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Maria Eriksson, Rasmus Fleischer, Anna Johansson, Pelle Snickars, and Patrick Vonderau, *Spotify Teardown: Inside the Black Box of Streaming Music*

Cambridge, The MIT Press, 2019

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The Health Check of the Swedish Unicorn

- 1 Large corporations are well known for their informational impenetrability. They use opaque legal tools such as non-disclosure agreements, intimidating notes, and security procedures to shield their competitive advantages. They often employ questionable (and possibly illegal) business practices against presumed adversaries such as competitors, activists, journalists, researchers, and even customers and partners. As a consequence, *Spotify Teardown* is actually less of a study drilling inside the black box and exposing the workings of the music streaming service giant, which is too slippery and opaque to submit to being nailed down, than it is a meta-study on *how* to investigate a media/tech company – and what might follow from it.

- 2 The recent shift in digital music reproduction attests to the surprisingly contingent unfolding of our conjuncture. Two decades ago, record industries were facing one of their largest shifts as recordings were increasingly circulated as binary information from user to user, in tandem with decreasing sales. In general, users did not hesitate to exploit the free distribution of music files – *file-sharing* – but the prospect for commercial producers did not look entirely bleak. Already in 1994, satellite technology had fuelled the utopian concept of Celestial Jukebox, affording the deliverance of any imaginable media content directly to a subscriber’s home (Burkart & McCourt 2004). Likewise, music business authors David Kusek and Gerd Leonhard (2005) envisaged that emerging digital technology would enable record companies to serve music to customers like water running from a tap. In October 2008, one such step from ownership to access was taken. Spotify, a service enabling users to directly stream music from servers on-demand for a monthly subscription fee or even for free (if interrupted by commercials), was “launched” in several countries such as France, Germany, United Kingdom and its home country Sweden – although launching is not an exactly truthful choice of words. Spotify had already operated for a year in beta mode, utilising peer-to-peer technology similar to filesharing programs (until 2014) to stream unlicensed copyrighted content¹ to invited test users, as the pack of authors of *Spotify Teardown* argue. Consequently, pirate practices such as sharing unlicensed content through P2P networks also generated the most important milking cow for the oligopoly of music corporations, reaffirming the power they held in the heyday of the CD market. Another matter of irony is that the company, which grew its business through collecting data from its users, was reluctant to provide any to the researchers² and was later irritated by their experimental methods to gain it – though admittedly somewhat transgressive in terms of research ethics – to the point that they appealed to their funder, the Swedish Research Council, to check the project, insinuating possible legal conflicts (though fortunately without any effect).³
- 3 The work is a bold and refreshing attempt by five scholars (Maria Eriksson, Rasmus Fleischer, Anna Johansson, Pelle Snickars, and Patrick Vonderau) to investigate the makings of one of the largest streaming services in the world, which currently boasts of catering to a quarter billion users, shadowed probably only by Soundcloud in the domain of digital music. What makes their work particularly interesting is its methodology, which combines active participatory approach with digital tools. To begin with, it contributes to the growing body of activist scholarship, where the researchers not only examine, but participate in affecting their object of examination along the lines of Marx’s critique of Feuerbach. In the book, each chapter is paired with an intervention, the latter describing a participatory mode of investigation, which are sometimes exhilarating, tongue-in-cheek, and carnivalesque. For example, at *Transmediale* in Berlin, the research team marketed a new app, *Songblocker*, for Spotify free users, an app which silences all tracks – except for the advertisements. However, the researchers (with backgrounds in humanities, social, and media studies) implemented tools informed by the famous Digital Method Initiative of the University of Amsterdam in several case studies. These methods, theoretically following the path taken by Jeremy Wade Morris (2015), effectively boiled down to a “SpotiBot” experiment, a diverse use of listener bots (automatised scripts resembling users): providing plays of their own music released on Spotify, mapping how the algorithms powering Spotify Radio looped music, and figuring out how the algorithms recommending music to users classified them in terms of age and gender. Some of the

cases are more thoroughly presented in their respective journal articles, which are featured in the impressive bibliography that the whole project has created, in addition to the book that summarises the entire five-year project, which ended in 2019.

- 4 The research is exceptionally critical and controversial, provoking its object to engage in a dispute. Like the loops that the project discovered when examining the song flow of Spotify Radio, the work starts from a citation of a letter and beautifully ends in one. The first is by Spotify to the Swedish Research Council, where they report the breaching of their user terms and the attempt to hide this from the project (referring to the user bots it employed several times). The last letter represents a kind of final intervention – or an intervention on intervention on intervention (!): it seems to be the last word that the researchers have in the dispute with the service, a kind of revenge embodied by a notice that the researchers send to the Swedish data protection authority, where they suspect Spotify of breaching GDPR, the recent EU directive on data protection. Consequently, according to a report last June, an investigation has begun.⁴ The subversive ethos of the project does not come as a full surprise, as for example Fleischer, an economic historian and active leftist cultural commentator, has a background in Piratbyrå, the pirate activist group in Sweden that was responsible for establishing the notorious Pirate Bay, one of the most enduring and largest BitTorrent⁵ search engines, whose operators were convicted in 2009. Published in the same year, Fleischer's (2009) manifesto on *post-digitality* contributed to the premise of curating the vast collections of ever-expanding music to the (almost) unlimited shelf space of hard disks. Thus, in the supposed contemporary condition of post-digitality, the problem of access is replaced by that of filtering. Spotify discovered this “curatorial turn” only around 2013, according to Eriksson et al. (p. 54–62), before which the user navigated through the content mainly using the search box, already knowing which of the millions of songs to listen.
- 5 Aply, the critical research on Spotify is partly rooted in the university of the company's one-time home base, Stockholm, where Fleischer and professor Patrick Vonderau, a well-known expert on films and online video, are affiliated. However, Umeå University, north of Stockholm, has provided the project with programming skills from its Digital humanities laboratory HUMlab, and several researchers such as Pelle Snickars, professor of media studies and an academic celebrity of sorts in Sweden, ethnologist Anna Johansson, and social anthropologist Maria Eriksson. Although the work does not state who is responsible for which chapter – the intent of the authors to make it seem more coherent – it seems discernible – at least for those familiar with the previous work of the authors.
- 6 The project has clearly benefited from the diverse viewpoints, experience, and methods of all participating parties. One of the most interesting results of the project in whole is how the user's reported gender influences the recommendation algorithms⁶, described in detail by the research group's special issue of the journal *Culture Unbound* (Fleischer & Snickars 2017). Likewise, the examination of loop patterns in Spotify Radio is documented more thoroughly in the issue, with the exception that the main results from the latter – unlike the former – are summarised in this book.
- 7 As the environment of Spotify is constantly in flux – which the book describes in a distinguished manner – the SpotiBot results are only able to give some snapshots of the covert workings of the service at the time (the experiments were conducted in spring 2016). The data collected by diverse bot listeners supports the conclusions by ordinary

users on discussion forums that the Spotify Radio, generating a radio stream based on a song picked by the listener, often repeats the song in question, and likely more often so in the case of a hit song (such as the tested *Dancing Queen* by Abba, at least when compared to the 1970s prog rock song *Queen of Darkness* by Råg I Ryggen – rings a bell, uh?). The stream would also repeat similar artists during the loops between the “base song”, and neither one of these discoveries was altered by the programmed listening habits of the bots. These are sure fairly interesting results, but the aims and the ambitions of the company had already shifted towards playlists such as the influential “Discover Weekly” by around 2015, as the authors themselves emphasise.

- 8 Phrases such as “to our knowledge”, “what is not known” and “it remains unknown” frequent the work, telling of the opaqueness of Spotify and its mechanisms, and the difficulty of investigating them. Unfortunately, one of the shortcomings of the work is that results ensuing from the many interventions and bot experiments are not very robust or useful. Reverse engineering the recommending algorithms would necessitate much larger scale testing to produce more general results and ones that are reliable in terms of probability: to their benefit the authors reflect this in an open manner, not trying to inflate their empiric work. The different aged listener bots do give some insights regarding the recommending principles, but the amount of data is too small to afford any reliable statistical results. Furthermore, SpotiBots are not “real” users: they do not act like unprogrammed, unruly humans; they do not have a listening history; they do not produce personal data from other web browsing, the same data which the company likely buys and/or collects itself for advertising, or perhaps for musical profiling purposes.
- 9 It is not that the book cannot provide a lot of information on the company and thus also other platforms: the platform is one of the key concepts throughout the work – although the authors endow the stiffness of platform research in general with a dose of critique. The chapter addressing Spotify’s programmatic advertising is insightful in this sense, showing the complexity of the networks that the service is entangled with. This underscores how the company is operating in at least two markets: serving music to users and serving users to advertisers (including a part of the music industries that supply music to it).
- 10 However, Spotify, constantly networking and partnering, scouting for new business opportunities and the next trends in digital entertainment markets, escapes the analysts for the most part. *Spotify Teardown* raises the question of whether a printed book is the best medium for delivering the results of large research on a contemporary business operator that is constantly changing at such a high pace. One interesting example of this is what has sparked the interest of many Spotify commentators: whether it is profitable as a company or not. On the 3rd of April 2018 these speculations became obsolete when the company went public (IPO, initial public offering) on the New York Stock Exchange. However, by that time the book was already in its final stages and could reflect on the event with only a few brief mentions, although it could have been employed to major importance.
- 11 Another matter of consideration is that there is an open air of negativity towards the service, trading on the border of what is a healthy critical attitude – the research has few, if any, positive things to say about Spotify. This leads one to speculate on whether it is because of the unsuccessful dialogue with the company signalling legal threats, the latter of which, I would argue, was not that surprising considering Spotify’s closeness

to the rough global corporate culture (for example the major music companies Warner, Universal, and Sony, which frequently engage in legal battles, owned significant equity in the company until the IPO).⁷ Even for a digital music industries scholar such as the undersigned, who is quite disenchanted with Spotify, contemporary music industries and capitalism, and as someone that does not have much faith nor see the point in the “objectivity” of academic research – the mentioned “malicious” narrative and at times the research ethos in *Spotify Teardown* invokes the hard-boiled, defamatory style of contemporary political online “conversation”. Of course, this kind of confrontation and controversy goes side by side with the activist mode of the research – the authors refer to this as “getting their hands dirty” – and is undoubtedly beneficial for marketing the book and, thus, ultimately, their “cause”. However, it might have been more appealing to a reader had the authors “fought the monster” without becoming just a little bit of one themselves.

- 12 There are also some minor complaints about the work. The pack of researchers repeat or contradict each other, which might be a sign of an editing process conducted in a hurry. There are also some unfounded claims about the economics of Spotify and related independent record productions. Quite probably – once again, we cannot know for sure – the major music companies have been able to negotiate themselves better royalties from the service than minor producers, a widely shared assumption which is also referred to, if not clearly claimed in the book (p. 54). Another feature of Spotify’s money flow cited in the book is the *pro rata* distribution of royalties, which is explained quite inadequately (e.g. p. 155–6; have the authors even understood how the money is exactly distributed?).⁸ What is left unmentioned is that the majors’ minimum per-stream or -user payments related to the former (their negotiation of equity and other benefits in exchange for licensing their repertoire) skew the distribution in the latter claim. The influence of this model when compared to other models (such as a so-called user-centric model) is anyway a topic of ongoing discussion, yet without any watertight evidence.⁹ Additionally, while the work argues several times that Spotify has generally made things worse for the independent artists in terms of profitability, the reality is more complex. Independent labels and aggregators connecting independent artists (such as the ones invented in the project) to Spotify such as TuneCore or CDBaby might take a smaller cut from their services than the majors, thus resulting in a greater revenue than the latter could afford. Of course, more popular artists have a better bargaining position than the less popular, regardless of working with major or independent labels. At least some independent labels and artists have been doing well in the streaming economy dominated by Spotify.¹⁰
- 13 If its new hardcore facts on the service and its black box are few and far between, *Spotify Teardown* is able to give diverse views amounting to a general description of an ultra-dynamic, opportunist company in a likewise ultra-dynamic, financially charged hyper-capitalist environment (often resembling the contemporary academic world) which seems at times next-to-impossible to grasp. This is a clear merit, as the more traditional *foci* on gatekeeping practices and distribution of revenues of the music industries research unfortunately often ignores the financial dimensions, nowadays of utter importance. This work manages, at least, to capture the liquidity not only of its object, but the contemporary global capitalism without a pessimistic surrender, while also providing an inspiring methodology. At times, it even provides a few laughs, although leaving the reader with a great level of uneasiness as one finds oneself so inevitably entangled in the rough contemporary consumer/business environment (to

which the publisher MIT Press most probably contributes as well, disarming the very research it has published). Although *Spotify Teardown* makes an interesting case, it could be argued that a book with a focus on one company, even a critical one, also contributes to building its significance and helps to consolidate its brand, perhaps representing, therefore, a Pyrrhic victory.

NOTES

1. Allegedly mostly obtained via The Pirate Bay.
2. Unlike the Norwegian WiMP, nowadays known as Tidal.
3. Strangely enough, Spotify Finland did give user data regarding March 2016 to a Finnish consultant employed by the local musicians' and copyright collection institutions: MUIKKU Jari. *Pro Rata and User Centric Distribution Models: A Comparative Study*, With the assistance of Pradeep DURGAM. Final report. *Digital Media Finland*, November 30, 2017, http://www.digitalmedia.fi/wp-content/uploads/2018/02/UC_report_final_171213.pdf.
4. DREDGE Stuart, "Swedish data-protection authority launches Spotify GDPR investigation", *Music Ally*, June 13, 2019, <https://musically.com/2019/06/13/swedish-data-protection-spotify-gdpr-investigation/>.
5. Peer-to-peer (P2P) file-sharing technology.
6. Recommender algorithm is a piece of code that automatically recommends new artists or songs to the user on the basis of their earlier listening history.
7. One ponders whether e.g. Fleischer cultivates antipathies for Spotify that roots in and takes advantage of similar computing environment as The Pirate Bay for a profit, but has been celebrated publicly in Sweden and globally, whereas the operators of the latter were convicted to prison and ordered to pay millions of Euros worth in damages.
8. Essentially, in pro rata a paying subscriber's monthly payment is not distributed directly to the songs they has listened to, but pooled and distributed according to the plays of all the users – possibly also including the users of the free version (KOPF Dan, "Your Spotify and Apple Music subscriptions pay artists you never listen to", *Quartz*, July 11, 2019, <https://qz.com/1660465/the-way-spotify-and-apple-music-pays-artists-isnt-fair/>).
9. INGHAM Tim, "Should Spotify Change the Way It Pays Artists?" *Rolling Stone*, December 7, 2018, <https://www.rollingstone.com/music/music-features/should-spotify-change-the-way-it-pays-artists-763986/>
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Juho Kaitajärvi-Tiekso was born in Tampere, Finland in 1979. He received his MA in 2005 (University of Tampere) and is currently working on – as for the last three years – finalizing his PhD project "Dynamics of Democratization and Digitalisation of Record Production in Finland in the 2010s" in the Faculty of Information Communication Studies in the Tampere University under the supervision of Professor Tarja Rautiainen-Keskustalo. Kaitajärvi-Tiekso is interested in the music and art scenes and the cultural politics of music and recordings. He has published his research work in English and in Finnish in many journals and anthologies.