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Worthy of Your Binge: How Media Momentum Drives Satisfaction in Clumped Consumption

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Worthy of Your Binge: How Media Momentum Drives Satisfaction in Clumped Consumption

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CONSUMER RELEVANCE AND CONTRIBUTION STATEMENT

Binge-watching—uninterrupted consumption of multiple episodes of serialized media (Flayelle et al. 2020)—is a part of life for 72% of Americans (Wired 2021). While having potential negative effects (Schneier 2015), binge-watching can also enhance viewing pleasure (Pittman and Sheehan 2021). Recognizing this potential, streaming platforms adopt simultaneous-release strategies (Prastien 2019) and promote content as “binge-worthy” (Wired 2021). But what is truly binge-worthy to consumers—leaving them more satisfied when binged?

We propose that a show’s binge-worthiness is determined by consumers’ perception of its *media momentum*: an impetus created by the interaction of the show’s perceived complexity (i.e., cognitive effort demands) and resonance (i.e., cognitive and emotional involvement offered). Interrupting the immersive experience of watching high momentum shows generates high levels of craving and recalling difficulties when the plot is complex. Such content will then be more likely to be binge-watched, and to lead to higher satisfaction when binged rather than separated.

Our work offers both theoretical and practical contributions. We expand theories related to intentional binge-watching (e.g., Pittman and Steiner 2021; Lu, Karmarkar, and Venkatraman 2023) and contribute to work on the hedonic value of repeated, uninterrupted consumption (e.g., Nelson, Meyvis, and Galak 2009; Galak and Redden 2018), by looking at the perceived content’s characteristics driving binge-watching and post-binge satisfaction. This work also offers practical contributions for consumers and companies by suggesting ways to increase product satisfaction and optimize consumption.

ABSTRACT

Binge-watching—the uninterrupted consumption of multiple episodes of serialized media—is popular among consumers and encouraged by companies, with shows often labeled “binge-worthy.” But what material is truly binge-worthy to consumers—more likely to be binge-consumed and more satisfying when binged? We propose that two factors positively interact to predict binge-worthiness: the content’s perceived media resonance (i.e., elicited cognitive and emotional engagement, reflected in curiosity and emotionally intense experiences) and complexity (i.e., cognitive effort demands). This combination creates *media momentum*: an impetus to continue watching even in the absence of the elements driving consumers’ initial choice and liking of the show, experienced as craving and expected utility from watching an additional episode. Across 6 pre-registered experiments and one secondary data analysis, we find that the interaction of these two factors best predicts binge-worthiness: higher resonance and complexity experienced in one episode predicts *media momentum*, as well as a greater likelihood to keep watching and greater satisfaction when the show is clumped rather than separated. Thus, we suggest that a relatively simple self-report of resonance and complexity perceptions can predict when binge-watching is a better choice than separated viewing, supporting better strategies for platforms and more satisfying viewing choices for consumers.

Keywords: binge-watching, satisfaction, complexity, resonance, momentum

WORTHY OF YOUR BINGE: HOW MEDIA MOMENTUM DRIVES SATISFACTION IN CLUMPED CONSUMPTION

Binge-watching, defined as the uninterrupted consumption of multiple episodes of serialized media (e.g., Flayelle et al. 2020; Schweidel and Moe 2016; Starosta and Izydorczyk 2020) is a part of life for 72% of Americans (Newscaststudio 2023). Recognizing its potential to foster engagement and increase product satisfaction, some streaming companies have adopted a “simultaneous release” strategy (Business Insider 2016; Ampere 2016; Praisten 2019) and even coined the term “binge-worthy” to promote certain shows (Wired 2021; Rotten Tomatoes 2025).

However, it is not always clear that binge-watching episodes of a show leaves consumers more satisfied than spreading them out (Choi, Chae, and Feinberg 2025; The Verve 2022). A recent survey conducted by the authors¹ suggests that 58% of consumers feel that content often listed as “binge-worthy” is not, in fact, suited to this type of consumption. Further, 53% report that binge-watching creates no more satisfaction than temporally separating episodes, while 26% say it provides less. In short, while binge-watching certain shows might be enjoyable, this value is hardly universal—raising the question: What makes programs binge-worthy to consumers?

This paper seeks to answer such a question. Our central thesis is that for media to be binge-worthy, it is not enough that its episodes are thematically interconnected or liked by viewers—though both factors do contribute (e.g., Schweidel and Moe 2016; Woolley and Sharif 2022). Rather, we theorize that binge-worthy media—more likely to be binge-watched and more satisfying when binged—are those generating sustained perceptions of what we call *media momentum* among consumers: an intense subjective impetus to keep watching, even in the

¹ Survey instrument and data available on ResearchBox: https://researchbox.org/2388andPEER_REVIEW_passcode=UNJGTP

absence of the elements driving initial choice. We also recognize that, while the more episodes an individual has watched of a show, the “stickier” it may become due to simple behavioral inertia (Schweidel and Moe 2016), media momentum goes above and beyond this effect.

Specifically, we hypothesize that content characterized by media momentum displays higher as opposed to lower perceived media *complexity*, requiring effortful engagement, and higher as opposed to lower perceived media *resonance*, evoking affective and cognitive involvement via intense emotions and curiosity. The positive interaction of these two forces experienced in one episode will create a higher craving and willingness-to-pay to watch the next (i.e., higher media momentum), a higher likelihood to keep watching and higher satisfaction when these high-momentum episodes are clumped rather than separated. Considering the extent to which media is perceived to possess these properties allows us to explain consumers’ preference for bingeing versus temporally spacing episodes, as well as the degree of satisfaction with each of these consumption patterns; that is, whether media truly is “binge-worthy.”

Data from 6 pre-registered experiments ($n = 3097$) and secondary data analysis support these ideas. Consistent with our conceptualization, we find evidence that individuals’ impetus to keep watching a show, above and beyond baseline liking of the product and inertia effects, is predicted by an interaction of its perceived media resonance and perceived media complexity, translating in higher chance to binge-watch its episodes. Most importantly, satisfaction for high-media-momentum shows is greater when consumers clump rather than separate consumption—and the opposite is true for low-media-momentum shows.

This work makes several important theoretical and practical contributions. First, prior work examined how some time-varying characteristics of media content—such as the presence of story arcs (Laurino Dos Santos and Berger 2022; Toubia, Berger, and Eliashberg 2021), or

variance in sentiment (Berger, Kim, and Meyer 2021)—affect their overall popularity and rating—but does not consider the effects of these content-related factors on propensity to continue watching after an episode has ended. Second, other studies have focused only on continuation decisions’ contingent elements—such as being at the beginning or end of a series (Lu, Bradlow, and Hutchinson 2022; Schweidel and Moe 2016)—but not on how those decisions are affected by the substantive content of the episodes themselves. We bridge these two streams of research in service of a new question: by considering the relationship between the perceived elements of media’s episodes and consumers’ continuation decisions; and by looking at these elements’ effects on consequent satisfaction for different consumption patterns.

Practically, we offer insights for both consumers and firms. First, we identify measurable subjective perceptions that make content binge-worthy to consumers, offering firms a way to easily pre-test media for its true binge-worthiness, hence allowing them to make more efficient choices in terms of releasing strategies and recommendation systems. Second, we offer a more refined way of thinking about what consumers want to binge-watch and what would make them more satisfied when doing so, hopefully contributing a solution to market inefficiencies in the production phase of new material, to help firms produce content that will actually be valued.

We build a theoretical framework for our research by briefly reviewing prior work on binge consumption and then develop a proposed theoretical account of what makes some programs inherently more binge-worthy than others, focusing on our core constructs of perceived media complexity and resonance as drivers of media momentum. We then report the findings of our empirical tests and conclude with a general discussion of the implications and future directions for this work.

THEORETICAL FRAMEWORK

While a range of binge-watching definitions have appeared in prior work (see Flayelle et al. 2020 and Starosta and Izydorczyk, 2020), the most widely accepted is “the consumption of multiple episodes of a television series in a short period of time” (Schweidel and Moe 2016).² As such, binge-watching is a form of “clumped consumption:” a pattern where goods are purchased in bursts periods, rather than at a consistent, regular pace, resulting in a large number of units repeatedly and uninterruptedly consumed in a single session (Lu et al. 2022).

Prior work offers two contrasting views on binge-watching. One body of research views bingeing as problematic (e.g., Walton-Pattison, Dombrowski, and Penseau 2018), a type of addiction that stems from the inability to control consumption (e.g., Riddle et al. 2018), leading to negative health effects like sleep deprivation and disrupted social relationships (e.g., Gabbiadini et al. 2021). In contrast, other work offers a positive view of binge-watching, seeing it as a deliberate (Pittman and Sheehan 2015; Pittman and Steiner 2021), even planned decision (Lu et al. 2023). Within this view, bingeing provides a positive immersive experience allowing consumers to draw immediate utility from such sources as increased attention, narrative transportation and the lure of story completion (Lin, Narender, and Zak 2022; Pittman and Steiner 2019; 2021). It is this latter, intentional, form of binge-watching we focus on in this research, with regard to the decision to continue watching and its implications on satisfaction.

While we know much about individual difference factors that drive binge-watching and its effects, we know much less about what makes some *programs* more prone to binge-watching

²The exact temporal demands vary, with some defining it as viewing between 2 and 6 episodes of a TV show (Netflix 2013), and others as watching that at least 3 hours-worth of episodes (Rubenking and Bracken 2018). We will test both structures.

than others. For example, work that has sought to offer mathematical characterizations of binge consumption finds that binge-watching tends to be inertial: the longer one watches, the more one is likely to keep watching, and end-of-series effects are common, with viewers particularly likely to continue watching when the series finale is proximate (e.g., Lu et al. 2022; Schweidel and Moe 2016; Trouleau et al. 2016). Missing from such investigations, however, is an understanding of the underlying elements of individual episodes, as perceived by consumers, that are most likely to cause these continuation decisions.

Likewise, some work suggests that a necessary condition for binge-watching is for episodes to be thematically linked (e.g., Schweidel and Moe 2016; Woolley and Sharif 2022; Lu et al. 2023). But it is clear that connectedness alone does explain binge consumption; Schweidel and Moe (2016), for example, note that binge-watching tendencies vary widely across genre. Even within genres, an examination of prior findings reveal that consumers exhibit different degrees of binge-watching preferences for shows that are seen as equivalently interconnected—all having recurrent characters, stories that evolve across episodes, and chronological order coherence. For example, in Lu et al. 2023’s Study 1, consumers perceive shows like “Breaking Bad” and “Grey’s Anatomy” as equally sequential, and yet they would rather clump the first and separate the latter, as observed in Figure 1 – following References.

So, what might explain this variance in binge-worthiness? In what follows we develop a series of hypotheses about causes for desires to binge-consume, and the circumstances under which binge consumption leads to higher satisfaction.

What Leads to a Preference for Clumped Consumption? The Role of Media Momentum

We suggest that, beyond effects of liking and interconnectedness, variance in binge-worthiness can be explained by variance in two properties of a program: its perceived complexity and its resonance. As will be elaborated below, complexity reflects the degree of intricacy and temporal variance in plot elements creating an effortful experience for the viewer, while resonance is the ability of those elements to generate cognitive and emotional engagement via curiosity and intense emotions. When combined, these elements are theorized to create “media momentum,” a heightened sense of craving and expected utility (i.e., willingness-to-pay) to watch consequent episodes. We will discuss each in turn, then explain our prediction related to their interactive effects on media momentum.

Perceived Media Complexity. To be bingeable, it is essential for a program’s narrative structure to attract and hold consumers’ attention for sustained periods of time. While a number of factors could contribute to attention, we suggest that the most fundamental is narrative complexity. Following Toubia et al. (2021), we define complexity as the amount of information contained in a story and its variance over time while viewing (Toubia et al. 2021). The need for complexity should be clear; the more complex a plot is, the greater the cognitive resources that must be allocated to process it, away from competing stimuli that could detract attention.

As an illustration of this effect, Mittel (2006) found that the greater cognitive effort demanded by a plot is a predictor of success for some of the most loved TV shows in television history, such as “Lost,” “The Sopranos,” or “Buffy the Vampire Slayer.” Likewise, Laurino Dos Santos and Berger (2022) found that narratives with a slower moving pace at the beginning (i.e., easier to process, due to a higher degree of semantic similarity) and faster moving pace towards the end (i.e., more difficult to process, with a lower degree of semantic similarity) are

characteristic of well-rated movies. Similarly, Toubia et al. (2021) found that narrative speed (i.e., how fast the author gets to a point), volume (i.e., how many points are covered in a single episode) and circuitousness (i.e., whether points are reached in a linear or non-linear fashion) explains the success of TV shows, movies and academic papers. Beyond this, Berger and Packard (2018) found that media complexity is a predictor of song popularity; the more a song's melody, lyrics, and production departed from the genre norms—requiring greater cognitive effort to process—the more successful it was. Finally, Bermejo-Berros, Lopez-Diez, and Martínez (2022) find that the non-linearity of a plot contributes to the audience's enjoyment of a movie.

However, plot complexity need not always be a positive. For one, binge-watching does not relate to the consumption of a single movie, one-time narrative or song but rather the consumption of a story broken into parts. Its negative effects might particularly arise in serial narratives, which tend to involve more characters' interactions, more frequent changes in timelines (Toubia et al. 2021), and, in general, a more non-linear storytelling (Piper and Toubia 2023; Hoeken and Van Vliet 2001; Mittel 2006) than movies or stand-alone episodes—all elements contributing to a higher volume and variance of information. Binge-watching also does not relate to the experience of watching temporally separated episodes, as is the case in the staggered-released shows Mittel (2006) bring as examples. Involving uninterrupted viewing, binge-watching complex plots implies repeatedly encountering diverse, time-varying elements in a short period of time, which can prove fatiguing for consumers (Salomon, 1983).

Complex stories can then easily become excessively effortful to watch, and rather than drawing consumers in, they could lead to disengagement (Westbrook and Braver 2015; Wickens 2014; Kahneman 1973). As such, while the presence of complexity is a necessary condition for

sustained watching of serial media, it is not a sufficient one. Rather, we propose that a second factor may be needed to make a series binge-worthy: the resonance of its elements.

Perceived Media Resonance. Media resonance is the ability of a narrative to activate a strong sense of empathy and transport for the characters and story depicted (Greenblatt 1990), perceived by consumers as the experience of intense emotions such as joy, fear, and sadness (Rosa 2019) and by cognitive drives such as curiosity (Hoeken and Van Vliet 2001).

Media resonance is likely to have a positive effect on engagement via both its affective and cognitive pathways. For instance, past research suggests that in single-episode consumption, audiences tend to prefer media with which they can resonate (Rosa 2019; Greenblatt 1990) as reflected in the effects that its two components, curiosity and emotional intensity, generate in the viewer. Cognitive experiences like curiosity have been shown to make ads more effective (Sevilla and Meyer 2020) and foster sustained levels of attention (Chater and Loewenstein 2016; Loewenstein 1994) and engagement (Wade and Kidd 2019; Wirz et al. 2023). Similarly, affective experiences created by emotionally intense content has been shown to associate with the popularity of movies and articles (Berger et al. 2021), the virality of news (Berger and Milkman 2012), sustained levels of attention (Yiend 2010) and increased motivation to read information (Berger, Moe, and Schweidel 2023; Bolkan 2015).

However, like complexity, it is not clear that perceived media resonance alone will help us understand binge-worthiness. Indeed, repeatedly experiencing resonance in consecutive episodes of the same media might decrease its effectiveness. As prior research has suggested, emotions become less intense the more often they are experienced (Galak and Redden 2018) and the drive created by curiosity can diminish once schemas repeat themselves (Galak, Kruger, and

Loewenstein 2013), making resonance less effective over time. Thus, even content that stimulates high degrees of resonance can eventually lead to decreasing audience engagement, boredom (Galak, Kim, and Redden 2022) and interrupted consumption (Nelson and Redden 2017). So, collecting perceived media resonance alone is also not likely to be sufficient to predict binge-watching tendencies and the consequent level of post-binge satisfaction.

The Perceived Media Complexity by Resonance Interaction. Taking this past work together, we suggest that perceived media resonance may interact with perceived media complexity in important ways for the clumped media consumption context. There are two main reasons for this prediction.

First, perceived media resonance may have a positive effect on continued consumption by effectively decreasing the effort necessary to process complexity across episodes (Lamina and Chase 2021; Sayali, Heling, and Cools 2023). That is, high degrees of resonance will mitigate negative effects of high complexity—and may even convert its attention-capturing tendencies into positive effects (Boyd, Blackburn, and Pennebaker 2020; Laurino Dos Santos and Berger 2022). Consistent with this, past work offers hints that emotionally and cognitively involved viewers can overcome barriers to continued narrative engagement created by complexity (Reagan et al. 2016; Bermejo-Berros, Lopez-Diez, and Gil Martínez 2022).

Second, complex plots may disrupt adaptation to resonance. By continuously increasing the amount of information that consumers process and varying the delivery of this information, narratives perceived as complex may keep consumers from adapting to the emotional intensity or curiosity associated with a show as a whole (Cox and Cox 2002; Chen and Redden 2023).

Indeed, the combination of sustained levels of attention and consistent patterns of rewards is implicated in other tasks that unfold over multiple episodes, such as in learning environments (Iso-Ahola and Dotson 2016; Chater and Loewenstein 2016), sports performances (Qiu et al. 2024), and the formation of superstitious beliefs (Doughty, Shahan, and Lattal 2001). In each case, individuals face both complexity, in the form of a challenging task or confusing circumstance, and resonance, in the form of curiosity or emotional satisfaction. When both elements are present and interact with each other, people tend to persist in an activity (Nevin and Grace 2000), exhibiting behavioral momentum (e.g., “tendency to adopt a behavior even in absence of the original input that caused it;” Nevin and Shahan 2011).

We thus suggest that not perceived resonance nor perceived complexity are enough alone to explain the kind of sustained and increased engagement that would lead to media momentum. Rather, the interaction of the two seems to be the likeliest to foster binge-watching tendencies: plots perceived as resonant can discount complexity, reducing the negative effects of cognitive effort; and plots perceived as complex can disrupt hedonic adaptation, prolonging the positive effects of resonance. Together, this theory yields the following hypothesis related to our first criteria of binge-worthiness—peoples’ likelihood to clump as opposed to separate consumption:

H1: As perceived media resonance increases, the negative effect of perceived media complexity on craving and expected utility from continued consumption decreases, yielding a higher likelihood to binge-watch.

What Leads to Higher Satisfaction for Clumped Consumption rather than Separated Consumption?

We next switch our focus to the second element of binge-worthiness: satisfaction with the content watched. We propose that a show's average media momentum will determine the extent to which clumping its episodes as opposed to watching them temporally separated increases satisfaction. When a story is characterized by high average momentum, we propose that separating it into multiple consumption occasions may imply higher costs, lowering satisfaction.

First, interrupting a resonant experience creates an immediate cost: stopping a curiosity inducing and emotionally intense show generates craving for what the story will bring next (Litman 2005; Zimmermann 2015). Hence, if halting the immersive experience of binge-watching is already painful (Lin et al. 2022; Nelson et al. 2009), stopping high momentum shows may be next to impossible: the more a show is perceived as resonant, the more painful it will be to stop watching it due to the high level of unsatisfied craving at the moment of interruption.

Second, interrupting a complex story will generate a future cost: a plot requiring effort to be followed is generally difficult to recall if the story is picked up again (McNamara and Houston 1987; Gardiner, Craik, and Bleasdale 1973) and complex stimuli are stored in viewers' memories for a shorter period of time (Bordalo, Gennaioli, and Shleifer 2017; Eng, Chen, and Jiang 2005). Moreover, the strong emotions and curiosity evoked by content consumers resonate with will also be more difficult to remember as time passes by (Tyng et al. 2017), disrupting narrative transportation (Erickson, Dal Cin, and Byl 2019) and decreasing craving for a too-long-awaited episode that has now lost hedonic value (Redden 2015; O'Brien 2015; O'Brien and Smith 2019). Hence, not only it will be more painful to stop watching a story perceived as high in momentum, but it will also be more painful to pick it back up, implying that separating high momentum content will harm satisfaction in a way that binge-watching it does not.

Shows containing many episodes perceived as high in complexity and resonance will then lead to higher satisfaction when clumped rather than separated: the high levels of craving generated by such content are immediately satisfied by watching the next part of the story right away and recall difficulty is mitigated by the shorter time intervals between consumption. Specifically, we hypothesize:

H2: As media momentum increases, a separated viewing of content compared to a clumped viewing will decrease satisfaction.

OVERVIEW OF EXPERIMENTS

We test our theory in 6 experiments and through secondary data analysis. Throughout these studies, we capture perceptions of media resonance in terms of the subjective experience that consumers have - cognitive engagement in the form of curiosity and affective engagement in the form of emotional intensity. We average these to create a measure of perceived media resonance, which we will refer to simply as "resonance." Similarly, we capture perceptions of media complexity in the subjective experience of effort, which we will refer to as "complexity." Study 1 first establishes a correlation between the elements of a show's average degree of momentum (i.e., perceived complexity and resonance) and consumers' ratings of its binge-ability, suggesting that the addition of these factors in our models explains variance observed in prior work. Study 2a-2b test hypothesis 1, confirming that media momentum, measured as craving and willingness-to-pay to continue watching, is more likely to arise when high levels of complexity—which normally would suppress watching—is accompanied by high resonance. Study 3 further tests hypothesis 1, investigating whether this interaction predicts the likelihood to keep watching the next episode for

four different TV shows varying in genre. Finally, Study 4a-4b test hypothesis 2. Study 4a tests whether separating rather than clumping a high-momentum-show decreases satisfaction, using a low-momentum-show as comparison. Study 4b replicates this result, testing for the mediating role on satisfaction of disutility measures associated with separating high-momentum-content (e.g., recall difficulty and decreased craving). In Study 5, archival data offer further evidence for hypothesis 2, suggesting that titles from high-momentum-genres receive higher ratings when they are clumped rather than separated, while the opposite happens for low-momentum-genres shows. All pre-registrations, study materials, data and code can be found at: https://researchbox.org/2388andPEER_REVIEW_passcode=UNJGTP.

STUDY 1

Study 1 tests the relationship between media momentum (measured by its elements: perceived complexity and resonance) and variance in perceived binge-worthiness, holding constant the show's interconnectedness, liking, and familiarity. To do this, we build on work by Lu et al. (2023), who demonstrated the importance of interconnectedness in driving intentional bingeing of the type we take as our focus. As shown in Figure 1, that work demonstrated that shows perceived as being more sequential than independent are associated with a higher intention to binge-watch. However, as shown in the circled section of the Figure, results also indicate that several shows are perceived as being equally sequential while still exhibiting different degrees of binge-ability. Based on our hypothesis 1, we propose that the variance in binge-watching intention for shows that are judged as equally sequential might be explained by consumers' perceptions of their complexity and resonance.

Participants and Design. 402 US-based online panelists from Connect (43% female, $M_{\text{age}} = 37.21$, $SD_{\text{age}} = 11.11$) completed the study in exchange for monetary compensation. Lu et al. (2023)'s Study 1 provides ratings of shows in terms of the percentage of people who classified them as more sequential (i.e., overlapping story with recurring characters) v. independent in nature, as shown in Figure 1. Using findings in Lu et al. we selected shows classified as sequential by more than 50% of people familiar with the shows. The resulting 58 shows fall in the circled area of Figure 1. We augmented this list with 13 more current shows, listed by Wired within the 100 most popular show in 2023 (similar for what Lu et al. did in their paper for shows in 2020) and selected because of their episode's length (i.e., 20-minutes long is the ideal length for stimuli in our lab experiments), for a total of 71 shows. None of the participants were familiar with 3 of the shows listed, meaning the final sample is of 68 shows.

We then followed Lu et al.'s method to augment their analysis with our proposed explanatory factors, resonance and complexity. Both would need to be present, given our theory. As in their work, we did this by first asking participants to identify the shows with which they were familiar or had watched before from this list. Participants were then randomly assigned to one of four between-subjects conditions, patterned after Lu et al.: in the first condition, they dragged the shows they had selected as familiar to a "Plan to binge-watch" or "Plan to watch one-by-one" box. In the second condition, participants dragged their selected shows into "Effortful to Watch" or "Not Effortful to Watch" boxes. In a third condition, they sorted shows into "Emotionally Intense" or "Not Emotionally Intense" boxes, and in a fourth condition, they sorted shows into boxes labeled "Curiosity Inducing" or "Not Curiosity Inducing."

In each case, prior to sorting, participants read descriptions of the key constructs involved in their task (see ResearchBox, under Study 1). For example, complex shows were defined as “shows where the plot is cognitively difficult to follow, such that you need a lot of effort to follow what is going on in the story.” Emotionally intense shows were described as evoking “stronger emotions in the viewer, such that they may feel emotionally involved and suffer or rejoice with the characters while watching” and curiosity inducing shows were described as shows “where the plot is full of suspense, meaning there is something in the story that makes you curious for what the next bit of it will bring.” Finally, as in Lu et al. all participants classified the shows in “Sequential”/ “Independent” and in “Love it”/ “Hate it”.

Analyses and Results. Participants expressed familiarity with 18 (SD = 13.34) shows on average. We first computed the perceived binge-worthiness, complexity, and resonance for each show. A show’s perceived binge-worthiness was calculated from 0 (0% of people thought the show was bingeable) to 1 (100% of people thought the show was bingeable), based on whether people in the relevant condition sorted it into the box labeled “Plan to binge-watch” rather than as “Plan to watch one-by-one.” Perceived complexity was similarly calculated as the percentage of people who sorted the show into the “Effortful to Watch” box. The percentage of people who classified a show as *both* curiosity inducing and emotionally intense determined that show’s score for perceived resonance (for instance, a show with a score of 0.76 of perceived resonance is a show that 76% of all the people assigned to the third and fourth condition categorized as being curiosity inducing and emotionally intense

Recall that our theory suggests that high momentum is generated when media is both high in resonance and high in complexity. Given this, we composed a Momentum Index for each

show, taking the percentage of people, across the other three conditions, who classified the show as both something they resonated with (i.e., finding it both emotionally intense and curiosity inducing) and something that was complex (i.e., effortful to watch). For instance, a Momentum Index of 0.75 means that 75% of the people assigned to the emotionally intense, curiosity inducing, or effortful condition classified this show as being all of these three things. We then used this index to predict binge-watching propensity. As shown in Figure 2 – following References, we observe a significant positive correlation between the Momentum Index and the Binge-Watch Index ($r = .48$, $t(66) = 4.41$, $p < .001$). We note that this r-squared exceeds that obtained in Lu et al. using a model relying only on sequentiality ($r = .33$, $t(98) = 3.47$, $p < .001$).

Given that we selected shows with a higher degree of sequentiality, we estimate three different models reported in Table 1: (1) a linear regression on the Binge-Watch Index predicted by the Momentum Index, (2) the same linear regression with popularity and liking included as covariates, to control for attitudes toward a show and its popularity, and (3) a third linear regression where we estimate the effect of popularity and liking alone. We also report (4) the results from the Lu et al.'s model.

Discussion. Study 1 suggests that capturing the components of media momentum may allow us to better explain binge-watching variance in prior work: even though many shows are interconnected, they may vary in their likelihood to be binged based on perceptions of their complexity and resonance. However, this study presents only correlational evidence, examining perceptions that consumers have regarding shows with which they are familiar and operating at an aggregate level, capturing the show rather than the episode-specific experiences of complexity and resonance. Study 2a and 2b were designed to test for stronger causal evidence of hypothesis

1 and to capture the subjective experience of momentum as it unfolds, through expected utility and feelings of craving for consecutive episodes.

STUDY 2

Study 2a and 2b test hypothesis 1, examining whether the positive interaction of perceived complexity (i.e., cognitive effort demands) and perceived resonance (i.e., cognitive and emotional engagement offered) leads to higher media momentum (i.e., craving and willingness-to-pay to watch the next episode). For this study and all that follow, we use multiple shows divided into consecutive clips of similar length as operationalizations of serialized content. To ensure the effects tested are not inherent to a specific show, genre or resonance and complexity level, we used different shows that varied in their levels of resonance and complexity across clips-within show and across shows. Full information regarding the average levels of resonance and complexity across shows are provided in the Web Appendix.

Study 2a

Study 2a tested whether the interaction of perceived resonance and complexity in one episode can predict higher willingness-to-pay to watch the next, thus experimentally testing hypothesis 1.

Participants and Design. A total of 292 US-based online panelists from Prolific (51% female, $M_{\text{age}} = 41.03$, $SD_{\text{age}} = 12.46$) were assigned to view eight consecutive clips composing

the first episode of the 20-minute-long animated show Gravity Falls. Each clip was 2-3 minutes long and sequential in nature. Participants completed the study for nominal compensation.

Stimuli and Procedures. After each clip, participants rated the effort it took to process the clip, as a measure of subjectively experienced complexity (“Based on the clip you just watched, to what extent does this show feel: EFFORTFUL - the plot is cognitively complicated, such that you need a lot of effort to follow the story.” 0 to 100 slider) and perceived resonance. Perceived resonance was captured using one measure for emotional intensity and one measure for curiosity, which were preregistered to be averaged as a resonance index: “Based on the clip you just watched, to what extent does this show feel: EMOTIONALLY INTENSE - watching this show will probably evoke strong emotions in the viewer, you may feel involved and suffer or rejoice with the characters while watching.; CURIOSITY INDUCING - the show is full of suspense, meaning there is something in the plot that makes you curious for what the next bit of it will bring.” 0 to 100 slider.

Participants then expressed their willingness-to-pay to watch the next clip (“If we gave you \$1 extra right now, how much of \$1 would you pay to watch the next clip right now? If you would pay \$1 to watch the next clip, write 100. If you would pay 50 cents to watch the next clip write 50. If you would pay 20 cents write 20 and so on. If you'd rather keep the \$1, write 0.”)

As covariates based in prior work, we measured participants’ perception of the show’s continuity (e.g., Lu et al. 2023) (“Based on the clip you just watched, to what extent does this show feel: INTERCONNECTED - there is an overarching story that progresses from one episode to the other, episodes are connected to one another.” 0 to 100 slider) and level of indulgence, which would account for effect driven by simple indulgent or low-self-control

behavior, based on Sung, Kang, and Lee (2018) (“Based on the clip you just watched, to what extent does this show feel: INDULGENT - watching this show feels like a treat.” 0 to 100 slider) after each clip. We also measured participants’ enjoyment for the show at the end of the experience (“How much did you enjoy this part of the story?” 1 to 10).

Analyses and Results. We first calculated a resonance score by averaging measures of emotional intensity and curiosity ($\alpha = .61$, $p < .001$; $M = 54.04$, $SD = 27.74$, range from 0 to 100)³. We also observed that the willingness-to-pay responses included a large proportion of zeros, leading to a non-normal distribution (number of zeros: 1147 out of 2336 total observations, skewness: 1.21), and thus determined that data should be analyzed using a zero-inflated distribution. We will account for this in our analyses using a zero-inflated negative binomial regression model (Ryan, Evers, and Moore 2021).

Expected Utility. We first tested hypothesis 1 by estimating a zero-inflated negative binomial regression—where the ratings given after each clip were entered as repeated measures that predicted the effect of each clip’s perceived resonance, perceived complexity and their interaction on willingness-to-pay to watch the next. To account for inertia effects suggested in past work (Schweidel and Moe 2016), we also included the linear and quadratic effect of clip number. Results when including covariates are shown in Table 2. The linear ($\beta = .03$, $SE = .02$, $p = .28$) and quadratic effect of clip number ($\beta = .0003$, $SE = .003$, $p = .90$) did not emerge as significant predictors of willingness-to-pay to watch future clips. However, the same analysis

³For all studies, these two measures are strongly correlated (between .57 and .78). As a robustness check we also performed the same analysis using the two measures separately. We replicate our effects and find that some shows are inherently more curiosity inducing than emotionally intense and vice versa. Resonance is still the stronger predictor of our dependent measures. All analyses reported on ResearchBox.

finds a negative main effect of perceived complexity on willingness-to-pay ($\beta = -.004$, $SE = .002$, $p = .04$), a positive main effect of perceived resonance ($\beta = .008$, $SE = .001$, $p < .001$) and, as predicted, a positive effect of their interaction on willingness-to-pay to watch the next clip ($\beta = .00009$, $SE = .00003$, $p < .001$), as shown in Figure 3 – figures and tables after References through. Results are robust to adding liking of the show, interconnectedness and perceived indulgence as covariates.

Discussion. Study 2a provides evidence supporting hypothesis 1. Here, we observe that the level of cognitive effort and resonance perceived in the current clip positively interact to predict participants' willingness-to-pay to watch the next clip at each point of the show (i.e., for each clip), thus providing evidence that complexity and resonance together generate a subjective experience of media momentum.

In the case of the show used as stimulus here, perceptions of resonance and complexity stay constant across clips. In this context, we observe no significant effect of accumulating clips on the consequent desire to watch more—as reflected in the non-significant linear and quadratic effect of number of clips. In Study 2b, we will replicate this result for shows where resonance and complexity do exhibit a higher degree of variance across clips and the number of clips accumulated matters, exploring whether resonance and complexity perceived in a clip can predict media momentum above and beyond inertia effects that may emerge. Moreover, we will use four non-animated TV shows from different genres to exclude the effect is inherent to a specific genre or type of show. Given that these shows are likely to match participants' preferences to very different degrees, we also include liking and familiarity as covariates, to see if they might instead explain likelihood to continue binge-watching.

Study 2b

Following a similar design to Study 2a, Study 2b tested whether the resonance and complexity perceived in one clip interact to explain craving to watch the next. In this study, we divide the first episode of four 20-minute-long TV shows from different genres into 8 consecutive clips. These clips varied in both resonance and complexity, both between and within shows, which allows us to test for robustness to different absolute levels of these factors. We also capture the subjective experience of craving in this study as an alternate operationalization of experienced media momentum.

Participants and Design. A total of 499 US-based online panelists from Connect (56% female, $M_{\text{age}} = 41.86$, $SD_{\text{age}} = 13.67$) were randomly assigned to view eight consecutive clips composing the entire Episode 1 of one of four different shows (i.e., Russian Doll, The Good Place, The Chair, AfterLife), completing the study for nominal compensation.

Stimuli and Procedures. As in Study 2a, participants saw each of the eight 2-3 minutes long clips from one of these shows. They then rated the show's perceived complexity and perceived resonance (as before, resonance is computed as the average of emotional intensity and curiosity; $\alpha = .67$, $p < .001$; $M = 56.09$, $SD = 26.91$). Participants then expressed their craving to watch the next clip ("How much do you crave watching the next part of this story?" 1 = *None at All* to 7 = *A Great Deal*; $M = 4.69$ (1.93)).

As covariates, we collected the average overall rating of the episode, as a proxy for participants' liking of the show ("How would you rate this episode?" 1 to 10; $M = 7.07$ (2.45)) and their familiarity with it ("Have you ever seen the show [title] before?" Yes/No; If No, "How familiar were you with the show?" 1 = *Not at All* to 7 = *Very Much*; $M = 1.44$ (1.00)).

Analysis and Results. Familiarity with the Show. While the majority of the sample had never seen the shows *The Chair* (98%), *Russian Doll* (88%) and *AfterLife* (87%), fewer people had never seen the show *The Good Place* (68%). A one-way ANOVA analyzing familiarity for people who had never seen the show before revealed a significant difference in familiarity levels across shows ($F(3, 422) = 6.77, p < .001, \eta_p^2 = .22$), such that participants were more familiar with the show "*The Good Place*" ($M = 1.85, SD = 1.26$) compared to the shows "*AfterLife*" ($M = 1.38, SD = .99; t(422) = 3.31, p = .006$), "*The Chair*" ($M = 1.23, SD = .84; t(422) = 4.42, p < .001$) and "*Russian Doll*" ($M = 1.44, SD = .88; t(422) = 2.90, p = .02$).

Liking of the Show. Moreover, a one-way ANOVA analyzing liking of the show revealed a significant difference in liking across shows ($F(3, 495) = 4.01, p = .008, \eta_p^2 = .16$), such that participants liked the show "*The Good Place*" significantly more ($M = 7.67, SD = 2.18$) than the shows "*The Chair*" ($M = 6.80, SD = 2.51; t(495) = 2.78, p = .03$) and "*Russian Doll*" ($M = 6.69, SD = 2.56; t(495) = 3.17, p = .009$), but no more than the show "*AfterLife*" ($M = 7.15, SD = 2.45; t(495) = 1.70, p = .32$). We will hence include familiarity and liking as covariates in our focal model.

Craving. We tested hypothesis 1 by estimating a repeated measures linear regression predicting the effect of perceived resonance, perceived complexity and their interaction on craving to watch the next clip, controlling for the fixed effect of the show and, as in Study 2a, both a linear and quadratic effect of clip number (i.e., time).

The analysis revealed a positive significant effect of number of clips watched on craving ($\beta = .05$, $t(3488) = 2.75$, $p = .006$, $\eta_p^2 = .01$), such that consumers experience higher degrees of craving as they progress through the story. However, we also note that this increase in craving decreases after a certain number of accumulated clips, resulting in a marginally significant negative quadratic effect on craving ($\beta = -.007$, $t(3488) = 3.26$, $p = .001$, $\eta_p^2 = .06$). As hypothesized, the same repeated measures linear regression finds a negative main effect of complexity on craving ($\beta = -.007$, $t(3488) = 4.26$, $p < .001$, $\eta_p^2 = .08$), a positive main effect of perceived resonance on craving ($\beta = .04$, $t(3488) = 35.45$, $p < .001$, $\eta_p^2 = .86$) and a positive interaction on craving ($\beta = .00006$, $t(3488) = 2.27$, $p = .02$, $\eta_p^2 = .04$), such that, as resonance increases, higher levels of perceived complexity increase craving for the next clip.⁴

As shown in model 2 of Table 3, our main results are robust to adding overall rating of the show to the model, as a proxy for liking, and familiarity with the show as captured in the scaled measure.

Discussion. In Study 2b we find again that the positive interaction of cognitive effort and resonance perceived in each clip is predictive of media momentum—that is, a higher level of

⁴ The show Good Place is inherently craved more than any other ($\beta = .38$, $t(3488) = 2.72$, $p = .007$, $\eta_p^2 = .15$), due to its overall rating being the highest among the shows ($M_{GP} = 7.67$; $SD_{GP} = 2.18$; $M_{TC} = 6.80$; $SD_{TC} = 2.51$; $M_{RD} = 6.69$; $SD_{RD} = 2.56$; $M_{AF} = 7.15$; $SD_{AF} = 2.45$; $F(3, 495) = 4.01$, $p = .008$), as the analysis on liking of the show below confirms. Relatedly, the overall rating for the show “The Good Place” was positively skewed, showing the least amount of variance. Additional by-show analyses are included in ResearchBox – Study 2b.

craving to watch the next clip. This can be observed when using four shows divided into short segments, despite differences in the shows' genre, general levels of liking as reflected in ratings, and content. Moreover, in this data, we observe that craving marginally increases over accumulation of clips, consistent with a behavioral momentum effect (Nevin and Grace, 2000). However, the interaction of resonance and complexity persists even after accounting for these effects, providing further evidence that media momentum goes above and beyond a simple inertia effect.

To this point, we have forced participants to watch all clips present for an episode, so that we can test hypothesis 1 with regard to the subjective experience of momentum—the impetus that a participant feels to keep watching. However, we have not yet shown that this interaction will determine participants' likelihood to binge-watch—that is, to continue watching when they have the option to discontinue. We explore the relationship between each clip's level of perceived complexity and resonance and binge-watching likelihood in Study 3, testing how different degrees of momentum across clips of the same show might shape the continuation decision necessary for binge-watching to occur.

STUDY 3

Study 3 tested whether the level of resonance and complexity perceived in a clip can predict the persistence to keep watching.

Participants and Design. A total of 500 US-based online panelists from Connect (55% female, $M_{\text{age}} = 41.82$, $SD_{\text{age}} = 13.26$) were randomly assigned to one of the four shows used in study 2b, which were treated as replicates, completing the study for nominal compensation.

Stimuli and Procedures. Participants saw the first of the eight 2-3 minutes long clips from one of these shows and rated the episode's perceived complexity and resonance with the same measures used in the previous two studies. They were then offered the choice to keep watching the next clip or to switch to another task ("Click on "keep watching" if you would like to see the next episode of this TV show right now. Click on "switch" if you would rather switch to another task.") To keep incentives constant, if they chose to switch, participants worked on word puzzles for the remaining time, finishing at the same time as everybody else, no matter when they chose to switch.

Moreover, we collected the overall rating of the episode as a proxy for individual liking of the show ("How would you rate this episode?" 1 to 10; $M = 1.50$ (.96)) and familiarity with the show ("Have you ever seen the show [title] before?" Yes/No; If No, "How familiar were you with the show?" 1 = *Not at All* to 7 = *Very Much*; $M = 7.08$ (2.35)) to be used as covariates.

Analysis and Results. Baseline Likelihood to Keep Watching. We first restructured the data such that each subject in the dataset has as many rows as the number of clips watched, and we create a dummy variable of the event "switch" coding the choice to keep watching as 0 and the choice to switch as 1, meaning a subject that switches after one clip will have only one row, a subject that switches after two clips will have two and so on. We use this data structure to

estimate the different “risks of switching” associated with each show ($R^2 = .49, p < .001$) using a discrete-time hazard model.

We first observe substantial variation across the shows that were used as replicates. As depicted in Figure 4, the analysis reveals that, compared to watching “AfterLife”, participants assigned to watch the show “Russian Doll,” which has a higher level of complexity and a lower level of resonance perceived in its first clip, have a 62% higher risk to switch after the first clip ($\chi^2(2074) = 6.39, p < .001$), while participants assigned to “The Good Place” have a 43% lower chance to switch ($\chi^2(2074) = 2.22, p = .03$) and participants assigned to watch “The Chair” exhibit no significant difference in risk⁵ ($p = .67$). We also observe behavioral inertia, conditional on choosing to continue, such that for all shows the risk to stop watching decreases as clips are accumulated (by 67% on average; $\chi^2(2079) = 9.43, p < .001$).

Likelihood to Keep Watching. Knowing that the baseline risk of switching is different across shows, we next estimated a Cox Proportional Hazard model with a Show fixed effect. This model accounts for the fact that at each clip only participants who remain at risk of switching (the “survivors”) provide ratings of perceived effortfulness and narrative engagement and allows baseline hazards to vary across shows, while still estimating the average interaction effect. Thus, we use the fixed effect of the show, the perceived complexity, resonance and their interaction by clip to predict the likelihood to *discontinue* watching (concordance index = .69, SE = .016; LR test ($\chi^2(6) = 131.3, p < .001$). The analysis reveals a significant negative interaction

⁵ The differences in baseline risk to switch can also be explained by the polarizing effect of the shows that have a higher degree of perceived complexity in their very first episodes. More analyses reported in the ResearchBox show how participants watching “Russian Doll” either hated or loved it, while all participants watching “The Good Place” loved it, explaining the difference in hazard rates. The shows “AfterLife” and “The Chair” instead showed normal levels of heterogeneity in liking. This result does not change the effect of resonance and complexity on likelihood to binge given we control for the fixed effect of the show.

effect of perceived resonance and complexity by clip on the likelihood to stop watching ($\beta = -.0002$; $SE = .00009$, $p = .01$), confirming the intuition that episodes perceived as higher in complexity and resonance are more likely to lead to continuation decisions—complete results shown in Table 4. As shown in Figure 5, a higher level of complexity perceived in the clip paired with a lower level of resonance results in the lowest probability of surviving, that is, continuing to watch (blue area). However, if resonance is high, no matter the level of complexity, the probability of surviving is much higher (green areas), especially if media is perceived as high in both (yellow areas).

Adding the familiarity and liking covariates also does not meaningfully change the results: while liking of the show positively predicts a higher likelihood to binge, our main results are robust to adding the overall rating of the show as a proxy for liking, and familiarity with the show to the model.

Discussion. Providing additional evidence for hypothesis 1, Study 3's results suggest that the positive interaction of a clip's perceived complexity and resonance explains the probability that a viewer will keep watching the next clip. This data also provides intriguing findings about the way binge-watching may unfold across different magnitudes of overall show's momentum.

Media that have a higher perceived complexity and lower resonance in their first clip (i.e., *Russian Doll*) result in a lower chance of viewers' continuation compared to media that are higher in resonance and vary in complexity from the very beginning (i.e., the other three). However, if consumers decide to keep watching highly complex shows like "*Russian Doll*", their consequent likelihood to binge-watch is again driven by this positive interaction. We return to

this point in the General Discussion, suggesting further exploration of complexity and resonance may help us understand the mechanism behind differential commitment to media over time.

Thus far, we have provided evidence consistent with hypothesis 1, showing that effects on willingness-to-pay, craving, and likelihood to continue watching episodes of a show can be explained by its perceived level of resonance and complexity, above and beyond previously-identified factors such as interconnectedness and liking or inertia effects generated by the content. However, we have not yet tested hypothesis 2, which posits that the same two factors' interaction will be critical in understanding differential satisfaction with media—as driven by whether it is watched in a binge or separated in time. Study 4a, 4b and 5 turn to this question.

STUDY 4

Study 4a, 4b and 5 will test hypothesis 2 that separating high momentum shows lead to lower satisfaction than separating low momentum shows.

Study 4a

Study 4a tested hypothesis 2 that shows that are higher in momentum lead to lower satisfaction levels when separated.

Participants and Design. A total of 465 US-based online panelists from Connect (46% female, $M_{age} = 37.72$, $SD_{age} = 10.95$) completed the study for nominal compensation. Study 4a was a 2(momentum: low v. high) x 2(viewing mode: separated v. binged) where participants

were randomly assigned to view eight consecutive 2-3 minutes long clips composing one entire episode of a show that was lower in momentum or a show that was higher in momentum.

Stimuli and Procedures. The stimuli selected for this study were two different cartoons, pretested to be lower v. higher in momentum: “Teen Titans” is a high-momentum show, having a higher number of clips perceived as complex (overall $M = 43.68$, $SD = 28.58$, clips ranging from 41.4 to 45.6) and resonant (overall $M = 64.94$, $SD = 25.47$, clips ranging from 57.5 to 69.4), while the show “Phineas and Ferb” is a low-momentum show, having lower overall levels of both complexity (overall $M = 26.94$, $SD = 26.27$, clips ranging from 23.8 to 32.2) and resonance (overall $M = 44.90$, $SD = 27.23$, clips ranging from 39.4 to 51.3)—pretest results in Figure 6.

Participants were randomly assigned to watch either the high or low momentum show. They were also randomly assigned to viewing mode: in the binge-watching condition, they watched all episodes in succession, then completed a set of word puzzles, while in the separate watching condition, they watched one episode at a time, completing a word puzzle in-between.

After each clip, participants expressed their satisfaction (“How satisfied are you after watching this clip?” 1 = *Extremely Dissatisfied* to 7 = *Extremely Satisfied*; $M = 5.44$ (1.43)), and as covariates, we measured participants’ liking of the show (“How would you rate this episode?” 1 to 10; $M = 7.93$ (2.03)) and their familiarity with it (“Have you ever seen the show [title] before?” Yes/No; “Have you ever seen this episode before?” Yes/No; “Have you heard of this show before?” Yes/No). We also collected the resonance and complexity perceived in the show overall at the end of the watching experience, as a manipulation check, given the same explanations and measures as in prior studies.

Analysis and Results. Manipulation Checks. First, we estimated two separate two-way ANOVAs using the assigned show to predict the overall perceived resonance and complexity. Results confirmed that complexity and resonance were manipulated as intended: the show “Teen Titans” is perceived as higher in momentum compared to the show “Phineas and Ferb”, no matter the viewing mode with which it is consumed (complexity: $M_{TT} = 2.38$, $SD_{TT} = 1.13$ v. $M_{PF} = 1.85$, $SD_{PF} = .98$; $t(461) = 4.28$, $p < .001$; resonance: $M_{TT} = 3.43$, $SD_{TT} = .91$ v. $M_{PF} = 2.93$, $SD_{PF} = .92$; $t(461) = 4.69$, $p < .001$).

Satisfaction. We tested hypothesis 2 by estimating a two-way ANOVA predicting satisfaction using the show watched, the viewing mode and their interaction as predictors. The analysis finds a non-significant main effect of show ($F(1, 461) = .006$, $p = .94$, $\eta_p^2 = .0003$), a non-significant main effect of viewing mode ($F(1, 461) = 2.42$, $p = .12$, $\eta_p^2 = .07$) and a significant positive interaction effect of the two ($F(1, 461) = 4.96$, $p = .03$, $\eta_p^2 = .10$). Specifically, contrast analysis reveals that, as hypothesized, separating a high momentum show leads to lower satisfaction ($M_{TT} = 5.20$, $SD_{TT} = 1.28$) than separating a low momentum show ($M_{PF} = 5.70$, $SD_{PF} = 1.07$; $t(461) = 3.09$, $p = .01$).

Effect of Clip Number. We also controlled for the effect of time (i.e., clip number) by running a repeated measures linear regression that predicts satisfaction by the number of clips accumulated, their quadratic effect, the degree of momentum of the show watched (Teen Titans—high v. Phineas and Ferb—low), constant across clips, the viewing mode (binged v. separated) and their interaction—also constant across clips (Marginal R^2 /Conditional $R^2 = .02/.77$; $F(1, 3253) = 9121.13$, $p < .001$).

The analysis revealed a negative significant effect of clip number on satisfaction ($\beta = -.12$, $t(3253) = 5.37$, $p < .001$, $\eta_p^2 = .09$), suggesting satisfaction decreases over time, and a negative significant quadratic effect of clip number ($\beta = .02$, $t(3253) = 7.26$, $p < .001$, $\eta_p^2 = .13$), suggesting it decreases more slowly as clips are accumulated—that is, consumers experience marginally increasing satisfaction as clips are watched, as shown in Figure 6. More importantly, we find a negative significant interaction effect of momentum level of the show and viewing mode, such that watching the high momentum show separated lead to lower satisfaction experienced after each clip ($\beta = -.51$, $t(461) = 2.24$, $p = .03$, $\eta_p^2 = .10$) compared to watching the low momentum show separated, replicating the result reported above by clip.

Liking and Familiarity with the Show were included as covariates: their inclusion did not alter the focal interaction substantially (complete analyses reported in ResearchBox- Study 4a).

Discussion. Study 4a finds evidence in favour of hypothesis 2, suggesting that separating high momentum content might indeed lead to lower levels of satisfaction for the experience. Study 4b will explore the role played by disutility in this lower level of satisfaction associated with temporally separating high momentum content. In particular, Study 4b will explore the relationship between a higher difficulty in retrieval and unsatisfied craving associated with temporally separating higher cognitively effortful and resonant experiences perceived in the content and satisfaction.

Study 4b

Study 4b seeks replication of study 4a's results, while also capturing some information regarding the mechanisms underlying differential satisfaction. Specifically, we capture recall difficulty and momentary craving, to see which potential driver of satisfaction may explain the lower degree of satisfaction when high momentum content is separated rather than binged.

Participants and Design. A total of 939 US-based online panelists from Connect (56% female, $M_{\text{age}} = 36.38$, $SD_{\text{age}} = 11.67$) completed the study for nominal compensation.

Study 4b was a replication of Study 4a, a 2(momentum: low v. high) x 2(viewing mode: separated v. binged) where participants were randomly assigned to view 5 consecutive 2-3 minutes long clips composing the first 15 minutes of Episode 1 of one of two different shows (i.e., Teen Titans—high momentum, Phineas and Ferb's—low momentum), either by watching one after the other and then completing word puzzles or by watching the first clip, completing one puzzle and so on.

Stimuli and Procedures. As in previous studies, participants saw each of five 2-3 minutes long clips from one of these shows and rated their satisfaction ("How satisfied are you after watching this clip?" 1 = *None at All* to 7 = *A Great Deal*; $M = 4.88$ (1.61)) as in Study 4a. In Study 4b, however, before starting the next clip, they also rated craving ("How much do you crave watching the next part of this story?" 0 to 100; $M = 48.9$ (34.01)) and difficulty in recalling the plot ("How difficult is it to recall the plot of the last episode you saw?" 0 to 100; $M = 19.82$ (23.12)). Satisfaction is measured at the end of an episode, while craving and recall difficulty are measured before the start of the next. In the binged condition, this order makes no difference,

while in the separated condition, it means that some time passes before the end of one episode and the recall difficulty and craving measurements.

As covariates, we measured participants' liking of the show ("How would you rate this episode?" 1 to 10; $M = 6.85$ (2.53)) and their familiarity ("How familiar were you with the show [title]?" 1 = *Not at All* to 7 = *Very Much*; $M = 4.24$ (2.16)).

Analysis and Results. Satisfaction. We first replicate the result from Study 4a by estimating a two-way ANOVA to predict average satisfaction using the manipulation of media momentum, viewing mode (separated v. binged) and their interaction. The analysis revealed a significant main effect of the show watched ($F(1, 935) = 6.97, p = .008, \eta_p^2 = .09$), but no significant main effect of viewing mode ($F(1, 935) = .03, p = .87, \eta_p^2 = .005$) or their interaction ($F(1, 935) = .57, p = .45, \eta_p^2 = .02$) on average satisfaction for the show. However, a contrast analysis revealed that separating the high-momentum show "Teen Titans" leads to a lower level of satisfaction ($M_{TT} = 4.60, SD_{TT} = 1.52$) compared to separating a low momentum show like "Phineas and Ferb's" ($M_{PF} = 5.08, SD_{PF} = 1.32; t(935) = 3.69, p = .001$) in this case, while satisfaction is more similar when the shows are binged ($M_{TT} = 4.76, SD_{TT} = 1.44$ v. $M_{PF} = 5.10, SD_{PF} = 1.40; t(935) = 2.64, p = .04$).

Recall Difficulty. We estimated a two-way ANOVA to predict average recall difficulty using the show manipulation (Teen Titans—high momentum v. Phineas and Ferb's—low momentum), viewing mode (separated v. binged) and their interaction. The analysis finds a significant main effect of the show watched ($F(1, 935) = 1.72, p = .19, \eta_p^2 = .04$), a significant main effect of viewing mode ($F(1, 935) = 2.72, p = .09, \eta_p^2 = .05$) and a significant interaction

($F(1, 935) = 2.34, p = .13, \eta_p^2 = .05$) on participants' difficulty of recall. Specifically, separating the high-momentum show "Teen Titans" made it more difficult to recall the plot ($M_{TT_sep} = 25.40, SD_{TT_sep} = 22.70$) compared to watching it in binged mode ($M_{TT_binged} = 18.50, SD_{TT_binged} = 18.04; t(935) = 3.84, p < .001$). Separating the high momentum show also yielded more recall difficulty than separating the low-momentum show "Phineas and Ferb's" ($M_{PF_sep} = 16.10, SD_{PF_sep} = 18.50; t(935) = 3.46, p = .003$).

Craving. A two-way ANOVA predicting craving level as a function of momentum level of the show, viewing mode and their interaction reveals no difference in craving caused by the shows ($F(1, 935) = 2.00, p = .16, \eta_p^2 = .05$), the viewing mode ($F(1, 935) = .72, p = .39, \eta_p^2 = .03$) and their interaction ($F(1, 935) = .10, p = .75, \eta_p^2 = .01$). However, a contrast analysis revealed that waiting to watch the next episode of a high momentum show due to a separated viewing schedule leads to a lower desire to watch the next episode ($M_{TT_sep} = 44.60, SD_{TT_sep} = 32.01$) compared to binging a low momentum show ($M_{PF_binged} = 52.60, SD_{PF_binged} = 32.10; t(935) = 2.73, p = .03$), while craving is more similar in the opposite schedules ($M_{TT_binged} = 48.40, SD_{TT_binged} = 32.91$ v. $M_{PF_sep} = 50.10, SD_{PF_sep} = 30.70; t(935) = 1.41, p = .49$).

Satisfaction predicted by Recall Difficulty and Craving. Finally, we estimated a moderated mediation model where momentum predicts satisfaction through recall difficulty and craving and is moderated by viewing mode using Structural Equation Modeling (i.e., SEM; Gunzler et al. 2013)—code can be found in ResearchBox, folder Study 4b.

This analysis suggests recall difficulty (*Indirect Effect: $b = -.005$, 95% CI, [-.009 to -.001]*) and craving (*Indirect Effect: $b = .036$, 95% CI, [.034 to .039]*) both explained satisfaction

when the episodes were watched in the separated mode and when they were binge-watched (*Indirect Effect Recalling*: $b = -.008$, 95% CI, [-.012 to -.004]; *Indirect Effect Craving*: $b = .033$, 95% CI, [.030 to .036]). Thus, Study 4b provides support for hypothesis 2, explaining how the higher recall difficulty and lower level of craving experienced when high momentum is separated might be responsible for the lower level of satisfaction in this viewing mode, something that does not happen when shows are binged.

Discussion. Study 4b replicates the results from Study 4a, showing that high momentum shows are less satisfying when watched in a separated schedule rather than in a clumped (e.g., binge-watched) schedule, something that does not happen for low momentum shows. However, in Study 4b we also find that these two shows' recall difficulty is different: recalling a high momentum show when its episodes are temporally separated is more difficult than recalling a low-momentum-show's separated episodes.

Moreover, we find that, especially for high momentum shows, waiting to watch the next episode due to a separated viewing mode leads, not only to a higher recall difficulty, but also to a lower level of craving, translating into a lower level of satisfaction when high momentum is separated. In Study 5, we will explore the downstream consequences of these differences, testing how separating high-momentum shows might affect their ratings.

STUDY 5

Study 5 employs data from a tracking app that captures watching habits in anime viewers (i.e., “myanimelist”; dataset available on ResearchBox) to explore the downstream consequences

of clumping shows from a high momentum genre instead of separating them into multiple consumption occasions.

Myanimelist is an app containing archival data on 13,379 anime shows, essentially working as a diary with which consumers can sort these titles into multiple lists to keep track of their viewing and preferences. For the purpose of this research, we use the data contained in the “completed” list, containing the titles of shows users finished watching. In particular, we can observe the last interaction between a show, a user and the “completed” list, meaning we only observe when a user self-reported a show as finished, but not when the show was started or progress over time.

We observe when a title is added to the “completed” list by a specific user for a total of 2,918,787 interactions over 18 years from 2004 to 2022. Finally, we also have information on the anime shows added, such as their release date, the length and number of episodes available and the rating of the show.

Independent Variables. We first identified “high momentum” and “low momentum” genres, using the data collected in Study S1 in ResearchBox. For example, thrillers and dramas are on average high in complexity and resonance, hence classified as high in momentum; comedies are low in both, classified as a low momentum genre—see Table 5 in Web Appendix for reference.

Second, we classify a show as binged vs. separated by using the ratio of its number of episodes and the days passed between release and completion. We consider the show binged if this pace is higher than 9 episodes (~ 3 hours) per day, consistent with prior work (Rubenking and Brecken, 2018). In order to make sure that our binge-watching operationalization implies

multiple episodes have been watched on the same day, we only analyze shows that are released simultaneously. We also only select shows that have more than 2 episodes available to watch (to allow for our “multiple episodes in a row” definition). This leaves a total of 2,112,615 interactions between 73 shows and 500,520 users. We control for the inherent characteristics of the show and the user by adding fixed effects for each.

Product Satisfaction. Ratings for the anime show (out of 10) provide measures of satisfaction.

Analysis and Results. Satisfaction. Given that a show is binge-watched, we test hypothesis 2, checking whether shows belonging to high momentum genres lead to higher ratings when binged rather than separated as opposed to shows coming from low momentum genres. A regression using cross-sectional fixed effects for show and user reveals that, consistent with our theory, shows from a high-momentum genre have higher average ratings when binged rather than separated ($b = .34$, $SE = .04$, $t(296973) = 8.94$, $p < .001$). The same is not true for low momentum shows.

Discussion. Study 5 provides additional support for hypothesis 2, suggesting that binge-watching shows higher in momentum may lead to higher ratings compared to watching them in separate occasions. While being only initial evidence, due to the high heterogeneity in genres that does not allow us to make exact show-level predictions, this result is promising for companies trying to decide how to release their content and for consumers trying to maximize satisfaction with binge-watching sessions.

GENERAL DISCUSSION

At the outset of the paper, we asked what makes some content more binge-worthy than other content. Is the problem that binge-watching is doomed to create hedonic adaptation, boredom or fatigue, thus leading to stubbornly low satisfaction levels? Is it that the wrong shows are labelled “binge-worthy?” Or is the problem that consumers are watching the wrong shows in the wrong way—clumping their viewing when they should separate it, or vice-versa?

We have answered these questions. Defining binge-worthiness in two ways—as both a higher likelihood to binge-watch and a higher satisfaction when doing so—we find that the level of complexity (i.e., the cognitive demands associated with processing the media) and resonance (i.e., the level of curiosity and emotional intensity the media induce) perceived in content interact with each other, positively affecting binge-worthiness.

First, we find that even shows previously seen as equally binge-worthy on the basis of their connectedness can vary in binge-watchability due to the overall complexity and resonance perceived by consumers (Study 1). Second, episodes perceived as having high complexity and resonance are perceived, on average, as higher in media momentum: they lead to higher levels of craving and expected utility from watching the next (Study 2a-2b). Such episodes will consequently lead to a higher likelihood to binge-watch—watch multiple episodes of the same show in a row (Study 3).

Second, shows perceived, on average, as higher in media momentum—that is, with a higher number of complex episodes that the audience resonate with—are also more satisfying when their episodes are watched in a binged rather than separated consumption pattern (Study 4a-4b). It follows that binge-watching shows from high average momentum genres, like thrillers

or dramas, rather than separating their viewing leads to higher ratings compared to clumping rather than separating the viewing of shows from low average momentum genres, like comedies (Study 5).

We find that, in short, the problems with binge-watching can be solved by considering the perceived media momentum at the show, season or even episode level, depending on the practical question we are trying to solve. The average media momentum of each episode might dictate whether the show is best distributed using a simultaneous or staggered release, impacting streaming platforms' revenues quite importantly (Zhao, Mehta, and Shi 2023).

Moreover, based on the tendency to binge-watch of their customers, media companies can better focus their offer, by acquiring more shows that are higher on average media momentum if their customer-base is mostly made of bingers or by acting at the customer-level, refining recommendation systems to propose high-momentum shows to customers that like to binge.

Finally, taking into account media momentum at the episode level can both affect how production companies decide to cut and pace the shows they create and improve the production phase, resulting in shows that are perceived as higher in quality overall.

While our findings might have been prone to limitations such as the use of a limited set of stimuli, a lab setting that allowed us to observe the effects under controlled conditions but also diluted the realistic valence of the results and the possibility of participants multi-screening, we think the present work offers several theoretical contributions and avenues for future research.

First, while the measurement of perceptions rather than concrete characteristics of the show might be adding noise, our theory offers a first bridge between theories on narratives structure and their popularity and theories of clumped consumption. Future research might focus

on closing this distance even more, studying how certain characteristics of narratives can be grouped under the perceptions they create in consumers and in how they drive their behavior in consumption patterns.

Moreover, it would be interesting to study whether consumers are able to infer the average media momentum of a show based on the characteristics they are presented with when they choose what to watch, like the number of episodes, the genre and synopsis. If consumers make such inferences, they might strategically plan to binge-watch certain shows and not others to maximize their satisfaction with the experience. Based on their media momentum inferences, they may also choose what shows to start when they feel like binge-watching and which to avoid if they want to avoid any self-control issues.

Second, while we cannot control for external drivers of binge-watching behavior, like the social utility derived from binging at specific points in time or to binge-watch with other goals than an attentive enjoyment and completion of narratives, this paper offers important contributions to the hedonic decline literature (Galak and Redden, 2018), defining new constructs that might lead to a slower hedonic decline and even to hedonic enhancement in narrative consumption.

Future research might focus on the different types of binge-watching driven by these different goals. Consumers might use binge-watching as a mood regulator, preferring to re-watch comfort shows they have already watched (O'Brien, 2021), or shows that are predictable—and low in resonance—and easy to follow—low in complexity (Boursier et al. 2021). Similarly, future papers may study the effect of binge-watching as a multi-tasking device: it could be that consumers purposely choose to have episodes going in the background to increase the focus on

a work-related task or on the opposite, to distract themselves from a boring, repetitive task like house chores.

Finally, the results presented in the current work can be generalized to other products consisting of one single overarching story that is divided into multiple consumption units, like books (and their chapters), games (and their levels) or concept albums (and their songs). Important to consider, for our framework to be applicable, there should be an interconnected narrative that is costly to separate into multiple consumption occasions that are distant in time—which makes our theory not descriptive of social media rabbit holes, where separating content does not impose a cost of recalling and the craving experienced is for the mindless state of scrolling rather than for the specific content watched, especially when this content is unrelated across its units.

Taken together, these findings help us understand why people are sometimes satisfied and sometimes disappointed by their bingeing sessions. We hope this work offers new contributions to our theoretical understanding of media consumption, and to research on hedonic consumption. Further, we offer important practical implications for companies and customers alike. Companies can use our findings to lower their costs due to market inefficiencies and maximize their revenue: they can easily pretest products for their perceived levels of resonance and complexity and start advertising the right products as binge-worthy. Moreover, if they want to produce binge-worthy content, they can efficiently pretest shows to understand their potential, reducing dissatisfaction with the shows distributed after an expensive production phase (and that consumers binge). Consumers can also improve their decision making to maximize satisfaction, suggesting it's not always bad to binge—they just have to binge what is truly binge-worthy.

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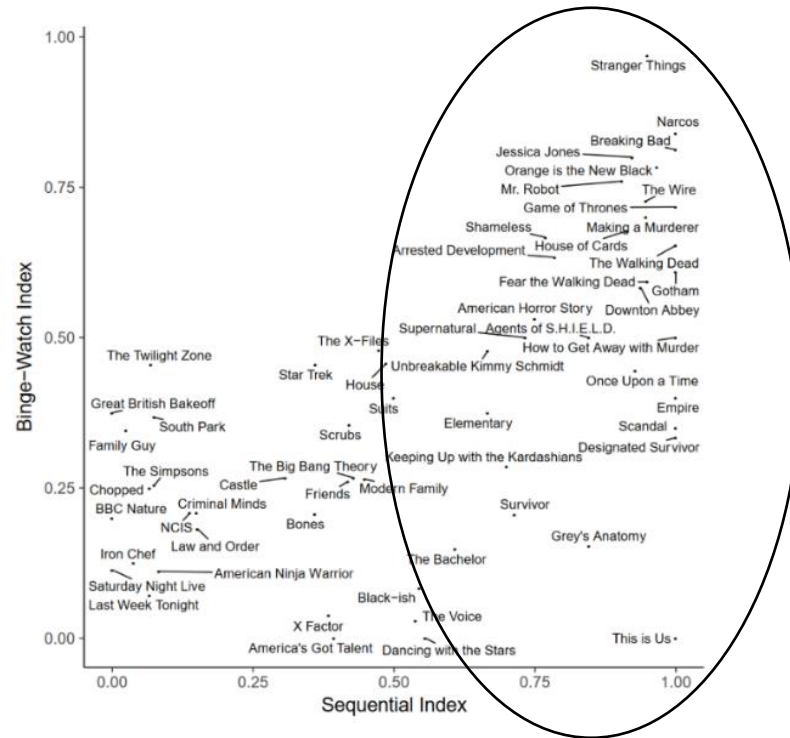
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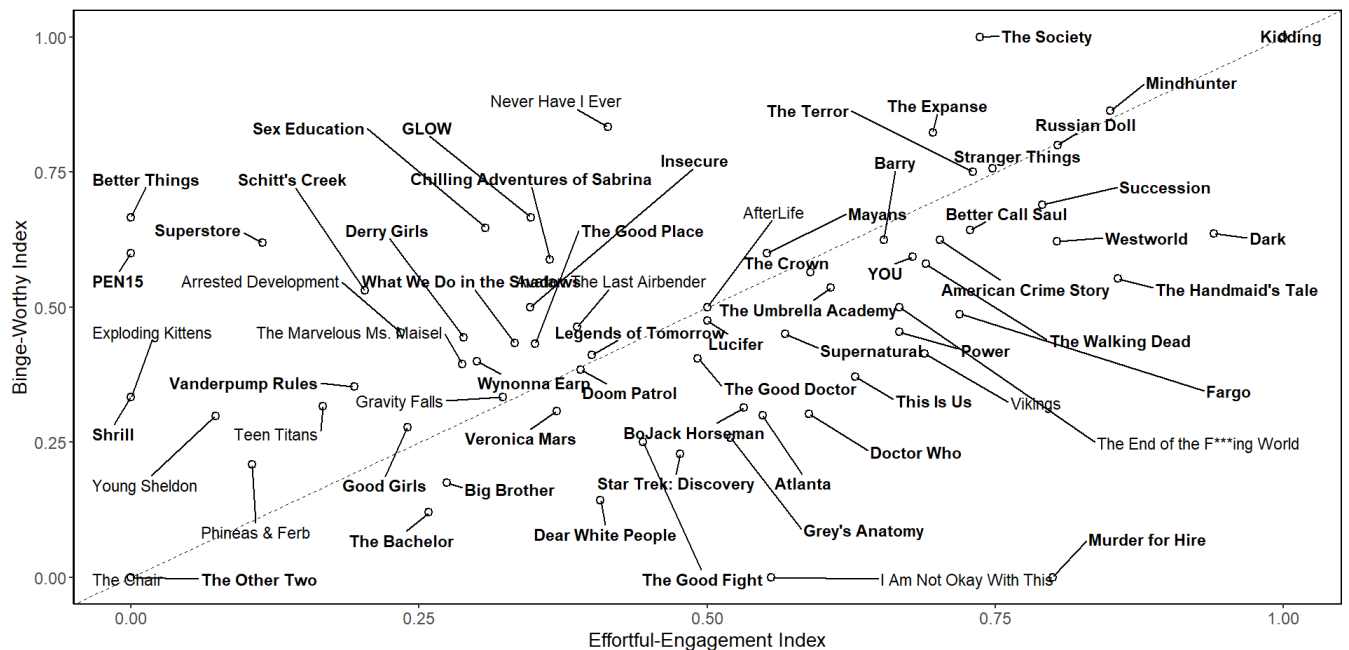
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FIGURE 1: PERCENTAGE OF PARTICIPANTS CONSIDERING THE SHOW SEQUENTIAL AGAINST THE PERCENTAGE CONSIDERING IT BINGEABLE.



NOTE— $r = .33$, $t(98) = 3.47$, $p < .001$; Picture adapted from "Planning to Binge: How Consumers Choose to Allocate Media Viewing Time," by J. Lu, U. R. Karmarkar and V. Venkatraman, 2023, *Journal of Experimental Psychology: Applied*. Advance online publication.

FIGURE 2: RELATIONSHIP BETWEEN MOMENTUM AND BINGEABILITY

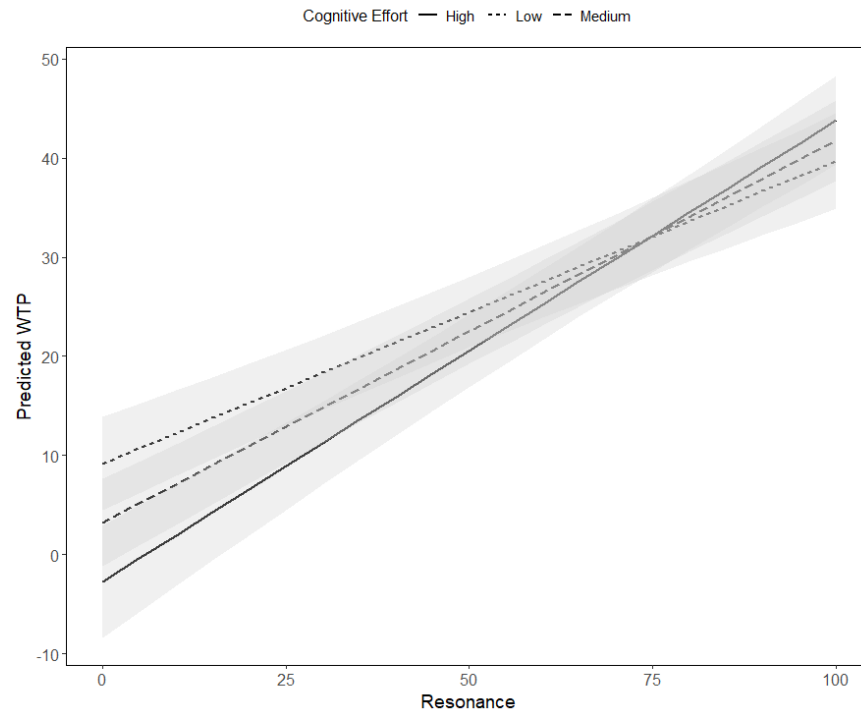


NOTE—Momentum explains variance in binge-watchability of sequential shows, where bold points are shows taken from lu et al.'s study 1.

TABLE 1: REGRESSION RESULTS FOR BINGE-WATCH INDEX ($N = 68$)

Variable	Binge-Watch Index (0 to 1)			
	(1)	(2)	(3)	(4)
Media Momentum Index	.41533*** (.09414)	.30211** (.09636)		
Sequentiality				.26348** (.08553)
Popularity		-.19162 ^{ns} (.13553)	-.16901 ^{ns} (.14424)	-.37371* (.17876)
Liking		.72287** (.22004)	.99174*** (.21597)	.46224** (.14666)
Observations	68	68	68	100
Adjusted R ²	.22	.32	.22	.19
	$F(1, 66) = 19.46, p < .001$			$F(3, 96) = 8.75, p < .001$
		$F(3, 64) = 11.28, p < .001$		$F(2, 65) = 10.57, p < .001$

NOTE—where (1) is a linear regression of the Binge-Watch index on Momentum, (2) is the same analysis including the covariates, (3) is the same analysis with only the covariates and (4) is the Lu et al.'s analysis using sequentiality.

FIGURE 3: INTERACTION OF COMPLEXITY AND RESONANCE ON WILLINGNESS TO PAY TO WATCH THE NEXT BY CLIP (MEAN $\pm$ 1 STANDARD ERROR).

NOTE— with complexity reported as median split (median = 23) for illustrative purposes.

TABLE 2: WILLINGNESS TO PAY (0-100) RESULTS FOR STUDY 2A (N = 292)

Variable	Model
Perceived Complexity	-.00390* (.00199)
Perceived Resonance	.00610*** (.00105)
Resonance*Complexity	.00008** (.00003)
Clip	.02327 ^{ns} (.02438)
Clip ²	-.00009 ^{ns} (.00257)
Indulgence	.00515*** (.00127)
Sequentiality	.00056 ^{ns} (.00069)
Liking	.83233*** (.10071)
Marginal R ² /Conditional R ²	.24/.77

TABLE 3: CRAVING (1-7) REGRESSIONS FOR STUDY 2b (N = 499)

Variable	Model	
	(1) Momentum Only	(2) Momentum and Covariates
Perceived Complexity	-.00686*** (.00161)	-.00692*** (.00157)
Perceived Resonance	.04157*** (.00117)	.03819*** (.00117)
Resonance*Complexity	.00006* (.00002)	.00005* (.00002)
Clip	.05113* (.01858)	.05277** (.01864)
Clip ²	-.00680* (.00209)	-.00689*** (.00209)
Familiarity		.06065 ^{ns} (.12256)
Liking		.28786*** (.01797)
FE(Russian Doll)	-.06042 ^{ns} (.69770)	-.05943 ^{ns} (.11476)
FE(The Chair)	.14362 ^{ns} (.14102)	.23529* (.11524)
FE(The Good Place)	.38445** (.69770)	.25896* (.22703)
Marginal R ² /Conditional R ²	.45/.89	.68/.91

NOTE— where (1) is a repeated measures linear regression on craving predicted by resonance, complexity and their interaction, (2) is the same model including the covariates.

FIGURE 4: COMPLEXITY AND RESONANCE BY CLIP (AS PRETESTED) AND PROPENSITY TO SWITCH (DISCRETE TIME HAZARD MODEL) BY SHOW.

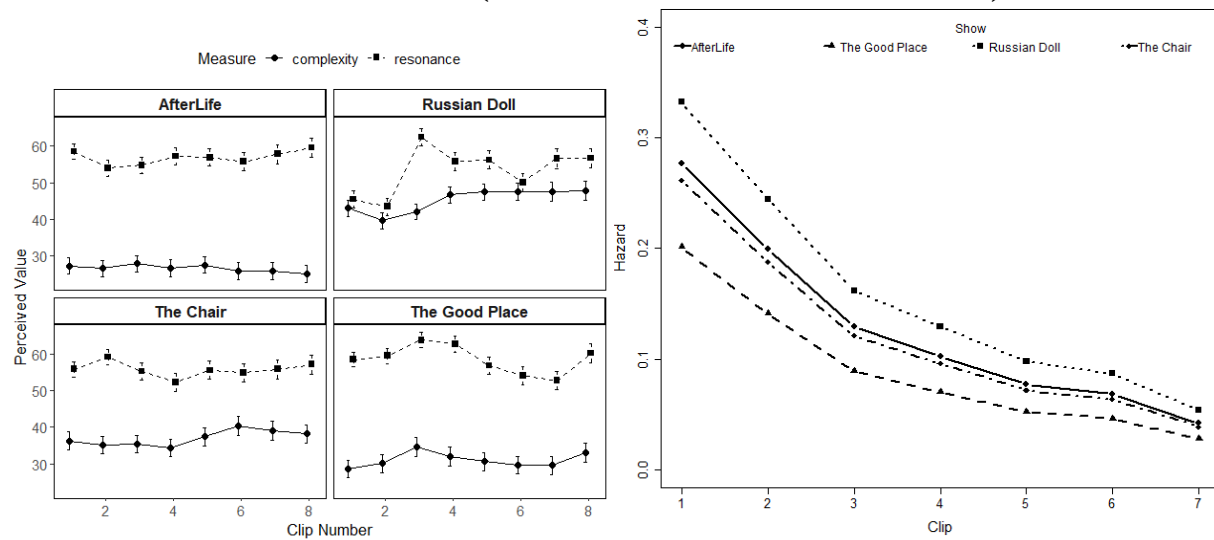
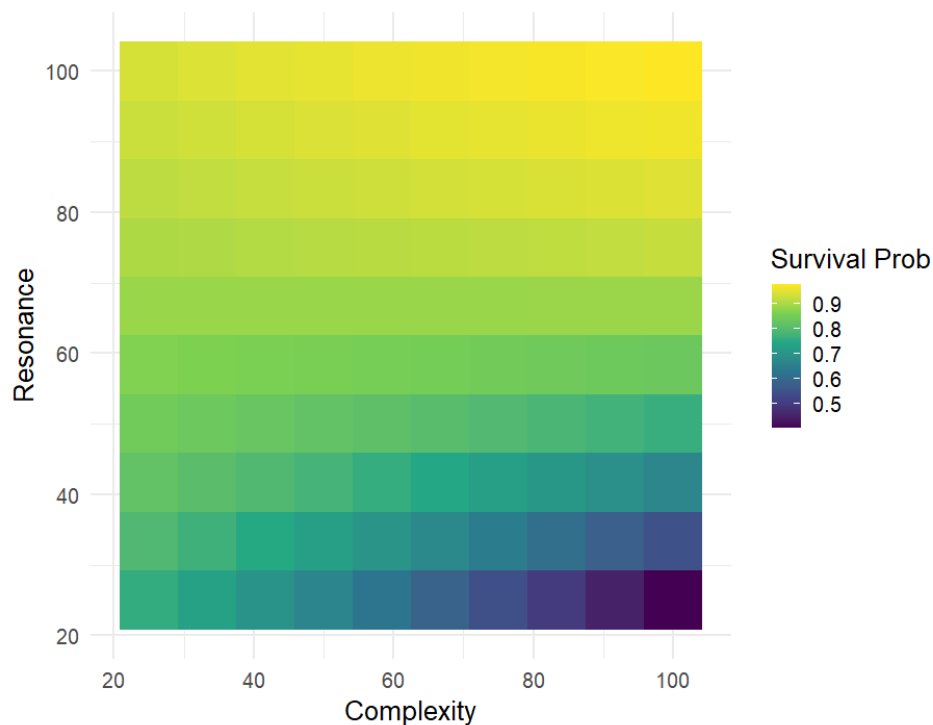


FIGURE 5: PREDICTED PROBABILITY OF STAYING AFTER CLIP 3 BY RESONANCE AND COMPLEXITY LEVELS



NOTE— where the yellow zone is the combination where the probability is highest.

TABLE 4: COX PROPORTIONAL HAZARD MODEL ON CHOICE TO DISCONTINUE (0=NO; 1=YES) FOR STUDY 3 (N=500)

Variable	Model		
	(1)	(2)	(3)
	Perceived Complexity and Resonance Only	Perceived Complexity and Resonance and Covariates	Covariates Only
Perceived Complexity	.02536*** (.00581)	.03186*** (.00597)	
Perceived Resonance	-.02024*** (.00342)	.01289*** (.00448)	
Resonance*Complexity	-.00022* (.00009)	-.00032*** (.00090)	
Familiarity		-.02323 ^{ns} (.07347)	-.01503 ^{ns} (.07288)
Liking		-.50000*** (.03945)	-.40415*** (.02634)
FE(Russian Doll)	.1597 ^{ns} (.1623)	.2050 ^{ns} (.1833)	.08613 ^{ns} (.17841)
FE(The Chair)	-.1481 ^{ns} (.1623)	-.4229* (.1747)	-.30315 ^{ns} (.17383)
FE(The Good Place)	-.4895*** (.1728)	-.5130* (.2262)	-.40981 ^{ns} (.22627)
concordance index	.69 (.016)	.80 (.016)	.80 (.016)
LR test	$\chi^2(6) = 131.3, p < .001$ $\chi^2(8) = 280.3, p < .001$ $\chi^2(5) = 241.3, p < .001$		

NOTE—where (1) is a cox proportional hazard model on the choice to stop watching predicted by perceived resonance, complexity, and their interaction, (2) is the same model including the covariates, (3) is the same model with only the covariates.

FIGURE 6: COMPLEXITY AND RESONANCE BY CLIP (AS PRETESTED) V. SATISFACTION AFTER WATCHING BY VIEWING MODE AND MOMENTUM LEVEL

