more about how you watch TV. Do you watch TV on a small handheld device, laptop, or a large smart TV?

Some older episodes are lower quality and may best be viewed on your computer or laptop. I do have jump drives with the episodes. I can post you a jump drive if we need more access. We can spend some time on one and make specific accommodations for your system.

Let's confirm access to the episodes on Google Drive.

To begin, we will review and discuss the values at the top of the spreadsheet.

Open discussion on values and collectively provide examples of how the values may be identified in the episode.

Watch the 20-minute video (*BH/E/1: Clampet's Strike Oil*) together and rate the importance of the characters' values in the episode. Discuss the various answers and confirm agreement to rate the values in the episode.

VALUES- open discussion

Wealth & Social Power – Expensive Clothing, buying things and experiences, paying for others

Ambition & Achievement- Discussion of goals and steps to achieve goals, display of awards or degrees
Success & Capability- Confidence, giving others advice, pointing out achievements
Pleasure & Gratification of Desire & Hedonism- impulsive decisions, knowing the cost and choosing to do it anyway
Enjoyment of Life & Self Indulgence- Doing the things they love to do, happiness, justify for self
Exciting & Daring Life- taking risks for fun
Self-Direction & Creativity & Independence- engaging in artistic expression, not needing advice or support of others
Protect the Environment & World at Peace- representing “hippie”, wearing clothing that has an earth on it, belonging to environmental groups
Unity with Nature & Beauty of Nature- spending time in nature, taking photographs,
Social Justice & Equality- speaking out against oppression, demanding equal treatment
Wisdom- advise (asking or taking), reading philosophy, seeking consultation
Helpful & Honest- offering to assist, telling the truth
Responsible & Loyal- taking on tasks, speaking out for friends
Respect Tradition & Modesty Humbleness- modest clothing, stating traditional practices
Honour Parents & Obedience- setting boundaries, respecting boundaries, enforcing boundaries.
Social Order & National Security- engaging in protest, identifying social standing

Instructions for coders measuring values.

1. Review the values across the top of the spreadsheet prior to watching the episodes.
2. Consider the examples and the values we discussed.
3. Watch the episode.
4. Consider each character individually within the episode.
5. Rate the importance of each value (1-not important to 5-Supreme Importance) for each character individually before moving on to the next character.
6. Watch the episodes consecutively.
7. Contact me if you have any questions or concerns.

For the EF measures.

Ensure access to the videos.

To begin, review and discuss the measures in the first column of the spreadsheet.

Open discussion and collectively brainstorm examples of how the measures may be identified in the episode.

How often are animal-based products consumed, or implied consumption?
Beef or Lamb
Pork
Poultry

Fish or Seafood
Egg, cheese and or dairy
% of the food eaten is unprocessed, unpackaged, or locally grown?
% of food that is fresh & unpackaged?
% of food that is locally grown or produced
Which housing type best describes the home(s)?
What material is the house constructed with?
How many people live in the household?
What is the size of the home?
Is there electricity in the home?
How energy efficient is the home?
How much trash is generated compared to the neighbours?
What comes closest to monthly new clothing, footwear and/or sporting goods purchases?
What comes closest to new household furnishings purchases?
How often are there purchases of household appliances?
How often are there purchases of electronics and gadgets?
How often are there purchases of books, magazines & newspapers?
How much paper is recycled?
How much plastic is recycled?
How far is travelled by car each week?
How far is travelled by motorcycle each week?
What is the average fuel economy of the car most often used?
What is the average fuel economy of the motorcycle most often used?
When traveling by car, how often is carpool depicted?
How far is public transportation travelled each week?
How far is travelled on public Train transportation?
How far is travelled on public Bus transportation?
How many hours of flying are discussed?

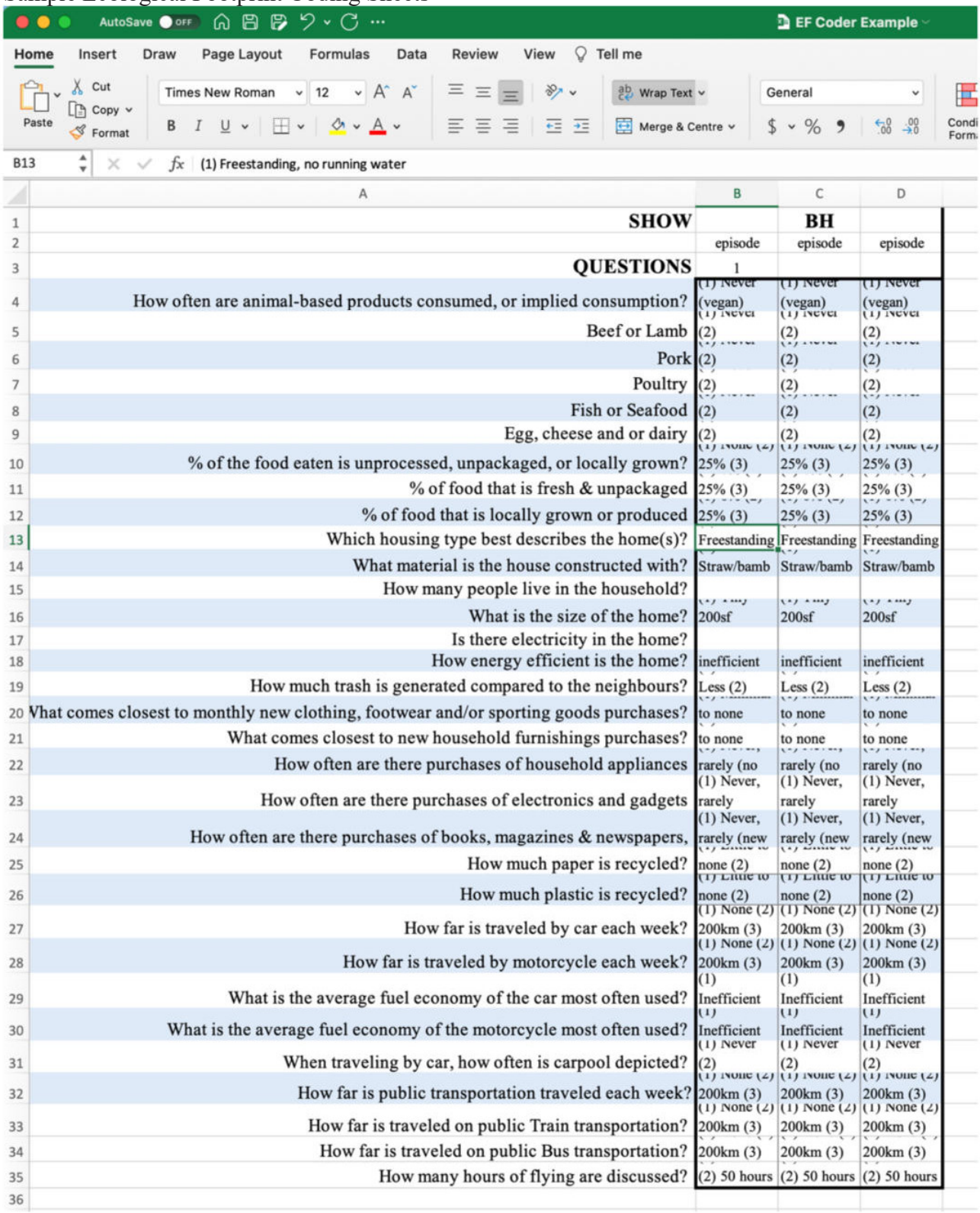
Watch the 20-minute video (*BH Clampet's Strike Oil*) together and select the rating that best describes what was displayed within the episode.
Discuss the various answers and confirm agreement for rating the measures in the episode.

Instructions for coders measuring the EF.

1. Review the measures prior to watching the episode.
2. Consider the comparison of measures we discussed.
3. Watch the episode.
4. Consider the content that was displayed within the episode.
5. Rate each measure based on the scale provided within the spreadsheet (each measure has a varied unit to choose).
6. Choose a measure for every variable within the episode. If there was nothing in the episode that relates to the measure, select the lowest value.
7. When you are finished coding the episodes, please email me your spread sheet with your name and the word COMPLETED in the title.
8. Please contact me if you have any questions or concerns.

Appendix B

Sample Ecological Footprint Coding Sheets



AutoSave OFF — EF Coder Example

Home Insert Draw Page Layout Formulas Data Review View Tell me

Paste Cut Copy Format — Times New Roman 12 — Wrap Text — General — Merge & Centre

B13 (1) Freestanding, no running water

	A	B	C	D
1	SHOW		BH	
2		episode	episode	episode
3	QUESTIONS	1		
4	How often are animal-based products consumed, or implied consumption?	(1) Never (vegan)	(1) Never (vegan)	(1) Never (vegan)
5	Beef or Lamb	(2)	(2)	(2)
6	Pork	(2)	(2)	(2)
7	Poultry	(2)	(2)	(2)
8	Fish or Seafood	(2)	(2)	(2)
9	Egg, cheese and or dairy	(2)	(2)	(2)
10	% of the food eaten is unprocessed, unpackaged, or locally grown?	25% (3)	25% (3)	25% (3)
11	% of food that is fresh & unpackaged	25% (3)	25% (3)	25% (3)
12	% of food that is locally grown or produced	25% (3)	25% (3)	25% (3)
13	Which housing type best describes the home(s)?	Freestanding	Freestanding	Freestanding
14	What material is the house constructed with?	Straw/bamb	Straw/bamb	Straw/bamb
15	How many people live in the household?			
16	What is the size of the home?	200sf	200sf	200sf
17	Is there electricity in the home?			
18	How energy efficient is the home?	inefficient	inefficient	inefficient
19	How much trash is generated compared to the neighbours?	Less (2)	Less (2)	Less (2)
20	What comes closest to monthly new clothing, footwear and/or sporting goods purchases?	to none	to none	to none
21	What comes closest to new household furnishings purchases?	to none	to none	to none
22	How often are there purchases of household appliances	rarely (no	rarely (no	rarely (no
23	How often are there purchases of electronics and gadgets	(1) Never, rarely	(1) Never, rarely	(1) Never, rarely
24	How often are there purchases of books, magazines & newspapers,	(1) Never, rarely (new	(1) Never, rarely (new	(1) Never, rarely (new
25	How much paper is recycled?	none (2)	none (2)	none (2)
26	How much plastic is recycled?	none (2)	none (2)	none (2)
27	How far is traveled by car each week?	(1) None (2) 200km (3)	(1) None (2) 200km (3)	(1) None (2) 200km (3)
28	How far is traveled by motorcycle each week?	(1) None (2) 200km (3)	(1) None (2) 200km (3)	(1) None (2) 200km (3)
29	What is the average fuel economy of the car most often used?	(1) Inefficient	(1) Inefficient	(1) Inefficient
30	What is the average fuel economy of the motorcycle most often used?	(1) Inefficient	(1) Inefficient	(1) Inefficient
31	When traveling by car, how often is carpool depicted?	(1) Never (2)	(1) Never (2)	(1) Never (2)
32	How far is public transportation traveled each week?	200km (3)	200km (3)	200km (3)
33	How far is traveled on public Train transportation?	(1) None (2) 200km (3)	(1) None (2) 200km (3)	(1) None (2) 200km (3)
34	How far is traveled on public Bus transportation?	200km (3)	200km (3)	200km (3)
35	How many hours of flying are discussed?	(2) 50 hours	(2) 50 hours	(2) 50 hours
36				

Appendix C

Sample Values Coding Sheets