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# Immunity from surveillance: A Magazine that Forces Readers to Disconnect from the Internet

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## Abstract

It is increasingly difficult to imagine digital experiences beyond the potential of data analytics and government or corporate surveillance. One possible means to evade surveillance is to avoid or opt-out of digital technologies, yet such acts of disconnection ignore the increasing degree to which the internet has become an essential infrastructure for people's day-to-day lives. In this paper, I contend that users do not have to retreat from digital technologies to avoid surveillance by focusing on *The Disconnect* magazine as a digital technology that provides a disconnective experience. *The Disconnect* is a hybrid digital/offline magazine that forces its readers to disconnect their device from the internet to access the magazine content. Using Ulises Ali Mejias' theory of paranodality and a mix of the walkthrough method and a platform studies approach, I analyse *The Disconnect* as a paranodal or off-the-network technology that inoculates its readers from surveillance practices during the period of media consumption. By forcing its readers offline, I argue *The Disconnect* creates a quiet and unobservable space on the edge of the digital network that escapes the reach of client-side surveillance programs such as Google Analytics, that in turn enhances readers' intellectual privacy and autonomy. Moreover, by fusing an offline experience with a digital medium, *The Disconnect* demonstrates that digital technologies are not synonymous with ubiquitous surveillance.

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## Introduction

In today's era of ubiquitous Wi-Fi and mobile networks, smart devices and Big Data, an increasing number of digital activities are monitored, recorded and analyzed. Platforms such as Facebook and Google track which websites users visit, how far they scroll, what they click or hover on, who they interact with, and what they search for. In this paper, I examine a hybrid digital/offline magazine called *The Disconnect*<sup>1</sup> as a mode of resistance to the logic of ubiquitous network surveillance. *The Disconnect* forces its readers to disconnect from the internet to read the content of the magazine. This act of forced disconnection temporarily shifts *The Disconnect* outside of the network, making the collection of data during the period of media consumption unfeasible; effectively inoculating readers from surveillance. Using Ulises Ali Mejias' concepts of nodacentrism and paranodality, I argue that *The Disconnect* disrupts the *nodacentric* or dominant network logic of connectivity that undergirds the overwhelming threat of totalizing surveillance. Instead, I contend that *paranodal* or off-the-network technologies

such as *The Disconnect* prove the possibility of digital experiences beyond surveillance.

To analyse *The Disconnect* as a paranodal web application, I turn to the walkthrough method and platform studies. The walkthrough method comes from science and technology studies and is a step-by-step approach to critically analyse mobile applications.<sup>2</sup> In this paper, I extend the walkthrough method to analyse a web application and offer a user perspective of the first issue of *The Disconnect*. I describe the steps a user must undertake to disconnect from the internet to unlock the content of the magazine, and a first-person experience of the unique reading environment that *The Disconnect* affords. However, the scope of the walkthrough method is too limited to capture how *The Disconnect* leverages the interactive capabilities of the web to transition to paranodal status. I therefore supplement the walkthrough method with a platform studies approach. Platform studies has a history in media studies and has been used to study the interactivity between platforms and web applications, and most commonly the

accessibility of data and logic through software known as an application processing interfaces (APIs).<sup>3</sup> I adopt a platform studies approach to analyse how *The Disconnect* interacts with APIs to protect users from data collecting practices. These approaches are informed by a semi-structured interview undertaken with *The Disconnect* co-founder Chris Bolin in September 2018. Combining both the walkthrough method and a platform studies approach enables both a description and analysis of the unique user experience and interactivities of *The Disconnect* that in turn, imagines new opportunities and applications of digital technologies beyond surveillance.

### Nodacentrism and Paranodality: Theoretical Considerations

What is the significance of *The Disconnect* – a digital technology that can operate both inside and outside of the network? How can such a technology inoculate users from surveillance practices? The idea of “disconnection” can provide a framework to address these questions. Disconnection, or the non-use of technology, is a relatively new area of research in media or information studies that emerged at the start of the 21<sup>st</sup> century. It has been described by scholars as an impoverished state, a mode of departure from media technologies, and a method to resist or disrupt socioeconomic systems.<sup>4</sup> In this paper, I focus on disconnection as a potential mode to resist surveillance and, in particular, dataveillance, which is the practice of monitoring and collecting online data.<sup>5</sup> However, to disconnect from the internet to resist surveillance is increasingly difficult due to the degree that data and media technologies have become deeply entangled with social transactions and relations,<sup>6</sup> turning the internet into an indispensable utility for people’s day-to-day lives.<sup>7</sup> For example, Facebook is used by many people as an event management tool to organise activities ranging from study groups, social gatherings and protests, and therefore disconnecting from the social network precludes participation in social and civic life. Despite the warnings from computer scientist and philosopher Jaron Lanier to disconnect because of the unprecedented persuasive power of Facebook and Google,<sup>8</sup> disconnecting from the internet is increasingly unfeasible for many people.

Critical network theorist Ulises Ali Mejias offers an alternative to disconnecting in a digitally dependent age. Instead of refusing digital technologies, Mejias calls for a rejection of the logic that digital technologies typically impose: *nodacentrism*. Mejias defines nodacentrism as a dominant network logic that “rationalizes a model of progress and development in which those elements that are outside the network can only acquire currency by becoming part of the network.”<sup>9</sup> Nodacentrism reduces digital technologies to mere nodes that serve to connect to other nodes, thereby imposing a connective imperative upon digital technologies and networks. Yet as social media scholar Ben Light argues, users engage in disconnective practices while using digital technologies, such as deleting a post on Facebook or blocking another user profile on Twitter.<sup>10</sup> Moreover, media archaeologist Grant Bollmer disputes that networked connection is a naturally sought after state, arguing it was not until the later development of financial and business technologies in the mid-20th century, that: “connection [was viewed as solving] ...social problems, reflecting a desire for connectivity found in the primal yearnings of the human soul.”<sup>11</sup> To challenge nodacentrism, Mejias recommends the *paranode* as a conceptual starting point, a term that derives from neuroscience and refers to a “specific type of cellular structure that, while not part of the neural network, still plays an important role in excitatory signal transduction.”<sup>12</sup> An example of a paranode is any technology, object, or person that sits outside the network and resists assimilation to network logics, such as obsolete hardware or software, internet jammers or a cut off web link.<sup>13</sup>

This paper contends *The Disconnect* is a paranodal technology as it operates both within and outside the digital network. By forcing its readers to disconnect their device from the internet, *The Disconnect* temporarily occupies a paranodal space on the edge of the network that is not subject to dataveillance. Additionally, *The Disconnect* rejects nodacentrism by demonstrating how digital media technologies can disconnect to create valuable user experiences that are optimal for independent activities such as reading. This paper also extends

## IMMUNITY FROM SURVEILLANCE

Mejias' theory of paranodality by arguing that the breaking of links between nodes is paranodal, as the action of disconnection creates a degree of separation that limits the reach of the network. Just as a tap can be turned off to prevent the trickle of water, a connection between two nodes can be disconnected to impede the flow of data. Extending paranodality in this way creates the scope for any digital technology with disconnective capabilities to become paranodal, which could further dispel the nodacentric view that digital technologies predominantly serve as connective hubs to extend the digital network and data flow. In other words, paranodality offers a framework to assess how digital technologies can be designed and used by people for purposes beyond connecting, offering a more holistic potential of digital technology use.

### Background and a User Experience of The Disconnect

The predominant creative force behind *The Disconnect* is Chris Bolin, a software engineer with a background in developing web applications that interact with the web. Prior to *The Disconnect*, Bolin built a one-page website called *Offline Only* that forced users to go offline in order to read a short essay Bolin had written.<sup>14</sup> In the essay, Bolin writes about the distracted nature of the web, how connectivity can hinder focus and productivity, and the benefits of disconnection. *Offline Only* received popular acclaim from a number of mainstream media outlets.<sup>15</sup> The positive feedback of *Offline Only* convinced Bolin to try an even more ambitious offline web application: a hybrid online/offline magazine. To do so, Bolin enlisted the help of editor Clayton D'Arnault and invited writers to submit fictional stories, essays, and poems to partake in a media experiment. Writers were informed of the limitations of a hybrid offline/digital magazine and instructed not to submit any work with hyperlinks or other components that require a connection to the internet to function. This project was titled *The Disconnect* and the first issue launched in February 2018. To access *The Disconnect*, readers must first visit the magazine's website at <http://thedisconnect.co> (Fig. 1).

*The Disconnect* homepage resembles the front page of a magazine with a cover image, magazine



Fig. 1: The Disconnect magazine homepage designed by Jacob Halton

title, issue date and number. The homepage offers limited interactivity; the screen is locked, and the user cannot scroll in any direction. The only clickable element is a hyperlink reading ‘Need help?’<sup>16</sup> The instruction asking users to disconnect from the internet appears as a bellyband, which are typically used in the print industry to highlight featured content and package magazines to prevent readers from browsing the magazine before purchase, as a print magazine cannot be opened without breaking the bellyband.<sup>17</sup> The bellyband on *The Disconnect* forces a different type of commitment from potential readers. There is no paywall or financial transaction required to unlock any content. According to Chris Bolin, the bellyband on *The Disconnect* serves as a “pay-attention wall,”<sup>18</sup> by forcing users to disconnect their device from the internet to eliminate any third-party digital distractions. Once the user has disabled their connection to the internet, the homepage of *The Disconnect* reloads, transitioning to a black and white version of the same front cover image sans the publisher band (Fig.2). If the user re-establishes their connection to the internet, the bellyband reappears.

After disconnecting, *The Disconnect* enables the user to scroll downwards, which reveals the contents of the magazine (Fig. 3). Articles are categorised under the headings of “stories”, “commentary”, “poetry”, or “about” for supplementary information about *The Disconnect*. Each article is listed as a line item and displays basic metadata, including the



Fig. 2: The Disconnect magazine after the user disconnects from the internet

title, author, and length of the article in page. If the user hovers their cursor over a line item, the text on the line item moves subtly and the font colour changes to a lighter shade of grey. Clicking on the text takes the reader to the article which is visually distinct from the section of *The Disconnect* that houses the contents.

The first issue of *The Disconnect* contains thirteen articles, with each article presented to the user as a distinct web page.<sup>19</sup> Users can browse between each article and return to the homepage



Fig. 3: The contents of The Disconnect magazine

or click on next article at the footer of each page. However, *The Disconnect* offers no interactivity outside of itself. Each article is effectively siloed from the rest of the web, devoid of hyperlinks that can transport users to places on the network beyond *The Disconnect*. If the user attempts to open a tab

on their browser and access another website, they are promptly reminded by their browser that they are offline and/or to check their connection. As Fig. 4 demonstrates, when reading the content of *The Disconnect*, there are no share buttons, no auto-playing videos, or banner ads, to click on; users can only read.

The articles and layout in *The Disconnect* also lack “rich content,” meaning high quality images or videos. In this sense, *The Disconnect* is aesthetically minimalist, offering only simple black and white typography and an abundance of white space. But what *The Disconnect* lacks in vibrant

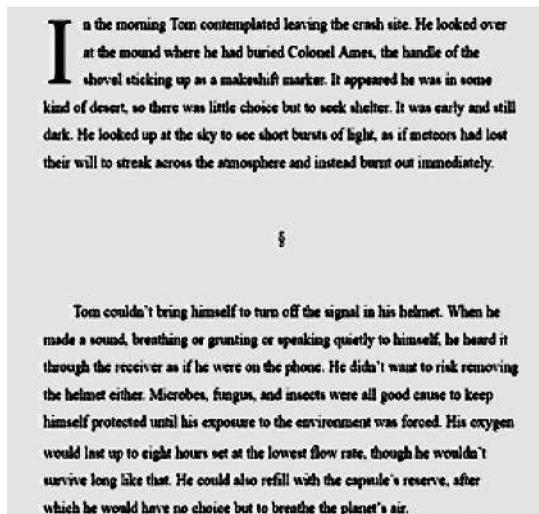


Fig. 4: An article on The Disconnect magazine

colour or imagery, it makes up for by offering a unique reading experience, ideal for fiction or longer forms of writing. Without hyperlinks or banner advertisements, *The Disconnect* is designed so readers cannot be distracted easily. There are no opportunities to share, “like” or otherwise circulate the content of *The Disconnect*. Readers are shielded from any such nodacentric logic that prioritizes the circulation of content over the actual engagement with content. Bolin considers that a distraction free online space offers a novel reading experience:

I think *The Disconnect* may have opened up something unique on the web, for example, the cover piece is a story called Rescue, it's a pretty long piece and the author had said that he had never find a place for it online because all of

## IMMUNITY FROM SURVEILLANCE

the restrictions were something like four thousand words or something like that...I was really happy because we could open up something like that. I know multiple people read the whole thing all the way through, and they didn't expect that to happen online. They didn't expect to read a webpage with that much text...So I'm really happy that we're able to do that. We are a very easy fit for fiction and poetry.

Studies comparing offline to screen-based reading have concluded that screen-based reading promotes skimming, keyword spotting, and other forms of fragmented reading which in turn contributes to losses in sustained attention.<sup>20</sup> *The Disconnect* complicates such a characterization of screen-based reading by forcing its readers to transform their screen into an offline device. By removing the distractions that a connection to the internet entails, *The Disconnect* attempts to fuse an offline reading experience with a digital medium to create an ideal screen-based space where attention can be sustained and oriented for possible pedagogical purposes. *The Disconnect* therefore reimagines digital environments that could be optimal for reading or any other independent modes of learning or creativity.

### Lifting the Curtain: The Interactive Web 2.0 and Offline APIs

To a user, an offline digital reading experience may appear as magical. In reality, Bolin utilises the interactivity of the web as a sleight-of-hand. The first trick Bolin uses is frontloading the entire magazine to the user's internet browser. Unbeknownst to users, as they enter the URL of *The Disconnect* and download the homepage, the entire web application is saved to the browser's web cache. This process is different to most modern websites that load on an as-clicked and as-scrolled basis due to the heavy data transfer requirements that websites demand when using rich content. Whilst the average website depends on a steady connection to ensure full functionality, *The Disconnect* must be entirely front-loaded in the user's internet browser because of the subsequent requirements of the user to disconnect from the internet. As Bolin explains:

What you as the user don't really realise is that an entire magazine is sitting there ready to be viewed, but you only look at the front page, and the page tells you to disconnect. But the whole magazine is already there. The technical hurdles are really just reducing that file size.

Because it must be front-loaded and read offline, *The Disconnect* must maintain a small file size; it is a media object that is barely over 200 kilobytes, which is tinier than the poster image on most websites.<sup>21</sup> The second engineering trick Bolin uses is reversing the intended use of a standard software protocol that has been common to Web 2.0. Web "1.0" and "2.0" are software engineering terms to describe how the web has evolved over the last two decades. The Web 1.0 refers to a network of channels to distribute and publish static Hyper Text Markup Language (HTML) pages of information while, in contrast, Web 2.0 is a platform that *interacts* with third party web applications or other software programs.<sup>22</sup> Bolin is an expert in building Web 2.0 applications: "My day job is to program for the web and that's what I feel like a lot of my skills and expertise is being built up in; thinking about what browsers can do." Web 2.0 applications like *The Disconnect* are primarily developed through standard software protocols, otherwise known as application programming interfaces or APIs. The API is a software interface that offers standard access to data, functionality, and protocols. An example is the use of the Facebook API which allows users to sign up for Spotify using their Facebook account. The use of an API in this way is nodacentric: to ensure a greater flow of data throughout the network by connecting more nodes via the interoperability of APIs.

However, just because APIs are predominantly designed to share data does not mean APIs must be used in such a nodacentric way. When users of *The Disconnect* disable their Wi-Fi, an event is fired by an API that is native to most modern internet browsers. This API is called online and offline events ("offline API"),<sup>23</sup> which was designed to recognise unreliable internet connections and cache content to avoid data loss. The offline API

is typically used by applications such as Gmail to inform the user when they are not connected to the internet and to preserve the user's data. In this instance, Bolin utilises the offline API to instruct *The Disconnect* web application to remove the bellyband and unlock the content when the user disables their internet connection.<sup>24</sup> To analogise, if the offline API is a lock, then the act of user's disconnecting their device from the internet is the key. Bolin was inspired to flip the logic of the offline API by a much older technology:

I take a little bit of inspiration from the very boring but very powerful changes in washing machine technology. You have a top load washing machine, and this was the technology we had for probably almost a century. And then someone had a very but very profound idea: "why don't we rotate [the washing machine] ninety degrees?"...I kind of think of using offline APIs to do something like this as similar. You're taking the thing and you're basically using it in reverse right? If before it was supposed to notify you when you were in a suboptimal position because you were offline, now we're saying you're in a suboptimal position because you're online.

By reverse engineering the offline API, Bolin and *The Disconnect* demonstrates the web can interact with digital technologies without being nodacentric. That is to say, the web does not have to necessitate the flow of data on the network but, at a more fundamental level, can interact with other nodes such as web applications for purposes that are beyond connecting. To analogise, the web is not just a pipe to circulate the movement of data but can also be leveraged as a valve to condition or impede data flow when or where desired. *The Disconnect* is a "valve" type of web application as it hinders the flow of data during the point of media consumption and is therefore an example of what Ulises Ali Mejias considers an intensification of the network: an act of creative disassembly that pushes the network to the limits of interactivity beyond nodacentrism. Instead of abandoning the network, *The Disconnect* reimagines how the network, the

web, and APIs can interact to create a novel offline screen-based experience. As Anne Helmond states, APIs enact the "programmability of the web"<sup>25</sup> which doesn't always transmit to the connectivity of the web, as not all of the web is social.<sup>26</sup>

### Off the Network: Immunity from Surveillance

*The Disconnect* is not just an experiment in the web, but also in the limits of surveillance. The only surveillance that *The Disconnect* enables is the server-based surveillance required to identify the web location of the reader so a copy of *The Disconnect* can be sent to the reader's internet browser. The level of information that server-based surveillance offers is rudimentary web location-based data and analogous to what a mailing list offers to a print publication. Beyond the location of the readers internet browser, Bolin admits he knows next to nothing about the readers of *The Disconnect*:

[...] we don't know the most basic thing of all—which is did [the user] even disconnect? Think of one of those free magazines that just has a bunch of ads—people pick them up from the newsstand and they might just look at the cover and just toss it. That could have been a request for *The Disconnect*.

The other form of surveillance commonly undertaken on the web is client-based surveillance or web analytics. Web analytics are commonly used by the online publication industry as they provide rich insights into reader preferences—what headlines they click on, sentences they highlight, or how far they scroll—which in turn are used by publishers to inform editorial decisions on subsequent content.<sup>27</sup> Web analytics are even used by editors to dynamically rewrite headlines if the click through rates are underperforming.<sup>28</sup> Edson C Tandoc, Jr. considers web analytics to be instrumental in the media industry adoption of a more consumer-driven process of selecting and packaging content in order to increase web traffic.<sup>29</sup> Web analytics requires a steady connection so a third party data analytics client, such as Google Analytics, can actively monitor the activities of the user.

## IMMUNITY FROM SURVEILLANCE

Web analytics cannot be undertaken on *The Disconnect* as, during the period of media consumption, *The Disconnect* is paranodal and off the network. *The Disconnect* can be interpreted as a response to Alexander Galloway and Eugene Thacker's call for "tactics of non-existence,"<sup>30</sup> as the content of *The Disconnect* can only be consumed while users are offline, and therefore, does not exist to be analysed as nodes of data on the network. *The Disconnect* is therefore fatal to web analytics practices, offering readers immunity from any data analytics that require a connection to the internet to work.<sup>31</sup> Put slightly differently, paranodality offers a type of immunity that is analogous to a witness protection scheme. By forcing readers to disconnect from the internet, *The Disconnect* temporarily relocates the reader off the network hiding them from the gaze of any watcher.

*The Disconnect* also provides optimal intellectual privacy for readers. Neil Richards defines intellectual privacy as "the protection from surveillance or interference when we are engaged in the processes of generating ideas."<sup>32</sup> In networked environments, intellectual privacy is hindered when the reader is encouraged to respond in a certain way. An example is the blogging platform *Medium* or the e-reader Kindle, where web analytics have enabled the development of the "top highlights" functionality that discloses to readers how many other users have highlighted a certain quote. The top highlights functionality suggests to the reader a collective consciousness of what material other readers consider to be significant, which could

encourage the reader to think the same. To this end, inoculating readers from web analytics enhances the intellectual privacy and autonomy of the reader as the absence of social functionalities allows the reader to respond to a text on their own terms.

*The Disconnect* is an experiment in software and media that offers hope for users that there is more to digital technologies than being subjected to surveillance and generating data. Surveillance and web analytics depend upon the nodacentric belief that digital technologies predominantly serve to connect to other nodes on the digital network and facilitate and generate data flow. *The Disconnect* rejects the connective imperative and was built on an opposing paranodal view: that disconnection from the network can be a desirable or optimal state. By reverse engineering an offline API, *The Disconnect* forces its readers to disconnect beyond the reach of web analytics. *The Disconnect* therefore simultaneously celebrates certain features of networks and digital technologies such as ease of access and dissemination, while eliminating the ubiquity of surveillance that has come at a cost of admission to the internet. Furthermore, by removing distractions and protecting intellectual privacy, *The Disconnect* further imagines new possibilities of screen and/or network-based reading environments that could be optimal to certain modes of independent learning. Paranodality and the idea of disconnected digital experiences offers a means to break the entrenched connective imperative of networks and the overwhelming power that totalizing surveillance has over our lives.

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### Notes

1 *The Disconnect*, Accessed October 22, 2018, <https://thedisconnect.co/one/>

2 Ben Light, Jean Burgess and Stefanie Duguay, "The Walkthrough Method: An approach to the study of apps," *New Media & Society*, vol. 20, no. 3, (2016), 881-900.

3 Anne Helmond, "The Platformization of the Web: Making Web Data Platform Ready," *Social Media + Society*, <https://doi.org/10.1177/2056305115603080>

4 Pepita Hesselberth, "Discourses on Disconnectivity and the Right to Disconnect," *New Media & Society*, vol. 20, no. 5, (2018), 1994-2010.

5 Rita Raley, "Dataveillance and countervailance," in *'Raw Data' is an Oxymoron*, ed. Lisa Gitelman (Cambridge, Massachusetts: MIT Press, 2013), 121-145.

- 6 Finn Brunton and Helen Nissenbaum, "Vervacular resistance to data collection and analysis: A political theory of obfuscation," *First Monday* vol. 16, no. 5, (2011), Accessed October 30, 2018. <http://firstmonday.org/article/view/3493/2955>
- 7 See Anne Kaun and Christian Schwarzenegger for a study where students were forced to disconnect from the internet but struggled to stay offline, which revealed how dependent on media technologies they were. "No Media, Less Life? Online disconnection in mediatized worlds," *First Monday* vol. 19, no. 11 (2014), Accessed October 29, 2018 <http://journals.uic.edu/ojs/index.php/fm/article/view/5497/4158>
- 8 Jaron Lanier, *Ten Arguments for Deleting Your Social Media Accounts Right Now* (London: Bodley Head, 2017).
- 9 Meijas, *Off the Network*, 10.
- 10 Ben Light, *Disconnecting with Social Network Sites* (Houndmills, Basingstoke: Palgrave MacMillan).
- 11 Grant Bollmer, *Inhuman Networks: Social Media and the Archaeology of Connection* (New York: Bloomsbury, 2016), 2-3. This leads Bollmer to a similar conclusion to Meijas, that networks produce 'nodal citizenship', an ideology that encourages people to connect socially, economically, biologically, and technologically, to maintain flows of information or data.
- 12 Meijas, *Off the Network*, 153.
- 13 Ibid., 154.
- 14 Chris Bolin, "Offline Only," Accessed October 29, 2018, <https://chris.bolin.co/offline/>
- 15 The launch of *Offline Only* was covered by international media publications such as *Vice*, *Motherboard* and *The Next Web*, as well as the *Canadian Broadcasting Company*.
- 16 The text on the publisher's band slightly varies depending on what device the user is using to access *The Disconnect*.
- 17 Jenny McKay, *The Magazines Handbook*. 3<sup>rd</sup> ed. (Abingdon, Oxon: Routledge, 2013), 315
- 18 Matthew Ingram, "A new digital magazine forces you to unplug from the internet," *Columbia Journalism Review*, February 26, 2018, Accessed December 20, 2018. <https://www.cjr.org/innovations/disconnect-magazine-only-works-offline.php>
- 19 Each article on *The Disconnect* has a unique URL slug.
- 20 Ziming Liu, "Reading behavior in the digital environment: Changes in reading behavior over the past ten years," *Journal of Documentation*, vol. 61, no. 6, (2005), 700-712.
- 21 This in part explains the simple aesthetics of *The Disconnect*. If *The Disconnect* contained richer aesthetics: color, video or any objects high in bytes, *The Disconnect* would take more time to download.
- 22 See Helmond, "The Platformization of the Web," 3, for an overview of Web 2.0: the web as a platform.
- 23 "Online and offline events", *Mozilla*, Accessed October 29, 2018. [https://developer.mozilla.org/en-US/docs/Web/API/NavigatorOnline/Online\\_and\\_offline\\_events](https://developer.mozilla.org/en-US/docs/Web/API/NavigatorOnline/Online_and_offline_events)
- 24 If the user is using an internet browser that doesn't have the offline API installed than an alternative method of polling is used to test if the user has gone offline. According to Bolin this happens in a matter of microseconds.
- 25 Helmond, "The Platformization of the Web," 3.
- 26 This contrasts with the social media logic of "connectivity" proffered by José van Dijck and Thomas Poell, "Understanding Social Media Logic," *Media and Communication*, vol. 1, no. 1, (2013), 2-14.
- 27 Angela M. Lee, Seth C. Lewis and Matthew Powers, "Audience Clicks and News Placement: A Study of Time-Lagged Influence in Online Journalism," *Communication Research*, vol. 41, no. 4, (2014), 505-530.
- 28 Jeffrey Kuiken, Anne Schuth, Martijn Spitters, and Maarten Marx, "Effective Headlines of Newspaper Articles in a Digital Environment," *Digital Journalism*, vol. 5, no. 10, (2017), 1300-1314.
- 29 Edson C Tandoc, Jr, "Journalism is Twerking? How web analytics is changing the process of gatekeeping," *New Media & Society*, vol. 16, no. 4, (2014), 559-575.
- 30 Alexander Galloway and Eugene Thacker, *The Exploit: A Theory of Networks* (Minneapolis: University of Minnesota Press, 2007), 135-137.
- 31 According to Bolin it would be possible to embed web analytics software within the code of *The Disconnect*, which could allow data analytics to be undertaken when the user is offline. However, for the data to be returned to Bolin or a third party, the user would have to reconnect to the internet while they still have the web application open. In other words, a forced disconnection significantly risks the successful transfer of captured data analytics.
- 32 Neil Richards, "Intellectual Privacy," *Yale Law Journal*, vol. 87, no. 2, (2008), 387.