PROTECT YOUR OWN DATA: INTERACTIVE STREAMING NARRATIVES AND DATA PRIVACY CONCERNS

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Abstract: Black Mirror: Bandersnatch exemplifies the value of data gathered from interactive streaming narratives. Netflix can utilize its wealth of subscriber data to push targeted product placements to subscribers based on their demographic data. Data on subscriber choices could also be used to increase the accuracy of Netflix’s recommendation algorithm. In the wake of data privacy regulations, companies must justify their data collection and processing practices.

INTRODUCTION

Netflix’s interactive film Black Mirror: Bandersnatch (“Bandersnatch”) has been characterized as a critical juncture in the development of interactive streaming media.1 The latest installment of the streaming giant’s Black Mirror series allows subscribers to choose between options to influence the development of the film’s plot.2 Bandersnatch brought the interactive narrative storytelling model to a major mainstream market for the first time.3 Indie publisher Chooseco, owner of the “Choose Your Own Adventure” trademark, sued Netflix in the United States District Court for the District of Vermont in early January 2019 for trademark infringement.4 In March 2019, Netflix requested that the district court dismiss the lawsuit.5 The case represents more than a trademark infringement dispute, however.6 Interactive streaming narratives have the potential to collect massive

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4 Amended Complaint, supra note 2, at 1.
5 Motion to Dismiss at 1, Chooseco, No. 2:19-cv-00008 (D. Vt. Jan. 11, 2019).
amounts of data on how users participate with these stories.\textsuperscript{7} This data could in turn be used for internal marketing or sold to third parties, sacrificing users’ privacy.\textsuperscript{8}

Part I of this essay provides background on the trademark infringement dispute between Chooseco and Netflix.\textsuperscript{9} Part II discusses data collection in Black Mirror: Bandersnatch.\textsuperscript{10} Finally, Part III places Bandersnatch in the privacy context and analyzes how Netflix might use the data it has collected.\textsuperscript{11}

\textbf{I. \textit{CHOOSECO V. NETFLIX}}

\textit{A. Black Mirror: Bandersnatch}

At the beginning of Bandersnatch, subscribers meet Stefan Butler, a youthful programmer preparing to present a videogame idea based on the fictional novel Bandersnatch.\textsuperscript{12} An early scene acts as a tutorial, asking the subscriber to choose between two types of cereal—Frosties and Sugar Puffs—that Stefan’s father offers him for breakfast.\textsuperscript{13} Later, the subscriber’s selection can be seen in a television advertisement in the background of the scene.\textsuperscript{14} As the film continues, the subscriber makes choices that influence the development of the plot.\textsuperscript{15} For example, in another scene, the subscriber can choose whether Stefan accepts or declines a job offer to develop his game at Tuckersoft.\textsuperscript{16} Over time, these choices become bleaker, in the spirit of Black Mirror, asking subscribers to choose to dispose of a body by either cutting it to pieces or burying it.\textsuperscript{17} Early in the film, Stefan discusses his videogame pitch and notes that he is adapting the videogame from the novel Bandersnatch.\textsuperscript{18} Stefan’s father comments that the author must not

\textsuperscript{7} See Knight, supra note 6 (discussing how subscriber decisions in Black Mirror: Bandersnatch could create valuable marketing profiles); Ng, supra note 3 (proposing that algorithms will become more sophisticated in their processing capabilities).

\textsuperscript{8} See Knight, supra note 6 (discussing how subscriber decisions in Black Mirror: Bandersnatch could create valuable marketing profiles).

\textsuperscript{9} See infra notes 12–30 and accompanying text.

\textsuperscript{10} See infra notes 31–61 and accompanying text.

\textsuperscript{11} See infra notes 62–86 and accompanying text.

\textsuperscript{12} Amended Complaint, supra note 2, at 8.

\textsuperscript{13} See id. at 7–8 (presenting a screenshot of what the viewer sees when Stefan’s father is offering the choice of breakfast cereals).


\textsuperscript{15} Amended Complaint, supra note 2, at 7.


\textsuperscript{17} Amended Complaint, supra note 2, at 10; Black Mirror: Bandersnatch, supra note 16.

\textsuperscript{18} Amended Complaint, supra note 2, at 8.
be an accomplished writer because Stefan is “always flicking backwards and forwards in that [book].”\textsuperscript{19} Stefan explains that \textit{Bandersnatch} is a “Choose Your Own Adventure” book.\textsuperscript{20} This scene forms the basis for a twenty-five million-dollar trademark infringement lawsuit against Netflix by the owner of the “Choose Your Own Adventure” trademark, Chooseco.\textsuperscript{21}

\textbf{B. Trademark Dispute}

Chooseco, a Vermont-based Indie publisher, filed a trademark infringement suit against Netflix, the popular subscription-based digital video streaming services company, in the United States District Court for the District of Vermont in January 2019, in \textit{Chooseco LLC v. Netflix, Inc.}\textsuperscript{22} Chooseco’s amended complaint focuses on the newest installment of Netflix’s \textit{Black Mirror} series, an interactive film titled \textit{Black Mirror: Bandersnatch}.\textsuperscript{23} The complaint highlights similarities between the structure of the Netflix film and Chooseco’s book series.\textsuperscript{24} Each book in the series is written in the second person.\textsuperscript{25} A reader is considered the story’s protagonist and makes selections to drive the plot, turning to different pages of the book depending on the choices they make.\textsuperscript{26} Both the ending and plot points along the way differ based on the reader’s choices.\textsuperscript{27} There are a variety of potential endings for a story within the same book.\textsuperscript{28} \textit{Bandersnatch} is structured similarly to allow subscribers to control the actions of the protagonist.\textsuperscript{29} While the film varies among subscribers, depending on the choices they make, each Netflix subscriber sees the scene where a character named Stefan says that \textit{Bandersnatch} is a “Choose Your Own Adventure” book.\textsuperscript{30}

\textbf{II. DATA COLLECTION IN \textit{BLACK MIRROR: BANDERSNATCH}}

\textit{A. Netflix User Data}

When a new subscriber creates a Netflix account, the company collects personally identifiable information such as the subscriber’s contact information and payment method.\textsuperscript{31} According to Netflix’s privacy statement, Netflix also collects information on subscribers’ interactions with Netflix content and advertising.\textsuperscript{32}

\begin{itemize}
\item \textsuperscript{19} Id. at 9.
\item \textsuperscript{20} Id.
\item \textsuperscript{21} Id. at 15.
\item \textsuperscript{22} Id. at 1–3.
\item \textsuperscript{23} Id. at 2.
\item \textsuperscript{24} See id. at 9 (describing similarities in the branching narrative structure of the Netflix film and Chooseco’s book series).
\item \textsuperscript{25} Id. at 4.
\item \textsuperscript{26} Id.
\item \textsuperscript{27} Id.
\item \textsuperscript{28} Id.
\item \textsuperscript{29} Id. at 7.
\item \textsuperscript{30} Id. at 9–10.
\item \textsuperscript{32} Id.
\end{itemize}
Netflix states that the company collects device identification and other unique identifiers through the use of cookies. Internet cookies are small, simple text files that are widely utilized to run websites or increase their efficiency. Additionally, cookies are used to provide information to sites on a user’s device and browsing history. This data is frequently used to personalize advertisements. Similarly, advertising identifiers are found on many mobile devices and tablets. These identifiers are also used to target advertisements to a particular subscriber.

B. Netflix Recommendation Algorithm

Netflix provides a general overview of its recommendation algorithm online. According to this overview, the algorithm works by weighing factors such as a subscriber’s viewing history or explicit feedback on other titles (i.e., thumbs up or thumbs down), the preferences of subscribers with similar tastes, and tags associated with particular titles that group content by categories like genre or actors. These and other factors are processed together in an algorithm. Todd Yellin, Netflix’s Vice President of Product Information, revealed more information about the recommendation algorithm in an interview with Wired in August 2017. To understand the algorithm, it is helpful to picture a three-legged stool. Yellin explains that the first leg of the stool represents Netflix subscribers, while the second represents taggers, experts on particular Netflix content and the algorithms that process that content, and the third represents Netflix’s machine learning algorithms. From the first leg of the stool, Netflix may see user activity, such as which programs subscribers watched, the programs they watched before or after that selection, their overall viewing history, and the time of day they watched the content. In-house and freelance staff review content and tag it appropriately to form data for the second leg of the stool. The tags span a broad range but may include the setting of the film or television show, cast members, genres and more. The data from the first two stools is then processed by machine learning algorithms that determine which factors should weigh most heavily. Both explicit and

33 Id.
34 Id.
35 Id.
36 Id.
37 Id.
38 Id.
40 Id.
41 Id.
43 Id.
44 Id.
45 Id.
46 Id.
47 Id.
48 Id.
implicit data are fed into Netflix’s algorithms.\textsuperscript{49} Explicit data is direct feedback from a user, such as a “thumbs up” on a particular movie or television show.\textsuperscript{50} Implicit data is behavioral.\textsuperscript{51} Even if a user does not give direct feedback, if they watched every episode of \textit{Stranger Things} over a single weekend, odds are Netflix can confidently recommend similar or related content with confidence.\textsuperscript{52}

\textit{C. General Data Protection Rights Act}

The General Data Protection Rights Act ("GDPR") grants citizens of the European Union the right to access information regarding the types and quantity of their personal data is collected and how companies use sort, and share that data.\textsuperscript{53} The Act, which went into effect in May 2018, seeks to increase transparency regarding how and why personal data is processed.\textsuperscript{54} The GDPR gives EU citizens the rights of access, update, deletion, and restriction of processing of their personal data.\textsuperscript{55} EU citizens can use the GDPR to access their Netflix user data.\textsuperscript{56}

A technology policy researcher obtained confirmation that Netflix was collecting data on subscribers’ choices in \textit{Bandersnatch}.\textsuperscript{57} The researcher, an EU citizen, was able to gain access to this information through the GDPR.\textsuperscript{58} The researcher submitted an access request to Netflix, citing the relevant GDPR provisions.\textsuperscript{59} The company’s response revealed that it was tracking and storing subscribers’ choices in \textit{Bandersnatch}.\textsuperscript{60} The platform must record a subscriber’s choices to determine the outcome of the narrative and allow the film to function as designed.\textsuperscript{61}

\textsuperscript{49} Id.
\textsuperscript{50} Id.
\textsuperscript{51} Id.
\textsuperscript{52} See id. (describing the types of data, explicit and implicit, that Netflix collects for its recommendation algorithm).
\textsuperscript{53} European Union General Data Protection Regulation, Council Regulation 2016/679, art. 15, para. 1(a–c), 2016 O.J. (L 119) (EU) [hereinafter GDPR].
\textsuperscript{54} Id. art. 5, para. 1(a).
\textsuperscript{55} Id. art. 5, para. 1(a–e).
\textsuperscript{56} See, e.g., infra notes 57–61 and accompanying text (discussing an example of an EU citizen using the GDPR to obtain his Netflix user data).
\textsuperscript{57} See Michael Veale (@mikarv), TWITTER (Feb. 11, 2019, 6:02 PM), https://twitter.com/mikarv/status/1095110948908662784 (indicating that he used GDPR access rights to confirm that Netflix collected data on subscribers’ choices in \textit{Bandersnatch}).
\textsuperscript{58} Id.
\textsuperscript{59} Id.
\textsuperscript{60} Id.
III. CONTINUING PRIVACY IMPLICATIONS OF STREAMING INTERACTIVE NARRATIVES

A. Privacy Implications

Chooseco LLC v. Netflix, Inc. is not only a trademark infringement dispute, but it also represents the potential profit that companies can make on behavioral data gathered from interactive media. Early in the Bandersnatch film, the subscriber chooses between two types of breakfast cereal: Frosties and Sugar Puffs. Netflix revealed on its social media accounts in January 2019 that the company stored this and subsequent choices from Bandersnatch. Netflix’s United Kingdom Twitter account revealed that, when given the choice between throwing tea over a computer or shouting at another character in a Bandersnatch scene, British subscribers chose “throw tea” nearly 3% less than the rest of the world. Netflix’s United States Twitter account responded to that tweet with another statistic: 73% of subscribers initially chose for the protagonist to accept the offer to develop his game at Tuckersoft. These tweets confirmed suspicions that Bandersnatch was a data mining experiment.

Interactive streaming narratives have the potential to collect massive amounts of data about how users interact with stories. Netflix already gathers a substantial amount of information from behavioral data for use in its recommendation algorithm. By providing subscribers with a choice between whether the protagonist of a romantic comedy ends up with (a) the bad-boy with a heart of gold, or (b) the best friend-turned soulmate, Netflix can gather information on what subscribers want to see in a film. The company can then make business decisions based on the data gathered from subscribers’ choices. The value of

62 See Jones, supra note 6 (revealing that Netflix collected data on subscriber choices from Black Mirror: Bandersnatch); Knight, supra note 6 (examining how subscriber decisions in Black Mirror: Bandersnatch could influence marketing); Raftery, supra note 6 (discussing Netflix’s intention to continue producing interactive narratives).
63 Amended Complaint, supra note 2, at 7–8.
64 See Black Mirror (@blackmirror), TWITTER (Jan. 17, 2019, 5:00 PM), https://twitter.com/blackmirror/status/1086035444507258881 (tweeting that 60% of subscribers chose Frosties for Stefan).
65 Netflix United Kingdom & Ireland (@NetflixUK), TWITTER (Jan. 17, 2019, 5:03 PM), https://twitter.com/NetflixUK/status/1086036335897395201.
66 BLACK MIRROR: BANDERSNATCH, supra note 16.
67 See Michael Veale (@mikarv), TWITTER (Feb. 11, 2019, 6:02 PM), https://twitter.com/mikarv/status/1095110948908662784 (indicating that he used GDPR access rights to confirm that Netflix collected data on subscribers’ choices in Bandersnatch).
69 Plummer, supra note 42.
70 See id. (summarizing how Netflix’s recommendation algorithm functions).
71 See Jon Markman, Netflix Harnesses Big Data to Profit from Your Tastes, FORBES (Feb. 25, 2019), https://www.forbes.com/sites/jonmarkman/2019/02/25/netflix-harnesses-big-data-to-profit-from-your-tastes/#36f4d6e466fd (explaining that the casting of Sandra Bullock in the Netflix film...
behavioral data may motivate Netflix to continue investing in interactive narrative formats, despite the difficulties involved in developing these narratives, not to mention the potential for litigation.\textsuperscript{72}

\textit{B. The Future of Streaming Interactive Narratives}

Netflix has stated its intention to continue developing interactive narratives.\textsuperscript{73} The technology that Netflix utilizes to provide subscribers with a seamless experience as they stream scenes in the branching narrative format, such as in \textit{Bandersnatch}, was difficult to develop.\textsuperscript{74} Unlike linear content, Netflix must queue multiple video segments to allow the film to transition seamlessly after the subscriber selects an option.\textsuperscript{75} The \textit{Black Mirror} series creator and executive producer, Charlie Brooker, and his team experimented with different tools in an attempt to map and organize the branching narrative story and its multiple endings.\textsuperscript{76} The team encountered issues with each of these tools.\textsuperscript{77} Eventually, Netflix engineers built a script-writing tool specifically for \textit{Bandersnatch}.\textsuperscript{78} This tool, called Branch Manager, allowed the writers to build up the complex narrative of \textit{Bandersnatch} and include loops to guide subscribers back to the main story if they wandered from a preestablished plot line.\textsuperscript{79} The \textit{Bandersnatch} writers’ seven-page outline exploded into a 180-page script over the eighteen months that they worked on the film.\textsuperscript{80} The script continued to grow until it crashed the Branch Manager tool.\textsuperscript{81} Despite the difficulties in developing this technology, reviewers note that \textit{Bandersnatch} is groundbreaking—not for utilizing a novel format—but for streaming a branching narrative format without glitches or buffering.\textsuperscript{82}

Netflix could further develop the back-end programming used for \textit{Bandersnatch} and use it for other applications, such as to seamlessly swap out products in television shows depending on the location that a subscriber is watching.

\textit{Birdbox} was a strategic choice by Netflix based on data revealing subscribers’ preference for mainstream actors).\textsuperscript{72} See id. (explaining that the casting of Sandra Bullock in the Netflix film \textit{Birdbox} was a strategic choice by Netflix based on data revealing subscribers’ preference for mainstream actors).\textsuperscript{73} Naman Ramachandran, Netflix ‘Doubling Down’ on Interactive Series After ‘Bandersnatch’ Success, VARIETY (Mar. 12, 2019), https://variety.com/2019/digital/asia/netflix-doubling-down-on-interactive-series-bandersnatch-success-1203161088/.


\textsuperscript{75} Id.

\textsuperscript{76} Id.

\textsuperscript{77} Id.

\textsuperscript{78} Id.

\textsuperscript{79} Id.


\textsuperscript{81} Roettgers, supra note 74.

\textsuperscript{82} Id.
from.83 For example, a child watching The Magic School Bus Rides Again in the United States might see Ms. Frizzle eating Lucky Charms while a child in the United Kingdom might see the same teacher eating Coco Pops instead.84 A user would be shown a product that they are likely to enjoy based on their demographic information and without an advertisement interrupting the cadence of the movie or television show they are watching.85 The value to be gained through these new avenues of advertising may encourage Netflix to continue using interactive narratives despite the cost and difficulties of developing them.86

CONCLUSION

Netflix’s Black Mirror: Bandersnatch brought interactive narratives to a massive and mainstream audience for the first time. Using a GDPR access request, an EU technology policy researcher obtained confirmation from Netflix that the company is storing subscriber choices from Bandersnatch. Despite the difficulties and expense associated with developing interactive streaming narratives, Netflix plans to continue to produce films and television shows in this storytelling model. Netflix could potentially develop the programming in Bandersnatch to allow products to be switched out in scenes depending on the subscriber’s location, age, or other demographic information. Netflix could use this behavioral data to increase the accuracy of its recommendation algorithm. The data could potentially be commoditized and sold to third-parties. In the wake of new data protection regulations, such as the EU’s GDPR, the public is increasingly conscious of data privacy. Due to this increased awareness, companies must justify their data processing practices based on their legitimate business interests. Netflix may use behavioral data gathered from interactive narratives for internal content decisions or to implement programmatic advertising.

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83 See Damiani, supra note 68 (discussing the potential use of Bandersnatch programming for advertising through specific product placement).
84 See id. (discussing the hypothetical use of Bandersnatch programming for advertising through specific product placement in children’s programs).
85 See id. (discussing the potential use of Bandersnatch programming for advertising through specific product placement).
86 See id. (discussing the potential use of Bandersnatch programming for advertising through specific product placement); Roettgers, supra note 74.