Labor, classification, and productions of culture on Netflix

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Abstract:

Purpose: This paper examines promotional practices Netflix employs via Twitter and its automated recommendation system in order to deepen our understanding of how streaming services contribute to sociotechnical inequities under capitalism.

Design/methodology/approach: Tweets from two Netflix Twitter accounts as well as material features of Netflix's recommendation system were qualitatively analyzed using inductive analysis and the constant comparative method in order to explore dimensions of Netflix's promotional practices.

Findings: Twitter accounts and the recommendation system profit off people's labor to promote content, and such labor allows Netflix to create and refine classification practices wherein both people and content are categorized in inequitable ways. Labor and classification feed into Netflix's production of culture via appropriation on Twitter and algorithmic decision-making within both the recommendation system and broader AI-driven production practices.

Originality: Findings demonstrate that via surveillance tactics that exploit people's labor for promotional gains, enforce normative classification schemes, and culminate in normative cultural productions, Netflix engenders practices that regulate bodies and culture in ways that exemplify interconnections between people, machines, and social institutions. These interconnections further reflect and result in material inequities that crystalize within sociotechnical processes.

Social implications: Assemblages that include algorithmic recommendation systems are imbued with structural inequities and therefore unable to be fixed by merely diversifying cultural industries or retooling algorithms on streaming platforms. It is necessary to understand systemic injustices within these systems so that we may imagine and enact just alternatives.

Keywords: Algorithmic recommendation systems; Netflix; Twitter; promotion; artificial intelligence; immaterial labor; classification; culture; social informatics; qualitative methods

Article classification: Research paper

Introduction

Algorithmic recommendation systems have captured attention due to the significant implications of their use; people interact with systems that claim to predict what they want to consume based on their behaviors. Streaming services such as Netflix are popular examples of algorithmic content recommendation that, like other media institutions, engage in promotional practices to cultivate and profit off audiences. However, intersections between promotion and algorithmic content recommendation are underexplored, which limits our understanding of the

wider sociotechnical ecosystems in which content recommendation services reside. In this paper, I examine the practices Netflix employs to promote its content via Twitter and the features of its recommendation system. I examine connections between Netflix's recommendation system and its Twitter accounts to understand how labor, classification, and productions of culture highlight sociotechnical inequities in algorithmic content recommendation under capitalism. Findings demonstrate that via surveillance tactics that exploit people's labor for promotional gains, enforce normative classification schemes, and culminate in normative cultural productions, Netflix engenders practices that regulate bodies and culture in ways that exemplify interconnections between people, machines, and social institutions. These interconnections further reflect and result in material inequities that crystalize within sociotechnical processes.

Literature Review

Algorithmic Recommendation Systems

Algorithmic recommendation systems encompass automated services like Netflix meant to provide people with personalized recommendations based on systems' interpretations of their preferences for content like television or movies. Such determinations are based on individuals' past search behaviors or other personal data (Deldjoo *et al.*, 2016). A system like Netflix aims to suggest relevant content to individuals to entice them to a) consume products, and b) remain users of the platform (Eriksson *et al.*, 2018; Johnson, 2018). However, how systems recommend content is typically opaque (Jin *et al.*, 2019), and systems' black boxes obscure algorithms that surveille people and use their data to promote products (Hallinan and Striphas, 2016; Gentleman, 2019). Though some scholars suggest that recommendation systems may be improved by providing users with control mechanisms including the ability to rate content, adjust algorithmic parameters, and build personal profiles (Jin *et al.*, 2019), such interventions operate at an individual level and do not address structural concerns with algorithmic content recommendation (Hesmondhalgh and Meier, 2018).

Such structural concerns include surveillance practices (Gentleman, 2019) wherein systems use people's data (e.g., the time of day they use a platform, the duration of time they use a platform, the content they interact with on a platform, their location, the devices they use, etc.) to both recommend content and to refine the systems' algorithms (Srnicek, 2017; Blattmann, 2018). It follows that systems use and subsequently profit off how people interact with them; recommendation systems are not only content providers, but also "private data broker[s]" (Eriksson *et al.*, 2018, p. 4) that control how content is accessed, mediated, and experienced (Hesmondhalgh and Meier, 2018). The recommendation system developed and deployed by Netflix provides a salient case of these phenomena.

Netflix

First developed in 1997 as an online DVD rental store, Netflix is currently a streaming service that offers subscribers access to films and television. In 2019, Netflix reported over 100 million subscribers, though the actual number of users is larger given that people share subscriptions (McFadden, 2019). As of 2019, Netflix was available in every country except China, Crimea, Syria, and North Korea (Nguyen, 2018).

Netflix executives boast that their system generates personalized recommendations to both match and expand people's taste in movies and television (Nguyen, 2018). Optimistic conceptions of Netflix contend that the internet's open and participatory affordances allow audiences to make independent choices about what to consume (Christian, 2017). However, such techno-futurism should be tempered with critical understandings of Netflix's industrial practices, content, and branding (Christian, 2017; Johnson, 2018), partly because platforms like Netflix are mediated by many stakeholders and infrastructures (Eriksson *et al.*, 2018) that subject them to structural inequities under capitalism (Hesmondhalgh and Meier, 2018), and thus influence their capacity to recommend content, as well as the motivations that drive content recommendation (Hesmondhalgh, 2002) .

For example, Netflix's recommendation system is meant to maximize corporate profit, as enumerated by executives including Founder/CEO Reed Hastings and VP Todd Yellin. From 2006-2009, Netflix ran the "Netflix Prize," which offered $1 million to the first person or group to improve the recommendation system's accuracy by 10% (Hallinan and Striphas, 2016). Though the winning team's proposal was not implemented, subsequent developments in Netflix's recommendation system, such as the "post-play" feature, support binging behaviors that executives connect to profit margins (Nguyen, 2018). Netflix desires to "hook" people by fostering binge-watching behaviors; ultimately, Netflix executives want their subscribers to "keep binging" so they stay with the service (Blattmann, 2018). Seaver (2018) calls these features and the goals they are designed to meet anthropological traps with significant ethical implications: because every element of a platform like Netflix can be framed as a personal recommendation, such systems constantly manipulate and constrain their users, often without uses' explicit consent.

Netflix claims that more than 80% of the television and movies people watch are discovered through its recommendation system. Recommendations develop from a system comprised of 1) Netflix members whose data inform the recommendations; 2) human taggers Netflix employs to classify content; and 3) "the machine learning algorithms that take all of the data and put things together" (Blattmann, 2018; McFadden, 2019, n.p.). Individuals are classified into a number of "taste groups" based on behaviors the Netflix system tracks, including what they watch, when they watch, and how they watch. In addition to these behaviors, the system also tracks people's searching activities across devices, and searching behaviors further inform recommendations (Lamkhede and Das, 2019). "Taste groups" classify people's preferences; they are comprised of "taste dopplegangers…or clusters of people who have the same content preferences" (Nguyen, 2018, n.p.). Individuals neither control nor are informed of which taste groups they belong to. As of 2018, over 2,000 taste groups existed on Netflix (Nguyen, 2018). The taste groups into which a person is classified at least partly dictate what content will be recommended to them, as well as how that content will be presented. For example, individuals who belong to various taste groups will be shown different materials, such as trailers and thumbnail images, to cater to their preferences and help them discover content so they continue using Netflix (Blattmann, 2018; Lawrence, 2015). Figures 1 and 2 exemplify how recommendations appear on a Netflix homepage as of February 2020.

[Insert Figure 1]

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Figure 1. The top of the Netflix homepage, showcasing 1) a trailer for the original series *Cheer*; 2) a row of TV show recommendations that include each program's title and a thumbnail image; and 3) a drop-down menu of notifications recommending content, which also includes titles and thumbnails.

[Insert Figure 2]

Figure 2. Further down the homepage, showcasing two genre rows ("Historical TV Shows" and "Comedy") the viewer may be interested in, followed by a selection of "Netflix Originals."

Because Netflix cannot rely on offering content licensed by its competitors (e.g., AT&T owns *Friends*), the company "needs more of its own must-watch media to woo subscribers and keep them streaming" (Nguyen, 2018, n.p.). Netflix releases programs rapidly and globally; in 2018, the company planned 80 films and 700 TV shows (Nguyen, 2018). However, while companies like Netflix may claim to advance inclusive production practices, they rarely involve marginalized people; per Smith, Choueiti, and Pieper (2016), streaming corporate channels mimic legacy media in offering few opportunities to marginalized people behind and in front of the camera. Though Netflix is credited for operating outside traditional networked media environments (Lotz, 2007; Lotz, 2017), scholars argue that it still subscribes to traditional dynamics of production (Johnson, 2018).

Netflix promotes its content to cultivate audiences and gain capital. Scholars point out that, especially via promotional practices that establish Netflix's identity as purveyor of quality media, the platform engages in the same patterns of promotion as traditional networked channels that want to establish a solid foundation of viewers (Cunningham and Silver, 2013; Johnson, 2018). Netflix does not only recommend content through its system; it uses more overt advertising tactics to promote its materials. The company's social media accounts serve as an additional means of recommending content to subscribers; in particular, Netflix uses Twitter to communicate with audiences and showcase available content. Media corporations of all sizes use Twitter and other social media platforms for promotion in order to strategically connect to audiences (Greer and Ferguson, 2011). Twitter accounts and the recommendation system are inherently connected; they both promote content, and they likely feed into each other. For example, programs recommended to audiences on the platform may be further promoted on Twitter to advance their viewership. Netflix executives claim to believe that when a person selects recommended content, they do so because the recommendation system introduces them to that content (Blatmann, 2018). This is likely oversimplified; recommendations may provide easy access to content that people *already* want to consume, perhaps partially because they saw it promoted on Twitter. How Netflix uses social media like Twitter to promote content—and, in particular, how such practices connect to algorithmic content recommendation to shape cultural productions and values—remain underexplored.

Promotional Practices

Netflix perpetuates instantiations of promotional culture that Aronczyk and Powers (2010) claim represent "the commodification of everyday life" (p. 3). Within promotional

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culture, capitalist forms of exchange systematically dominate culture; in particular, information and communication become prime sources of capital (Aronczyk and Powers, 2010, p. 7) meant to attract consumers to particular platforms, products, or ideas for said entities' economic gain. Promotion is pervasive and not limited to common forms of market exchange; it is applicable to activities beyond what is clearly commercial (Wernick, 1991).

Examinations of promotion should extend beyond merely acknowledging that everyday phenomena are marketed and commodified (Aronczyk and Powers, 2010). Banet-Weiser (2012) argues that 1) brands are about culture, 2) brands are meant to invoke particular experiences associated with a company or product, and 3) brands are a story told to consumers. Such invocations of experience and storytelling within promotional culture may discourage people from critically reflecting on promotional practices used by entities such as Netflix (Andrejevic, 2009). However, media industries use promotion to construct identities, communities, and lifestyles in order to attract audiences, and even seemingly inclusive or subversive programming often capitalizes on "progressive social values" based on profit-driven market research (Himberg, 2018).

It is necessary to investigate Netflix's promotional practices in order to further understand its cultural impact as well as the assemblages it forms with people who interact with its recommender system and wider structural instantiations of institutionalized inequities. This paper begins to explore these phenomena of interest (Charmaz, 2014) via a study of two sources of Netflix's promotions: verified Netflix Twitter accounts, and material features of Netflix's recommendation system. Results help us further understand how Netflix, as an exemplar of algorithmic content recommendation, contributes to sociotechnical ecosystems and the inequities that are reified within them.

Methods

I used a Google Chrome extension to scrape tweets from two verified Netflix Twitter accounts: Netflix US (@netflix) and Netflix Family (@netflixfamily). I selected these accounts because they are intended to appeal to different audiences: one focuses on region (the US) while the other corresponds to contents' attributes (i.e., content that appeals to nuclear families). The accounts served as analytical cases through which I could explore Netflix's promotional practices on Twitter (e.g., Szlyk, Gulbas, and Zayas, 2019). I sampled tweets from August 30, 2019, to December 31, 2019, which amassed a corpus of 1,432 tweets.

As I collected and analyzed tweets, I simultaneously conducted a critical literature review (Connaway & Radford, 2017) of both academic and popular literature that discusses the features Netflix employs to recommend content to people. This allowed me to review a number of features and what is known about how they operate. Table 1 defines the features I analyzed.

[Insert Table 1]

Table 1. Material features analyzed in this study.

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I used inductive analysis and the constant comparative method to qualitatively analyze Twitter data and material features (Charmaz, 2014). I manually coded data, progressing from open descriptive coding to axial coding, and finally to more analytical focused coding (Charmaz, 2014). Consistent with a constructivist interpretive approach to qualitative data collection and analysis, I coded both data sources simultaneously so that findings from Twitter and findings about material features iteratively informed the analytic process (Charmaz, 2014). I ceased analysis when I reached reasonable saturation (Low, 2019). I established the trustworthiness of my findings via peer debriefing sessions with colleagues in both information science and media studies wherein we discussed, debated, and refined my findings (Lincoln & Guba, 1985). Results center around three categories that exemplify sociotechnical inequities expressed by Netflix's promotional practices: laboring, classifying, and producing culture.

Ethical considerations

Collecting and analyzing Twitter data begets a number of ethical concerns. Twitter data is often collected without individuals' knowledge or permission, and researchers' use of Twitter data for analytic gains may perpetuate practices that threaten Twitter users' anonymity and leave their identities or the identities of entire communities vulnerable to discovery and increased surveillance (Fiesler and Proferes, 2018; Hoffmann and Jones, 2016). These concerns are perpetuated by institutions such as Institutional Review Boards (IRBs) and university cultures that do not classify tweets as "human subjects data" (Vitak *et al.*, 2017). The study presented here was exempt under [concealed] IRB. Because Netflix US and Netflix Family are *corporate* accounts, most tweets collected for this study do not perpetuate undue data privacy violations because they do not risk exposing a person's or marginalized group's identity. However, both accounts retweet content from individual public figures (e.g., celebrities) and laypeople. I dealt with these concerns in the following manner: I obfuscated direct quotes from laypeople and I did not use identifiers that may be linked to their accounts. However, I do directly quote tweets/retweets from public figures and provide their names given their general visibility.

Results

Given the interpretivist tradition from which this research is produced, this section combines results and discussion, and is followed by a section that explicitly states the implications of this research (Charmaz, 2014). Analysis resulted in three categories that exemplify how Netflix's promotional practices reify and produce inequities in sociotechnical assemblages: laboring, classifying, and producing culture. These findings demonstrate how Netflix's tweets and recommendation system function in relation to individual people whose data Netflix exploits in order to operate, as well as structural power dynamics that are institutionalized in promotional discourses and cultural industries writ large. Findings demonstrate that though Netflix perpetuates long-standing promotional practices within media institutions, the inequities inherent in such practices are amplified by Twitter affordances and power dynamics that are structurally encoded (Benjamin, 2019) into Netflix's algorithms.

Laboring

Netflix's Twitter activity and the material features of its recommendation system demonstrate that Netflix uses people's labor to promote its content. Such labor is *immaterial*; immaterial labor describes how cognitive and affective activities are valued and commodified under capitalism (Lazzarato, 1996). Netflix uses people's immaterial labor in two ways: 1) retweeting people to promote content and 2) using people's data to inform recommendations. Though activities like tweeting and interacting with platforms that harvest people's data may not be considered "work" in a normative sense (Dalmer & Huvila, 2019; Dalmer & McKenzie, 201920), they constitute aspects of often-invisible immaterial labor and information work, including performances of cybernetics work and activities that sway cultural standards and public opinion (Lazzarato, 1996). When Netflix uses people's Twitter content and platform-based data to promote content and inform recommendations, the corporation *exploits* people by using their creations (e.g., tweets) and actions (e.g., interactions with Netflix's platforms) for both capital gain and platform development (Anselmo, 2018). Exploitation occurs primarily because people do not explicitly consent to these processes, they are not compensated, and their actions are not recognized as labor because they are immaterial. However, "immaterial" work provides media industries like Netflix with material gains (e.g., Andrejevic, 2008); people create Twitter content that Netflix uses to promote their productions, and people serve as informants for the development of Netflix's algorithmic systems.

Both Netflix US and Netflix Family frequently retweet information from laypeople who post reactions to content on Netflix. Netflix US, for example, retweets numerous reactions to 2019's *The Dark Crystal* that note its storyline, visual effects, and legacy as a Jim Henson creation. The accounts also retweet public figures who endorse Netflix content, or who are employed by Netflix. For example, Netflix US retweets a popular TV star who enjoyed the original series *Raising Dion*, while Netflix Family frequently showcases Ellen DeGeneres's tweets about her role in Netflix's adaptation of *Green Eggs and Ham*. Here, Netflix takes advantage of labor performed by laypeople and public figures who use their Twitter presences to discuss Netflix content; their activities allow Netflix to, in the case of *The Dark Crystal*, promote artistic features of original content (Lazzarato, 1996), and, in the case of *Green Eggs and Ham*, demonstrate the cultural relevancy of such content (i.e., via the direct involvement of Ellen DeGeneres; Terranova, 2003; Banet-Weiser, 2012).

Both accounts combine retweets with original tweets to promote content. Original tweets often blatantly advertise a show or movie; for example, both accounts post weekly lists of newly available titles. Retweets from laypeople's accounts, on the other hand, provide a more affective means through which to promote content. They may feature popular GIFs that relay excitement (e.g., a cat typing furiously on a keyboard), humor (e.g., "kombucha girl"), or devastation (e.g., a person crying). These tweets serve to capture emotions that Netflix content can evoke, thus enticing people to watch said content. However, not all retweets are affective in this manner. Others appeal to audiences by explicitly telling them to watch certain content; Netflix US retweets a layperson who encourages "everyone" to watch *Unbelievable* because of its truth-telling, while Netflix Family retweets a layperson who claims that anyone with children should watch *Spookley the Square Pumpkin*.

Netflix accounts also directly engage people's labor through tweets that ask them to respond to questions or requests. Netflix US, for example, tweets, "Tag your Connie,"

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accompanied by a GIF from its popular original series *Big Mouth*, while Netflix Family says, "Tell us what your kid's Halloween costume is and we'll recommend something for them to watch." Responses to these tweets are significant because they bring more attention to Netflix's accounts, and they provide Netflix with promotional material that they do not have to directly generate. Responses to the *Big Mouth* tweet promote the show via the affective dimensions of friendship, while the Halloween tweet provides Netflix Family with opportunities to recommend content that they may not otherwise cover. Netflix accounts use the knowledge generated by these tweets to gain market value (Aronczyk and Powers, 2010; Chaput, 2011). By retweeting information from both laypeople and public figures to their followers, the accounts promote Netflix's service to mass audiences on Twitter. It follows that people who Netflix retweets— especially those who are not otherwise employed by Netflix—perform "free" knowledge work based on their consumption of Netflix's content in a type of capitalist cultural flow (Terranova, 2003).

Most forms of labor involve surveillance practices wherein powerful figures monitor subordinates' behaviors (Foucault, 1975). Netflix's tactics are no exception, and these surveillance tactics further highlight the exploitative nature of ways that Netflix uses people's labor for corporate gains. While power hierarchies in immaterial labor are less clear-cut than in traditional work scenarios, surveillance remains a key component of immaterial labor, especially as it occurs online; despite its virtual and dispersed qualities, immaterial labor involves networks of surveillance wherein powerful entities—here, Netflix—profit from the work of less powerful bodies—here, people who tweet about and use Netflix (Lazzaro, 1996; Terranova, 2003; Zuboff, 2019). Retweeting is a form of surveillance; while some people tag Netflix or specific shows' accounts, many do not, and are instead noticed by Netflix's Twitter accounts because of words or phrases they use that Netflix tracks. Such surveillance practices are themselves inequitable; just as BIPOC workers are overly surveilled in racist workplaces, so are Black people on Twitter disproportionately exploited in corporate retweeting practices so that their affective labor and epistemic authority can be used as a means to legitimize media productions that feature people of color (Maragh, 2016).

It follows that surveillance occurs during the second type of immaterial labor Netflix exploits: people's use of the platform's recommendation system. The system could not function without exploiting users' data in order to make recommendations that ultimately serve as ways to promote their content (Srnicek, 2017). Netflix's recommendation system captures users' data from nearly every angle of their viewership; while executives claim they do not record demographic data, they do record everything from what a person viewed to how, when, where, and on what device they viewed it (Blattmann, 2018). The system also monitors the trailers a person watches, the genre rows they select from, the thumbnails that attract them, their search patterns, and the time it takes them to select a program after it appears on their homepage (Lamkhede and Dou, 2019). Collectively, these data are a key component of how Netflix displays content and advances its systems design (e.g., Lawrence, 2015). Therefore, in addition to using people's Twitter content to promote materials, Netflix also uses people's embodied practices with the platform, and resultant data, to inform platform aesthetics, develop algorithmic interventions, and promote content via the platform's interface. From multiple angles, Netflix profits off people's labor for its own material and capital gains.

        Netflix demonstrates what Gentleman (2019) characterizes as an algorithmic feedback loop where assemblages between bodily practices and content recommendations co-constitute each other and are revealed in surveillance and recommendation practices. Netflix could not function without users' labor; the recommendation system is a manifestation of normalized surveillance and user exploitation (Cohen, 2016) that tracks people (Hallinan and Striphas, 2016) for industrial gain (Dean, 2009). While the algorithms designers employ to inform Netflix's recommendation system remain opaque, one thing is clear: without people's data (the products of their immaterial labor), the material features of Netflix's platform could not function, meaning content would not be promoted to taste groups in the same manner.

        Ultimately, both Netflix's Twitter accounts and its recommendation system profit off people's immaterial labor in similar ways: they take data generated from people and use it for their promotional practices and corporate gain. On Twitter, promotion occurs via invocations of contents' affective dimensions (Chaput, 2011; Banet-Weiser, 2012), while within the recommendation system, promotion occurs via the material features that are displayed to entice people to consume content. These instantiations of labor feed Netflix's second promotional practice: classifying content.

Classifying

        Classification is an inherently difficult task bound to constructed notions of knowledge and knowledge organization; within classification schemes, power dynamics are always apparent, and normativity often dictates how information is structured and presented (Olson, 2001; Adler, 2012; Drabinski, 2013). We see detailed critical discussions of classification in literature about libraries and other information institutions that develop and use both formal and informal systems for categorizing materials, often in order to make these materials findable. Netflix engages in these same classification practices on their Twitter feeds and their platform: classification is ubiquitous across Netflix's Twitter accounts and across the material features of its recommendation system, as Netflix classifies both people and content to promote its offerings. On Twitter, this manifests in how accounts are constructed and who they are meant to appeal to, while within the recommendation system, this is reflected in strategically constructed material features that promote content to members of various taste groups. Overall, Netflix's classification practices reflect and advance normative harms that are similar to those propagated by formalized classification schemes such as Library of Congress subject headings (see Adler, 2012; Drabinski, 2013; Howard & Knowlton, 2018). Netflix exemplifies how such normativities—especially as they are expressed within constructed realms of race, gender, and the family—function in a corporate setting where information must not only be findable, but marketable.

        Regarding Twitter, Netflix's accounts are themselves labeled; there is not one central Netflix Twitter account. Instead, many accounts (the exact number of which could not be conclusively gleaned) exist that are meant to appeal to specific audience groups that share a location or a specific interest/positionality. Netflix US and Netflix Family discuss and promote the same content—both accounts focus on a selection of upcoming and recently released Netflix original programming as well as popular content available on Netflix.

However, each account employs different strategies to promote content, and these strategies draw on highly normative discourses related to constructions of race, gender, and family. Despite the volume of content Netflix hosts, and the hundreds of originals it releases every year, the Twitter accounts center a narrow selection of content that overrepresents white men's work. This is exemplified by Netflix US's treatment of a television show and a film that feature Black actors and involve creatives of color. *Raising Dion*, a Netflix original program that stars primarily Black and disabled actors, premiered in October 2019; according to a Netflix US tweet, it ranks as the highest-viewed family series release of 2019. Though it is featured on both Netflix accounts, its coverage is mostly comprised of retweeted content from fans and from another Netflix Twitter account, Strong Black Lead (@strongblacklead). *Dolemite is My Name*, a Netflix original film that was also released in 2019, receives similar treatment despite featuring well-known Black actor/comedian Eddie Murphy and receiving nominations for major awards, including Golden Globes. Behind the scenes, Taiwanese-American filmmaker Dennis Liu created *Dion*, while Murphy produced *Dolemite*.

Both accounts more frequently tweet about content that premiered within a month of *Dion* and *Dolemite*, but center white actors and creatives; this content is promoted through original tweets rather than retweets. Netflix US extensively covers *The Irishman*, directed by a white man and starring white men; tweets include countdowns to its air date, coverage of its premiere, and information about its content. While tweets are not exclusively original tweets, retweeted information frequently comes from the more general Netflix Film (@NetflixFilm) account as opposed to a more specialized account like Strong Black Lead. A similar phenomenon occurs with Netflix Family's coverage of *The Dark Crystal*, which predominantly features white voice actors.

This reflects often-discussed inequities in classification schemes: phenomena that conform with normative or dominant cultural discourses (e.g., whiteness) are afforded more attention, partly because they are considered the "default" (Olson, 2001) and are deemed more likely to attract a wide audience (Thomas, 2019). Netflix US centers white-centric productions as representative of "the US," while productions created by and featuring people of color are othered through retweeting practices. Content that predominantly features white people is not classified as "white," thus solidifying its normative status, whereas blackness is both named and separated from more normative content. The Twitter accounts therefore instantiate systemic violence in normative classification practices (Adler, 2016) when they promote Netflix's offerings.

Netflix does not only classify content—Twitter accounts classify *audiences* and make assumptions about various audience groups' preferences. Netflix US appears to assume that their audience consists of mostly white people, or at least people who are following the account to see white-centric content. Further, particularly in Netflix Family's case, how the accounts address their audiences instantiates normative dynamics. Netflix Family bases its content on highly normative conceptions of familial ties; content is targeted toward nuclear families consisting of parents and young children. Such assumptions are not divorced from the normative whiteness discussed above; they further reflect normative classification practices given that nuclear family units are tied to white colonialism and resultant cis/heteronormativity (Weston, 1997).

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The language Netflix Family uses to appeal to nuclear families demonstrates its commitment to normative family dynamics. The account appeals primarily to *mothers* and its rhetoric invokes, and jokes about, women's domestic labor (see, Fortunati, 2011). Though tweets do not always address mothers, the content they showcase implies that they try to appeal to mothers; cartoons feature women, while images showcase characters who are mothers. Other tweets more subtly invoke normative discourses surrounding womanhood and motherhood; one tweet nods to age-related anxiety by pairing a GIF of Anna Farris excitedly hugging a man with the caption, "*gets carded*", while another relates the series *Hyperdrive* to the experience of driving kids to school in a minivan. Tweets also engage in more overt classification by suggesting what's new for "Kids," "Family," and "Me-Time." Such categories separate domestic work and leisure time, and define normative conceptions of children's content (Robinson, 2012).

In the context of the recommender system, it becomes clear that classifying people and classifying content are inextricably linked; how content is assigned to certain taste groups, how taste groups form, and how classification efforts manifest in various visual material features on the Netflix platform depend on intersections between co-constructed categories of Netflix users and Netflix content (McFadden, 2019; Lawrence, 2015). Lawrence (2015) notes that features such as genre rows are not value-neutral, but are instead interpretive arguments in service of corporate goals. He argues that genres identified as relevant to certain taste groups "discursively mold our taste even as our taste molds them" (Lawrence, 2015, p. 358). In essence, what people watch affects how the system categorizes them, and how they are categorized in turn affects content that is promoted to them.

Classification practices, then, result in their own feedback loops: the system sorts people into taste groups based on their viewing history, which is connected to promotional practices showcased on social media: accounts amplify interconnections between what the corporation wants to be popular, and what people are watching (Gentleman, 2019). Because viewership and popularity affect whether a program is renewed or a movie receives a sequel, this extends to content production: if Netflix US—which has significantly more followers than accounts like Netflix Family—showcases predominantly normative content, then people may be more likely to know and watch that content, which Netflix executives will then deem "successful" and worth continuing to produce. Further, this loop troubles Netflix executives' stated conception of the recommendation system. Especially because the interface obscures mechanisms such as the search box, people may access content through recommendations (e.g., they find it in a genre row) that they intended to watch before logging on: content is likely not "discovered" through recommendations as often as Netflix claims.

Though Netflix states that it does not collect people's demographic data (Nguyen, 2018), the very acts of sorting people into taste groups implies that the system is not only deducing information about people's identities; it is constructing identities in the same way as any sociotechnical system creates data doubles (Haraway, 1984; Haggerty and Ericson, 2000). Constructing identities in this sense involves a number of normative assumptions that may be particularly harmful for members of marginalized groups given noted inequities in automated classification efforts (Browne, 2018; Keyes, 2018). Such technologies tend to perpetuate instantiations of structural inequities including racism, transphobia, ableism, and classism through their design and implementation (Benjamin, 2019; Hoffman, 2019; Winner, 1980). As

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an automated classification system, Netflix participates in and perpetuates these normative harms, which are themselves tied to classification practices (Cohn, 2016).

Such inequities in classification manifest in noted problems with features of Netflix's system such as thumbnail images, as demonstrated by an incident in 2019 involving *Nailed It!* co-host Nicole Beyer. People on Twitter pointed out that, though the show centers Beyer, a Black woman, over co-host Jaques Torres, a white man, thumbnails that advertised the show disproportionately excluded Beyer and featured Torres (Grossman, 2019). Beyer composed a series of (now-deleted) tweets expressing that "this is essentially white-washing for more views" (nicolebeyer, 2019). The incident is a salient example of how the system a) classifies content on the basis of race, b) classifies people based on what the system thinks they want to watch (i.e., whiteness), and c) ties these complimentary classification practices to profit margins; if whiteness sells, then whiteness is what people will see. This example further exemplifies the harms caused by Netflix's classification schemes and their material (i.e., the thumbnails) manifestations: the platform reifies whiteness and the erasure of Black people.

However, visuals and representations are not the only salient aspect of Netflix's classification practices and their material effects. Much like Netflix's use of people's labor to promote their productions, the corporation surveilles people in order to classify them: taste groups are formed based on people's viewing history and platform interactions (Nguyen, 2018), and these interactions also feed the material properties of the platform that people see (Lamkhede and Das, 2019). Thus, classification provides another lens through which we can understand harms perpetuated by Netflix: categorizing people into groups and controlling what people see when they interact with Netflix's platform may be framed as mechanisms of control (Andrejevic, 2002, 2009) that further exploit people for the corporation's gain. However, such mechanisms of control do not only extend to the individual people who watch Netflix and interact with its Twitter accounts; they also extend into wider streams of cultural production.

Producing Culture

As a media industry, Netflix produces cultural materials (Hesmondhalgh, 2002). However, Netflix's cultural impact is not limited to the series and films it makes. How Netflix promotes content via both its Twitter accounts and its recommendation system reflects and constructs cultural phenomena in service to Netflix's ultimate goal: turning profits (Johnson, 2018). Through Twitter activity, Netflix appropriates cultural moments to promote its content, while through its recommendation system, Netflix participates in and constructs algorithmic culture via automated cultural decision-making (Hallinan and Striphas, 2016).

Netflix US and Netflix Family draw on situated cultural phenomena to promote content. Via GIFs and references to popular discourses, the Twitter accounts brand Netflix's content as relevant, fun, and relatable. A tweet from Netflix US notes the anniversary of Tina Turner's cover of "The Best," and pairs that information with a textual and GIF reference to characters from *Schitt's Creek*. A Netflix Family tweet uses "#BeyDay" to reference Beyoncé's birthday; though the tweet's text does not mention content that is specific to Netflix, it is accompanied by a meme of *The Office*'s Michael Scott saying, "I am Beyoncé always."

Cultural engagement does not only promote Netflix's content; it also promotes the *company itself*. Twitter accounts are meant to represent Netflix as a corporation, meaning their cultural references construct Netflix as a company that is relevant and cool. Gallucci (2018) calls Netflix's social media accounts "sassy, light-hearted, and extremely tuned-in." As promotion is "meant to invoke the experience associated with a company or product" (Banet-Weiser, 2012, p. 4), Twitter accounts brand Netflix as fun and engaging (Havens, 2018). The experiences invoked by Netflix's accounts, however, are far more complex than they appear.

Promotional practices represent ways that capitalist dynamics continue to systemically dominate culture (Aronczyk and Powers, 2010). This means that seemingly benign or fun methods Netflix accounts use to promote content actually demonstrate and reify inequitable dynamics within cultural industries. While Netflix accounts have been hailed as humorously affective (Gallucci, 2018) or even subversive (Jean-Philippe, 2019), a critical perspective suggests that they are manifestations of capitalist forms of social exchange (Dean, 2005). Tweets that seem to promote marginalized content and creatives are in reality *performative* acts of circulation that brands may use to appear inclusive, caring, and community-centered (Anderson, 1993; MacInnis *et al.*, 2009) when their ultimate aim is to communicate with consumers for economic gain. Per Aronczyk and Powers (2010), "the brand…remains a controlled and controlling device that limits social and political potential for participation" (p. 11).

Significant limits of branding practices draw attention to another phenomenon that Netflix's Twitter accounts illustrate: though Netflix may appear more progressive than other content production companies (Lotz, 2007; Cunningham and Silver, 2013), they rarely deliver or promote content that better includes people who face structural barriers to participating in media industries (Christian, 2017). Twitter accounts help to re-circulate older content so that it remains culturally relevant; they highlight shows such as *The Office* and *Friends*, which continue to be critiqued for whiteness and transphobia (Floegel and Costello, 2019). In their attempts to attract audience members, Twitter accounts ensure that symbolically violent content remains culturally salient. Interestingly, though Netflix hosts and produces a number of programs that involve law enforcement, the Twitter accounts do not feature these contents, likely because they conflict with Netflix's optics of care and inclusion. For example, according to a petition from The Action Network (2020) that asks Netflix to stop streaming shows about law enforcement, a Netflix reality show called *Border Security: American's Front Line* glorifies border patrol agents and perpetuates xenophobia; this show is absent from both Netflix Twitter accounts analyzed for this study.

Accounts also focus on major awards that content is nominated for or won. Awards demonstrate cultural values held by our society; they tend to reward highly normative content and create their own feedback loop: awards carry cultural prestige, normative content is nominated for/wins awards, and more normative content is made in the hopes that it will win awards (English, 2005; Gomez, 2017). Erigha (2019) calls this the "Hollywood Jim Crow," and claims it continues in part because awards are tied to capitalist—and therefore racist, classist, and cis/heteronormative (e.g., Collins, 2000)—modes of production that symbolize "success" for media industries (Hesmondhalgh, 2002; English, 2005). It follows that Twitter accounts highlight "awards-bait" over other content. This partly accounts for Netflix US's devotion to *The Irishman*; tweets call its director and cast "the greats" and "the stars." *The Irishman* was

nominated for ten Oscars, whereas *Dolemite*, which was not covered nearly as extensively, received no nominations. While the relevancy of awards like the Oscars is worth debating given their egregious exclusions of marginalized people, especially people of color (Willmore, Jung, and Bastién, 2020), they remain cultural arbiters of taste, and Netflix enforces such arbitration through Twitter practices.

Maintenance and construction of normative cultural discourses extends to Netflix's recommendation system, which also engages in promotional practices that feature awards-bait. This highlights an underdiscussed element of the "personalized" recommendations Netflix claims to provide. Content is not only promoted to people based on the system's interpretation of their preferences; Netflix's original content may be more prominently featured than other content (e.g., first in a genre row), and this is especially true for content that attracts award-related attention (Johnson, 2018). It follows that what content is algorithmically promoted and, ultimately, consumed and subsumed into the cultural zeitgeist is tied to intersections between corporate gain and cultural prestige.

Promotional practices also affect what Netflix creates. This is particularly salient in an algorithmic domain because media industries increasingly use AI to produce content (Siegel, 2020). Developers at Netflix used algorithms to produce *House of Cards* (Carr, 2013) and *Orange is the New Black* (Gentleman, 2019) among other content; showrunners, directors, actors, and other creatives involved in both series were selected partly based on algorithmic determinations of who would attract viewers. According to Gentleman (2019), even narrative choices in both programs depended on algorithmic conceptions of what viewers want. Given evidence that Netflix's recommendation system and Twitter accounts favor content made by and featuring white people (especially cisgender men), as well as broader evidence of AI's propensity to reify privilege (Bennett and Keyes, 2019), it stands to reason that algorithmic content production further enforces normative cultural dynamics.

Netflix participates in and produces *algorithmic culture*, or the delegation of work culture to computational processes wherein algorithms have an effect both *on* culture and *as* culture (Striphas, 2015; Gillespie, 2016; Gentleman, 2019). Obscured by its cheery promotional practices and promise to provide personally relevant content, Netflix connects "algorithms to art and, in doing so, [intervenes] in the conceptual foundations of our culture" (Hallinan and Striphas, 2016, p. 118). Though people's data have always been key information sources for media industries, Netflix's use of "big data" for cultural gain raises a number of concerns: The algorithms Netflix deploys to recommend content via material features are now arbiters of culture themselves. Cultural spaces are part of sociotechnical assemblages wherein algorithms intersect with transforming notions of culture (Cohn, 2016; Hallinan and Striphas, 2016), and this means that online cultural dissemination such as that which Netflix perpetuates is inherently steeped in values, politics, and the inequities therein (Eriksson *et al.*, 2018).

Netflix's recommendation system engages in manifestations of sociotechnical promotion wherein long-standing instantiations of culture and related normativities (Clark, 1991; Banet-Weiser, 2012) are magnified by the inequities that algorithmic decision-making highlights. Rather than acknowledge or grapple with the sociotechnical implications of its system, Netflix, like other streaming services, opts to understand culture as something that can be engineered

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(Eriksson *et al.*, 2018). This perspective emphasizes that Netflix does *not* provide the fully personalized recommendations it promotes. Instead, promotional practices demonstrate the interlocking power dynamics that influence constructions of culture; ultimately, Netflix engages in long-standing normative production and promotional practices that highlight connections between culture and capitalism.

Implications

Analysis of Netflix's Twitter accounts and recommendation system finds that Netflix profits off people's labor to promote content. Such labor allows Netflix to create and further refine classification practices wherein promotional strategies necessitate categorizing both content and people, often in inequitable ways. Using people's labor for classification purposes feeds into Netflix's production of culture via appropriation on Twitter and algorithmic decision-making within both the recommendation system and wider production practices. These concepts demonstrate that Netflix's promotional practices are algorithmic in multiple ways; while the recommendation system uses machine learning to promote content via material features, the Twitter accounts employ similarly algorithmic (i.e., formulaic) decision-making that is exposed by patterns found in the data analyzed for this study.

This suggests that efforts to understand the "black boxes" within content recommendation platforms' systems are perhaps unnecessary given what we can glean from examining Netflix's practices (Trammell and Cullen, 2020). Netflix engages in promotional tactics that media industries have employed since their inception. However, situated circumstances related to Twitter and the recommendation system change the stakes of these practices. Netflix can profit off people's immaterial labor in new ways via retweeting and other data surveillance practices, and the implications of AI-driven content creation—whether that content be material features within the system or the production of entire series—are concerning given inequities that are instantiated in sociotechnical systems, especially those that involve corporate institutions (Noble, 2018; Benjamin, 2019).

Moreover, findings from this study advance our understanding of interconnections between promotional (Aronczyk & Powers, 2010; Himberg, 2018), algorithmic (Gillespie, 2016; Striphas, 2015), and surveillance (Browne, 2015; Zuboff, 2019) cultures. In particular, we see how labor, classification, and productions of culture exploit people: people's Twitter content and the data they provide by interacting with Netflix's platform are used to promote content, develop Netflix's algorithmic systems, and even craft content. These processes happen via surveillance strategies that offer neither explicit consent policies nor compensation. It is key to recognize, understand, and critique such processes in order to expose and reorient power dynamics and the roles they play in structuring everyday inequities (Haraway,1984; Ahmed, 2004). It follows that the analysis presented here does not only highlight inequities in the relationship between Netflix and the people who interact with its contents in some way; it also demonstrates how inequities manifest in the material, discursive, and aesthetic entities that are constructed within sociotechnical processes. We see inequities manifest, for example, in thumbnail images and classificatory practices. Netflix therefore serves as a context through which we can visualize how corporations and algorithmic systems *regulate* people and their cultural milieus (e.g., Foucault, 2010; Srnicek, 2017). By exploiting labor, classifying people and contents, and producing

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cultural materials, Netflix uses people's practices—for example, the content they generate on Twitter and their embodied interactions with the platform that generate data—to construct and promote cultural materials in ways that both reflect and reify harmful normativities, particularly along intersecting axes of race, gender, and family.

Ultimately, then, Netflix wields *power* over its users and their cultural milieus. However, this does not unequivocally imply that people are subordinate to Netflix; as Banet-Weiser (2012) points out, brand cultures hold "possibility for individual resistance and corporate hegemony simultaneously" (p. 12). Despite insidious power dynamics, people may still experience "safety, security, and relevance" (Banet-Weiser, 2012, p. 216) within cultures fostered by corporations like Netflix. However, these feelings typically occur on an *individual*, rather than a *structural*, level; structurally, via Twitter promotion and the recommender system's features, Netflix gains cultural capital while perpetuating structural inequities. Though Netflix's practices "are not evacuated of political possibility" (Banet-Weiser, 2012, p. 218), such possibilities are surface-level due to the inherently limited potentials of branding and promotion under capitalism. To think of Netflix as radical or utopic misses the normative power dynamics that inform its foundation and continued actions: Casting Netflix as divorced from other media industry dynamics represents a profoundly neoliberal perspective that neither challenges nor destabilizes capitalism and its fundamental inequities (Banet-Weiser, 2012; Dean, 2005). Per Hesmondhalgh (2002), any text produced by a cultural industry will be "complex, ambivalent, and contested" (p. 3). Such ambivalence applies to the myriad of "texts" discussed throughout this paper including tweets, material features, and Netflix's content; these productions combine to form Netflix's overall identity as a corporation, and they highlight the inequities inherent in the algorithmic promotional practices Netflix and similar streaming platforms deploy to promote themselves and their contents.

Overall, then, we see that sociotechnical systems involved in algorithmic content recommendation are not merely constructed between individual people and Netflix's algorithms: institutionalized power dynamics, inequities, and corporate promotional strategies are intricate parts of these assemblages (Winner, 1980; Haraway, 1991; Lupton, 2016). Because of this, power dynamics (re)produced by recommendation systems cannot be dismantled by merely "diversifying" who works for corporations like Netflix, nor by fostering more inclusive storytelling and "improving" algorithms (Saha, 2018). In fact, these power dynamics are unsolvable problems within the context of inequitable assemblages that comprise current streaming platforms and the structurally racist, classist, trans/homophobic, ableist, and largely western contexts in which such platforms are developed. This has particular significance for current events wherein Netflix joined a slate of corporations in declaring "Black lives matter" after police murdered Breonna Taylor, Tony McDade, and George Floyd in 2020; such declarations ring hollow when the platform itself is structurally racist, and continues to showcase and develop content that glorifies policing. Therefore, rather than work to enact change *within* Netflix and other media corporations, it may be more beneficial to critically *imagine* alterative structures through which cultural materials may be (re)made via dynamics that are less capitalistic and more just (e.g., Benjamin, 2016).

Conclusion

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Conducting research on any system—particularly one that continues to develop in the commercial interests of a corporate entity—is difficult because results may be understood as a series of recommendations through which a system may improve and, in turn, increase its company's profits. The discussion here is not meant to offer suggestions for Netflix's design; it contributes to literature that points out the fundamental flaws in AI in order to critically conceptualize how capitalist dynamics and their downstream inequities affect everyday social realities. As discussed above, Netflix is perhaps irreparably problematic because its formation rests on capitalist principles, which are inherently inequitable, disorienting, and unstable (Hesmondhalgh and Meier, 2018).

However, this study is limited because it does not directly include people's voices. Future work should involve Netflix users to further explore ideas discussed in this paper. The work is also limited because it engages with two of a larger corpus of Netflix Twitter accounts. The material features discussed are constantly shifting, but the ideas raised in this paper remain theoretically relevant despite changes to Netflix. To that end, the constructs I present here— laboring, classifying, and producing culture—are transferable to other contexts where they are apparent. Constructs may be examined in related spaces including online dating platforms that classify people to recommend potential partners, and educational technologies that track students' behaviors. Future work should continue to develop these constructs and assess their transferability in order to deepen our understanding of the power dynamics in algorithmic recommendation.

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| Feature of Netflix's Recommender System	Definition/Function
Genre rows	Rows of content grouped together based on general (e.g., horror) or specific (e.g., strong female lead) commonalities the (*Free Labor*, n.d.)system identifies between each program or movie (Lawrence, 2015). What genres a person sees ostensibly depend on their membership in various taste groups (McFadden, 2019).
Thumbnails	The images that represent content. Each piece of content has a number of thumbnails that potentially represent it, and which thumbnail a person sees is supposedly based on their membership in certain taste groups (Blattmann, 2018; Nguyen, 2018).
Trailers	Commercials for Netflix original TV shows and movies that automatically play at the top of a person's homepage or after a person finishes a show or movie (Nguyen, 2018).
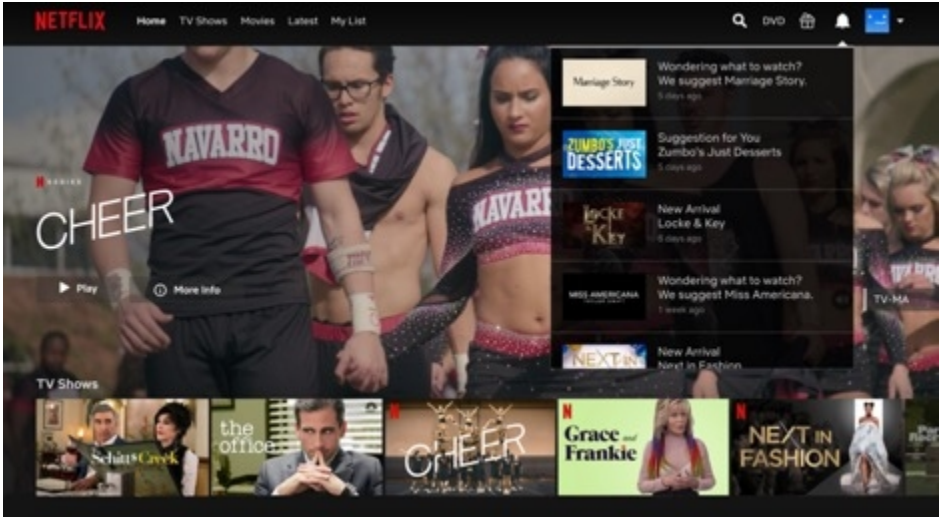
Figure 1. The top of the Netflix homepage, showcasing 1) a trailer for the original series Cheer; 2) a row of TV show recommendations that include each program's title and a thumbnail image; and 3) a drop-down menu of notifications recommending content, which also includes titles and thumbnails.

165x90mm (72 x 72 DPI)

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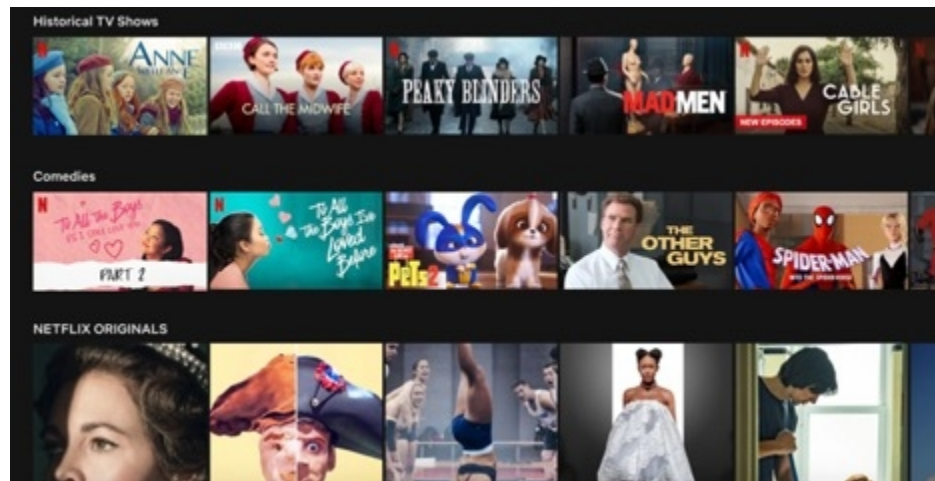51
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Figure 2. Further down the homepage, showcasing two genre rows ("Historical TV Shows" and "Comedy") the viewer may be interested in, followed by a selection of "Netflix Originals."

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