

Don't Let Netflix Drive the Bus: User's Sense of Agency Over Time and Content Choice on Netflix

BRENNAN SCHAFFNER, University of Chicago, USA

ANTONIA STEFANESCU, University of Chicago, USA

OLIVIA CAMPILI, University of Chicago, USA

MARSHINI CHETTY, University of Chicago, USA

Users often turn to subscription video on demand (SVOD) platforms for entertainment. However, these platforms sometimes employ manipulative tactics that undermine a user's sense of agency over time and content choice to increase their share of a user's attention. Prior research has investigated how interface designs affect a user's sense of agency on social media and YouTube. For example, YouTube's *autoplay* left users feeling like they had less control over their time. We extend this work by investigating the design elements of Netflix, the most used SVOD, for the impact they have on users' senses of agency. We conducted interviews with 20 participants that used Netflix regularly, asking about their experiences and perceptions of features in the Netflix platform design that may affect their sense of agency. We found that a user's sense of agency was at odds with the platform's design. Users, who were often seeking entertainment for mood management, were met with features that encouraged watching more than they originally planned to and watching content they may not otherwise watch. We discuss design recommendations that Netflix could employ to reaffirm their users' agency.

CCS Concepts: • **Human-centered computing** → **Empirical studies in HCI**.

Additional Key Words and Phrases: streaming media, online manipulation, autoplay, time management

ACM Reference Format:

Brennan Schaffner, Antonia Stefanescu, Olivia Campili, and Marshini Chetty. 2022. Don't Let Netflix Drive the Bus: User's Sense of Agency Over Time and Content Choice on Netflix. In . ACM, New York, NY, USA, 32 pages.

1 INTRODUCTION

There are over 1.2 billion paid subscribers to subscription video-on-demand (SVOD) services [10]. Each day, many of these users trust these platforms to provide content for entertainment purposes. However, SVOD companies are not necessarily just concerned with hosting content; they often prioritize maximizing user engagement and turning a profit which can result in designs that cause users to spend time binge-watching, lose sleep, or face mental health difficulties owing to consumption habits resembling addiction [15, 39, 42]. Researchers have noted that these effects can be linked to changes in platform design, such as the reduction in *stopping cues*, or signals that help indicate to users that it is time to move on to do something different [15].

In some cases, what is consumed on these platforms can not only cause individual harms but also have large-scale societal harms as well. For example, a TV show produced and shown by Netflix was associated with increased suicide rates amongst certain segments of the male youth

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for components of this work owned by others than ACM must be honored. Abstracting with credit is permitted. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee. Request permissions from permissions@acm.org.

CSCW '23, October 13–18, 2023, Minneapolis, MN

© 2022 Association for Computing Machinery.

ACM ISBN 978-x-xxxx-xxxx-x/YY/MM...\$15.00

population in the United States (US) [24]. Moreover, television seen on online platforms changes the way we talk about important topics like gender diversity [22] and climate change [36]. As human attention becomes an increasingly valuable resource [33], control over how one spends their time is important since it affects users' overall well-being (as well as society's). Thus, users should have a sense of agency over both their choice in content and time spent on these platforms, where sense of agency is defined as "the feeling of control over actions and their consequences" [59]. Note that we focus on a user's *sense of* agency to forgo the free will debate about *actual* agency, in accordance with prior work [19, 54, 59].

Prior work on non-subscription platforms found how a user's sense of agency over time management can be affected by platform design choices [54] and how a user's perceived quality of music can be directly affected by the ordering of recommendations [13]. The Netflix platform demands attention due to the size of its user base and dominance in its field as the largest SVOD service [79]. As such, our work focuses on elements of Netflix's platform design related to a user's sense of agency in time management and content choice.

To understand how Netflix's design affects a user's sense of agency over time and content choice, we posed the following research questions:

- RQ1** What are the general contexts that motivate a user to begin a Netflix watching session, and how do they relate to a user's sense of agency on the platform?
- RQ2** What is the relationship between Netflix's platform design and a user's sense of agency over time management on the platform?
- RQ3** What is the relationship between Netflix's platform design and a user's sense of agency over content choice on the platform?

To address these questions, we conducted an interview study with 20 participants that use Netflix regularly. In the interviews, we asked the participants about their experiences and perceptions of the Netflix platform, structuring the interview around a Netflix session from before opening the platform to a post-session reflection. We focused on elements related to users' motivations for using Netflix, sense of agency regarding time management, and sense of agency regarding content choice.

From a qualitative analysis of the interviews, it became clear that Netflix's platform design contributes to a reduction in user's sense of agency which may undermine the trust its users place in the platform when seeking entertainment. Specifically, we uncovered three main findings. 1) While our participants had a variety of reasons for using Netflix, they often watched alone and for escapism-like mood management often willingly and trustingly handing a degree of agency to Netflix over their time and content choice (**RQ1**; Section 4.1). 2) Even while our participants used a variety of strategies to manage their time on Netflix, design factors like *autoplay* and a lack of *stopping cues* often influenced them into watching more than they originally planned (**RQ2**; Section 4.2). 3) The design of the Netflix's recommendation-infused homepage influenced what the participants choose to watch, and the participants were not necessarily happy about it, preferring "more human" recommendations like those from friends and family (**RQ3**; Section 4.3).

Based on these findings, we have two main suggestions for the design of Netflix. First, we recommend that the *autoplay* and *autoplay preview* (which automatically starts playing content when a user arrives on the homepage) features should be easier to toggle on and off instead of buried in account settings that can only be accessed in browser. Second, we suggest that Netflix should design the platform for increased human-human connections around content suggestions over human-algorithm connections. For example, they could add capability to 'import' recommendations from off-platform sources (e.g., friends and blogs), allow building and sharing of *autoplay* queues, and integrate group watching [26].

The specific contributions of this work are:

- We conduct an analysis of user experiences and perceptions about using the most popular streaming media platform, Netflix, and provide a range of user opinions regarding their sense of agency on the platform.
- We provide a breakdown of the effects that the Netflix platform design has on its users' time spent watching media on the platform and choice of content watched.
- We extend literature on dark patterns and online manipulation [23, 45, 60]. Existing taxonomies focus on interface designs related to choice architecture [58] and do not necessarily cover the manipulative nature of the features highlighted in this work, like the temporal inertia of choice (*autoplay*) or removing choice altogether (*autoplay*).
- We show that the negative effects that non-subscription based platform features, such as YouTube's *autoplay*, have on a user's sense of agency over time-on-device and content consumption [54] also apply to Netflix, the largest SVOD. We also provide evidence of manipulative effects from SVOD-specific features such as *autoplay* and homepage design.

2 BACKGROUND AND RELATED WORK

In this section we describe Netflix's rise as an SVOD service, how streaming media platforms can exacerbate technology overuse, and how content presentation can affect a user's sense of agency over content consumption on streaming media platforms.

2.1 A Brief History of Netflix and its Scale

Netflix was founded in 1997 as a company for selling and renting DVDs by mail in the US [46]. They launched their website for managing DVD orders in 1998 [48] and introduced the subscription model in 1999 [61]. The company went public in 2002 at a value of \$82.5 million [2]. By 2003, Netflix gained their millionth subscriber [3]. In 2007, Netflix delivered their billionth DVD by mail [4] and began the transition to streaming video on-demand over the Internet [47]. From 2010 to 2012 Netflix expanded its streaming services internationally, first in Canada [32], then to Latin America [40] and Europe [69].

Although at first Netflix was primarily a distributor of content, it premiered the first Netflix-produced content in 2013 calling them Netflix Originals, marking the start of Netflix's journey into the production space [27]. By 2016, Netflix had expanded to almost every remaining country [75]. By 2017 Netflix subscriptions surpassed the combined users of major cable providers in the US [68]. At the time of writing, Netflix had about 75 million subscribers in US and Canada alone and 221 million worldwide [78]. The company has the largest market share of SVOD services (e.g., Disney+ and Amazon Prime Video) worldwide [79]. Given its large size worldwide and in the US, we chose to examine how Netflix's design can affect users' time management and choice of content to consume.

2.2 Streaming Media and User Engagement

The goal of technology companies and their success hinges on their algorithm's ability to get users 'hooked' [37, 38]. Online manipulative interfaces have increasingly come under scrutiny. For instance, there is a growing body of work on dark patterns or manipulative user interface designs that coerce, steer, or deceive users into making particular decisions such as making a purchase, giving up private data, or choosing to visit a particular site [12, 23, 45, 60]. Mathur et al. explain how these design patterns rely on humans' natural cognitive biases [57].

There has been some work targeting manipulative and/or addictive designs outside of academic research as well. For example, Frances Haugen, a Facebook whistleblower, outlined how Instagram exacerbated eating disorders among teen users by recommending content that was damaging but

engaging [39]. Along with other criticisms of Facebook’s internal research documents released by Haugen, this helped motivate the Kids Online Safety Act (KOSA), a bill introduced by bipartisan congresspersons to increase the responsibility and restrictions of online service providers for designs impacting children [21]. This bill, KOSA, includes mention of manipulative designs in streaming media platforms such as Netflix. For example, under KOSA, platforms would be required to allow parents of minors to limit features that increase, sustain, or extend their children’s use such as “automatic playing of media” and allow them to “opt out of algorithmic recommendation systems that use a minor’s personal data” [21]. The effects of KOSA on platforms like Netflix are still unclear. Critics of KOSA argue that the act will effectively force platforms to increase surveillance and censorship of minors without improving their safety [49].

Regardless, the effects of manipulative design patterns are significant and expansive [58]. For example, manipulative design patterns cause users to make decisions against their best interests [53], leave users feeling manipulated [23], and expose users to harmful content [85]. It is clear that these manipulative designs can contribute to “the age of behavioral addiction” as described by Alter in his book *Irresistible: The Rise of Addictive Technology and the Business of Keeping Us Hooked* [15]. For example, Alter notes the technology world’s drive to reduce *stopping cues*, or signals that it is time to move on to do something different, and how this shift contributes to technology overuse.

Research to date has mostly focused on the harms of online manipulation in social media platforms particularly, as opposed to SVOD services [14, 39, 66, 67]. However, companies designing experiences to be addictive may have origins in other fields. Schüll writes about the gambling industry’s shift towards machines infused with addictive design elements, prioritizing “time-on-device” and getting players “into the zone” to the point where they are physically and economically exhausted [72]. Some have connected these manipulatively engaging designs to the realm of daily device usage, “equat[ing] carrying a smartphone to walking around with a slot machine in our pockets” [43]. For instance, Day and Stemler explore how social media’s user experience design results in a dopamine release framework akin to gambling addictions [34]. Instagram, specifically, withholds notifying users of likes until later moments that are experimentally determined to result in larger bursts of dopamine [31]. Whether these types of user experiences technically constitute ‘addiction’ is still unclear, but many researchers do consider it at least habitual or compulsive [50, 63, 82] or dissociative by design [18].

With respect to streaming media platforms, the “irresistible” platform designs may manifest in a decreased sense of agency with respect to time management, sleep, and mental health issues [15, 54]. However, prior works have not investigated this topic in depth for SVOD systems such as Netflix. Our work addresses this gap by investigating the user experiences and perceptions of Netflix design elements related to a sense of agency over time management.

2.3 Content Choice Curation Versus Content Choice Manipulation

Online manipulative user interfaces can not only affect user’s overall time management, but they can also affect what we watch. For instance, it is well-known that recommendation engines and ranking systems drive many of the decisions in our daily lives and that these systems may result in harm as they tend to prioritize engagement metrics over well-being [66, 67, 73, 81].

In fact, recommendation systems have evolved from helping users find what they want quickly to save time to now increase platform engagement metrics [44]. Some feel that the goals of these systems could even be deemed as having shifted overtime from beneficial task support (i.e., ‘reading our minds’) to paternalistic aggressive recommendations (i.e., ‘leading our minds’) [29]. Similarly, Cohn writes “recommendation systems privilege the ‘free choice’ of users as a synecdoche of their unique individuality, self-worth, and authenticity while, in fact, always guide users toward certain choices over others” [30]. These systems rely on personalized records of fine-grained user activity,

to provide users an endless stream of content that they will, with high probability, engage with [86]. This may benefit users, providing them with content they might enjoy. On the other hand, the benefits given to platforms employing these systems are also clear: revenue from user retention and an active role in what users see [44, 83].

With respect to streaming media platforms, recommendation systems can have substantial effects since every platform design element to curate and present content to a user can heavily influence what users choose to watch. As the decision space increases (e.g., the number of news websites or the size of Netflix's catalog) so does the demand for recommendation systems, which can present a 'special' subset of the space. On Netflix specifically, the home screen can only show a fraction of their 5K+ titles [77]. That is, even just listing a title on the Netflix homepage can be considered a recommendation to some extent as it was 'hand-selected' from the full library [52].

Further, how content is displayed or recommended influences users' perceptions of the content [17]. For example, randomly assigned recommendations as well as perturbed real recommendations affect consumers' willingness to pay for content [13]. Some recommendation systems can also cause users to consume increasingly similar content to one another, even content misaligned with personal interests [28]. One study showed that users discover and develop new interests when they swap recommendations with other users [20]. On Netflix, these influences are important since they reach such a large subscriber base, and what people consume on the platform can have significant societal impact.

For instance, Netflix viewer consumption has had noticeable economic effects—the release of "The Queen's Gambit" resulted in significant increases in chess participation and purchases [76]—to harmful public health outcomes—the release of "13 Reasons Why" resulted in significant increases in suicide rates of boys 10 to 17 years old [24]. Both series were produced and promoted by Netflix. Further, since users primarily know Netflix as an entertainment platform, as opposed to, say, a traditional news website, there may not be the same norms for carefully consuming and critiquing content. Yet, the effects of how Netflix presents its content are not fully known. Our work addresses this gap by investigating the user experiences and perceptions of streaming media platform design elements related to a sense of agency over content choice.

There is already one study examining the topic of users' sense of agency over time and content choice on YouTube, another streaming media platform with a different model than Netflix [54]. Lukoff et al. examined how *autoplay*, a feature that automatically plays one YouTube video after another, affects how much control users feel they have over what they watch and how much time they spend watching YouTube [54]. With a user study focused on digital wellbeing, these authors found that *autoplay* was a leading feature contributing to users feeling a loss of a sense of agency on YouTube. Our study differs in that we examine Netflix, the largest SVOD worldwide [79].

Further, SVOD services like Netflix differ from social media platforms like YouTube in that: Netflix generates revenue from subscriptions instead of primarily advertisements; and the type of content differs in type, length, and whether it is user generated. Thus, these platforms warrant separate studies. We also extended the analysis to include additional features like *autoplay*, the full homepage experience, and non-digital external mechanisms (e.g., interactions with friends) as opposed to purely digital ones (e.g., mobile applications). Another study conducted interviews with middle-aged adults asking about their beliefs and theories of how algorithmic recommendation systems work, identifying four main actors believed to influence the recommendations they receive on YouTube: the current user, other users, the algorithm, and the organization [16]. Our study differs in that we ask about specific design features of the Netflix platform and, again, that we focus on the largest SVOD instead of social media.

Table 1. Descriptions of the Netflix homepage features that affect which content is played and displayed. Screenshots of these features (and other features that we do not report on in this work) were shown to the participants as visual probes and can be found in the Appendix A.2.3.

Feature	Description
<i>Autoplay*</i>	When content finishes playing, Netflix queues up content that automatically starts after a 5-second countdown.
<i>Autopreview</i>	When users open Netflix, a large preview box automatically plays content at the top of the homepage.
<i>For You</i>	Used as a catch-all for the Netflix homepage rows like “Top picks for you”, “Gems for [Profile Name]”, etc.
<i>Netflix-N</i>	Netflix distinguishes titles on its homepage as Netflix Originals with an N-badge, meaning that the content’s production was either originally commissioned by Netflix or has had additional seasons commissioned by Netflix after originally being produced elsewhere. There are also dedicated homepage rows for these titles where the platform aggregates Netflix Originals in one place (i.e., “Only on Netflix”).
<i>Top 10</i>	Most popular content on Netflix at the time. These titles are displayed in a dedicated ordered row on the homepage. The titles may also appear in other rows (e.g., rows showing titles of a specific genre). If the titles appear in another row, the thumbnail includes a <i>Top 10</i> badge.
<i>Trending</i>	Netflix’s proprietary combination of the platform’s popular content and personalized recommendations based on user demographics.

*We did not show screenshots of *autoplay* because it is a platform-wide policy as opposed to a visual platform element on the homepage.

3 METHODS

To explore user experiences and perceptions of features in the Netflix platform design related to a user’s sense of agency, we conducted semi-structured interviews with 20 participants.

3.1 Interview Structure

We designed the interviews to loosely resemble the structure of a typical Netflix session, that is, from start to finish of one visit to the platform. First, we asked about participants’ motivations and feelings prior to opening the platform. Second, we asked them to walk us through how they choose content to watch on Netflix and described their interactions with different platform features. During this stage of the interview, we showed participants screenshots of notable features on the Netflix homepage where the main content catalogue is located as prompts for discussing how they choose content. The screenshots we shared (Appendix A.2.3) were from both mobile and desktop versions of Netflix. The specific features we report on and their descriptions are shown in Table 1. Third, we asked about participant’s watching behaviors once they press play followed by their feelings and perceptions after they end a Netflix watching session. Finally, we asked questions about their general reflections on the platform and provided an opportunity for participants to speak about Netflix features we or they might have missed until that point. The full interview guide can be found in Appendix A.2.2.

Once we created the interview guide, two researchers conducted two pilot interviews which we used to tweak the wording and ordering of questions before finalizing the guide. The pilot interviews are not included in the data set. After obtaining IRB (Institutional Review Board) approval, both interviewers began conducting interviews virtually (on Zoom) from January 2022 to May 2022. Before participating in the interview, we asked participants to fill out a brief survey providing their consent, demographic information, and some background about their watching behaviors (see survey instrument in Appendix A.2.1). The interviews lasted about 30-60 minutes (median: 47 minutes). All interviews were audio recorded and we compensated participants with a \$25 Amazon e-Gift Card for their participation.

Table 2. Survey participant demographics: age, gender, and highest level of education

Age	#	%	Gender	#	%	Education	#	%
18-24	6	30	Female Identifying	8	40	Less than High School	1	5
25-34	14	70	Male Identifying	11	55	High School	2	10
			Non-binary	1	5	Associate Degree	1	5
						Bachelor's Degree	11	55
						Professional Degree	5	25

Table 3. How long participants have used Netflix, the number of Netflix uses per week, the distribution of their daily Netflix use, and the modalities in which the participants typically use Netflix

Account Age	Years	Frequency of Use	#	%	Total Daily Use	Hours/Day	Modality	#	%
Median:	5.5	Once a week	1	5	Median:	2.25	Desktop/Laptop	15	75
Average:	5.4	More than once a week	9	45	Average:	3.88	Mobile	13	65
Standard Dev.	2.37	Once a day	3	15	Standard Dev.	4.43	Smart TV	8	40
Range:	2-10	More than once a day	7	35	Range:	0.50 - 19.2	Tablet	7	35
							Gaming Console	1	5

3.2 Recruitment

We recruited 20 interview participants via a public Twitter post soliciting regular Netflix viewers currently living in US. The interviewee demographics are shown in Table 2. The participants were young, roughly split on gender identity, and most had a bachelor's degree. In the background and demographic survey, we asked about the participants' general watching behaviors, which are shown in Table 3. They all watched Netflix regularly, with most reporting watching more than once a week and many reporting watching Netflix more than once a day. The median number of hours that the participants reported spending watching Netflix a day was 2.25 hours, equating to more than a full month out of a year.

3.3 Interview Analysis

We used Rev.com for interview transcription, with whom we have a non-disclosure agreement. Two members of the research team performed thematic analysis [70]. First, these team members coded a subset of interviews to identify structural codes for organizing the data such as 'Watching Context' and 'Choosing Content'. Next, after multiple discussions with the research team, we generated subcodes such as 'Favorite Recommendation', 'Desired Tools' and 'Stopping Cues' and discussed which ones of these were most relevant until the codebook was finalized. Two researchers then coded each interview transcript using the final codebook in MAXQDA. One researcher, the primary coder, went through all interview transcripts and applied the codes described in Table 4. The other researcher, the secondary coder, then went through the interviews and checked the applied codes, indicating spots for further discussion. Over several research meetings, we discussed points of disagreement and resolved them. For each code, we extracted the coded segments for that code to Excel and then read through and did a round of axial coding. We then wrote summaries for each code, and the team discussed all the summaries to discern which were the relevant and important emergent themes of interest for the paper. When reporting participant quotes in the following sections, we use participant codes: P1-P20.

3.4 Limitations

Our study's participant sample tended towards young and most had college degrees. We also filtered for participants located in the US. Future work could expand this study to include users of other

Table 4. Codebook used for qualitative coding of the interviews, in alphabetical order.

Code	Memo
CHOOSING CONTENT	
Favorite Recommendation	Which source of recommendations are their most valuable and why?
Feelings	How do they feel about the process of choosing content?
Find vs. Know	Do they find stuff to watch or already know what to watch?
Least Favorite Recommendation	Which source of recommendations are their least valuable and why?
Netflix Browsing	How do they navigate the Netflix platform?
Not on Netflix	What do they do/think when content they search for turns out to not be on Netflix?
Recommendation Sources	Where do they get recommendations from?
Strategies	What are their general strategies for finding/choosing content?
MISC	
Other	Anything that does not fit in with other codes but does not warrant its own code.
Platform Comparisons	How does their experience on Netflix compare with other SVODs?
PERSONAL REFLECTION	
Behavior Appreciation	Is there anything they would like to change about how they watch Netflix?
Behavior Undesirables	What do they appreciate about their relationship with Netflix or how they watch?
Feelings After	How do they feel after a session? Why?
PLATFORM REFLECTION	
Desired Tools	Are there any other tools that they wish existed?
Dislikes	What features did they dislike or find unhelpful/harmful and why?
Likes	What features did they like or find helpful/useful and why?
Supplements	What other strategies, tools, tricks did they use alongside their Netflix experience?
SPECIFIC FEATURES	
<i>Autoplay, Autopreview, For You, Genres, Hover-Preview, Netflix-N, Random Shuffle, Recently Watched, Search Bar, Top 10, Trending</i>	How did they use/think about this feature? (Codes applied separately for each feature.)
TIME MANAGEMENT	
Effects	What are the general relationships between their time management and Netflix?
Stopping cues	Why/when do they stop watching?
Strategies	What are their general strategies for managing their time (if any) on Netflix
Watch durations	How long do they tend to watch? (Time, number of episodes, etc.)
WATCHING CONTEXT	
Companions	Who are they with when they are watching? Are they Alone?
Concurrent Activities	What other things are they doing when they watch?
Mood	How do they feel when they decide to watch?
Motivations	Why do they watch Netflix?
Time of day	When do they watch?

ages (e.g., older adults or children) and users in other countries, even those where Netflix is less popular. Further, our recruitment methods (social media) may bias towards those interested in internet or academic research. Also, we conducted the interviews while social distancing was still in effect during the COVID-19 pandemic which may have affected participant responses.

4 FINDINGS

In this section, we report on participant perceptions and experiences of Netflix organized with respect to our study's three main research questions.

4.1 Netflix Watching Context: Setting the Scene

We gathered the general setting and context that motivate the participants to use Netflix. We found that while users had a variety of reasons for using Netflix, they often watched alone and for escapism-like mood management, lending a degree of agency to the platform.

4.1.1 Why Use Netflix? The entertainment value of Netflix is clear and the primary reason for using the platform, but the participants also gave a variety of additional motivations for why they use Netflix. We found that motivations for watching Netflix were highly related to users' desire for managing their mood such as escapism and alleviating boredom.

Motivated by Feelings and Mood Management. When they decided to watch Netflix, participants provided a variety of moods and feelings. It was more common that participants cited negative moods when deciding to open the Netflix platform (15/20). Most commonly mentioned negative feelings were boredom (8/20) and exhaustion (3/20). Others mentioned feeling stressed, upset or angry, zombie-like, not-focused, longing for loved ones, “*in need of much needed entertainment*” (P19), or general unhappiness. As P6 reported:

“Sometimes I open it because I’m bored. I just want to look around, look what’s there. [...] So I was hoping, ‘Okay, hopefully there’s something good or interesting that could entertain me.’ Okay, in that way, I guess like when I’m too bored or stressed out from work, I tend to open it more.”

6/20 participants mentioned that they were often feeling positive when they decided to watch Netflix. Positive moods that our participants mentioned included happy, content, good/great mood, excited, stress-free, relaxed, or chilled. A few (3/20) stated they had no particularly strong emotions when choosing to watch Netflix. 2/20 participants mentioned being eager (to learn something) or anticipative, feeling adventurous, or focused.

Most participants (13/20) spoke of how Netflix could be used for some form of mood management. To list a few: “*to chill out*” (P1), “*to turn off my brain for a little bit*” (P8), and “*to stay afloat*” (P9).

Convenient Form of Entertainment. 7/20 participants said they used Netflix because it is a particularly convenient form of entertainment, with very few hurdles in the way of being entertained. For instance, one participant told an anecdote about how they chose Netflix over other entertainment options since its on-demand entertainment did not require active participation. Many participants (7/20) mentioned using Netflix as a way to stay caught up with the worlds of Film and Television.

Some (5/20) cited Netflix’s time-passing, time-killing, and time-filling abilities. Other participants mentioned more specific uses for Netflix such as as an activity around which to build a date with their partner, a tool to learn about a topic from documentaries, or just habitual use.

Netflix as a Complementary Activity. We asked participants if they do other things while they watch Netflix. Exemplified by P20, Netflix allows for concurrent activities since full attention is not always required:

“I guess I... scroll on my phone... especially when watching reality TV... which is maybe why I like it. It’s like, okay, if you miss parts of it and you’re just looking at your phone”

Most (14/20) participants liked to do other things while watching Netflix. The two most common additional activities that participants mentioned doing while watching Netflix were cooking/eating food (7/20) and using their smartphones or other devices for entertainment and activities such as texting, checking email, and scrolling through social media (7/20). At least two even told us they make the Netflix player smaller on their screen so they could do other activities on the same device at the same time.

There were a variety of other activities that participants did while watching Netflix: doing chores, exercising, taking public transportation, reading, playing games, engaging in intimate relations, chatting with others that they are watching a show with, and working. Other participants (6/20) liked to specifically dedicate their full attention to what Netflix is playing. They mentioned that they often like to only focus on Netflix while they are watching and not do any other attention-splitting activities. For example, P9 said “*Well, most of the time when I’m watching, I’m watching.*”

4.1.2 Who Do Users Watch Netflix With? We asked participants who they are with when they watch Netflix. We found that watching Netflix alone was more popular among our participants than watching with others.

Watching Alone. Almost every participant (17/20) mentioned watching Netflix alone. 5/17 *sometimes* watched alone, where the others *mostly* (8/17) or *only* (4/17) watched alone. Notably, two participants specifically mentioned that they did not like watching Netflix with others as P19 summarizes:

“[I] don’t like watching films with my friends, because they’re going to be a big, big distraction. That’s just it. I might get someone asking me questions about what I’m watching, or someone might try to intrude into what I’m seeing currently.”

Watching With Others. Most participants (12/20) did however watch with others at least sometimes. The most common watching companions were partners (6/12) and friends (5/12), followed by family (2/12) or roommates (1/12).

4.2 Netflix Platform Design and User’s Sense of Agency: Time Management

We explored the relationships between our participants and their daily time management. We found that even while users may use a variety of strategies to manage their time on Netflix, platform design features like *autoplay* and a lack of *stopping cues* often influenced users into watching more than they originally planned.

4.2.1 What Strategies Help Users Manage Their Time on Netflix? Participants used a variety of strategies to manage their time on Netflix, some common (e.g., mapping out schedules) and some less common (e.g., maintaining watchlists to reduce time scrolling for content, logging out of the app on their phone, replacing Netflix time with reading). 7/20 participants reported not using any general strategy or just managed their time *“naturally”* (P16).

Preplanning or Planning On-the-Fly Many participants (8/20) reported planning or fitting Netflix sessions into their free time throughout the day. Sometimes, the predictable/knowable length of Netflix content made it easier to plan than typical TV sessions. A couple of participants indicated how the scheduling can follow rules on the number of episodes/movies instead of just time. For instance, participants told us they would decide ahead of time that they would just watch a single episode or movie and then be done no matter what. However, often participants deferred the decision to continue watching until the end of whatever content they were watching, at which they would ask themselves:

“Do I want to watch another episode or go do something else, like do work or do something else?” (P1).

Using Complementary Activities to Regulate Time on Netflix. A few participants spoke about how their time on Netflix is partially managed by their engagement with other activities (3/20) such as reading, playing games, or watching Netflix at the gym:

“But when I do got to the gym and I actually started doing that this past winter is that I would find a Netflix series and I would only watch at the gym. So it gave me motivation to go to a gym if it was really good, because I was disciplining myself to only watch it at the gym. So I was responsive like, ‘I got to go to the gym right now because I need to watch this show’” (P18).

Other Time Management Strategies. Participants also had other tricks to manage their time such as not installing the app on their phone so they would use it less at night, deciding what to watch ahead of time to avoid wasted time scrolling, watching at almost 3× speed, or *“just don’t open it”* (P20).

4.2.2 How Does the Platform Design Affect Time Management? We asked about two main factors affecting users' time management: *stopping cues* and *autoplay*. We found that users' time management could be subverted by the platform to a large extent.

The Content Informs When Users Stop Watching. We asked participants what it looked like when they stopped a Netflix watching session. Most participants told us that they typically watched Netflix until the content ends (16/20), barring urgent interruptions or rare occasions of terminated watching due to low-quality content (P6: *"When I start a particular contents, I have to finish it"*).

For most, the decision to continue watching was deferred until the end of the episode or movie. Others talked about how the content itself could affect their time management:

"Yeah. Sometimes I'll just watch it straight through until the end of the episode. Like I said, I feel like I am forced... Like I said, if there's only 10 minutes left on the show and I'm like, 'Well, I've already been on break for 30 minutes for my lunch. I'm just going to take another 10 minutes to finish this show and it'll be okay.' Because I need to finish this episode because I need to know what's going to happen. And if I don't, then I'm going to have anxiety because I'm like, 'Oh, I need to find out what...'" (P18).

The other way in which the content informed when a participant stopped watching was when the content was not high enough quality to keep them entertained or engaged. A few (3/20) participants said they stopped watching sooner than planned if they did not like the content they were watching.

Other Stopping Cues. Off-platform *stopping cues* included the need to return to daily activities. 8/20 participants told us about activities from their daily life that pulled them away from watching Netflix, most commonly, to return to working (6/8) or needing to go to sleep (3/8). A few of the other daily life activities that ended Netflix sessions were needing to do chores/run errands, caring for pets, and cooking. P12 summarized a canonical example of external *stopping cues*:

"Yeah. Like cases where I have to run out to the grocery store, or I have a deadline to meet, or a friend to come over and I have to like hang out, or I have to run on errand for somebody or look after something or feed my pet. Except from those few obstructions, I don't have other reasons to stop the show abruptly."

Sometimes participants (5/20) mentioned how they had to stop watching Netflix to attend to some unplanned urgent matters, such as if a child fell and started crying, people were showing up at their door, or parents called on the phone to chat. P10 equated the feeling to playing outside as a child:

"I feel like... You know, when you're small and you have to ride your bike, and after some minutes, your parents have to call you in to come go to other stuff. Like, 'Come on, five more minutes please.' So that's how I feel sometimes. And other times I just feel like, 'Okay, what I have to do, this is really, really important.'"

A few participants (5/20) reported that timing devices could provoke them to stop watching Netflix. For example, break alarms at work (that sound at the end of a breaktime) informed some participants to stop watching and return to work. At least 3/20 set alarms or reminders for themselves to know when they should be done watching Netflix, stopping a Netflix session when the clock reaches a certain time, rather than when content ends. Others tried to set and follow a strict bedtime for themselves to combat the "biggest temptation" of watching late into the evening (P3):

"Well, probably the big one is set a time that you're going to go to bed and just go to bed. I think maybe the biggest temptation is watch late into the evening, which I know is not good for me. Usually I'll just kind of set a rule and make sure you're still getting the sleep you need."

Participants also mentioned that they sometimes stopped watching Netflix whenever they completed the activity they were doing while using Netflix as background noise. Others stopped when they wanted to take a break from electronics or to take a walk. Others talked about listening to signals from their body and mind to know when it's a good time to stop.

“Not particularly. I don’t feel like a ton of struggle with this, honestly. I get very overwhelmed by too much TV and stimulation after a while. So I can’t usually do much more than three to four hours of TV before I start feeling like I am overwhelmed and need to turn it off. My head hurts.” (P8)

Autoplay as a Convenient Removal of Friction. We asked participants how they felt about *autoplay*, the automatic playing of content after one piece of content ends. Half of the participants appreciated how *autoplay* (10/20) was convenient/less work for them when it played something related (like the next episode of the same TV show) easing/bridging the suspense episode to episode, especially when using Netflix as background noise. Some enjoyed checking out the automatically played content even if it was not directly related to the content that just completed. P15 summarized the feature’s convenience:

“[I]f I’m really into the show and I absolutely cannot stop watching it, I love that feature. It’s just so simple. I get my two minute break for the credits or whatever to take in everything that just happened on the episode, and then it will automatically play the next one, which is so nice. I guess the same thing will happen when I am playing something in the background, like a show. It’s just nice because I don’t have to keep paying attention to it, and it’ll keep playing in the background. I don’t have to break from my little focus bubble and take the time out to play the next episode.”

Autoplay as an Inconvenient Removal of Friction. However, half of participants were critical of the *autoplay* feature since it made it easier to watch more than they originally desired to watch by creating a sort of inertia in their watching session. If participants simply waited or did nothing, Netflix made the decision to extend their watching session by another episode, and, as discussed earlier, participants would generally stay for the whole duration of the added content. This is summarized by the following quotes:

“Yeah. I think it makes me watch more episodes of a TV show when I’m watching a TV show. Yeah. And particularly because they do roll very fast. I think it’s five seconds or maybe even less. Yeah. If I’m watching, I don’t know, a short sitcom while I’m eating dinner, sometimes I’ll just watch one episode and then, I don’t know, stop and do dishes and go do something else after dinner. But sometimes the next episode will start playing, and I’ll say, ‘Oh, whatever, I’ll just watch another episode and do like my dishes later,’ that type of thing.” (P1)

“If the next episode is playing, it’s probably because I just let the autoplay continue or, I know, more because I was lazy to pick up my remote and do something, change a search for something else explicitly.” (P11)

Some participants acknowledged that the *autoplay* feature helps Netflix keep users engaged:

“I actually am very opposed to autoplaying to the next show or next movie, whenever I finish a thing, I definitely want to stop, turn off the TV and take a break. But definitely I fall into like, ‘Ah, this was so great. I should just watch one more episode. One more episode. It’s not too late.’ [...] I imagine that it can be a problem for people sometimes. And I don’t appreciate that as a business decision to keep people engaged.” (P8)

Additional criticisms of the *autoplay* feature included how it discouraged time for reflection or mindful decision-making. 6/20 participants mentioned how *autoplay* also cuts out their time to process what they watched, take breaks, or do other activities because the countdown was so fast and added pressure to making a decision.

"It's a little bit jarring because sometimes I want to sit there and process the movie... I don't know why. I feel very strongly that I do not want to have something auto-play that I haven't chosen to watch. I guess it feels a little bit different because for episodes of a TV show I've chosen to watch a TV show. So it is a little bit jarring because I really do feel like I have to race to turn that off." (P1)

While some participants were fine with assuming the responsibility, most participants spoke about how stopping a Netflix session required active user participation to stop *autoplay*. This creates an opt-out, under-pressure, decide-later dynamic instead of the alternative opt-in, mindful, intentional Netflix sessions.

Autoplay in the Settings. The participants were divided on whether they would turn off *autoplay* in the settings. Half of our participants said they planned to keep *autoplay* and had not really considered turning it off. In the other half, some expressed desire to turn it off but were not aware this was possible until we asked about it. Only 4/20 had taken the time to turn off the *autoplay* feature because of the criticisms above or they did not want Netflix to keep playing all night after they fall asleep.

"Oh, I had no idea that there's a setting. Is there really a setting? If it is a setting, I will go change that tonight. Wait. Oh, now I'm... Okay. I'm surprised. I am not entirely sure that that will lead to me watching fewer episodes, but I'm kind of confident that it would" (P1).

4.2.3 What Adverse Effects Do the Users Experience? Even with the use of time management strategies outlined above, 15/20 participants did mention adverse effects Netflix use had on their time, fueled by a lack of *stopping cues* and *autoplay*. Many (6/20) watched more than they planned to, and in some cases were hooked into watching for long periods of time. A few participants shared acute cases of feeling sucked into Netflix. P19 remembered feeling lost and dizzy after watching for a long time, and P6 said:

"I would just keep watching. Actually I did this a lot while I was in college. I would just watch, I first planned to watch something for one hour and became like three hours, four hours. And I stayed up too late and I feel bad the next day. But when I was watching it, I was so addicted to it."

P15 even felt "*shameful*" about their watching behaviors and getting hooked to Netflix's content. 7/20 mentioned how they were forced to adjust their sleep schedules to accommodate their watching of Netflix, resulting in lost sleep as summarized by P18:

"So I could have went to sleep right after I got done eating, but I chose to stay up and watch it. At that point, then it's almost midnight and I'm just not wanting to sleep, knowing I should have been asleep a while ago."

4.3 Netflix Platform Design and User's Sense of Agency: Content Choice

We wanted to know how participants choose what to watch on Netflix. We found that the design of the Netflix platform influenced what the participants chose to watch, and the participants were not necessarily happy about it, preferring "*more human*" (P4) recommendations like from friends and family.

4.3.1 How Do Users Feel About Their Different Sources of Recommendations? Netflix users constantly field recommendations from a variety of sources. We asked participants which sources they use and which ones they preferred over others.

Off-Platform Recommendations. Participants' off-platform recommendation sources were friends (19/20 participants), social media (16/20), blogs/articles with reviews (12/20), and family (9/20). 11/20 participants mentioned ranking recommendations from friends as their favorite recommendation source. Next, were social media (5/20), family (4/20), and then blogs/articles (3/20). Reasons for favoring recommendations from friends tended to follow the idea that the participants' friends had similar preferences and tastes as the participant or at least knew the participant well enough to give recommendations that they were likely to enjoy. Recommendations from friends and family also added a social component to the experience. P1 summarizes their preferred recommendation sources:

"Just from experience, I think that I generally like the recommendations that I'm given from my family and friends more than other sources of recommendations. It also is nice to go back and talk about whatever I watch with family and friends."

Participants that valued social media recommendations pointed to trust of public opinion: if more people watched it and talked about it, then participants told us they felt the content would probably be worth watching. Participants that preferred blogs/articles liked the curated opinions of professionals/critics and experienced writers.

Only a few participants ranked off-platform recommendations as their least favorite source of content, expressing how their taste differed from their friends, family, social media profiles, critics/writers, etc.

On-Platform Recommendations. 17/20 participants mentioned using recommendations from Netflix themselves. However, only 3/20 ranked Netflix as their favorite recommendation source. Those that valued Netflix recommendations valued the algorithm's ability to provide good suggestions and sometimes also valued what Netflix says is popular (in the cases where they used *Top 10* or *Trending Titles*).

9/20 participants mentioned ranking recommendations from Netflix their least favorite. The participants that did not value recommendations from Netflix typically said the recommendation algorithm was "off" in some way. It either over recommended a (sub-)genre they watched once but would not watch again, or over recommended popular content that participants did not necessarily want to watch. P20 summarized common sentiments in their quote which relates back to time management and how Netflix's recommendations are driven by engagement (profits):

"I just feel like they're trying to push random things on me that I won't necessarily have interest in. Yeah. I think they are nefarious... I mean, not nefarious depending how you look at it, but they just want me to watch more TV, and I don't necessarily want to watch more TV."

4.3.2 How Does Netflix Drive Users to Content? Despite preferring off-platform recommendations, most participants did use on-platform recommendations at least sometimes. Here we explore how participants used the Netflix features to reach content to watch on the platform.

Two-Step Framework of Exploration. Participants summarized Netflix's role in pushing content as two steps: First, the platform gives a user something that they have not heard of before. Second, the user must be convinced that this content is worth checking out. The platform features on the homepage are designed to present a vast number of titles to expose users to various content. Participants gave many examples highlighting the important role of attention capture when scrolling

through the homepage, where attention capturing titles, thumbnails, and row-headers are a degree of filtering on an already curated subset of the Netflix catalog. Participants also commented on how Netflix has features to convince the viewer a piece of content is worth watching. These features included appealing to the content's popularity such as *Top 10* or *Trending* or its 'goodness of fit for you' via Netflix's personalized recommendations such as *For You*.

Autopreview Plants Seeds Akin to Advertising. Many participants often mentioned that the *autopreview* feature, playing clips or trailers of a particular show or movies automatically at the top of the homepage, sometimes captured their attention and caused them to engage with the content and eventually watch it (15/20). Only five of these participants said they usually did not end up watching this content as summarized by P6 who said they are "*kind of immune to it*". Participants told us that this *autopreview* content felt like an advertisement and talked about how this feature was effective subconsciously, planting seeds for future watching choices.

"Yeah. It just starts playing. It starts shouting at you when you open it up. Yeah. It's kind of annoying. Every once in a while, it hooks me and I watch the whole trailer. Less often than that do I watch the whole trailer and then start watching what it's showing me, but I think it is probably good for planting something in my subconscious, like I see one show being advertised for, I don't know, a couple times in a row and then I don't think about it for a week and then I think, 'Oh, maybe I should try out this show that.'" (P1)

Some told us how the *autopreview* feature unintentionally played content in the background when they just left Netflix open (e.g., on their smart TV) which they found "*annoying*". Some found the autopreviewed content to be an overly specific recommendation that they were not necessarily going to like or that the content was specifically chosen by Netflix, seemingly more so than the rest of the homepage content. Only two participants (2/20) mentioned that it was a nice way to be exposed to a variety of trailers.

Navigating the Rows of Content. Otherwise, participants spoke of how they navigated the Netflix homepage. Participants talked about the side-scrollable rows of content presented on the Netflix homepage with categories including *Top Ten*, *Popular on Netflix*, *Trending*, etc. It was not clear to the participants the concrete differences between some of these rows. As such, participants typically talked about these rows interchangeably. 15/20 said they use *Top 10* and *Trending* when browsing Netflix, with the most common (and predictable) reason being that it was a good "*barometer*" (P4) for what is popular on Netflix at the time. A few participants specifically added that what is popular must be worth watching, and these participants used this feature to keep up with what's new to Netflix (although *Top 10* and *Trending* content is not necessarily new). A few participants explained how important *Top 10* and *Trending* is to their Netflix experience:

"Yeah. It's like the Google page of Netflix. If you want to know what's going on or what's changing or the next big movie, as I said earlier, this is where you come. It's like the News Feed on Facebook." (P5)

"I feel like the top 10 is always interesting, because for me, in order to ... How am I going to say it? For example, you own a platform and you really want people to know more about it, and you want more views, more viewers on the platform, you have to give them the best. I guess that that's what Netflix are always doing. They always give the top 10 movies that is trending." (P14)

Several participants (6/20) mentioned wanting to watch things primarily because of their popularity (sometimes as an assumed proxy for quality).

“So if I see it in the chart, like the Top in the USA, most people in the US are viewing it. Most people in the US are seeing it, then that means it’s really good because a lot of people see it, a lot of people are viewing it, then why should it be so popular if it is not good? Things like this do really do influence me.” (P19)

“But since I see that it’s trending in the US, I’m like, ‘Well, what is everybody else watching? Let me watch that.’” (P18)

On the other hand, half of the participants said that the *Top 10* and *Trending* content was not necessarily aligned with their personal watching interests and that they did not really watch the content at all.

Participants Usually Did Not Consider Whether Content Was Produced by Netflix. 16/20 participants discussed how (and if) they considered a title being a Netflix Original when deciding what to watch (indicated by the *Netflix-N* badge). Most of these participants said they did not consider the *Netflix-N* when choosing what to watch with some not noticing it all. Only a few (3/20) participants sometimes considered the *Netflix-N* when choosing what to watch because they typically associated it with content quality.

Some participants also noticed that more often Netflix Original content was shown more than other content not produced by Netflix and wanted more transparency in the availability of content and why it came and went.

“Nowadays, they don’t have too many legacy shows. Most of those went to other services, so it’s mostly like what’s new, I guess I would say. So like movies that are coming up every so often like, ‘Oh, this Red Notice [Netflix Original] thing came out, The Witcher [Netflix Original] came out.’ What else do we see? The Umbrella Academy [Netflix Original] came out. Oh, sure, we’ll see the thing that’s new, and then move on until there’s another new thing.” (P2)

4.3.3 How Did the Users Feel About the Process of Choosing Content? Participants told us they enjoyed finding new content to watch both on and off Netflix, but many had complex opinions about Netflix’s role in the act of choosing what to watch.

The Joy of Discovering New Content. The participants reported a high degree of joy when they felt like they were finding content that they liked on their own. To name a few examples, P10 equated it to finding money on the street, P15 said it was like uncovering treasure, and it made P13 feel *“like a boss.”* That is, in addition to the entertainment value of consuming the content, our participants explained how they found special entertainment value coming from the discovery of new content.

Cynical Appreciation for Algorithmic Support. Participants had mixed feelings when asked about how Netflix’s recommendation engines supported their choice in what to watch. Half the participants expressed appreciation for algorithmic support in the content choosing process, but most participants (15/20) did share some concerns about the algorithmic support. P9 exemplifies this bittersweet relationship in the following quote, where they had both appreciations for the algorithm’s quality of recommendation and concerns over loss of a sense of agency in what they watched:

“Oh my gosh, now that I’m saying all this out loud, I’m like, I’ve handed so much control of my life over to Netflix. But they do such a great job. I feel very convicted about this. They do an incredible job and also I’m a little ashamed of myself because I should know better.”

Half 10/20 of the participants said that they appreciated the algorithmic support, all ten citing its ability to give good recommendations. A few of these participants added that it helped show them content that they otherwise would not watch and saved clicks/time that it would take to find those suggestions otherwise.

"[Netflix] is built around those recommendations. So if they were to be taken away, I would probably just stop using Netflix altogether. But I would say they mostly serve to make it easier for me to see things that I already want to see, that I already heard about. It's clicks that ... for me at least, it's more like they're saving me clicks" (P2)

Dislike and Distrust of "The Algorithm". Many (8/20) participants expressed a general distrust or dislike of Netflix's algorithmic suggestions. Participants often felt that their interests and Netflix's interests (or Netflix's assumed interests of the user) were not aligned, resulting in recommendations that the user would not enjoy watching. Others felt that while they did not necessarily dislike what the algorithmic support comes up with, they did not particularly trust its intentions:

"It does feel a little coercive, a little bit manipulative, what the recommendation engine is doing, especially those things in the, I don't know, user interface or the recommendations that cause me to watch more and more TV because sometimes that happens. Sometimes I feel like I'm watching too much Netflix. I know that is mostly my fault, but it feels like sometimes I'm watching more Netflix because I'm interacting with the recommendations a certain way." (P1)

Desire for Independence. 8/20 participants expressed they preferred independence in finding content than depending on Netflix's algorithmic support. This came in both specific forms of *wanting to be in control* of what one watched (P18: "No. I need to be in control of my own destiny and what I watch.") and *not wanting Netflix to be in control* of what one watched as P1 explained:

"I'm very mixed because I think they do an unreasonably good job, but I kind of wish that I was not relying on them. [...] Maybe I just don't want to admit that I'm letting Netflix choose so much for me by choosing which options to show me when I'm scrolling through it."

Some (4/20) participants explained how they felt that the algorithmic recommendations were less meaningful than other sources. For them, the human elements of finding content were missing from the algorithmic recommendations (P4: "Well, experientially getting recommendations, even from weird Twitter people just feels more human. It's like, I am part of the discourse in some way"). Similarly, P1 added how algorithmically recommended content did not provide the same ability to create a lasting connection with others:

"I think when I find a new show to watch from a recommendation from someone else, that is pretty meaningful because it's a nice show to watch and it's also a nice way to connect with that person. We get to discuss the show, and, I don't know, maybe if the next season's coming out, we can talk about that. I would say oftentimes when I'm scrolling through Netflix and find something new to watch, that's less meaningful."

5 DISCUSSION

In this work, we investigated design elements of Netflix for the impact they have on users' senses of agency. In brief, we found that most participants commonly used Netflix for mood management; the frictionless platform design often kept users watching longer than they intended; and the platform influenced what people watched by heightened exposure to algorithmic recommendations. We discuss the implications of these findings, including recommendations for practitioners and future work.

5.1 Boarding the Netflix Bus: A Trusting Hand off between Users and the Platform

Our findings show how our participants opened Netflix to relax or escape reality, most commonly alone. It is also common for users to split their attention by participating in other activities simultaneously. This type of use may be akin to users being willing to sacrifice a loss in sense of agency over their watching behaviors motivated by a desire for a space without responsibility and “real life problems” [84]. We are not claiming this type of use is problematic as some do [51]; but that it results in a degree of handing off agency to the platform, a relationship where trust is fundamental. Our findings show that Netflix may undermine its user’s trust by employing platform designs that create results counter to user intentions, like longer viewing sessions than intended and pushing undesirable relationships with recommendations. Even in cases where users may intentionally and knowingly hand off some responsibility to the platform (by accepting to watch *autoplay* content and algorithmic recommendations), a user’s sense of agency should underscore (and bookend) the session. That is, the session should respect user’s original intentions and “return” a sense of agency to the user as the session ends or even periodically throughout.

Future work could further explore mechanisms for robustly exchanging agency between a platform and its users. Future work could also explore how context of use may affect users’ vulnerability to manipulative designs in SVODs. For example, perhaps watching in certain settings (e.g., watching Netflix in bed or leaving it on in the background of other activities) increases the power of impact of certain design elements like *autoplay* and *autoplay*. If so, there may be potential avenues for research targeting platform designs that encourage such contexts of use.

5.2 Waiting to Get off Until the Next Stop: Inertia in User Watching Behaviors

As our findings show, participants often navigate the Netflix homepage to find something to watch, scrolling through Netflix’s homepage which includes a trailer that automatically plays at the top followed by rows of thumbnails united by common themes. Popular content is displayed prominently as well as personally recommended content. After selecting content to watch, they often split their attention while watching by engaging in a simultaneous activity.

Once they press play, they will likely finish. The user could exit the platform early, but most do not apart from urgent interruptions. And at the end, the user has a 5-second window to opt-out of the next episode. The longer the user takes to make the decision, the more likely they are to watch the next episode. Or perhaps they are distracted by the other activities, so the content ending is not being considered. Regardless, inaction turns into an extended session. Before one has time to reflect, the next episode begins. For every 20–60-minute episode, Netflix gives the user 5 seconds to opt-out.

Currently, to turn off features like *autoplay* and *autoplay*, users must navigate to deep account settings that are only accessible on the Netflix settings via a browser. Given that half of the participants expressed interest in turning off *autoplay* and that it influenced users to watch more than they intended, we suggest putting a more accessible toggle for the feature, potentially modeling it off YouTube’s *autoplay* toggle. Additional control could include being able to increase the *autoplay* countdown for a longer period of reflection or set the number of episodes that will *autoplay* before stopping. Participants also found *autoplay* annoying and advertisement-like indicating that control over *autoplay* should be made more accessible as well. KOSA specifically targets these types of features that automatically play content [21], except not for adults. Future work could also investigate qualitatively measuring the effects that features like *autoplay* and *autoplay* have on viewing behaviors.

5.3 Netflix Chooses where the Bus Stops are: Architecture of Content Choice

As evidenced by our findings, users may not be consciously considering whether a piece of content was produced by Netflix or not, setting the stage for Netflix to expand its share of the content we consume without direct user oversight. As their share of viewed content increases, so does their cultural impact. Netflix had the most Academy Award nominations in 2022 [62], which generate substantial extra revenue [35]. Many argue that the nominations themselves are products of influence rather than specifically content quality [56]. This background could provide Netflix motivation for manipulating the choice architecture via methods like self-preferencing and aggressive algorithmic recommendation systems. The possible negative consequences being that users are exposed to more and more of the same content that Netflix creates and wants its users to see. In fact, a common focus of antitrust debates and a possible target of regulation, especially those regarding tech companies, is “self-preferencing,” where a company favors their own internal collaborations over competitors [64, 71, 74].

In the case of Netflix, this could be ranking, recommending, or displaying Netflix Originals favorably over licensed content from other productions, which cost them more. There have been investigations targeting self-preferencing in some of the big tech companies like Google [25], and Apple [41], for example, but less so for SVOD platforms like Netflix. Since Netflix can have societal impact, we suggest more research on whether (or how) Netflix self-preferences original content in their recommendation framework including the homepage. For example, on the homepage of their mobile application, the thumbnails under the row of titles promoting Netflix Originals are 4× larger than the thumbnails in the other rows (Appendix A.1).

Further, as our findings show, users prefer recommendations from sources other than Netflix anyway. To this end, we recommend that Netflix designs the platform for increased human-human connections over human-algorithm connections or for more meaningful use [55]. Netflix could take inspiration from the social features on other platforms such as Spotify [9] where users can curate a public playlist of songs for others. Park and Kaneshiro found that successful collaborative music playlists like these support social connections, trigger nostalgia, and expand personal taste [65]. Netflix could similarly offer ways for friends to collaboratively build *autoplay* queues with content to watch, make these Netflix queues private or public on their profile page, and send their Netflix queues directly to one another. Netflix could also incorporate and promote live group watching across devices instead of isolating users. In fact, Cairns et al. found how individuals turned to applications for group watching while social distancing, given the pandemic’s recontextualization of personal relationships with technology and loneliness [26]. Already, there are a number of third-party applications that allow for group watching on Netflix, typically in the form of a browser extension and future work could determine how these features could more directly plug into or be part of the platform itself.¹

5.4 Exploring the Roadmap: SVODs and Regulation

There may be a larger issue at play. When big technology companies are incentivized to break existing infrastructure at speeds where regulation lags [80], regulatory conversations become increasingly difficult. How should Netflix (and similar platforms) be treated, from a regulatory perspective? Originally, they were intermediaries that cut out brick-and-mortar video stores, delivering content to users. As their means of delivery transitioned to online streaming, they became content hosts. As their recommendations became more sophisticated, they became content aggregators and promoters. Responding to market trends, they transitioned to creating their own

¹E.g., Teleparty [11], Watch2Gether [7], and Scener [8].

content, becoming producers. Today, they are all the above, reminiscent of the vertically integrated early days of Hollywood that the US supreme court decided violated antitrust law.

That is, in 1948 the US supreme court made a landmark decision in vertical monopolies, targeting specifically large companies in the film industry that controlled both film production and exhibition [1]. A major facet of the Paramount Decree, as the resulting agreement was called, forced film studios to divorce their movie theaters companies from their production companies. The decree also banned several anti-competitive content distribution practices. The following years saw increases in independent films and independent theaters.

In August of 2022, the Paramount Decree will be officially lifted [6], following a trend of the Department of Justice’s Antitrust Division revoking regulation [5]. The removal of the decree will have unknown effects since the world of streaming is so different from the time one could only see films in theaters. Still, film studios (including Netflix) will be able to purchase their own movie theaters, further extending their reach, and resume predatory distribution practices that effectively control the showings at other theaters (that they do not own). To add to the continued debate on regulations, the CSCW community can expand researching the harms of manipulative platform designs. Much of this attention has been directed towards social media; however, SVODs also warrant attention. As the CSCW community has helped inspire, a shift towards human-centered platform design is overdue. One face of human-centered design that this work has shown to be important in the context of SVODs is designing for respect of users’ intentions.

5.5 Opportunities for Comparative Research on Other Streaming Platforms

While this work focused on Netflix as a canonical example of SVOD platforms, other SVODs may warrant their own attention given their different approaches to content recommendations and delivery. For example, video streaming is bundled with access to books, music, and faster package delivery for subscribers to Amazon Prime; and Hulu has an added aspect of live programming integrated into their SVOD platform. Moreover, users are not only choosing among content to watch on a platform, but there is a broader context of user choice in selecting which platform(s) to subscribe to in the first place. Future user studies could uncover how users handle following many shows across many SVOD platforms, since the same content may be hosted on multiple platforms at once, it may migrate from platform to platform, or it may never reach certain platforms at all.

Future work could also extend this work by including the multitude of non-subscription video streaming platforms such as YouTube, Twitch, and Vimeo. Future work could explore how (if) the differences in business model, sources of content, and user base manifest in different manipulative design elements given the varying platforms’ incentives.

6 CONCLUSION

In summary, we studied the relationships between the Netflix platform design and a user’s sense of agency. Specifically, we conducted and analyzed 20 interviews with participants that use Netflix regularly in the US, resulting in three main findings. First, our study’s participants used Netflix most commonly alone and for escapism-like mood management. Second, the participants employed a variety of strategies for managing their time on Netflix, but design elements like *autoplay*, *autoplay preview*, and a lack of *stopping cues* sometimes resulted in the participants watching more than they intended to. Most participants reported Netflix use adversely affecting their time management and many had to adjust their sleep schedules. Third, participants preferred “more human” off-platform recommendations to “pushy” Netflix recommendations. They enjoyed finding content on their own and were critical of Netflix’s algorithmic support in finding content. Based on our findings, we put forth design recommendations that uphold a user’s sense of agency. Specifically, we recommend making the *autoplay* and *autoplay preview* settings more accessible and shifting towards a more human-centered

platform design. We also discussed potential next steps for the research community including how future work could explore the design–agency framework on entertainment platforms, measuring the behavioral impact of features like *autoplay* and *autoplay preview*, and exploring potential regulatory avenues aimed to uphold users' senses of agency online.

References

- [1] 1948. United States v. Paramount Pictures, Inc., 334 U.S. 131.
- [2] 2002. Offering of Netflix Brings in \$82.5 Million. *The New York Times* (May 2002). <https://www.nytimes.com/2002/05/23/business/offering-of-netflix-brings-in-82.5-million.html>
- [3] 2003. Netflix Announces First Quarter 2003 Ending Subscribers of 1,052,000, Up 74% Over The Prior Year. <https://ir.netflix.net/investor-news-and-events/financial-releases/press-release-details/2003/Netflix-Announces-First-Quarter-2003-Ending-Subscribers-of-1052000-Up-74-Over-The-Prior-Year/default.aspx>
- [4] 2007. Netflix delivers 1 billionth DVD. <https://www.nbcnews.com/id/wbna17331123>
- [5] 2018. Department of Justice Announces Initiative to Terminate “Legacy” Antitrust Judgments. <https://www.justice.gov/opa/pr/departement-justice-announces-initiative-terminate-legacy-antitrust-judgments>
- [6] 2019. Memorandum In Support Of Motion Of The United States For An Order Terminating Antitrust Judgments. <https://www.justice.gov/opa/press-release/file/1219831>
- [7] 2021. Watch2Gether - Watch Videos together. <https://w2g.tv/>
- [8] 2022. Scener - Watch Netflix and more with friends. <https://scener.com/>
- [9] 2022. Spotify - Web Player. <https://open.spotify.com/>
- [10] 2022. Subscription video-on-demand (SVOD) subscriptions and subscribers worldwide in 2021 and 2027. <https://www.statista.com/statistics/1235801/global-svod-subscriptions-and-subscribers/>
- [11] 2022. Teleparty | Watch together on Netflix, Youtube, HBO Max + more. <https://www.teleparty.com/>
- [12] Alessandro Acquisti, Idris Adjerid, Rebecca Balebako, Laura Brandimarte, Lorrie Faith Cranor, Saranga Komanduri, Pedro Giovanni Leon, Norman Sadeh, Florian Schaub, Manya Sleeper, Yang Wang, and Shomir Wilson. 2017. Nudges for Privacy and Security: Understanding and Assisting Users' Choices Online. *Comput. Surveys* 50, 3 (Aug. 2017), 44:1–44:41. <https://doi.org/10.1145/3054926>
- [13] Gediminas Adomavicius, Jesse Bockstedt, Shawn Curley, and Jingjing Zhang. 2017. Effects of Online Recommendations on Consumers' Willingness to Pay. <https://papers.ssrn.com/abstract=2982194>
- [14] Amaal Alruwaily, Chelsea Mangold, Tenay Greene, Josh Arshonsky, Omni Cassidy, Jennifer L. Pomeranz, and Marie Bragg. 2020. Child Social Media Influencers and Unhealthy Food Product Placement. *Pediatrics* 146, 5 (Nov. 2020), e20194057. <https://doi.org/10.1542/peds.2019-4057>
- [15] Adam Alter. 2017. *Irresistible: The rise of addictive technology and the business of keeping us hooked*. Penguin.
- [16] Oscar Alvarado, Hendrik Heuer, Vero Vanden Abeele, Andreas Breiter, and Katrien Verbert. 2020. Middle-Aged Video Consumers' Beliefs About Algorithmic Recommendations on YouTube. *Proceedings of the ACM on Human-Computer Interaction* 4, CSCW2 (Oct. 2020), 121:1–121:24. <https://doi.org/10.1145/3415192>
- [17] Sarah Arnold. 2016. Netflix and the myth of choice/participation/autonomy. *The Netflix effect: Technology and entertainment in the 21st century* (2016), 49–62.
- [18] Amanda Baughan, Mingrui Ray Zhang, Raveena Rao, Kai Lukoff, Anastasia Schaadhardt, Lisa D Butler, and Alexis Hiniker. 2022. “I Don't Even Remember What I Read”: How Design Influences Dissociation on Social Media. In *CHI Conference on Human Factors in Computing Systems*. 1–13.
- [19] Eric P. S. Baumer, Rui Sun, and Peter Schaedler. 2018. Departing and Returning: Sense of Agency as an Organizing Concept for Understanding Social Media Non/use Transitions. *Proceedings of the ACM on Human-Computer Interaction* 2, CSCW (Nov. 2018), 1–19. <https://doi.org/10.1145/3274292>
- [20] Md Momen Bhuiyan, Carlos Augusto Bautista Isaza, Tanushree Mitra, and Sang Won Lee. 2022. OtherTube: Facilitating Content Discovery and Reflection by Exchanging YouTube Recommendations with Strangers. In *CHI Conference on Human Factors in Computing Systems*. ACM, New Orleans LA USA, 1–17. <https://doi.org/10.1145/3491102.3502028>
- [21] Richard Blumenthal and Marsha Blackburn. 2022. Text - S.3663 - 117th Congress (2021–2022): Kids Online Safety Act. <http://www.congress.gov/> Archive Location: 2021/2022.
- [22] Stéfany Boisvert. 2020. ‘Queering’ TV, one character at a time: How audiences respond to gender-diverse TV series on social media platforms. *Critical Studies in Television* 15, 2 (June 2020), 183–201. <https://doi.org/10.1177/1749602020914479> Publisher: SAGE Publications.
- [23] Kerstin Bongard-Blanchy, Arianna Rossi, Salvador Rivas, Sophie Doublet, Vincent Koenig, and Gabriele Lenzini. 2021. “I Am Definitely Manipulated, Even When I Am Aware of It. It's Ridiculous!” - Dark Patterns from the End-User Perspective. In *Designing Interactive Systems Conference 2021* (Virtual Event, USA) (DIS '21). Association for Computing Machinery, New York, NY, USA, 763–776. <https://doi.org/10.1145/3461778.3462086>

- [24] Jeffrey A. Bridge, Joel B. Greenhouse, Donna Ruch, Jack Stevens, John Ackerman, Arielle H. Sheftall, Lisa M. Horowitz, Kelly J. Kelleher, and John V. Campo. 2020. Association Between the Release of Netflix's 13 Reasons Why and Suicide Rates in the United States: An Interrupted Time Series Analysis. *Journal of the American Academy of Child & Adolescent Psychiatry* 59, 2 (Feb. 2020), 236–243. <https://doi.org/10.1016/j.jaac.2019.04.020>
- [25] Antonio Buttà. 2018. Google Search (Shopping): an Overview of the European Commission's Antitrust Case. *Antitrust & Public Policies* 5, 1 (2018).
- [26] Maryann R Cairns, Margaret Ebinger, Chanel Stinson, and Jason Jordan. 2020. COVID-19 and human connection: collaborative research on loneliness and online worlds from a socially-distanced Academy. *Human Organization* 79, 4 (2020), 281–291.
- [27] David Carr. 2013. TV Foresees Its Future. Netflix Is There. *The New York Times* (July 2013). <https://www.nytimes.com/2013/07/22/business/media/tv-foresees-its-future-netflix-is-there.html>
- [28] Allison JB Chaney, Brandon M Stewart, and Barbara E Engelhardt. 2018. How algorithmic confounding in recommendation systems increases homogeneity and decreases utility. In *Proceedings of the 12th ACM conference on recommender systems*. 224–232.
- [29] Mary Childs. 2021. Runaway Recommendation Engine : Planet Money. <https://www.npr.org/2021/05/26/1000529597/runaway-recommendation-engine>
- [30] Jonathan Cohn. 2019. *The burden of choice: Recommendations, subversion, and algorithmic culture*. Rutgers University Press.
- [31] Anderson Cooper. 2017. What is 'Brain Hacking'? Tech insiders on why you should care. *60 Minutes* (2017).
- [32] Deborah Crawford and Ken Ross. 2010. Netflix Announces Q3 2010 Financial Results. <https://ir.netflix.net/investor-news-and-events/financial-releases/2010/default.aspx>
- [33] Thomas H Davenport and John C Beck. 2001. The attention economy. *Ubiquity* 2001, May (2001), 1–es.
- [34] Gregory Day and Abbey Stemler. 2020. Are Dark Patterns Anticompetitive? *Ala. L. Rev.* 72 (2020), 1.
- [35] Eva Deuchert, Kossi Adjamah, and Florian Pauly. 2005. For Oscar Glory Or Oscar Money? *Journal of Cultural Economics* 29, 3 (Aug. 2005), 159–176. <https://doi.org/10.1007/s10824-005-3338-6>
- [36] Anthony Dudo, Jacob Copple, and Lucy Atkinson. 2017. Entertainment Film and TV Portrayals of Climate Change and Their Societal Impacts. <https://doi.org/10.1093/acrefore/9780190228620.013.374> ISBN: 9780190228620.
- [37] Nir Eyal. 2014. *Hooked: How to build habit-forming products*. Penguin.
- [38] Nir Eyal. 2019. *Indistractable: How to control your attention and choose your life*. BenBella Books.
- [39] Sheera Frenkel. 2021. Whistleblower discusses how Instagram may lead teenagers to eating disorders. *The New York Times* (Oct. 2021). <https://www.nytimes.com/live/2021/10/05/technology/facebook-whistleblower-frances-haugen>
- [40] Ben Fritz. 2011. Netflix expanding into Latin America. <https://www.latimes.com/business/la-xpm-2011-jul-06-la-fi-ct-netflix-expands-20110706-story.html> Section: Business.
- [41] Damien Geradin and Dimitrios Katsifis. 2021. The antitrust case against the Apple App Store. *Journal of Competition Law & Economics* 17, 3 (2021), 503–585.
- [42] Natalie Gerhart. 2017. Technology Addiction: How Social Network Sites Impact our Lives. *Informing Science* 20 (2017), 179–194. <https://doi.org/10.28945/3851> Num Pages: 179-194 Place: Santa Rosa, United States Publisher: Informing Science Institute.
- [43] Steve Glaveski. 2019. Stop letting push notifications ruin your productivity. *Harvard Business Review* (2019).
- [44] Carlos A. Gomez-Uribe and Neil Hunt. 2015. The Netflix Recommender System. *ACM Transactions on Management Information Systems (TMIS)* (Dec. 2015). <https://doi.org/10.1145/2843948> Publisher: ACM PUB27 New York, NY, USA.
- [45] Colin M. Gray, Yubo Kou, Bryan Battles, Joseph Hoggatt, and Austin L. Toombs. 2018. The Dark (Patterns) Side of UX Design. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18)*. Association for Computing Machinery, New York, NY, USA, 1–14. <https://doi.org/10.1145/3173574.3174108>
- [46] Reed Hastings. 2005. How I Did It: Reed Hastings, Netflix, Internet Business Models Article. <https://www.inc.com/magazine/20051201/qa-hastings.html> Section: How I Did It.
- [47] Miguel Helft. 2007. Netflix to Deliver Movies to the PC. *The New York Times* (Jan. 2007). <https://www.nytimes.com/2007/01/16/technology/16netflix.html>
- [48] Gina Keating. 2012. *Netflixd: The epic battle for America's eyeballs*. Penguin.
- [49] Jason Kelley. 2022. The Kids Online Safety Act Is a Heavy-Handed Plan to Force Platforms to Spy on Young People. <https://www.eff.org/deeplinks/2022/03/kids-online-safety-act-heavy-handed-plan-force-platforms-spy-young-people>
- [50] Nuning Kurniasih. 2017. Internet Addiction, Lifestyle or Mental Disorder? A Phenomenological Study on Social Media Addiction in Indonesia. *KnE Social Sciences* (June 2017), 135–144. <https://doi.org/10.18502/kss.v2i4.879>
- [51] Kagan Kircaburun and Mark D. Griffiths. 2019. Problematic Instagram Use: The Role of Perceived Feeling of Presence and Escapism. *International Journal of Mental Health and Addiction* 17, 4 (Aug. 2019), 909–921. <https://doi.org/10.1007/s11469-018-9895-7>

- [52] Emily Lawrence. 2015. Everything is a Recommendation Netflix, Altgenres and the Construction of Taste. *Knowledge Organization* 42, 5 (2015).
- [53] Jamie Luguri and Lior Jacob Strahilevitz. 2021. Shining a Light on Dark Patterns | Journal of Legal Analysis | Oxford Academic. *Journal of Legal Analysis* 13, 1 (2021), 43–109. <https://academic.oup.com/jla/article/13/1/43/6180579?login=true>
- [54] Kai Lukoff, Ulrik Lyngs, Himanshu Zade, J. Vera Liao, James Choi, Kaiyue Fan, Sean A. Munson, and Alexis Hiniker. 2021. How the Design of YouTube Influences User Sense of Agency. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*. ACM, Yokohama Japan, 1–17. <https://doi.org/10.1145/3411764.3445467>
- [55] Kai Lukoff, Cissy Yu, Julie Kientz, and Alexis Hiniker. 2018. What Makes Smartphone Use Meaningful or Meaningless? *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* 2, 1 (March 2018), 1–26. <https://doi.org/10.1145/3191754>
- [56] Rick Lyman. 2002. What Price Buzz? Hollywood Breaks Bank for Oscar Race. *The New York Times* (Feb. 2002). <https://www.nytimes.com/2002/02/03/us/what-price-buzz-hollywood-breaks-bank-for-oscar-race.html>
- [57] Arunesh Mathur, Gunes Acar, Michael J. Friedman, Eli Lucherini, Jonathan Mayer, Marshini Chetty, and Arvind Narayanan. 2019. Dark Patterns at Scale: Findings from a Crawl of 11K Shopping Websites. *Proceedings of the ACM on Human-Computer Interaction* 3, CSCW (Nov. 2019), 81:1–81:32. <https://doi.org/10.1145/3359183>
- [58] Arunesh Mathur, Jonathan Mayer, and Mihir Kshirsagar. 2021. What Makes a Dark Pattern... Dark? Design Attributes, Normative Considerations, and Measurement Methods. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*. 1–18. <https://doi.org/10.1145/3411764.3445610> arXiv:2101.04843 [cs].
- [59] James W Moore. 2016. What is the sense of agency and why does it matter? *Frontiers in Psychology* 7, 1272 (2016), 1.
- [60] Arvind Narayanan, Arunesh Mathur, Marshini Chetty, and Mihir Kshirsagar. 2020. Dark Patterns: Past, Present, and Future. *Queue* (April 2020). <https://doi.org/10.1145/3400899.3400901> Publisher: ACM PUB27 New York, NY, USA.
- [61] Condé Nast. 2002. The Netflix Effect. <https://www.wired.com/2002/12/netflix-6/> Section: tags.
- [62] José Gabriel Navarro. 2022. Statista - Movie distributors with the most Academy Award nominations in the United States in 2022. <https://www.statista.com/statistics/681263/oscars-nominations-per-film-studio/>
- [63] Antti Oulasvirta, Tye Rattenbury, Lingyi Ma, and Eeva Raita. 2012. Habits make smartphone use more pervasive. *Personal and Ubiquitous Computing* 16, 1 (Jan. 2012), 105–114. <https://doi.org/10.1007/s00779-011-0412-2>
- [64] Jorge Padilla, Joe Perkins, and Salvatore Piccolo. 2022. Self-Preferencing in Markets with Vertically Integrated Gatekeeper Platforms*. *The Journal of Industrial Economics* 70, 2 (2022), 371–395. <https://doi.org/10.1111/joie.12287> eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/joie.12287>.
- [65] So Yeon Park and Blair Kaneshiro. 2021. Social Music Curation That Works: Insights from Successful Collaborative Playlists. *Proceedings of the ACM on Human-Computer Interaction* 5, CSCW1 (April 2021), 117:1–117:27. <https://doi.org/10.1145/3449191>
- [66] Steve Rathje, Jay J. Van Bavel, and Sander van der Linden. 2021. Out-group animosity drives engagement on social media. *Proceedings of the National Academy of Sciences* 118, 26 (June 2021), e2024292118. <https://doi.org/10.1073/pnas.2024292118> Publisher: Proceedings of the National Academy of Sciences.
- [67] Manoel Horta Ribeiro, Raphael Ottoni, Robert West, Virgílio A. F. Almeida, and Wagner Meira. 2020. Auditing radicalization pathways on YouTube. In *Proceedings of the 2020 Conference on Fairness, Accountability, and Transparency (FAT* '20)*. Association for Computing Machinery, New York, NY, USA, 131–141. <https://doi.org/10.1145/3351095.3372879>
- [68] Felix Richter. 2017. Netflix Surpasses Major Cable Providers in the U.S. <https://www.statista.com/chart/9799/netflix-vs-cable-pay-tv-subscribers/>
- [69] Thomas Ricker, Vlad Savov, and Bryan Bishop. 2011. Netflix service coming to the UK and Ireland in early 2012. <https://www.theverge.com/2011/11/14/2560476/netflix-uk-ireland>
- [70] Johnny Saldaña. 2013. *The Coding Manual for Qualitative Researchers* (2nd ed ed.). SAGE, Los Angeles.
- [71] Michael A. Salinger. 2020. Self-Preferencing. <https://doi.org/10.2139/ssrn.3733688>
- [72] Natasha Dow Schüll. 2012. *Addiction by Design: Machine Gambling in Las Vegas*. Princeton University Press.
- [73] Ryan Mac Silverman, Craig. 2021. Facebook Has Been Showing Military Gear Ads Next To Insurrection Posts. <https://www.buzzfeednews.com/article/ryanmac/facebook-profits-military-gear-ads-capitol-riot> Section: Tech.
- [74] Caro de Sousa and Pedro. 2020. What Shall We Do About Self-Preferencing? <https://papers.ssrn.com/abstract=3659065>
- [75] Emily Steel. 2016. At CES, Netflix Adds Over 130 Countries to Streaming Service. *The New York Times* (Jan. 2016). <https://www.nytimes.com/2016/01/07/business/media/netflix-expands-its-streaming-service-worldwide.html>
- [76] Don Steinberg. 2020. Netflix's 'Queen's Gambit' Sparks a Chess Boom—Here's How to Get Started. <https://www.wsj.com/articles/netflixs-queens-gambit-sparks-a-chess-boomheres-how-to-get-in-on-it-11606332062> Section: Arts.
- [77] Julia Stoll. 2022. Statista - Countries with the Biggest Netflix Library Worldwide. <https://www.statista.com/statistics/1013571/netflix-library-size-worldwide/>

- [78] Julia Stoll. 2022. Statista - Netflix subscribers count worldwide 2011-2022. <https://www.statista.com/statistics/250934/quarterly-number-of-netflix-streaming-subscribers-worldwide/>
- [79] Julia Stoll. 2022. Statista - SVOD subscriber count worldwide 2020-2027, by service. <https://www.statista.com/statistics/1052770/global-svod-subscriber-count-by-platform/>
- [80] Jonathan Taplin. 2017. *Move fast and break things: How Facebook, Google, and Amazon have cornered culture and what it means for all of us*. Pan Macmillan.
- [81] Nicholas Thompson. 2018. When Tech Knows You Better Than You Know Yourself. *Wired* (2018). <https://www.wired.com/story/artificial-intelligence-yuval-noah-harari-tristan-harris/>
- [82] Jonathan A. Tran, Katie S. Yang, Katie Davis, and Alexis Hiniker. 2019. Modeling the Engagement-Disengagement Cycle of Compulsive Phone Use. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*. ACM, Glasgow Scotland Uk, 1–14. <https://doi.org/10.1145/3290605.3300542>
- [83] Tim Wu. 2017. *The attention merchants: The epic scramble to get inside our heads*. Vintage.
- [84] Nicola L Young, Daria J Kuss, Mark D Griffiths, and Christina J Howard. 2017. Passive Facebook use, Facebook addiction, and associations with escapism: An experimental vignette study. *Computers in Human Behavior* 71 (2017), 24–31.
- [85] Cat Zakrzewski, Christiano Lima, Elizabeth Dwoskin, and Will Oremus. 2021. Facebook whistleblower Frances Haugen tells lawmakers that meaningful reform is necessary ‘for our common good’. <https://www.washingtonpost.com/technology/2021/10/05/facebook-senate-hearing-frances-haugen/> Section: Technology.
- [86] Shoshana Zuboff. 2015. Big other: surveillance capitalism and the prospects of an information civilization. *Journal of Information Technology* 30, 1 (March 2015), 75–89. <https://doi.org/10.1057/jit.2015.5>

A SUPPLEMENTARY MATERIALS

Here we include additional graphics and our interview materials including the background survey, interview guide, and interview visuals.

A.1 Netflix Originals Screenshot



Fig. 1. Extended screenshot of the Netflix mobile homepage illustrating the disparate size of Netflix Original promotions.

A.2 Interview Materials

A.2.1 Background and Demographics Survey Instrument.

- (1) What is your name:
 - Text entry
- (2) What is your age?
 - 18-24 years old
 - 25-34 years old
 - 35-44 years old
 - 45-54 years old
 - 55 years or older
 - Prefer not to answer

- (3) What is your highest level of education?
 - Less than High School
 - High School Graduate
 - Some College
 - 2 Year Degree
 - 4 Year Degree
 - Professional Degree
 - Doctoral Degree
 - Prefer not to answer
- (4) What is your estimated annual income? (Leave blank if you prefer not to answer.)
 - Text entry
- (5) What is your occupation? (Leave blank if you prefer not to answer.)
 - Text entry
- (6) What is your gender?
 - Female Identifying
 - Male Identifying
 - Non-Binary
 - Prefer not to answer
 - Prefer to self-describe
 - Text entry
- (7) What state do you live in?
 - Drop-down menu
- (8) How often do you use Netflix?
 - More than once a day
 - Once a day
 - More than once a week
 - Once a week
 - Less than once a week
 - Never
- (9) How many hours a day do you typically spend watching Netflix?
 - Hours: Slider 0-24
- (10) What devices do you use to watch Netflix? (Select all that apply)
 - Mobile phone (e.g. iPhone or Android)
 - Desktop/Laptop Computer
 - Smart TV
 - Tablet (e.g. iPad)
 - Gaming Console (e.g. Xbox, Wii, PlayStation)
 - Other (Please specify):
 - Text entry
- (11) How long have you been using Netflix?
 - Years: Slider 0-24
- (12) How do you spend time on Netflix? (Select all that apply)
 - Watch TV shows
 - Watch Movies
 - Watch Fast Laughs (only available on mobile)
 - Play Netflix Games (only available on mobile)
 - Other (Please specify):
 - Text entry

- (13) What type of TV Shows or Movies do you watch? *Note: This question was shown only to participants that answered 'Watch TV shows' or 'Watch Movies' to question 12*
- Action & Adventure
 - Anime & Animation
 - Children & Family
 - Classics
 - Comedy
 - Documentary
 - Drama
 - Faith & Spirituality
 - Foreign
 - Horror
 - Independent
 - LGBTQ
 - Music & Musicals
 - Romance
 - Sci-Fi & Fantasy
 - Special Interest (e.g. cooking, hobbies, education, etc.)
 - Sports & Fitness
 - Thrillers
 - Other (Please specify):
 - Text entry
- (14) Rate your satisfaction with Netflix:
- Extremely Dissatisfied
 - Somewhat Dissatisfied
 - Neither Satisfied nor Dissatisfied
 - Somewhat Satisfied
 - Extremely Satisfied
- (15) Do you also use any of the following subscription based video content streaming platforms?
- Hulu
 - Amazon Prime Video
 - Criterion Collection
 - Peacock TV
 - HBO Max
 - Fubo TV
 - Disney+
 - YouTube TV
 - Other (Please specify):
 - Text entry
 - I do not use any other platforms

A.2.2 *Interview Guide.* We conducted semi-structured interviews using the following guide.

Stage 1: Decision to Open Netflix

- The first thing we're going to talk about today is why you use Netflix. On an average day, why do you open up Netflix? Can you walk us through that process...
 - Tell us about the times of day you watch?
 - Who is with you when you are watching Netflix?

- What [other things] are you doing when you are watching?
 - Tell us about your mood when you are watching?
 - How often are you opening Netflix to watch something you know you want to watch?
- Versus:
- How often are you opening Netflix to find something to watch?

Stage 2: Content Discovery

- The next thing we want to know about is how you find what you watch. Specifically, once you have Netflix open, give us your first thoughts: how do you choose what to watch?
 - In general, can you describe your strategies you use to find recommended content? What do you usually end up watching?
 - How do you get recommendations? How often are these from friends or family? Or other sources for instance: Blogs, articles, websites, forums, social media? How often are they from Netflix?
 - Which of these recommendations are most valuable to you? Why?
 - Which are least valuable? Why?
- Aside from recommendations, how do you find shows on your own? Talk us through the difference between using Netflix to help choose what to watch vs finding content on your own or off Netflix.
 - What does it feel like to find something that has not been recommended to you contrast with what does it feel like to watch something that has been recommended to you?
 - How do you feel about recommendation engines supporting you in discovering new content?
 - In the context of Netflix content (movies and shows) , what does the word discovery mean to you?
- Next, zooming in on specific features, I'll show you some features that Netflix has on its homepage to help with choosing content. What features do you use on Netflix to find shows/movies/stuff to watch? [We then shared our screens displaying the Interview Visuals [A.2.3](#)] Netflix has features including top ten, recommended for you, and the search bar. How often do you use these features? For each feature:
 - Why do you use [x feature]?
 - How do you think the use of [x feature] affects what you watch?
 - Wow useful is it to you?

Stage 3: Content Consumption

- We want to also know more about how you're watching Netflix. At the end of a show/movie, Netflix starts playing the next episode of that show/related shows/next movie automatically. Can you describe a time when this has happened to you?
 - What do you do when the auto-play happens?
 - How do you feel about this feature?
 - How do you think this feature affects you?
 - Have you ever tried to change the setting of this feature? Why/Why not?
- How long do you tend to watch Netflix content at a time?
- If you are watching a TV show, do you tend to watch one or more than one episode at a time? How many? Do the episodes autoplay? Why do you watch one/more than one at a time?
- What are your thoughts on how Netflix releases episodes should they be weekly or whole seasons at once. - for new shows

- If you finish a movie, do you tend to watch another one? What do you do when you see the recommendation starting to be played automatically? Why? Are you watching more content on autoplay or more content that you find on your own?
- Tell me more about the relationship between Netflix and your time management
 - Are there any strategies you use to manage your time on Netflix?
 - Tell me more about the relationship between Netflix and your sleep schedule
 - What does it look like when you stop watching Netflix?
 - Does anything coincide with the end of watching?
 - What are some things that make you (or would make you) stop watching?

Stage 4: Post-Session Emotion

- Next, we want to know how Netflix makes you feel. How do you tend to feel after a session of watching Netflix? Why do you feel this way?
- Is there anything you would like to change about how you watch Netflix? Why/why not?
- What do you appreciate about your relationship with Netflix or how you watch or watching behavior?

Stage 5: Additional Comments and Conclusion

- Finally, we want to learn more about what you like and dislike about Netflix. If you were to design a platform similar to Netflix, what would you keep? Why? What would you change? Why?
- Are there any Netflix features we did not cover that are particularly useful or helpful to you?
- Are there any Netflix features we did not cover that are particularly harmful or unhelpful to you?
- Are there any strategies or tools or tricks that you use to regulate or supplement your Netflix experience? Anything you use alongside. What and how? Are there any other tools that you wish existed?
- How does your experience on Netflix compare with other streaming media platforms you use?
- Is there anything else regarding Netflix that you want to talk about?

A.2.3 *Interview Visuals.* We used screenshots of Netflix's homepage as interview probes.

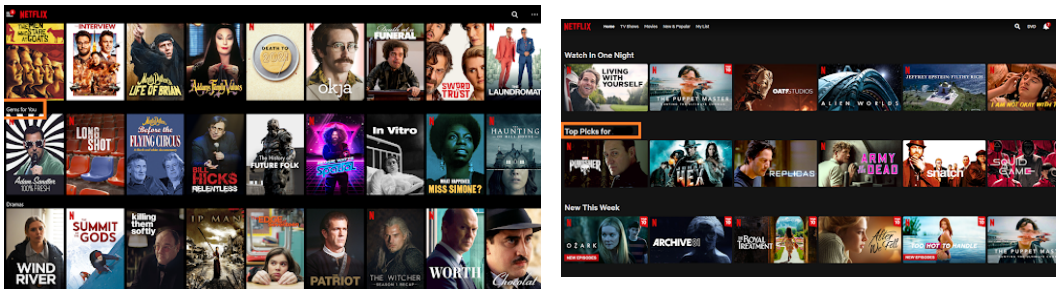


Fig. 2. Screenshots exemplifying the *For You* home page feature.

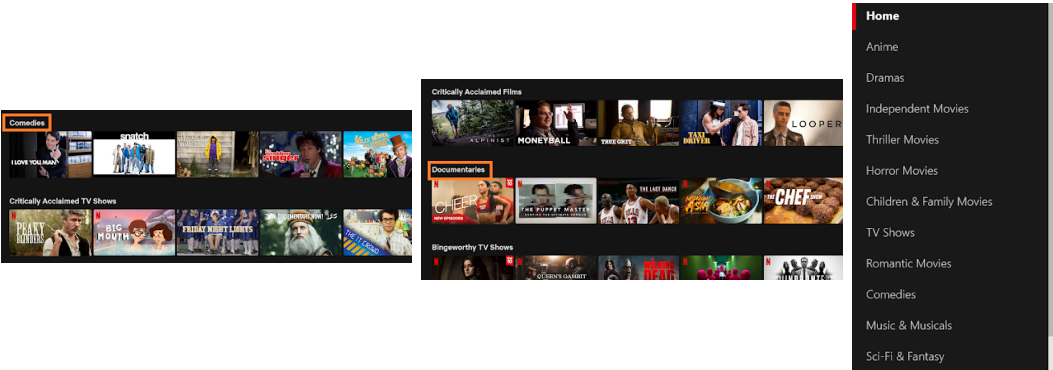


Fig. 3. Screenshots exemplifying the *Genres* home page feature.

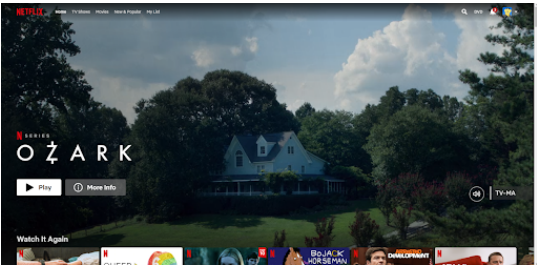


Fig. 4. Screenshot exemplifying the *Autopreview* feature.

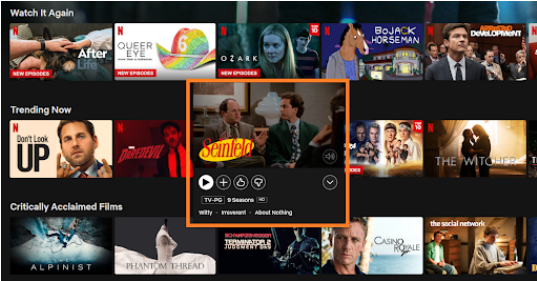


Fig. 5. Screenshot exemplifying the *Hover-Preview* feature.

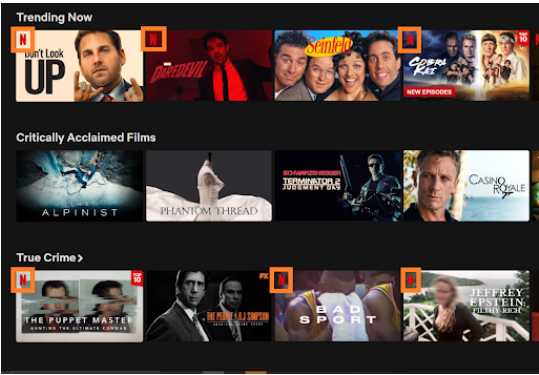


Fig. 6. Screenshot exemplifying the *Netflix-N* badge.

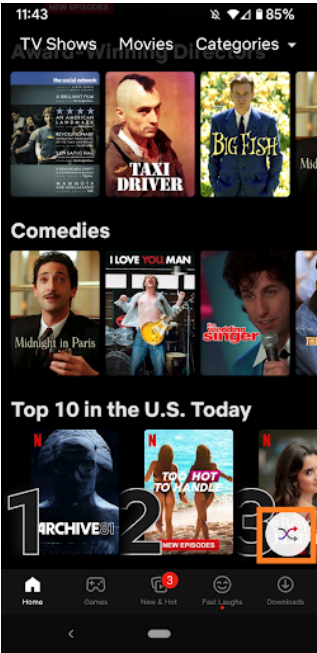


Fig. 7. Screenshot exemplifying the *Random Shuffle* feature.

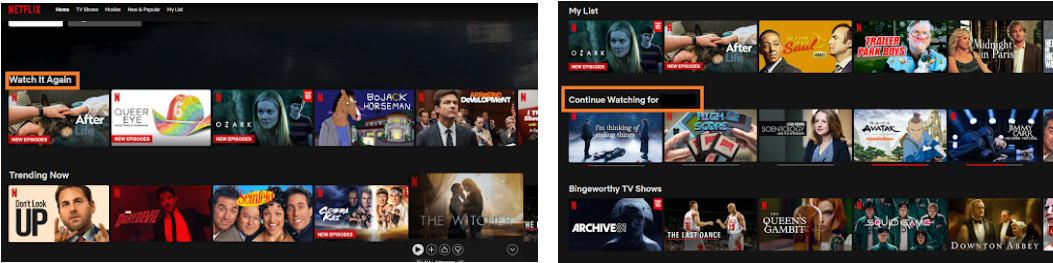


Fig. 8. Screenshots exemplifying the *Recently Watched* home page feature.

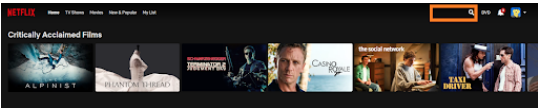


Fig. 9. Screenshot exemplifying the *Search Bar* feature.

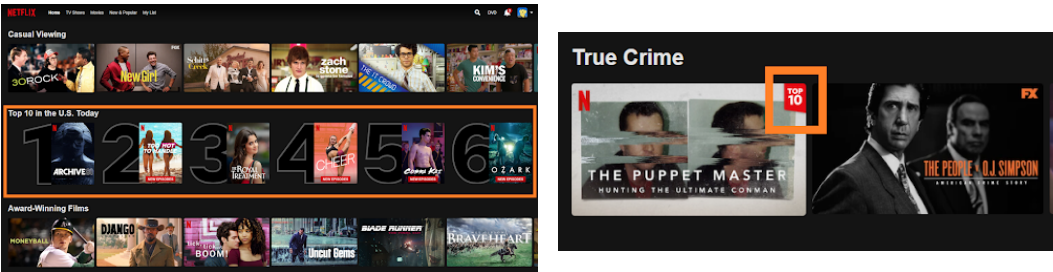


Fig. 10. Screenshots exemplifying the *Top 10* home page feature.

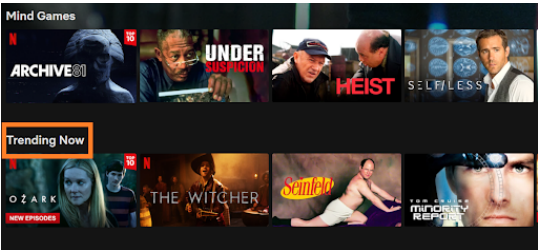


Fig. 11. Screenshot exemplifying the *Trending* feature.