Good for Your Mood, Bad for Your Health: Narrative Involvement, Health Behaviors, and Binge Watching

Abstract

Binge watching, defined as viewing three or more episodes of the same television program in a single day, has become a popular activity in recent years (Centris, 2014). Television consumers are no longer tied to traditional broadcast schedules and are instead able to view a nearly endless supply of television content through online streaming services like Netflix. This change in viewing strategy opens up new questions for research. In the current studies, we explore two potential implications of binge watching – increased narrative involvement and greater engagement in negative health behaviors. In Study 1, survey results indicated that participants binge watch more often than they watch serially, and that binge watching is associated with more character identification, parasocial interaction, transportation, and enjoyment than is serial watching. Amount of binge watching was also significantly correlated with engagement in negative health behaviors. In Study 2, a two-wave survey was conducted to explore causality in the relationships from Study 1. Results in Study 2 largely replicated those from Study 1, with one interesting addition – that for participants who view binge watching as a positive activity, amount of binge watching positively predicted a temporarily expanded sense of self. Implications and directions for future research are discussed.

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Few would argue with the notion that the internet and digital technology have drastically changed how we view television. Prior to the 1990s, television consumers were largely forced to watch their favorite programs as they aired, often waiting weeks between episodes that aired on just a handful of channels (Prior, 2003). The only alternative was to purchase an entire season or series of a television show in physical form (such as VHS tapes or DVDs), though even that required waiting months or years for their release. Today, however, technological advancements have significantly increased television viewing options. Online video streaming services and digital video recorders (DVRs) not only allow television users to watch currently airing content, but also to binge watch (defined as viewing three or more episodes of the same television show in a single day; Centris, 2014) television episodes that have previously aired.

Downloading, streaming, and time shifting (recording the original live broadcast of a program and watching it at a later time) have altered the ways in which we view television today (Bury & Li, 2013). This includes a significant amount of binge watching, usually defined as watching three or more episodes of a single television show in one day (Centris, 2014). One recent survey with 6,000 participants assessed the frequency with which participants binge watch TV shows, as well as the platforms they use for this binge watching (Centris, 2014). Approximately 44% of participants reported that they regularly binge watch television shows. The most commonly used binge watching platform was the DVR (28%), followed by subscription video on demand (SVOD) services like Netflix (25%), live TV (23%), free streaming sites (14%), DVD/Blu-Ray (7%), on-demand (5%), and pay-per-view/download-to-

own streaming sites (5%). Studies such as this indicate the growing prevalence of binge watching amongst television viewers.

This is particularly true of series that are released online an entire season at a time rather than airing episodically on regular television. For example, whole seasons of popular Netflix series such as *Orange Is the New Black, House of Cards,* and *Unbreakable Kimmy Schmidt* become available for viewing on predetermined release dates. This means that television consumers are no longer tied to traditional broadcasting schedules. Rather, they may choose when they want to view their favorite TV series. For example, a poll of 4,724 people who planned to watch season two of the Netflix original series *Orange is the New Black* found that 65.8% planned to binge/marathon, 19.1% planned to try pacing themselves but admitted they would likely end up bingeing/marathoning, 11.7% planned to marathon the first few episodes and then pace themselves a bit, 2.6% planned to pace themselves with one episode per day, and a measly 0.57% planned to pace themselves at one episode per week ("Poll Archive," 2014). This is a far cry from the single-episode-per-week model of most cable and broadcast television shows and is indicative of modern television watching patterns.

This relatively modern method of viewing television necessitates new lines of research to explore how binge watching might impact our experience of television. Though television has been researched extensively over the last several decades, these past studies were primarily conducted in a world of traditional broadcast schedules. Arguably, the psychological effects of television use may be different when a viewer consumes a single episode of a program each week (referred to as serial watching) than when consuming three or more episodes in the same day (referred to as binge watching, Centris, 2014). Binge watching allows the viewer to be immersed in a narrative world for longer periods, enveloping them in the settings, characters, and

action patterns of that particular story. This saturation could potentially impact the viewer in a number of different ways. In the current study, we explore two potential outcomes associated with binge watching: greater narrative/character involvement and negative health effects. We generally hypothesize that the immersive nature of binge watching can positively affect the entertainment experience by allowing greater connection to the narrative world. At the same time, though, the amount of time dedicated to a sedentary activity like binge watching could have negative effects on a person's health. Both of these possibilities will be examined through the implementation of two surveys. Additionally, we measure the relative utilization of serial watching and binge watching styles, to explore whether binge watching is replacing serial watching, or just adding to the total amount of television consumed.

Motivations for Binge Watching

As noted, 44% of people report that they regularly binge watch television shows (Centris, 2014). The fact that nearly half of the population engages in this behavior raises the question of its appeal. Discourse analysis of the reasons people binge watch has found three main antecedents: new content delivery technology, active audience behaviors (i.e., media selectivity), and content that is dense and thought-provoking (Perks & Montpelier, 2013). This indicates that binge watching behavior is largely a product of the enhanced digital nature of television viewership. In addition, there seems to be a dynamic relationship between the ability to engage with a deeper and more complex narrative and the increased existence of such narratives. Because we now have an augmented range of options for television viewing and can thus be more selective about what/when we watch, the opportunity to binge watch programs is greater than ever.

Narrative and Character Involvement

One particularly interesting question regarding binge watching is whether it has the potential to affect viewers' involvement with the narrative world, relationships with characters, and enjoyment of the show. Do we experience a story differently when exposed for a single, intense period as compared to when we are exposed in 30- or 60-minute increments over a longer period of time? Previous qualitative work has found that binge watching shows is associated with stronger emotional bonds between viewers and characters, stories, and the media experience (Perks & Gatchet, 2013). Based on this previous research, we expect to replicate in a more quantitative manner the findings regarding character and story involvement.

Specifically, we predict that binge watching will have a strengthening effect on transportation into the narrative, identification with characters, and parasocial interaction. Transportation, defined as absorption into a story (Green & Brock, 2000), entails complete attention to the narrative, imagining oneself in the story world, and emotional response. Essentially, transported viewers become swept up into the story world and are entirely focused both physically and psychologically. It can be argued that a longer immersion in the story world could increase the sense of transportation. Extended time in the story world means less time in the real world and more attention focused on the narrative. As one media buyer put it: "Watching a few episodes in a row is more engaging and keeps me focused, or else I tend to forget or move on after the first episode" (Bruell, 2013). This sense, that a long period of uninterrupted watching could enhance transportation, is also reflected in the way that researchers often purposefully disrupt transportation in experiments – by distracting participants from the narrative (Green & Brock, 2000; Van Laer, De Ruyter, Visconti, & Wetzels, 2014; Zwarun & Hall, 2012). Thus, there may be in some sense an inertia involved in transportation, in which the longer one watches

the more transported one becomes – at least until other forces act upon the situation and break focus. Binge watching, therefore, should be associated with stronger reported narrative transportation.

More time in the story world should also mean more identification with its characters. Identification with characters is defined as "a process that consists of increasing loss of self-awareness and its temporary replacement with heightened emotional and cognitive connections with a character" (Cohen, 2001, p. 251). This particular definition of identification indicates that a significant degree of attention is necessary to identify with a character. In fact, Cohen lists the four components of his definition as empathy, perspective sharing, understanding motivations, and absorption. So, much like transportation, the extended viewing time of binge watching might offer a greater level of absorption. It is also likely that the amount of time spent with characters during a binge would allow a viewer greater opportunity to understand their motivations, take their perspective, and empathize without the cleansing break between episodes that might otherwise occur. We therefore predict that identification with characters will be stronger during binge watching.

Similarly, this greater amount of time spent with the characters might lead us to develop a stronger sense of friendship with them, which is known as parasocial interaction (PSI; Giles, 2002). These one-sided relationships with media figures could be fostered in a more intense way by spending uninterrupted hours in the same story world. Previous research suggests that parasocial interactions become parasocial relationships as interactions with characters endure over time (Dibble, Hartmann, & Rosaen, 2016). Depending on how many episodes someone may watch in a single day, they could have a fairly intense relationship that builds with the characters

in the program. Therefore, we also predict that binge watching will be associated with stronger reports of parasocial relationships with characters.

Finally, enjoyment of narrative media is tightly tied with transportation, identification, and PSI (e.g., Green, Brock, & Livingston, 2004). The more immersed one is in the story, the more one understands and empathizes with the characters, and the more one bonds with the characters, the more one should also report enjoyment of the narrative. Thus, we also hypothesize that participants will report greater enjoyment when binge watching.

Health Behaviors

Arguably, greater enjoyment of and engagement with a story world are positive potential outcomes of binge watching; however, what about potential negative effects? The same immersive experience that could lead to more narrative engagement could also lead television viewers to engage in unhealthy behaviors. Many have expressed concern over the amount of time Americans spend being sedentary (Christensen, 2015; Patel et al., 2010). Time spent sitting can have a negative impact on health in a variety of ways, especially in terms of obesity and cardiovascular disease mortality (Patel et al., 2010). In addition, many people may snack while watching television or delay sleep in order to watch more episodes, which further contributes to health concerns. One study found that those who self-identified as binge watchers reported significantly greater trouble sleeping due to binge watching disrupting their sleep schedules (Kruger, Karmakar, Elhai, & Kramer, 2015). Clearly, more work needs to be done in order to fully understand the negative health consequences of binge watching television content as a potentially sedentary activity that may or may not replace more physically active pursuits. In the current studies, we examine the extent to which participants engage in a number of behaviors

with potential physical and mental health implications, including eating meals, snacking, forgoing sleep in favor of additional viewing, solitary viewing, and multitasking.

The Current Studies

With the following studies, we attempt to uncover how binge watching may have both positive and negative impacts on the television experience. Specifically, we report the results of two surveys designed to explore binge watching's relationship with narrative engagement and with health behaviors. In Study 1, we conducted a cross-sectional study that measured frequency of binge/serial watching, identification and parasocial interaction with characters, transportation, narrative enjoyment, and the aforementioned health behaviors. In Study 2, we conducted a two-wave survey to assess the causal relationship between binge watching/perceptions of binge watching and the same outcome variables from Study 1, with some additions.

Study 1

Method

Participants. A total of 248 undergraduates in the Midwestern United States participated for extra credit in their courses. Their median age was 20 years, and 62.7% were female.

Procedure. The study was conducted as an online survey via Qualtrics. Participants responded to questions assessing how often they watch television serially and by bingeing, the shows they watching most often serially and by bingeing, transportation, identification, parasocial interaction, enjoyment, and health behaviors. Whether participants answered the questions for serial watching or binge watching first was counterbalanced to decrease the likelihood of order effects. Order of items within scales was randomized.

Measures.

Frequency of binge watching and serial watching. The frequency at which participants engage in binge watching and serial watching was measured with a single-item each, on a scale from 0 (I have never watched a show in this way) to 10 (I watch shows this way all the time), stating, "How often would you say you binge watch television shows?" (M = 5.50, SD = 2.62) and, "How often would you say you watch television shows as they air (i.e., week-to-week)?" (M = 4.09, SD = 2.63). Participants were left to define binge watching for themselves, while serial watching was defined for them as watching a show every week as it airs.

Shows watched serially and by bingeing. Participants were asked at the beginning of the questions for each watching style (i.e., binge watching and serial watching) to list up to seven shows that they have binge watched the most , starting with the show they watch most often (number written M = 3.22, SD = 1.92) or serial watched (number written M = 2.80, SD = 2.63). The title of this show was then inserted into the questions for that style of watching. For example, a participant who indicated that she binges watches *Game of Thrones* would be presented with "When binge watching *Game of Thrones…*" at the beginning of each question. This was to encourage participants to think more specifically and clearly about their behaviors while consuming media in each particular style.

Transportation. Transportation was measured using an 11-item scale from 0 (strongly disagree) to 10 (strongly agree; Green & Brock, 2001). These questions included, "The narrative affected me emotionally," and "I was mentally involved in the narrative." Transportation was measured separately for each watching style: binge watching (M = 5.54, SD = 1.45, Cronbach α = .73) and serial watching (M = 5.34, SD = 1.37, Cronbach α = .71).

Identification. An eight-item scale from Cohen (2001) was measured on a 0 (strongly disagree) to 10 (strongly agree) scale. Questions included "I wanted the main character to succeed in achieving his goals" and "I was able to understand the events in the story in a manner similar to that in which the main character understood them." These items were also measured separately for each watching style: binge watching (M = 7.04, SD = 2.07, Cronbach α = .94) and serial watching (M = 6.65, SD = 2.15, Cronbach α = .95).

Parasocial interaction. Parasocial interaction was measured with a 10-item parasocial interaction scale from Rubin and Perse (1988) on a 0 (strongly disagree) to 10 (strongly agree) scale. Items included "I feel sorry for the main character when he/she makes a mistake," and "The main character seems to understand the kinds of things I want to know." These items were again measured separately for each watching style: binge watching (M = 6.50, SD = 2.19, Cronbach α = .92) and serial watching (M = 6.31, SD = 2.11, Cronbach α = .92).

Enjoyment. Enjoyment of media being watched with each style was measured with the 10-item scale from Bowman and Tamborini (2008). Sample items include "I enjoyed watching the show" and "Overall, I would rate the show positively." It was measured on a 0 (strongly disagree) to 10 (strongly agree) scale for each style: binge watching (M = 8.22, SD = 1.77, Cronbach α = .94) and serial watching (M = 7.86, SD = 1.83, Cronbach α = .95).

Health behaviors. The health behaviors were eight possible activities that might be common while consuming media. Participants were asked how often they engage in these activities both while serial watching and while binge watching. The items were: eat a meal, eat a meal you consider to be healthy, eat a snack, eat a snack you consider to be healthy, watch alone, watch with at least one other person, forego sleep in favor of watching more TV, and multitask

(use your phone, play video games, read, etc.). Participants responded on a scale from 0 (never) to 10 (all the time).

Because these items were written by the experimenters, factor analysis was used to determine how to treat the items. The factor analysis was run separately for binge and serial watching, in case watching style influenced the relationships between the items. Principal components extraction and promax (oblique) rotation was used because any factors could theoretically be correlated. For binge watching, a three-factor solution was generated, but the third factor was only barely above the eigenvalue cut-off of one (1.01). Based on previous arguments that the cut-off at eigenvalues of one is fairly arbitrary and simple error variance could mean the difference between an eigenvalue of 0.99 and 1.01 (Reagan, 2000), the choice was made to focus on the first two factors. Factor one had an eigenvalue of 2.96 and accounted for 37.01% of the variance, while factor two had an eigenvalue of 1.64 and accounted for 20.54% of the variance. However, in assessing factor loadings for the items, only one item loaded highly (greater than .30) on factor 2 (“watched with at least one other person”) and all other items loaded on factor 1. Therefore, this item was discarded and all other items were retained as a scale for negative health behaviors during binge watching (M = 5.37, SD = 1.63, Cronbach α = .65).

A factor analysis with the same strategy was run for the serial watching health items, with similar results. Three factors were extracted, but the third again had an eigenvalue close to 1 (1.05) and so was discarded. Factor one had an eigenvalue of 2.51 and explained 31.31% of the variance, and factor two had an eigenvalue of 1.79 and explained 22.31% of the variance. The item “watched with at least one other person” was again the only item that loaded highly on

factor two and so was again discarded for the scale of negative health behaviors while serial watching (M = 4.76, SD = 1.83, Cronbach α = .72).

Results

Analyses were run in SPSS 21 and Stata 14. Amount of binge watching and amount of serial watching were significantly and positively correlated, r = .19, p < .01. Interestingly, this indicates that people are not replacing serial watching with binge watching, but are actually increasing total television consumption. In order to account for possible confounding effects of this relationship, serial watching was controlled for in the analyses when binge watching was the focal predictor, and vice versa.

Comparing binge watching and serial watching. Paired samples t-tests were used to compare the measures for binge watching and serial watching directly before turning to outcomes of each consumption style. Results indicated that participants binge watch (M = 5.50, SD = 2.62) more often than they watch serially (M = 4.09, SD = 2.63), t(248) = 6.65, p < .001. Along these same lines, participants also listed more shows that they binge watch (M = 3.22, SD = 1.92) than they serial watch (M = 2.80, SD = 2.19), t(248) = 2.65, p < .01. Binge watching, as compared to serial watching, was associated with more positive experience of the narrative and its characters. Identification with characters was higher when binge watching (M = 7.04, SD = 2.08) than when serial watching (M = 6.67, SD = 2.14), t(240) = 2.49, p < .05; transportation was also higher when binge watching (M = 5.58, SD = 1.44) than when serial watching (M = 5.36, SD = 1.38), t(238) = 2.11, p < .05; and enjoyment of the content was higher when binge watching (M = 8.24, SD = 1.78) than when serial watching (M = 7.85, SD = 1.83), t(239) = 3.21, p < .001. However, there was not a significant difference between binge watching (M = 6.55, SD = 2.19) and serial watching (M = 6.30, SD = 2.12) on parasocial interaction, t(238) = 1.59, p = .11.

Overall, these results indicate that although binge watching and serial watching are correlated with one another, binge watching is more popular in the present sample. Binge watching is also associated with stronger and more positive reactions to the media content, such as increased enjoyment, transportation, and identification with characters, as hypothesized.

In terms of negative health outcomes, it also emerged that behaviors during binge watching (M = 6.36, SD = 1.63) were significantly more unhealthy than behaviors during serial watching (M = 5.75, SD = 1.84), $t(243) = 5.58$, $p < .001$. Therefore, as expected, participants reported less healthy behaviors when binge watching television than when serial watching.

Effects on the watching experience. The differences in means between binge watching and serial watching provide static information about overall trends during binge and serial watching. However, it is still potentially important to understand the relationships between how often a person consumes media with a given style and our outcomes of interest. The correlational nature of the present study means that causal order is not predictable, but it is still useful to know, for example, if an increase in binge watching is associated with an increase in identification with characters in those shows. Is it binge watching, per se that increases identification (as evidenced by the paired samples t-tests), or does amount of binge watching matter? A relationship between amount of binge watching and identification, for example, might suggest that something about binge watching makes people more likely to identify with characters, or it could also suggest that identifying with characters makes one more interested in binge watching their show. Importantly, it is most likely both – a dynamic effect where each effect strengthens the other (Lang & Ewoldsen, 2010).

In every regression predicting outcomes for a given consumption style, the variables measuring the extent to which participants engage in both styles are included simultaneously.

This allows us to test whether the measures for experiences and behaviors during each type of watching style are measuring distinct things. Binge watching amount was a significant predictor of identification with characters while binge watching, $R^2 = .03$, $F(2, 243) = 3.99$, $b = 0.13$, $t(243) = 2.53$, $p < .05$, but serial watching was not a significant predictor, $b = 0.04$, $t(243) = 0.77$, $p = .44$. Serial watching amount was a marginally significant predictor of identification with characters while watching serially, $R^2 = .02$, $F(2, 241) = 1.94$, $b = 0.10$, $t(241) = 1.94$, $p < .06$, while binge watching amount was not a significant predictor, $b = -0.00$, $t(241) = -0.06$, $p = .95$.

Binge watching amount was a significant predictor of parasocial interaction with characters while binge watching, $R^2 = .04$, $F(2, 243) = 5.49$, $b = 0.14$, $t(243) = 2.63$, $p < .01$, but serial watching was not a significant predictor, $b = 0.08$, $t(243) = 1.49$, $p = .14$. While watching serially, serial watching amount was a marginally significant predictor of parasocial interaction with characters, $R^2 = .04$, $F(2, 239) = 4.35$, $b = 0.10$, $t(239) = 1.84$, $p < .07$. Interestingly, binge watching amount was also a marginally significant predictor, indicating that the more people binge watch they also have marginally stronger parasocial interactions while watching serially, $b = 0.10$, $t(239) = 1.89$, $p < .07$.

Likewise, binge watching amount was a significant predictor of enjoyment while binge watching, $R^2 = .04$, $F(2, 243) = 5.17$, $b = 0.12$, $t(243) = 2.85$, $p < .01$, but serial watching was not a significant predictor, $b = 0.04$, $t(243) = 0.93$, $p = .35$. And, serial watching amount was a significant predictor of enjoyment while watching serially, $R^2 = .08$, $F(2, 240) = 9.92$, $b = 0.16$, $t(240) = 3.68$, $p < .001$. Interestingly, binge watching amount was also a marginally significant predictor, indicating that the more people binge watch they also experience marginally more enjoyment when they watch serially, $b = 0.08$, $t(240) = 1.73$, $p < .09$.

And finally, neither watching style was a significant predictor of transportation while binge watching, $R^2 = .02$, $F(2, 242) = 1.92$, $p = .15$. Binge watching amount was not a significant predictor, $b = 0.03$, $t(242) = 0.91$, $p = .36$. Serial watching was also not a significant predictor, $b = 0.05$, $t(242) = 1.53$, $p = .13$. Serial watching was, however, a significant predictor of transportation while watching serially, $R^2 = .03$, $F(2, 240) = 3.80$, $b = 0.09$, $t(240) = 2.51$, $p < .05$. Binge watching was not a significant predictor, $b = 0.02$, $t(240) = 0.66$, $p = .51$.

Effects on health behaviors. The first outcome tested was health behaviors during consumption, such as eating while watching, foregoing sleep, and watching television alone, $R^2 = .06$, $F(2, 245) = 7.84$, $p < .001$. When the health behaviors were specific to binge watching, binge watching amount was a significant predictor, $b = 0.15$, $t(245) = 3.82$, $p < .001$. Serial watching was not a significant predictor of health behaviors while binge watching, $b = 0.01$, $t(245) = 0.31$, $p = .76$. However, serial watching was a significant predictor of health behaviors while serial watching, $R^2 = .03$, $F(2, 241) = 4.16$, $b = 0.12$, $t(241) = 2.76$, $p < .01$. Binge watching was not a significant predictor of health behaviors while serial watching, $b = 0.01$, $t(241) = 0.28$, $p = .78$.

Discussion

The results of this study highlight the current popularity of binge watching, given that participants reported binge watching more than watching serially. Binge watching was also associated with higher identification, parasocial interaction, transportation, and enjoyment of content when compared directly to serial watching. It is not just whether or not one binge watches, however, but also the amount of binge watching as suggested by regression analysis. When controlling for serial watching, amount of binge watching significantly predicted identification, parasocial interaction, and enjoyment. Even more interestingly, amount of binge

watching was also a marginally significant predictor of parasocial interaction and enjoyment when watching serially. One possibility that was unexplored in the present study is that some people may binge on the same shows that they watch serially. For example, a person could have wanted to start watching *Breaking Bad* when it was already airing season four. Therefore, they could have binge watched seasons one through three, and then once caught up began serial watching the rest of the show. The earlier binge watching of the first few seasons could have increased the parasocial interaction with the characters and enjoyment in the later seasons that were watched serially. This is an interesting possibility to explore in future research. Regardless, these results are indicative of what makes binge watching so popular; the practice of binge watching allows a closer relationship with characters, which in turn increases enjoyment of the experience.

Unexpectedly, binge watching amount was not associated with increased transportation – although there was a significant difference in terms of average transportation reported while bingeing as compared to watching serially. This suggests that the mere act of binge watching may increase transportation and it matters less how often one engages in it. This makes sense when one considers the role of time in narrative involvement as opposed to character involvement. Absorption into a narrative is by nature fleeting. Once you turn off the TV or computer, leave the room, or are distracted by a situation in your immediate environment, you no longer feel yourself to be part of that narrative world. A single binge watching session would have the same level of in-the-moment transportation as three other binge sessions. Character involvement, however, such as parasocial relationships, is expected to develop over time (Dibble et al., 2016). Therefore, multiple binge watching sessions should make character involvement

that much stronger. Of course, this is mostly speculation. Future research in this area should explore this possibility further.

With regard to health behaviors, both serial watching and binge watching significantly predicted negative health behaviors while engaging in those respective viewing styles. In other words, binge watching predicted negative health behaviors while binge watching, and serial watching predicted negative health behaviors while serial watching. Neither viewing style predicted negative health behaviors while engaging in the other style. Thus, people report unhealthier behaviors the more television they watch, regardless of style. However, they report higher average unhealthy behavioral engagement during binge watching as opposed to serial watching.

Overall, this study takes a step toward understanding the popularity of binge watching and how it might influence the psychological processes underlying television use. However, it was correlational in nature, meaning our ability to draw causal conclusions about the influence of binge watching is limited. In Study 2, we aim to enhance our understanding of the relationship between binge watching and these outcome variables by conducting a longitudinal survey. By measuring participants' frequency of binge watching and then assessing their experiences at a later time, we hope to further understand the temporal processes involved.

Study 2

Study 2 focused on binge watching only, without the comparison to serial watching. In addition to the time-lagged aspect of this two-wave survey, we also include some additional variables that might help explain some of the differences between binge watching and serial watching, and why binge watching is so popular. First, We have included a measure of Temporarily Expanding Boundaries of the Self (TEBOTS) (Slater, Johnson, Cohen, Comello, &

Ewoldsen, 2014). TEBOTS assesses the extent to which people feel that media help them to leave behind the responsibilities and depleting issues of their own lives to experience something that goes beyond their normal existence and normal identity (Slater et al., 2014). We predict that binge watching, with its longer duration away from the real world, may serve to enhance this experience of TEBOTS and may indicate one possible motivation for engaging in binge watching.

Additionally, we explore a potential moderating factor in the proposed relationships: normative evaluations of binge watching. Social norms guide a great deal of behavior, and our perceptions of whether our behavior is normative often determines both our behavior and the way we feel about what we have done (Cialdini & Trost, 1998). To our knowledge there has been no empirical work on the normative perceptions regarding binge watching. Anecdotally, spending hours watching television – a practice once considered by many to be lazy and self-indulgent – now seems to be celebrated and normalized. This raises interesting questions about how binge watchers perceive the practice, but also about how those normative evaluations affect the binge watching experience. In our analyses, we included normative evaluations as a potential moderator of effects to explore whether negative perceptions of binge watching (e.g., thinking it is a lazy activity) might influence outcomes.

Method

Participants. Participants were 74 undergraduates from a large Midwestern university who participated for course credit (M_{age} = 20.62 years, 62% female). The seventy-four participants in the final sample represent only those who completed both waves of the two-part survey, which occurred over the course of a university semester. An additional 181 participants completed part one but failed to complete part two. The most likely explanation for this drop-out

rate is the long gap between the parts (approximately nine weeks), during which many participants likely completed their required course credits with other studies. There were no significant differences in any of the variables measured during part one between those who completed both parts and those who dropped out after part one, except that international students were less likely to complete both parts than domestic students, $t(174.02) = -2.20$, $p < .05$. International student status was not a significant predictor of any other variable tested and therefore was not included in analysis.

Procedure. The first wave of the two-wave survey was completed during the first three weeks of the university semester, and the second wave was completed during the last three weeks (approximately nine weeks later). The two-wave design was selected to better test the influence of binge watching over time, as well as to strengthen causal claims about the effects of binge watching beyond the relationships described in Study 1.

Part one measures. The following are the measures used in part one of the present study. All items were measured on a zero to 10 scale unless otherwise specified, and order of items within scales was randomized.

Binge and serial watching frequency. Binge watching frequency was measured using a five-item scale rather than the single item from Study 1. The scale was created to capture many possible variations of binge watching behavior, and participants were asked to indicate how often they engage in each behavior on a scale from 0 (never) to 10 (all the time). The items were: watch three or more episodes of a television show in one sitting, watch three or more episodes of a television show in one day, watch three or more episodes of a television show in one week, watch one or more seasons of a television show in one week, and watch one or more seasons of a television show in one month. The five items came together in a reliable scale and so were

treated as such (Cronbach α = .89, *M* = 4.97, *SD* = 2.48). Serial watching frequency was measured in the same way as in study 1, with a single item (*M* = 4.97, *SD* = 3.23).

Normative evaluations. Participants were asked to normatively evaluate the activity of binge watching using five semantic differential items: not cool/cool, lazy/not lazy, not fun/fun, a waste of time/a good use of time, and an anti-social activity/a social activity. These items were reliable as a scale (Cronbach α = .81, *M* = 3.67, *SD* = 1.58).

Part two measures. All items were measured on a 0 to 10 scale unless otherwise specified, and order of items within scales was randomized, as was order of scales. Participants were asked to list media content that they have binge watched during the course of the semester and to think about that content when answering the questions. The same scales from Study 1 were used, including measures of health behavior (Cronbach α = .75, *M* = 4.70, *SD* = 1.95), transportation, (Cronbach α = .72, *M* = 5.54, *SD* = 1.51; Green & Brock, 2001), identification, (Cronbach α = .97, *M* = 6.63, *SD* = 2.56; Cohen, 2001), parasocial interaction (Cronbach α = .95, *M* = 6.40, *SD* = 2.52; Rubin & Perse, 1988), and enjoyment (Cronbach α = .97, *M* = 7.68, *SD* = 2.62; Bowman & Tamborini, 2008).

TEBOTS. In addition to the outcome measures from Study 1, we also measured a concept known as Temporarily Expanding the Boundaries of the Self (TEBOTS; Slater et al., 2014) with a 14-item scale (Cronbach α = .97, *M* = 4.78, *SD* = 2.42). Sample items include, “How much do the characters help to expand your sense of the kind of person you are?” and “How much do you feel that you have a larger perspective on things because of the characters?”

Results

Results were obtained using OLS regression in Stata 14, and regression coefficients are unstandardized unless otherwise specified. Serial watching frequency was included as a covariate in all analyses. Please see Table 1 for detailed regression information.

Table 1. Regression outcomes predicting time two dependent variables from time one binge frequency and time one serial frequency (regression 1), plus time one normative evaluation and the interaction between time one binge frequency and time one norm evaluation (regression 2).

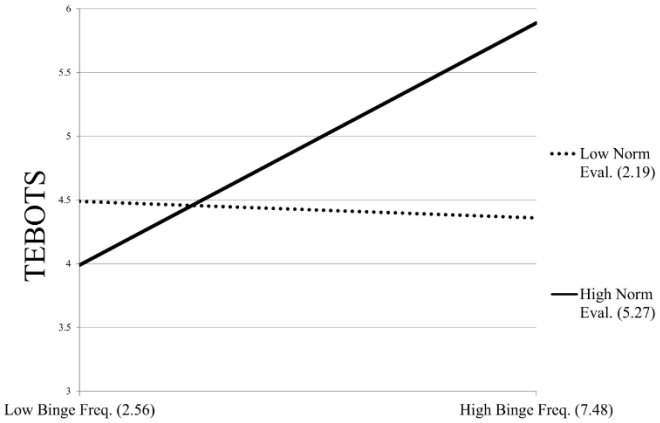
	Health		Enjoyment		Identification		Transport.		Parasocial		TEBOTS	
	b	*t*	*b*	*t*	*b*	*t*	*b*	*t*	*b*	*t*	*b*	*t*
T1 Binge	0.18	1.92	0.44	3.67	0.34	2.80	0.19	2.64	0.32	2.69	0.15	1.23
T1 Serial	0.11	1.56	-0.13	-1.42	0.01	0.09	-0.02	-0.28	-0.10	-1.12	0.03	0.34
R^2	0.10		0.17		0.11		0.09		0.10		0.03	
F	3.64		7.06		4.08		3.50		3.87		0.91	
T1 Norm	-0.21	-0.52	-0.56	-1.10	-0.72	-1.38	-0.26	-0.83	-0.76	-1.49	-0.65	-1.29
Binge X Norm	0.04	0.59	0.05	0.62	0.11	1.31	0.06	1.29	0.09	1.19	0.14	1.74
R^2	0.10		0.20		0.13		0.13		0.13		0.08	
F	1.86		4.12		2.52		2.41		2.56		1.41	

In terms of the main effects of binge watching frequency, binge watching at time one (T1) was a marginally significant predictor of the health behaviors at time two (T2), such that the more participants reported binge watching in T1, the slightly less healthy their behaviors at T2. Binge watching frequency in T1 was also a significant predictor of media enjoyment at T2, such that the more participants reported binge watching in T1, the more enjoyment they felt at T2. In addition, binge watching frequency in T1 was a significant predictor of identification with characters, such that the more participants reported binge watching in T1, the more identification they felt at T2. And binge watching frequency in T1 was a significant predictor of transportation, such that the more participants reported binge watching in T1, the more transportation recounted

at T2. And finally, binge watching frequency in T1 was a significant predictor of parasocial interaction, such that the more participants reported binge watching in T1, the stronger their parasocial reactions at T2. Binge watching at T1 did not, however, predict TEBOTS at T2. Thus, the more participants reported binge watching at T1, the more they reported enjoyment of media content, identification with characters, transportation into the narrative, and parasocial interactions at T2. However, this deeper connection with content may again come at a cost, as participants also reported slightly more negative health behaviors at T2 the more they binge watched at T1.

Normative evaluations at T1 had no significant main effects on any outcome variable. It did, however, marginally moderate the effect of binge watching frequency on TEBOTS (Figure 1). Exploring the interaction indicates that the more participants reported binge watching at T1, the more they experienced TEBOTS, but only when normative evaluations of binge watching were highly positive. The Johnson-Neyman technique indicated that the positive effect of binge watching on TEBOTS was significant at norm evaluation values at or higher than 4.65 (25.35% of the sample). Below that, there are no significant differences in TEBOTS based on binge watching frequency. This interaction suggests that participants can experience heightened expansion of the boundaries of the self through binge watching, but they have to see binge watching as a normatively good thing first. This makes sense in the way that TEBOTS is defined – it is motivational in nature (Slater et al., 2014). These results suggest that people may need to have positive expectancies about what binge watching will do for them, and whether it is likely to be good or bad, in order to receive TEBOTS benefits. However, it should be noted that this interaction was only marginally significant and should be replicated before stronger conclusions can be drawn.

Figure 1. Interaction between binge watching and norm evaluations at Time 1 predicting TEBOTS at Time 2.



Discussion

Overall, the results of Study 2 are fairly consistent with those from Study 1. As with Study 1, more binge watching significantly predicted greater identification, parasocial interaction, and enjoyment, as well as engagement in negative health behaviors (marginally in Study 2). However, unlike in Study 1, binge watching frequency in this study significantly predicted transportation, whereas frequency was unrelated to transportation in Study 1 – only binge vs. serial watching mattered. Additionally, data revealed a marginally significant interaction between binge watching and normative evaluations on TEBOTS, such that those who binge watched more frequently and had a positive perception of binge watching as an activity were likely to report expanded boundaries of the self.

General Discussion

These two studies are an early step in furthering our understanding of binge watching's effects. Consistent with qualitative research that found binge watching to be associated with stronger emotional bonds between viewers and characters, stories, and the media experience

(Perks & Gatchet, 2013), our results indicate that binge watching, when compared to serial watching, can create stronger identification, parasocial interaction, transportation, and enjoyment. Also in relation to narrative experience, it seems that positive normative evaluations of binge watching allow viewers to leave behind the responsibilities and depleting issues of their own lives to experience something that goes beyond their normal existence and normal identity as they binge watch. Thus, it appears that binge watching has some interesting implications for the experience of entertainment.

At the same time, however, the results of these studies indicate that binge watching is associated with unhealthy behaviors. Amount of binge watching was positively associated with negative health behaviors in both Study 1 and Study 2 (though only marginally significant in Study 2). Given concerns about the amount of time Americans spend being sedentary (Christensen, 2015; Patel et al., 2010), and the association of time spent sitting with obesity and cardiovascular disease mortality (Patel et al., 2010), this issue is of great importance. Also concerning is previous research indicating that binge watching can cause sleeping issues (Kruger et al., 2015). Our research contributes to the small but growing body of research indicating potential negative health effects of this increasingly popular television viewing style.

Limitations and Future Research

The present studies attempted to illuminate a causal relationship between binge watching television and narrative experience and between binge watching and negative health behaviors. Unfortunately, it is difficult to study binge watching in an experimental way, which would go much further than a two-wave survey in establishing causality. Future research should consider possible experimental ways of testing the role of binge watching in media psychology.

Conclusion

Binge watching is a common behavior that is likely to continue increasing in popularity. Our research indicates that it is predictive of more immersion, enjoyment, and identification with characters than is serial watching. However, these benefits of narrative engagement come at the cost of negative health behaviors. In a longitudinal analysis, binge watching at time one predicted better narrative engagement at time two, as well as negative health behaviors. This establishes some causal relationship, or at the very least a dynamic relationship, between binge watching and these outcomes. Binge watching is a media consumption strategy that is not likely to disappear anytime soon, so understanding its draws and effects will be an important undertaking.

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