Music Streaming's Impact on Cultural Diversity

Spotify and Recommendation Algorithms as Gatekeepers

The rapid growth of music streaming business has brought significant changes to the music industry, creating new opportunities for artists, labels, and consumers alike. Streaming services, like Spotify, use algorithmic recommendation systems to help users find the content relevant to them from the seemingly endless trove of music. As modern gatekeepers, these services – and the algorithms they use – yield significant power over culture, affecting the rights of both artists and listeners. This thesis examines the music business in the digitalized era, the algorithmic recommendation of music, and its impact on cultural diversity, the right to express and access culture. Additionally, I will examine what kinds of methods the international society, UN at its helm, has proposed to protect cultural rights and diversity.

Musiikin suoratoistopalveluiden nopea kasvu on muuttanut musiikkialaa merkittävästi, luoden uusia mahdollisuuksia niin artisteille, levy-yhtiöille kuin kuluttajillekin. Suoratoistoalustat, kuten Spotify, käyttävät suosittelualgoritmeja ja koneoppimista helpottaakseen käyttäjälle relevantin sisällön löytämistä musiikin loputtomasta tulvasta. Moderneina portinvartijoina suoratoistopalveluilla – ja näin myös niiden käyttämillä suosittelualgoritmeilla – on paljon kulttuurista valtaa. Opinnäytetyössäni tutkin, minkälaisia vaikutuksia suoratoistopalveluilla ja suosittelualgoritmeilla, voi olla ihmisoikeuksiin; kulttuuriseen monimuotoisuuteen, ilmaisunvapauteen ja pääsyn kulttuurin äärelle. Lisäksi tutkin, minkälaisia toimia kansainvälinen yhteisö YK:n johdolla on ehdottanut kulttuuristen oikeuksien turvaamiseksi.

Table of Contents

Sources

Articles and literature

Aguiar, Luis – Waldfogel, Joel, Platforms, Power, and Promotion: Evidence from Spotify Playlists*. Journal of Industrial Economics, John Wiley & Sons, Ltd, 2021 (69); 3: 653-691. *(Aguiar & Waldfogel 2021)*

Aguiar, Luis – Waldfogel, Joel – Waldfogel, Sarah, Playlisting favorites: Measuring platform bias in the music industry. International Journal of Industrial Organization, 2021 (78): 1-17. *(Aguiar et al. 2021)*

Albornoz, Luis A. – García Leiva, Ma. Trinidad, Audio-Visual Industries and Diversity: Economics and Policies in the Digital Era. Routledge, 2019. *(Albornoz & García Leiva 2019)*

Allen, David – Wheeler-Mackta, Henry – Campo, Jeremy – Ugur, Evin, The Effects of Music Recommendation Engines on the Filter Bubble Phenomenon. Worcester Polytechnic Institute, 2016. *(Allen et al. 2016)*

Anderson, Ashton – Maystre, Lucas – Mehotra, Rishabh – Anderson, Ian – Lalmas, Mounia, Algorithmic Effects on the Diversity of Consumption on Spotify. In: Proceedings of The Web Conference 2020. IW3C2 (International World Wide Web Conference Committee), 2020. *(Anderson et al. 2020)*

Arogyaswamy, Bernard, Big tech and societal sustainability: an ethical framework. AI & Society, 2020 (35); 829-840. *(Arogyaswamy 2020)*

Bello, Pablo – Garcia, David, Cultural Divergence in popular music: the increasing diversity of music consumption on Spotify across countries. Humanities and Social Sciences Communications, 2021 (8); 182: 1-8. *(Bello & Garcia 2021)*

Brown, Steven C. – Krause, Amanda E., Freedom of Choice: Examining Music Listening as a Function of Favorite Music Format. American Psychological Association, 2020 (30); 2: 88-120. *(Brown & Krause 2020)*

Brusila, Johannes – Cloonan, Martin – Ramstedt, Kim, Music, Digitalization, and Democracy. Popular Music and Society, 2022 (45); 1: 1-12. *(Brusila et al. 2022)*

Burri, Mira et al., Big Data and Global Trade Law. Cambridge University Press, 2021. *(Burri et al. 2021)*

Chodos, Asher Tobin, Solving and Dissolving Musical Affection: A Critical Study of Spotify and Automated Music Recommendation in the 21st Century. University of California San Diego Electronic Theses and Dissertations, 2019. *(Chodos 2019)*

Crawford, James, Brownlie's Principles of Public International Law, 9th edition. Oxford University Press, 2019. *(Crawford 2019)*

Dubber, Markus D. – Pasquale, Frank – Das, Sunit, The Oxford Handbook of Ethics of AI, online edition. Oxford Academic, 2020. *(Dubber et al. 2020)*

Eriksson, Maria – Fleischer, Rasmus – Johansson, Anna – Snickars, Pelle – Vodreau, Patrick, Spotify Teardown: Inside the Black Box of Streaming Music. The MIT Press, 2019. *(Eriksson et al. 2019)*

Fakuda-Parr, Sakiko – Gibbons, Elizabeth, Emerging Consensus on 'Ethical AI': Human Rights Critique of Stakeholder Guidelines. Global Policy, 2021 (12); 6: 32-44. *(Fakuda-Parr & Gibbons 2021)*

Grafanaki, Sofia, Drowning in Big Data: Abundance of Choice, Scarcity of Attention and the Personalization Trap, A Case for Regulation. Richmond Journal of Law & Technology, 2017 (24); 1: 1-66. *(Grafanaki 2017)*

Hesmondhalgh, David, Streaming's Effects on Music Culture: Old Anxieties and New Simplifications. Cultural Sociology, 2022 (16); 1: 3-24. *(Hesmondhalgh 2022.)*

Jannach, Dietmar – Abdollahpouri, Himan, A survey on multi-objective recommender systems. Frontiers in Big Data, 2023; 6:1157899. *(Jannach & Abdollahpouri 2023)*

Kleinhans, Martha-Marie – Macdonald, Roderick A., What is a *Critical* Legal Pluralism?. Canadian Journal of Law and Society, 1997 (12); 2: 25-46. *(Kleinhans & Macdonald 1997)*

Otto, Dianne, Rethinking the Universality of Human Rights Law. Columbia Human Rights Law Review, 1997 (29); 1: 1-46. *(Otto 1997)*

Pariser, Eli, The Filter Bubble – What the Internet is Hiding from You. Penguin Group, 2011. *(Pariser 2011)*

Pasquale, Frank, The Black Box Society – The Secret Algorithms That Control Money and Information. Harvard University Press, 2015. *(Pasquale 2015)*

Ricci, Francesco – Rokach, Lior – Shapira, Bracha – Kantor, Paul B, Recommender Systems Handbook. Springer New York, 2011. *(Ricci et al. 2011)*

Roy, Deepjyoti – Dutta, Mala, A systematic review and research perspective on recommender systems. Journal of Big Data, 2022 (9); 59: 1-36. *(Roy & Dutta 2022)*

Shapiro, Peter, Turn the Beat Around – the Secret History of Disco. Faber & Faber Limited, 2005. *(Shapiro 2005)*

Wethner, Hannes – Prem, Erich – Lee, Edward A. – Ghezzi, Carlo, Perspectives on Digital Humanism. Springer, 2022. *(Wethner et al. 2022)*

Internet sources

"Amplifying Artist Input in Your Personalized Recommendations". Spotify Newsroom, Nov 2nd, 2020. https://newsroom.spotify.com/2020-11-02/amplifying-artist-input-in-your-personalized-recommendations/ *(Spotify Newsroom 2020)*

"Responsibly Balancing What Goes Into Your Personalized Recommendations". Spotify Newsroom, Mar 6th, 2023. https://pr-newsroom-wp.appspot.com/2023-03-06/responsibly-balancing-what-goes-into-your-personalized-recommendations/ *(Spotify Newsroom 6 Mar 2023)*

"Spotify's New Experience Inspires Deeper Discovery and Connection." Spotify Newsroom, Mar 8th, 2023. https://newsroom.spotify.com/2023-03-08/new-home-page-scroll-clips-previews/ *(Spotify Newsroom 8 Mar 2023)*

"Users' interests are multi-faceted: recommendation models should be too". Spotify R&D, Feb 22nd, 2023. https://research.atspotify.com/2023/02/users-interests-are-multi-faceted-recommendation-models-should-be-too/

"About Spotify". Spotify Newsroom (retrieved Mar 6th, 2023). https://newsroom.spotify.com/company-info/ *(About Spotify)*

"It's happened: 100,000 tracks are now being uploaded to streaming services like Spotify each day". Music Business Worldwide, Oct 6th, 2022. (Retrieved Feb 3rd, 2023) https://www.musicbusinessworldwide.com/its-happened-100000-tracks-are-now-being-uploaded/ *(Music Business Worldwide 2022)*

"Music Streaming Statistics in 2023 (US & Global Data)". Musical Pursuits, Dec 28th, 2022. https://musicalpursuits.com/music-streaming/ *(Musical Pursuits 2023)*

"Algorithms Are Everywhere. How You Can Take Back Control". Lewis, Danny, The Future of Everything Podcast, The Wall Street Journal, Jan 20th, 2023. *(WSJ Podcast 2023)*

Reports

Economics of music streaming: Second Report of Session 2021-22. The UK House of Commons, Digital, Culture, Media and Sport Committee, 2021. https://committees.parliament.uk/publications/6739/documents/72525/default/ *(HC 50 2021)*

Gatekeeping in the Digital Age. Ikäheimo, Hannu-Pekka – Seuri, Olli, Sitra Working Paper, 2022. https://www.sitra.fi/app/uploads/2022/12/gatekeeping_in_the_digital_age.pdf *(Sitra 2022)*

Global Music Report 2023. IFPI 2023. https://ifpi-website-cms.s3.eu-west-2.amazonaws.com/GMR_2023_SOTI_V11_1_122ef618c8.pdf *(IFPI 2023)*

Performers' Rights Study: Update 2022. AEPO-ARTIS, 2022. https://www.aepo-artis.org/wp-content/uploads/2022/11/AEPO-ARTIS_Performers_Rights_Study_2022_digital.pdf *(AEPO-ARTIS 2022)*

Spotify Equity and Impact Report 2022. Spotify 2022. https://www.lifeatspotify.com/reports/Spotify-Equity-Impact-Report-2022.pdf *(Spotify E&I 2022)*

Study on the Artists in the Digital Music Marketplace: Economic and Legal Considerations. World Intellectual Property Organization, Standing Committee on Copyright and Related Rights, 2021. https://www.wipo.int/edocs/mdocs/copyright/en/sccr_41/sccr_41_3.pdf *(WIPO 2021)*

Study on the place and role of authors and composers in the European music streaming market. Legrand Network & GESAC – European Grouping of Societies of Authors and Composers, 2022. https://www.akm.at/wp-content/uploads/2022/09/GESAC_Music_-streaming_-study_31-8.pdf *(GESAC 2022)*

Ethics Guidelines for Trustworthy AI. European Union Commission, High-Level Expert Group on Artificial Intelligence, 2019. https://digital-

strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai *(EU Guidelines 2019)*

The impact of algorithmically driven recommendation systems on music consumption and production – a literature review. Hesmondhalgh, David et al; Centre for Data Ethics and Innovation, the UK Government Department for Digital, Culture, Media & Sport, 2023. https://www.gov.uk/government/publications/research-into-the-impact-of-streaming-services-algorithms-on-music-consumption/the-impact-of-algorithmically-driven-recommendation-systems-on-music-consumption-and-production-a-literature-review *(CDEI 2023)*

The Toronto Declaration – Protecting the right to equality and non-discrimination in machine learning systems. Amnesty International & Access Now, 2018. https://www.torontodeclaration.org/declaration-text/english/#ref1 *(The Toronto Declaration 2018)*

The UN and UNESCO

Universal Declaration of Human Rights. United Nations Department of Public Information, NY. https://www.ohchr.org/en/human-rights/universal-declaration/translations/english *(UDHR)*

International Covenant on Economic, Social and Cultural Rights. General Assembly resolution 2200A (XXI). https://www.ohchr.org/en/instruments-mechanisms/instruments/international-covenant-economic-social-and-cultural-rights *(ICESCR)*

UNESCO Universal Declaration on Cultural Diversity. United Nations Educational, Scientific and Cultural Organization, General Conference, 2001. https://www.unesco.org/en/legal-affairs/unesco-universal-declaration-cultural-diversity?TSPD_101_R0=080713870fab2000fad435c699937d2da18e03319d6ae32412ce3763ba191bbc27e0a5a772ff5df80814bf021a143000eb3da95096fd937bf2549165b80ea10976115a978584c4f679d78d9d2ef44938d1cfd735fa811dea9354560e508018a9 *(UNESCO Declaration)*

Convention on the Protection and Promotion of the Diversity of Cultural Expressions, 2015 Edition. United Nations Educational, Scientific and Cultural Organization,

Diversity of Cultural Expressions Section, 2015.
https://en.unesco.org/creativity/sites/creativity/files/convention2005_basictext_en.pdf#page=15 (UNESCO Convention)

Guidelines on the Implementation of the Convention in the Digital Environment. UNESCO Conference of Parties, 6th Session, 2017. https://unesdoc.unesco.org/ark:/48223/pf0000370521.page=92 (UNESCO Guidelines)

Re/Shaping Policies for Creativity: Addressing Culture as a Global Public Good. UNESCO, 2022. https://unesdoc.unesco.org/in/documentViewer.xhtml?v=2.1.196&id=p::usmarcdef_0000380474&file=/in/rest/annotationSVC/DownloadWatermarkedAttachment/attach_import_fa10d5a7-2afe-412f-a787-cac2c48739fb%3F_%3D380474eng.pdf&updateUrl=updateUrl4464&ark=/ark:/48223/pf0000380474/PDF/380474eng.pdf.multi&fullScreen=true&locale=en#%5B%7B%22num%22%3A389%2C%22gen%22%3A0%7D%2C%7B%22name%22%3A%22XYZ%22%7D%2C49%2C780%2C0%5D (UNESCO 2022)

Recommendation on the Ethics of Artificial Intelligence. UNESCO, 2021. https://unesdoc.unesco.org/ark:/48223/pf0000380455/PDF/380455eng.pdf.multi (UNESCO Recommendation)

The Age of Digital Interdependence. Report of the UN Secretary-General's High-Level Panel on Digital Cooperation, 2019. https://www.un.org/en/pdfs/DigitalCooperation-report-for%20web.pdf (UNSG 2019)

Abbreviations

AI	Artificial intelligence
EU	European Union
HRDD	Human rights due diligence
ICESCR	International Covenant on Economic, Social and Cultural Rights
MSP	Music streaming platform
OECD	Organisation for Economic Co-operation and Development
SDG	Sustainable Development Goals
UN	United Nations
UDHR	Universal Declaration of Human Rights
UNESCO	United Nations Educational, Scientific and Cultural Organization
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

1 Introduction

1.1 Background and the structure of the thesis

"Digital technologies are rapidly transforming society, simultaneously allowing for unprecedented advances in the human condition and giving rise to profound challenges. Growing opportunities created by the application of digital technologies are paralleled by stark abuses and unintended consequences."[1]

1.1.1 Cultural diversity

I begin my thesis by clarifying the relationship between human rights and cultural diversity, and examining what the international organisations', mainly the UN and UNESCOs treaties and conventions set out as the foundation for cultural diversity. I will also briefly examine some of the trickle-down impact of human rights in the regulation of the music industry. The cornerstone of music and all art lies in the cultural human rights.

Cultural diversity sets the cornerstone of my research as well. It refers to the presence of multiple cultures, ethnicities, languages, religions, and other forms of human difference within a particular community or society. Cultural diversity can manifest in a variety of ways, including in the arts, food, music, literature, and other forms of cultural expression. It can also be seen in the diversity of social practices, beliefs, and values that shape the way people interact with each other and with the world around them.[2]

Cultural diversity is closely linked to human rights, particularly the rights to freedom of thought, expression, and cultural participation. The United Nations recognizes the importance of cultural diversity as a fundamental human right, enshrining it in the Universal Declaration of Human Rights and subsequent international agreements that are legally binding in the countries party to these agreements. At its core, the right to cultural diversity acknowledges that every individual and community has the right to express and preserve their own cultural identity, and to participate fully in the cultural life of their society. This includes the right to access cultural materials and resources, to create and share cultural works, and to participate

---

[1] UNSG 2019, pp 4.

[2] UNESCO 2001.

in cultural practices and traditions. Moreover, cultural diversity is also linked to other human rights, such as the right to education, the right to information, and the right to participate in political and social life. Access to diverse cultural materials and resources is essential for developing critical thinking skills, promoting intercultural dialogue, and fostering active citizenship.[3]

After clarifying the term of cultural diversity and examining its background and impact in international law, I continue my thesis with investigating the public space the music streaming services provide and ponder the responsibilities they might have for the dissemination of music. Finally, I will briefly examine what the international community has proposed for bringing human rights into the digital realm.

1.1.2 Briefly on the music industry and Spotify

In the digital era, music has undergone a radical transformation in terms of production, distribution, and consumption. With the advent of digital technologies and the internet, music is no longer confined to formats like vinyl, cassettes, and CDs; It's not about owning physical copies anymore.[4] This 'digital turn'[5] has brought about significant changes to the music industry, challenging traditional models, and creating new opportunities for musicians, labels, and consumers alike.

Music streaming platforms (MSPs) have also played a key role in reshaping the economics of the music industry. Prior to the rise of music streaming services like Spotify, the music industry was dominated by traditional record labels, which controlled the production and distribution of music. The emergence of streaming services has disrupted this model: on the one hand they allow artists to distribute their music directly to fans and to earn revenue through streaming royalties. On the other hand, the digital turn created platforms that collectively and simultaneously dominate both distribution and promotion.[6] Today, Spotify is

---

[3] UNESCO 2001.

[4] Although, I for one love the tangible experience of records.

[5] For example, Brusila et al. 2022, pp 1.

[6] For example, Aguiar & Waldfogel 2021, pp 688.

widely considered a leading player in the music industry, having played a major role in transforming the way that music is consumed and distributed in the digital age. The company was founded in Sweden in 2006 and has since grown to become one of the largest music streaming services in the world, with over 500 million active users, 205 million subscribers across over 180 markets.[7]

With digitalisation, music industry has also become data centric.[8] Spotify has been at the forefront of this shift, offering a vast library of songs but also providing tools and analytics to help navigate the abundance of data. The company has also been a major proponent of data-driven marketing and promotion, using its vast trove of user data to help artists and labels identify and target new fans with precision and efficiency. As of late, Spotify has been concentrating on its recommendation and personalisation algorithms, which use machine learning techniques to analyse user behaviour and preferences in order to deliver playlists and recommendations to its users.[9]

> "It is plausible that today, more music is listened to than ever before, and it is certain that this listening happens more and more through algorithmically mediated platforms; it seems obvious that music, as both quintessentially "cultural" and increasingly "algorithmic" ought to be an important part of the discussion of algorithmic culture."[10]

While these playlists and recommendation algorithms offer convenience and personalisation, they have also raised questions and concerns about their impact on the music industry and about the business model of the services that provide them.[11] Those questions and concerns are the ones I am keen to explore.

---

[7] About Spotify.

[8] Eriksson et al. 2018, pp 80.

[9] For example, Eriksson et al. 2018, pp 67.

[10] Chodos 2019, pp 72.

[11] Hesmondhalgh 2022, pp 1.

1.2 Research questions

Studying the themes above – cultural diversity, music business, and personalisation – and inspired by the multiple reports of industry concern[12], I aspire to shed light on the following questions:

> RQ: What impact does personalised music recommendation have 1) on cultural diversity in the music industry and 2) the diversity of music recommended to users?

Sub-questions to this are: In what way do algorithms affect the diversity of music recommended to users? And, within music as a business, what has resulted this development?

From the point of view of artists, musicians, songwriters, etc. – hereinafter music creatives for short – one of the key concerns with algorithmic recommendation is cultural rights.[13] The way in which music is recommended and promoted can influence cultural norms and values. Fears of homogenization of music culture and a loss of diversity and richness in the music industry have been voiced. All this relates to concerns of recommendation algorithms having the potential for discrimination and bias: algorithms are only as good as the data they are trained on, and if the underlying data is biased or incomplete, the recommendations generated by the algorithm can also be biased. This can result, for example in the exclusion or marginalization of certain musical traditions or communities, particularly those that are underrepresented or historically disadvantaged. With this thesis I want to find out if these fears hold true.

Furthermore, one of the questions driving my research is whether these algorithms tend to prioritize popular and mainstream music over less well-known and niche genres and does this lead to a concentration of cultural power and influence in the hands of a few dominant artists and record labels. This can have a chilling effect on cultural diversity and limit opportunities for emerging artists and independent creators to reach new audiences. In my thesis I argue that MSPs (Spotify as a market leader) wields significant gatekeeping power. "Even today, gatekeepers do not just mediate information, they also filter, restrict and reshape it."[14]

---

[12] For example, CDEI 2023, 1.1.

[13] HC 50 2021, pp 79.

[14] Sitra 2022, pp 10.

The focal point of this thesis will be the analysis on the legal and ethical dimensions of cultural rights in the digital age. Furthermore, this thesis critically evaluates the role of algorithmic playlists in shaping music consumption and cultural production. I will peek into the technical workings of algorithmic playlists, their impact on music discovery and promotion, and their potential for reinforcing cultural stereotypes and biases. Cultural diversity and human rights are intimately connected, with each reinforcing and supporting the other. Thus, human rights provide a doctrinal background to my thesis. The study also has some confluence to international trade law, as it examines the music business and the market power of these platforms, recognising the role of cultural goods in international trade.

Overall, this thesis seeks to provide a comprehensive understanding of the digitalisation of music, cultural rights, and the business model of algorithmic playlists. By examining these issues from multiple perspectives, I aim to contribute to ongoing discussions on the future of the music industry and the role of technology in shaping cultural production and consumption.

1.2.1 Limitations

Overall, this thesis serves as an examination of the powers that be and the causalities of how the music business works in the digital realm. Because of this theoretical standing point, further analysis on, for example, the enforceability of human rights or regulation of international trade law will be left out of scope of this thesis.

Within the music business, questions of copyright and licensing are usually the first ones to appear. So is the case with recommendation systems and algorithmic playlists as well. The analysing algorithm uses copyrighted material in the song's metadata, including its title, artist, album, and genre, to create a playlist. Algorithms also collect data of a song's audio waveform to keep track of copyrighted material even if the song has been modified or remixed. To avoid infringement issues, Spotify, for example, has licensing agreements with record labels and publishers, and these obviously raise questions about contract law.

In addition to copyright issues, another legal issue with algorithmic playlists is privacy. Spotify's algorithms analyse a user's listening habits, search history, and other data to create personalised playlists. This data can include sensitive information, such as a user's location, age, and gender, which may be protected by privacy laws. Despite privacy policies, some

users still may have concerns about their privacy, especially in the light of recent data breaches and privacy scandals involving other tech companies.

However, the questions that I am most interested in within my research are the questions about the impact of algorithmic playlists on cultural diversity and the right to culture. Input data in the form of musical qualities of a song or user's listening habits will be examined, but in the intersection of cultural rights, digitalisation, and algorithmic playlists, concentrating on the impact of the changing role of intermediaries with their recommendation systems, and the democratisation of music production and distribution. As I will concentrate on personalised recommendation, non-personalised recommendations, e.g., top chart-based recommendation will be mentioned only briefly.

In my research regarding playlists, I will be focusing on algorithmic music recommendation, whereas human curated playlists and user generated content will be excluded. Also, democratic access to digital music technology is left out of the scope, as it is a research topic on its own. Furthermore, critique on streaming thus far has, it seems to me, concentrated on MSPs failure to sufficiently compensate musicians, artists, and songwriters.[15] While this definitely is a pressing issue, I wanted to concentrate on the ability to express and disseminate without intrusion, and being able to access the marketplace of streaming. That being said, the right to adequate remuneration does overlap with the right to culture in the sense that without the ability to earn a living, participating in cultural life is severely threatened.

1.3   Theory and methods

As stated above, human rights provide the doctrinal background for this thesis. This is because on the international level, human rights may provide a more encompassing framework and "- - they are subject to enforcement – however, soft – through national and international mechanisms."[16] The ideal of human rights' universality in this case should be, in my opinion, understood in the transformative way Dianne Otto proposes in their article *Rethinking the Universality of Human Rights Law.* This encompasses the acute awareness of

---

[15] See, for example, AEPO-ARTIS 2022.

[16] Fakuda-Parr & Gibbons 2021, pp 33.

the limitations of one's own singular understanding and knowledge and respecting cultural relativity.[17] I think also that cultural relativity should be applied liberally; The cultural differences between the art world, tech world, and the rule of law are strongly present in this conversation. Accepting "multiple consciousness" and engaging in communication are key.[18]

While legal dogmatism is almost an inescapable part of legal research and this thesis will most likely have traces of it all over, legal dogmatism might not be the best approach when it comes to researching human rights and legal culture. Thus, I found that doing my research through the lens of socio-legal approach and legal pluralism might be more appropriate.

The socio-legal approach examines how legal institutions and norms interact with social and cultural factors, and takes into account the varieties of interacting, competing normative orders.[19] Kleinhans and Macdonald describe the critical legal pluralistic approach as seeing the law as hermeneutically circular: that subjects of a legal order are "not merely law abiding", but law *inventing.*[20] This, I think, holds particularly true in the case of digitalisation and algorithms. The creation and use of algorithmic playlists, and more widely the whole of streaming economy, has tangible social and cultural implications, and thus constantly create new needs for ruling and regulating. In the spirit of critical legal pluralism, I have asked several doctrinal questions during my research; What are the institutions? Is there a legal order that a particular legal object sees themselves to be acting?[21]

This thesis will also have empirical elements, since, as a music fan, a musician, and a streaming service heavy user I have probably started doing this research long before getting into law school. With that in mind, it must be mentioned that I do have personal biases and opinions about music as an artform that will probably be visible in this thesis as well, but I have worked hard to stay objective and respect the scientific approach to research.

---

[17] Otto 1997, pp 44.

[18] Otto 1997, for example pp 45.

[19] Kleinhans & Macdonald 1997, pp 31.

[20] Kleinhans & Macdonald 1997, pp 38.

[21] Kleinhans & Macdonald 1997, pp 36.

1.4 Audience and personal motivations

On a personal level as a music fan and a musician myself, the 'digital turn' has had real, tangible impact, both professionally and as a consumer. I use streaming services for pleasure but also for example for scrolling through a song to learn it or for DJ gigs as a quick notebook for songs to play. Streaming services have also become the only viable option for artists to distribute their music, myself included. I use streaming services not necessarily because I like them but out of necessity. At present, for example Spotify does not have an opt-out feature for the users to decide whether Spotify collects their data or not. Currently, my Spotify profile thinks I love Katy Perry because I listened to one of her songs on repeat because I had to learn it for a wedding gig. There is an incognito mode available but toggling it on-the-go is surprisingly difficult, and now, with the newest update, recommendations are even more inescapable.[22] For pleasure, I would love to listen to something completely different, but my Spotify keeps recommending me pop songs from the 2010s. My personal hardships aside, there is, I think, a wider transparency problem here.

It is obvious that music streaming, too, is subject to free market conditions. Music – or more broadly art – has a complex relationship with commerciality, and all of this is intertwined with cultural diversity. The right to culture not only means the freedom to create, but also the right to disseminate, display and access culture. There are gatekeepers, but who are they in the digital world?

After the turmoil of digitalisation era, the Covid-19 pandemic changed the landscape for the creative industry further, especially the performing arts. Grass roots musicians and producers already struggling to get exposure lost the ability to promote their work live. It is timely and topical to do some research on how the creative industry is holding up in these ever-changing times. Furthermore, I think it's crucial to examine this also for the benefit of a small music market such as Finland.

The goal of this research is to create dialogue between the creative field and the academic field and to encourage interdisciplinary communication, bearing in mind and focusing on the issues raised by advances in technology. The goal is also to emphasize that everyone – a fan, a creator, an investor, a political figure – has an important role in securing cultural freedom.

---

[22] Spotify Newsroom 8 Mar 2023.

Further, the goal is to spark an interest in the reader to actively participate in cultural life. A potential reader is anyone from a legal or sociological scholar to a music producer or musician who is interested in cultural human rights in today's digital music society.

2   Prelude – The Backbone of the Music Industry

The music industry is a complex ecosystem that thrives on diversity, creativity, and cultural exchange. From the early days of recorded music to the current streaming era, the industry has been shaped by a diverse range of artists, genres, and cultures. Cultural diversity is the backbone and cornerstone of the music industry because it provides a rich source of inspiration, innovation, and cross-cultural exchange that enriches the art form and enhances its global appeal.

Cultural diversity has its roots in international human rights law, as cultural rights are enshrined in the United Nations treaties. The Universal Declaration of Human Rights (UDHR) adopted by the United Nations General Assembly in 1948, recognizes the right of every person to freedom of opinion and expression, including to receive and impart information and ideas.[23] Moreover, Article 27 reinforces the right to participate in cultural life and to enjoy the arts.[24] The International Covenant on Economic, Social and Cultural Rights (ICESCR), which was adopted by the UN General Assembly in 1966, further emphasizes the right of individuals and communities to participate in cultural life, to enjoy the benefits of scientific progress and cultural freedom, and to have access to and enjoy their own cultural heritage.[25] Together (with the International Covenant on Civil and Political Rights) they form the International Bill of Human Rights.

The Covenants entered into force in 1976 and since then have been legally binding as international treaties to the parties to them. These legal instruments recognize the importance of cultural diversity as a fundamental human right and highlight the role of culture in promoting social and economic development, cross-cultural understanding, and peace. The application of the Covenants is supervised through an obligatory reporting on measures adopted.[26]

The United Nations Educational, Scientific and Cultural Organization (UNESCO) complements and further advances the UDHR by providing a more specific framework for the

---

[23] UDHR Art. 19.

[24] UDHR Art. 27.

[25] ICESCR Art. 15.

[26] Crawford 2019, pp 614.

promotion and protection of cultural rights, particularly with regards to the creative industries. In its Universal Declaration on Cultural Diversity, UNESCO defines culture as "the set of distinctive spiritual, material, intellectual and emotional features of society or a social group and that it encompasses, in addition to art and literature, lifestyles, ways of living together, value systems, traditions and beliefs."[27] The UNESCO Declaration then continues to describe diversity as a fluid embodiment of uniqueness and plurality of the groups and societies that the humankind consists of.[28]

The UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expressions (the Convention) was adopted in 2005. The Convention points out the opportunities and challenges that globalisation sets on the free flow of culture. The Convention also provides a further definition for cultural diversity, stating that:

> "Cultural diversity" refers to the manifold ways in which the cultures of groups and societies find expression. These expressions are passed on within and among groups and societies.
>
> Cultural diversity is made manifest not only through the varied ways in which the cultural heritage of humanity is expressed, augmented and transmitted through the variety of cultural expressions, but also through diverse modes of artistic creation, production, dissemination, distribution and enjoyment, whatever the means and technologies used.[29]

Furthermore, it recognizes the importance of cultural diversity in fostering creativity, innovation, and social cohesion, and aims to promote the free flow of cultural goods and services while protecting and promoting the diversity of cultural expressions, thus making explicit that culture has both symbolic and commercial value.[30] In their analysis on the Convention Luis A. Albornoz emphasizes the importance of understanding how crucial the Convention and the international cooperation the creation of it entailed has been in forming the audio-visual industry we currently have. They state that what the Convention created with

---

[27] UNESCO 2001, preamble.

[28] UNESCO 2001, Art 1.

[29] UNESCO Convention, Art 4.

[30] Albornoz & García Leiva 2019, pp 25.

the recognition of culture's value was a domino effect of national governance facilitating the distribution of cultural goods and services, thus transforming international flows of trade.[31]

Analysing the commercial role of culture further, in 2022 UNESCO Published their global report *Re/Shaping Policies for Creativity – Addressing culture as a global public good.* It emphasizes the importance of culture in global trade, calling for measures to promote and protect culture especially after the crisis the COVID-19 pandemic inflicted on the cultural sector.[32] Continuing on the foundation of the UDHR and the Convention, the global report gives recommendations of cooperation, collaboration, and research, as well as acknowledges the slow emergence of national legislation.[33]

The music industry's go-to mechanism for regulating is through intellectual property rights, mostly copyright.[34] A good example of the UDHR and subsequent treaties having trickle-down effect is manifested here, too, in the two types of rights essential for artists in the streaming economy: First, the right of communication to the public and broadcasting, and second, the right of making available of phonograms. The former is part of the 1961 Rome Convention (art. 12) and the WIPO Performances and Phonograms Treaty (art. 15). The latter is found in the WIPO Treaty, article 10.[35] At their core, these rights are about promoting cultural diversity and ensuring that people have access to a wide range of creative works.

---

[31] Albornoz & García Leiva 2019, pp 25–30.

[32] UNESCO 2022, pp 5.

[33] For example, UNESCO 2022, pp 115.

[34] For example, Chodos 2019, pp 27.

[35] WIPO 2021, pp 44.

3 Music Recommendation: Spotify as an Example

3.1 The business model of streaming

The music industry in the early 2000s saw the revolution in music consumption habits from owning physical media to accessing music through digital platforms. If before a music fan had to have their own collection of records or CDs, the new digital technology shifted the collection to an intangible, seemingly limitless form. This shift was first accelerated with the rise of audio data compression formats, i.e., MP3 and file-sharing services, mainly Napster that harnessed the power of the internet to distribute music. Napster gave its users free access to music in the form of digital files and created a new peer-to-peer (p2p) model for sharing those files.[36]

At the same time, the music industry has its cornerstone on intellectual property law and copyright. The new way of sharing files disrupted the whole ecosystem of music that was economically dependent on record sales, and so the struggling industry reacted by strengthening copyright and intellectual property rights laws to gain back its power.[37] While the first p2p services were eventually deemed illegal and shut down due to copyright infringement, they paved the way for legal streaming services to emerge. In his doctoral dissertation *Solving and Dissolving Musical Affection: A Critical Study of Spotify and Automated Music Recommendation in the 21st Century* Asher Tobin Chodos argues that Spotify is 'a good machine': essentially offering the same service, but where copyright norms are built in their design.[38] Chodos also notes that, quite paradoxically, while regulation on copyright has expanded and hardened, with digitalisation "- - we occupy a culture less inclined than ever to respect traditional copyright norms."[39] There is clearly a tension between the corporate logics and the culture of openness.[40] But the industry needed to adapt to the new digital world and came up with streaming.

---

[36] For example, Knees in Wethner et al. 2022, pp 167.

[37] Knees in Wethner et al. 2022, pp 167.

[38] Chodos 2019, pp 65.

[39] Chodos 2019, pp 32.

[40] Brusila et al. 2022, pp 7.

Now, streaming services provide users with access to a vast library of music that they can listen to on-demand, without having to own or download the music itself. Paired with the rise of mobile devices and the internet's ubiquity, the streaming industry has experienced explosive growth in recent years. From the total of US$ 26,2 billion (€23,9) of global recorded music market in 2022, streaming accounted for 67,0%.[41] With its 205 million subscribers Spotify occupies a third of the overall market, landing it as the market leader, second place being held by Apple Music, with 15% of the market.[42] Overall, Spotify has over 500 million users.[43]

Attracting masses of new customers seems to be the streaming services' main objective.[44] Most MSPs, Spotify included, operate on a freemium business model, which means that they offer both free and paid subscription options to their users. The free version of the service is ad-supported, meaning that users will hear or see ads periodically while using the service. The paid subscription version, called Premium on Spotify, on the other hand, allows users to listen to music without ads and provides additional features like offline playback, higher quality audio, and access to exclusive content. At present, Spotify's standard paid subscription costs €/$/£ 9.99, and the price hasn't changed since the beginning.[45] The subscription fee for MSPs is effectively same across the board. Market competition keeps the prices low, and even though NGOs and activists in the creative field have campaigned for raising the prices, arguing for fair remuneration, the increase in prices would have to apply to every player in the field.[46]

Moreover, music streaming services have large libraries of music, and licensing that music can be expensive. Therefore, a higher subscription price could potentially drive away some of the service's user base, resulting in lower revenue overall. Instead of raising prices, streaming services have been focusing on growing their user base and increasing revenue through advertising. As more users sign up for the service, the advertising revenue generated by the

---

[41] IFPI 2023, pp 10-11.

[42] About Spotify; GESAC 2022, pp 13.

[43] About Spotify.

[44] WIPO 2021, pp 24.

[45] GESAC 2022, pp 5.

[46] GESAC 2022, pp 5.

free version of the service also increases. Additionally, Spotify has applied different pricing models, such as family plans and student discounts, to attract more subscribers without increasing the overall subscription price.[47]

To maintain their customers and to transform the free streamers into Premium users, Spotify has invested in its user interface, concentrating on personalization and interaction.[48] Spotify's interaction design emphasizes the importance of behaviours, feelings, and moods in shaping users' listening experiences. By curating playlists and motivational messages that change several times a day, Spotify has effectively created an interactive and personalized platform that supposedly encourages users to engage with their emotions and seek out music that reflects their current state of mind.[49] Their newest update, running since March 2023, introduced a new, even more interactive design, offering visual clips on the home page that can be saved and shared.[50] Compared to other forms of social media, Spotify's presumed interactivity is centred around the personalization and curation of music, rather than the social connections between users and relies on algorithms and user data.

It's important to note here that music listeners are not the only customers of the streaming services. Despite the streaming industry's success, it has faced some criticism from artists and industry insiders. One of the primary concerns is that streaming services do not pay artists enough for their music. There are many notions of the streaming industry's inability to turn a profit, attributing it to the fact that instead of profit, streaming calculates its value based on the stock market, and that this is the way to monetize the vast amount of data these services collect from their users.[51] In other words, data is the currency the industry operates on. It is generally agreed that the revenue the services do generate by streaming is not proportionally allocated and thus, not nearly enough to sustain many artists. As Chodos puts it: "The music we listen on Spotify is watermarked and surveilled, our access to it carefully controlled, and

---

[47] About Spotify.

[48] WIPO 2021, pp 24.

[49] Eriksson et al. 2018, pp 5.

[50] Spotify Newsroom 8 Mar 2023.

[51] Chodos 2019, pp 111; WIPO 2021, pp 24-25; Knees in Wethner et al. 2022, pp 169.

huge portions of its revenue accrue to the major labels. Most artists receive essentially nothing."[52]

The connection of popularity and profitability, in other words commerciality, has been dictating the music industry long before streaming. According to Peter Knees, distribution of money has long been based on measurable criteria, such as chart positions, that from the qualitative point of view seem arbitrary. This led the industry to foster super-stardom, i.e., have select few who claim overproportioned amount of revenue compared to the others who get essentially nothing. "Overall, this system favored the record companies over the individual artists and creators, as controlling the music production means would allow them to exert power over artistic decisions and aggregate various licensing rights while maintaining strong ties to the media and other distribution channels."[53] Building on this industry development, Knees accuses the streaming industry of taking an already broken system and scaling it up to these current numbers. [54]

There have been concerns about the financial and commercial influence on promotion and discovery. "- - 2019 Spotify announced that labels could "pay to have their artists promoted to targeted fans within the Spotify ecosystem." + 'Discovery Mode' for artists[55]

3.1.1 The power of the playlist

Streaming and the so-called curatorial turn have also affected listening habits within music. Historically, the curatorial turn is not a new phenomenon. Before, owning physical albums meant that songs on the albums were listened to in the order on the recording, in their entirety. DJs then creating mixtapes, acting as intermediaries, eventually resulted in the change of recording format, from 7" records to 12" records.[56] Similar a change in format has happened to music now with streaming, in the form of playlists. Aguiar and Waldfogel (2021) define

---

[52] Chodos 2019, pp 68.

[53] Knees in Wethner et al. 2022, pp 167.

[54] Knees in Wethner et al. 2022, pp 166.

[55] Aguiar et al. 2021, pp 4.

[56] Shapiro 2005, pp 28 onward.

the role of a playlist as twofold: First, a playlist is an informative list of songs that can be used for promotion and gaining user awareness of those songs. Second, a playlist is a simple tool for music listening that allows access to those songs.[57] A Spotify playlist can be human curated or algorithmic. For editorial playlists, Spotify employs either in-house or third-party influencers to create and curate playlists and in this sense, editorial playlists are more or less comparable with traditional radio or DJing, as they are curated by human gatekeepers.[58]

It is important to remark here that Spotify has major record labels as its shareholders, and also third-party playlist services that Spotify uses, such as Filtr, Topsify, or Digster are owned by Sony, Warner, and Universal, respectively.[59] In addition, WIPO notes in their report that it is common for playlists "- - to be sponsored to popularize a certain genre or achieve greater impact in the launch of a new song or artist."[60]

In their extensive study combination, *Platforms, Power and Promotion: Evidence from Spotify* and *Playlisting favorites: Measuring platform bias in the music industry*, Luis Aguiar, Joel Waldfogel and Sarah Waldfogel examined the promotional power of a song getting added on the most popular playlists on Spotify. According to them, over 75% of the followers of the top 1,000 playlists on Spotify are covered by Spotify's own curated playlists. In addition, Spotify's chart-based algorithmic playlists cover another 9,3 per cent.[61] Personalized, algorithmic playlists on Spotify are Discover Weekly and Release Radar. Aguiar and Waldfogel's research studied data from 2017, so it is likely that the popularity of personalized playlists, like Discover Weekly has since increased.

The power of the playlist as a source – as well as a bottleneck – for discoverability, dictating popularity has been widely recognized by music creatives.[62] This statement was meticulously studied by Aguiar et al. The result of their studies was that placement on playlists significantly affected the streaming numbers of songs, and that songs that were already

[57] Aguiar & Waldfogel 2021, pp 655.

[58] HC 50 2021, pp 78.

[59] Eriksson et al. 2018, pp 5.

[60] WIPO 2021, pp 26.

[61] Aguiar & Waldfogel 2021, pp 656.

[62] GESAC 2022, pp 22.

popular became even more popular.[63] It must be noted here that Aguiar et al. studied chart-based playlists, concentrating on one human curated Spotify playlist called New Music Friday. Though scientific evidence for personalised playlists having the same kind of promotional power is lacking, the study conducted by Aguiar et al. gives important, tangible evidence on what it means for an artist to be promoted by Spotify.

With that in mind, WIPO references Aguiar & Waldfogel's 2018 report of their study, stating that "[t]his automatic or human-managed editorialization of services, the composition of playlists, the algorithms that decide the next title obviously play a major role in the creation of value and the possible royalties attached to it."[64] The report continues that major label music has a greater share on the playlists driving the streams.[65] On the other hand, gaining access to a playlist without the promotional support of a record label is hard, some say close to impossible.[66] Regarding independent music, Aguiar & Waldfogel study showed that in their country-specific sample, of the 19,055 songs observed just under half were from independent record labels.[67]

There have been signs that Spotify has heard the concerns, as it stated in 2020 that it will be increasing indie artist input onto its playlists.[68] Similar development and signs of the industry learning was shown also in Pablo Bello and David Garcia's research from 2021.[69]

3.2   A cornucopia of music

The amount of music on Spotify seems essentially infinite. In September of 2022, two CEOs of two of the biggest labels in music business announced that 100 000 tracks are added to

---

[63] Aguiar & Waldfogel 2021, pp 657.

[64] WIPO 2021, pp 30.

[65] WIPO 2021, pp 31.

[66] GESAC 2022, pp 22.

[67] Aguiar & Waldfogel 2021, pp 686.

[68] Spotify Newsroom 2020.

[69] Bello & Garcia 2021, pp 5.

music streaming platforms every day.[70] The sprawling power of the internet has the capacity to carry music with a previously inconceivable pace, both in terms of distribution and production. Digitalisation has made the production and distribution cost a fraction what it used to be in the era of record pressing. Before, market intermediaries, i.e., record labels ferociously controlled which records or artists were produced.[71]

Music streaming is just one – albeit excellent – example of data abundance of the digital era. The amount of data is so overwhelming that, understandably, some filtering is necessary.[72] Scholars call this the 'curatorial turn': turning to an intermediary to sort out the best options available – and in today's world, that intermediary is more often than not an algorithm.[73]

Spotify, along with its competitors, have made significant investments in improving their recommendation systems, thus making visible the growing tendency of the industry. Recommendation is in close contact with marketing and commerciality.[74] Most notably, Spotify started its journey into a music recommendation service in 2014 by acquiring the recommendation algorithm software company Echo Nest.[75]

Spotify's practice of surveilling user behaviour is indeed an example of what has become the dominant business model for tech companies, which is to collect and analyse user data in order to better understand consumer behaviour, preferences, and habits. This data is then used to inform business decisions such as product development, marketing strategies, and revenue generation.[76] As WIPO notes in its report, online music providers commonly promote their innovations based on their business strategy and interests, such as their commercial relationships or social networks, and the distribution and promotion varies in accordance with the target audience.[77] This statement is particularly visible with the newest update on Spotify,

---

[70] Music Business Worldwide 2022.

[71] Bello & Garcia 2021, pp 3.

[72] Grafanaki 2017, pp 18.

[73] Eriksson et al. 2018, pp 61; Chodos 2019, pp 1.

[74] WIPO 2021, pp 27.

[75] Eriksson et al. 2018, pp 63.

[76] Chodos 2019, pp 104.

[77] WIPO 2021, pp 28.

since the recommendations the service provides are pushed onto the user's home page, in the same way that advertisements are "recommended" on for example social media.[78] Our online experiences are integrated, interconnected, and intertwined. The surveillance of data gives the companies – which are relatively few – extremely powerful insights on mass populations.[79]

This type of usage of data for commercial purposes can be exploitative. However, it is worth noting that Spotify's use of data to improve user experience is not necessarily harmful or exploitative in and of itself. In fact, many users appreciate the personalized recommendations and playlists that Spotify offers, which are made possible through the analysis of user data. Furthermore, in their Equity & Impact report, Spotify explains the efforts to assess their algorithmic impact.[80]

Nevertheless, decisions that were once made by human gatekeepers have now been paralleled – or superseded – by automation[81], or, as Frank Pasquale put it: "Authority is increasingly expressed algorithmically."[82]

3.2.1 Algorithmic music recommendation systems

As stated above, the sheer amount of data creates a desperate need for filtering, and in music streaming that filtering is increasingly conducted via algorithms. Categorisation, systematization, and classification are natural responses when faced with an abstract mass of information, and we have outsourced the decision-making process to automation. In everyday language the term 'algorithm' has a vague, encompassing connection to all things AI. The technical definition for 'algorithm' is that it is a set of instructions or rules that are followed to solve a specific problem or complete a specific task. These sets of rules are now mostly given

---

[78] Spotify Newsroom 8 Mar 2023.

[79] Grafanaki 2017, pp 6.

[80] Spotify E&I 2022, pp 58.

[81] Sitra 2022, pp 9.

[82] Pasquale 2011, pp 8.

to a computer to execute the task.[83] "Algorithms, you might say, are technological solutions to the problems posed by technology itself."[84]

A music recommendation algorithm is a system that analyses a user's listening behaviour and preferences to suggest new songs or artists that the user may enjoy.[85] It is based on the concept of personalized music recommendation, where the algorithm learns from a user's past music choices and provides customized recommendations that are relevant and interesting to the user. Recommender systems are software tools and techniques that give suggestions as a result of decision-making processes, i.e., in the case of music, songs or artists to listen to.[86]

On Spotify, recommendation happens in multiple forms, from personalized playlists to suggestions on your home page and filtering your search results.[87] The company's *Discover Weekly* playlist, for example, is generated using a combination of collaborative filtering and natural language processing algorithms to identify songs that the user is likely to enjoy based on their listening history and other factors.[88]

---

[83] CDEI 2023, 1.3.

[84] Chodos 2019, pp 70.

[85] Jannach & Abdollahpouri 2023, pp 1.

[86] Ricci et al. 2011, pp 12.

[87] Spotify Newsroom 8 Mar 2023.

[88] CDEI 2023, 3.2.5.

Figure 1 Spotify algorithm data.[89]

There are several ways in which music recommendation algorithms work. The following are a few, rough examples:

Content-based filtering, which analyses the audio features of songs, for example tempo, melody, and instrumentation, to recommend music that has similar characteristics to the user's preferred songs. Content-based filtering heavily relies on the descriptions given about the songs or artists, and the more detailed the description, the more accurate the recommendations.[90]

In **collaborative filtering**, the algorithm analyses the listening habits of users with similar preferences to the target user and recommends music that those users have enjoyed. This

---

[89] Spotify Newsroom 2022.

[90] Roy & Dutta 2022, pp 6.

"enjoyment" is indicated, for example, through ratings, which on Spotify means likes and measuring whether the user listens to a track or if they skip it. The problems with collaborative arise when songs aren't listened to and thus receive no ratings, and when ratings differ over time and preferences change.[91] Connected to this are **community-based or social recommender systems** that recommend items based on the preferences of a user's friends. These systems model and acquire information about social relationships and preferences of users' friends.[92]

Context-based filtering analyses the user-related or environment-related contexts, such as the time of day, location, and weather, to evaluate for example the emotional state of the user (whether, for example, it's a party or bedtime) and to recommend music that is suitable for the current situation.[93]

Hybrid-based filtering combines all or some of the methods described above. Combining these different methods may improve the quality of recommendation and tackle some of the problems computing personal preferences may pose.

For example, **the cold start problem** is a common issue in algorithmic recommendation systems where the system struggles to provide recommendations for new users or new items (for example, songs or artists) with little or no historical data available. This can occur when a new user signs up for the system or when a new item is added to the system's inventory. In the case of a new user, the recommendation system may not have any information about the user's preferences or interests, making it difficult to generate personalized recommendations. Similarly, for a new item, the system may not have any data on how users have interacted with similar items, making it challenging to predict how the new item will perform.[94]

Scalability problem, on the other hand, refers to the challenge of efficiently processing and generating recommendations for a large number of users and items, while maintaining high accuracy.[95] As the number of users and items in a recommendation system grows, the

---

[91] CDEI 2023, 3.2.1.

[92] Ricci et al. 2011, pp 13.

[93] CDEI 2023, 3.2.3.

[94] Roy & Dutta 2022, pp 6.

[95] Roy & Dutta 2022, pp 8.

computational complexity of generating recommendations also increases. This is particularly true with music recommendation, and possibly the reason why streaming services have invested so much into personalisation.[96]

The sparsity problem refers to the challenge of making accurate recommendations when there is limited or missing data about users' preferences or items' characteristics. The sparsity problem arises when there are many more items than users, or when users interact with only a small subset of available items. As a result, there may be very few users who have rated or interacted with a particular item, making it difficult for the recommendation algorithm to accurately predict how other users will respond to that item.[97] This is especially problematic when the system is trying to recommend items to new users who have not yet provided any explicit feedback on their preferences.

Recommender systems' main goal to reduce the user's time and effort in searching and selecting relevant information.[98] With millions of songs and countless user-generated playlists, it would be impossible for a human to manually curate recommendations for each user. Based on the consumer's preferences, the platform builds a consumer profile to adapt to the competing demands of the consumer and the business model. The profile is used to evaluate what kind of music the platform considers may be of interest to the listener, and that includes promoting the platform's other clients, for example record companies or specific artists.[99] Recommendation is essentially a combination of personalised interests of the consumer, the platform's commercial and other interests, engineering objectives of the system's designer, and the objectives of the item providers, in this case the creator or the rights-holder of the songs.[100]

With recommendation, platforms are also trying to reach short-term and long-term goals: Both recommending content the users are likely to enjoy in the short term and offering an

---

[96] Eriksson et al. 2019, pp 128.

[97] Roy & Dutta 2022, pp 7.

[98] Roy & Dutta 2022, pp 2.

[99] WIPO 2021, pp 27.

[100] Jannach & Abdollahpouri 2023, pp 3.

opportunity to explore and therefore remain satisfied in the long term.[101] This means providing content that on the one hand instantly pleases the user, providing something that is already familiar, and the other hand, the long-term goal is to provide users with an opportunity to explore and discover new content that may interest them, thereby fostering a sense of satisfaction over a more extended period. Therefore, music recommendation and the platforms using it seek to get to know the customer thoroughly, in order to give as targeted and as precise recommendation as possible. [102]

---

[101] Anderson et al. 2020, pp 10.

[102] WIPO 2021, pp 27.

4   Streaming, Automation, and Diversity

4.1   Everything, everywhere, all at once

While digitalization has increased the number of options available in culture, it has not necessarily led to cultural pluralism. Instead, overwhelmed by the abundance of choices, relying on something already familiar or letting automated filtering make the decisions for you may come as a relief. In their article, Brusila et al. (2022) argue that amidst all this content, there is a possibility of people becoming more passive in their participation in cultural life.[103] In other words, increase in competition does not lead to an increase in diversity.[104] David Hesmondhalgh (2022), on the other hand, notes that dividing listeners to 'active' and 'passive' ones might contain a sense of elitism, and simplifies the reasons for human experience when listening to music.[105]

From the point of view of artists, composers, and songwriters, digitalization has both positive and negative implications for their work. On the one hand, streaming along with social media have made it easier for independent artists to reach a global audience without the backing of major record labels. This has created new opportunities for musicians to gain exposure and build a fan base and has also given rise to new genres and styles of music.[106] On the other hand, the proliferation of digital platforms has also led to increased competition for attention and a crowded marketplace for music. In addition, the dominance of algorithmic mechanisms used by streaming services can further limit the visibility of independent artists, who may struggle to get their music recommended to listeners in the same way as more established or mainstream acts. Brusila et al. argue (referencing their sources) that even though Spotify describes itself as "a democratizing tool" offering wider access to music than radio, "the majority of the artists available on the service are hardly ever, or never listened to."[107] Streaming services and their music recommendation have become important industry gatekeepers.

---

[103] Brusila et al. 2022, pp 4.

[104] Ranaivoson in Albornoz & García Leiva 2019, pp 105.

[105] Hesmondhalgh 2022, pp 5.

[106] Ranaivoson in Albornoz & García Leiva 2019, pp 107.

[107] Brusila et al. 2022, pp 5.

In their working paper *Gatekeeping in the Digital Age* Sitra has examined the nature of the hybrid media environment and digital power. It examines different levels of gatekeeping. It references the European Commission's definition for gatekeepers as companies that create bottlenecks between businesses and consumers, and that have an entrenched and durable position in the digital market. This means that platform companies have significant power over what kind of information reaches vast amounts of people and how cultural reality is formed.[108] In the case of streaming services, these bottlenecks can be formed both in between the platform and the listener, but also between the artist and the platform. Aguiar & Waldfogel, among others, note that the concentration of power in the hands of online platforms can create a number of issues, "including bias in the treatment of suppliers."[109] The gatekeeping power of the platforms is concentrated and centralised, as the ability to create gatekeeping algorithms is concentrated to the powerful few.[110]

The Sitra working paper, referencing their sources, defines five levels of gatekeeping: The individual level, the routines, the organisational level, the institutional level, and the system level. It further explains that platform power of gatekeeping lies somewhere in the routine and organisational level.[111] I argue that with the rise of online platforms, gatekeeping has moved even further up to the organisational level, even to the institutional level. Furthermore, the top levels of gatekeeping have blended and intertwined now with globalisation, digitalisation, and market concentration.

Centralized power and lack of diversity within tech companies obviously creates problems for cultural diversity.[112] The fact that streaming companies that now are a select few, means that that oligopoly has enormous power over both artists and listeners. New regulation and even breaking up platform operators have been contemplated[113], but history has shown that there are many problems with that as well.[114] The enormous market power also gives

---

[108] Sitra 2022, pp 9.

[109] Aguiar & Waldfogel 2021, pp 657.

[110] Sitra 2022, pp 14.

[111] Sitra 2022, pp 12.

[112] Arogyaswami 2019, pp 833-834.

[113] Aguiar & Waldfogel 2021, pp 654.

[114] Arogyaswami 2019, pp 836.

disproportioned leverage to the big companies, and independent artists lack the bargaining power or legal resources to negotiate favourable terms. There is a pressing need for collective management, especially for the performers.[115]

The digitalised economy operates according to the principles of the free market economy. This implies that media companies, streaming services, are simply responding to the demands of their customers. However, critics argue that this might not be the case, since it is well possible that the needs of people are created by the media itself, through advertising, marketing, and other forms of persuasion.[116] In addition, music streaming is heavily affected by the commercial goals of the companies that oversee and control production and distribution. [117] The streaming services have harnessed the gatekeeping power radio once had but are also closely linked to the production power of the recording and publishing companies, who own the rights to music and control what is produced, distributed, and promoted.[118]

The commercialisation of music is not a new phenomenon, but the rise of the streaming services has intensified this trend. Personalisation of music recommendation has blurred the lines of commercialisation and freedom of choice.[119] The CDEI report, referencing media scholar Robert Prey, notes that recommender systems constantly reflect back to us "categorised images of our self", and that that reflection is heavily influenced by brand needs, commercialisation and advertisers. Music is forged into a system of promotion and consumerism.[120] The relatively low monthly fee does erase advertisements from your listening experience, but a user cannot opt out recommendations or personalisation.[121] Those, I argue, are music advertising in a new, innovative package. I argue also that commercialisation calls for more rigorous reflection on the market and corporations. It is also

---

[115] AEPO-ARTIS 2022, pp 74.

[116] Brusila et al. 2022, pp 3.

[117] CDEI 2023, 2.5.

[118] CDEI 2023, 2.5.

[119] Pasquale 2015, pp 5.

[120] CDEI 2023, 2.4.

[121] Spotify Newsroom 8 Mar 2023.

possible that the impact is deeper than it seems, a bigger shift in cultural choices, influenced by the companies "- - all to orchestrate an online world that maximizes their own profits."[122]

The global growth of the platforms has been exponential, with many becoming household names in just a few short years. As a result, policymakers and regulators have struggled to keep up with the rapid changes in the industry and to fully understand the implications of digital platforms on society. Additionally, the influence on political and economic power has created as complex web of interests that may hinder regulatory efforts.[123] Eriksson et al. (2018) argue that Spotify is a "black box" in and of itself, and that the power it possesses is built on the "- - ability to keep such boxes firmly closed and to make us believe that it could not be otherwise."[124]

4.2 Computing diversity

In their *Future of Everything* podcast, the Wall Street Journal's Danny Lewis interviewed behavioural scientist Gerd Gigerenzer about his research on algorithms and human choice making. He states that "- - in order to get most out of AI, we have to make the world more predictable. Including humans need to become more predictable." But because the world isn't predictable to always be computable the way algorithms need it to be to work properly, Gigerenzer argues that algorithms should not be used as liberally as they arguably now are. Even the slightest anomaly in the data given to the algorithm, and the results become nonsensical. He calls this 'the stable world principle'.[125]

Music escapes all categorization, even though humans have tried to harness it into genres if not centuries. To a certain extent categorization is obviously necessary, but AI recommendation based on artificial genres and categories is deemed to give, if not unfair, at least lacking results. Music or the emotions it evokes aren't predictable.

---

[122] Pasquale 2015, pp 5.

[123] Sitra 2022, pp 9.

[124] Eriksson et al. 2018, pp 7.

[125] WSJ's podcast, 4:23.

Automatic recommendation uses historical data and behavioural patterns to predict and influence individual's future choices and actions. This approach assumes that individuals are likely to behave in similar ways in the future as they have in the past. [126] However, this approach has limitations, particularly in the context of rapidly evolving markets and changing consumer preferences. It is not always safe to assume that individuals will continue to behave in the same way in the future, especially when confronted with new products, services, or information. Moreover, relying too heavily on historical data can lead to biases and blind spots, particularly when it comes to diverse or marginalized populations who may have different needs or experiences.[127] Furthermore, the assumption that individuals will follow past behavioural patterns ignores the potential for individual agency and autonomy. While past behaviour can be a useful indicator of future behaviour, individuals are capable of making their own choices and changing their behaviours based on new information or circumstances.[128] Thus, companies that rely solely on historical data risk overlooking the potential for individuals to change and evolve over time.[129]

An algorithm is linearly rational: It is intelligent to the extent that it can be expected to achieve its objectives through its actions. In personalisation, the designer defines those objectives and the listeners feed the learning data.[130] Furthermore, unlike humans, algorithms are not capable of reasoning about their own reasoning or being introspective about their decision-making processes. Stuart Russell (in Wethner et al, 2022) argues that since the algorithm pursues the objective of maximising clickthrough, these algorithms will try and reach that long-term objective, and thus learn to manipulate the users to make them more predictable.[131] Again, these are theoretical analyses, based on how mathematical calculations work to reach the result with highest efficiency. How to prevent this efficiency skewing? "It's anyone's guess, as long as the algorithms involved are kept secret."[132]

---

[126] Grafanaki 2017, pp 25.

[127] UNESCO 2022, pp 106.

[128] Russell in Wethner et al. 2022, pp 23.

[129] Russell in Wethner et al. 2022, pp 20.

[130] Russell in Wethner et al. 2022, pp 20.

[131] Russell in Wethner et al. 2022, pp 21.

[132] Pasquale 2015, pp 9.

There is also a pressing need for cultural and environmental sensitivity. The behaviour, beliefs, and values of different populations can vary significantly, and an AI system trained on data from one cultural or environmental context may not perform well in another. Therefore, it is essential to consider the cultural and environmental factors that may impact the performance of an AI system and to design appropriate training data and models that take these factors into account. [133] Plus, since these platforms, Spotify included, are predominantly Western, the platforms should recognise their familiarity with Western content and thus their inherent bias. It is essential to consider the cultural and environmental factors that may impact the performance of an AI system and to design appropriate training data and models that take these factors into account.

Despite all the general criticism, a form of filtering the immense amount of information is understandably necessary. Next, I will examine how the applied decision-making filtering may affect diversity.

4.2.1 Diversity dissected

There is no specific definition of diversity of production or consumption when it comes to researching diversity in music. Heritiana Ranaivoson (in Albornoz et al. 2019) use a mix of different definitions: First, they explain the so-called Stirling model that defines diversity as a combination of variety, balance, and disparity. It is based on categorisation, and diversity is evaluated based on how those categories are represented among the studied field. Then, they add the assessment of supplied (what is made available) and consumed (what is actually consumed) diversity of items. Finally, different parts of the communication process are defined, referencing their sources, as threefold: source diversity, content diversity and exposure diversity.[134] However, I found it important to add a fourth notion, as per the literature review for the UK House of Commons Digital, Culture, Media and Sport Select Committee, *The impact of algorithmically driven recommendation systems on music*

---

[133] Burri et al. 2021, pp 119.

[134] Ranaivoson in Albornoz & García Leiva 2019, pp 102.

consumption and production, where David Hesmondhalgh et al. define four types of diversity for evaluating the input and output data of machine driven decision making:

Source diversity focuses on the number and variety of culture-producing actors in a media environment. It considers ownership and workforce structures, as well as characteristics of the producers such as age, race, education, gender, nationality, religion, sexuality, and physical abilities. Source diversity is important for ensuring a range of perspectives and ideas are represented in the media, and to counteract biases that may arise from a lack of diversity in the producers.

Content diversity measures the variety of media content available, including ideas, narratives, perspectives, characters, and artistic styles. In music this refers, for example, to the range of musical styles, genres, and cultural influences that exist within the music industry. It may encompass differences in musical instrumentation, rhythms, melodies, and lyrics, as well as the cultural traditions and influences that shape musical expression. Content diversity is crucial for promoting a diverse range of viewpoints and experiences in the media. It is also important for ensuring that individuals from diverse backgrounds can see themselves represented in the media they consume.

Exposure diversity measures the extent to which individuals are exposed to source or content diversity via different media outlets over time. Exposure diversity is important for promoting a broad range of perspectives and ideas, and for reducing the potential for individuals to be exposed only to media content that reinforces their existing beliefs and biases.

Aggregate diversity measures source or content diversity at an aggregate level, either across all users or across all creators. Aggregate diversity is important for assessing the overall level of diversity in a media environment and identifying areas where improvements can be made.[135]

Promoting all the different forms of diversity, even the technical ones, is crucial. The music industry has a long history of cultural exchange and hybridization, with artists drawing on diverse cultural traditions and styles to create new and innovative sounds. For example, genres such as jazz, blues, rock and roll, disco, and hip hop have all emerged from the

---

[135] CDEI 2023, 5.2.

blending of different cultural influences, including African American, Latin American, and European traditions.[136] Similarly, global music styles such as reggae, salsa, and K-pop have all gained widespread popularity and influence through their distinctive cultural expressions and identities. All the different ways to measure and define diversity, deriving from UNESCOs definition are visible in the blending, mixing, and matching of music globally.

Hesmondhalgh et al. found that interdisciplinarity is called for: On the one hand, when it comes to measuring possible bias or lack of diversity in algorithmic recommendation, academic computer science tends to concentrate on the technical aspects of the problems and solutions, ignoring or downplaying complex social and cultural aspects of problems. For example, Spotify's answer to adding diversity into recommendation may be seen as a technical solution, opening up the process of what the algorithm does.[137] On the other hand, critical researchers provide insights on the social and cultural implications that might be beyond the ones of computer scientists, policy makers and tech businesses, but offer little understanding of the technical realities of AI design. These different points of view might not collaborate enough, yet the exchange of insights might prove valuable. [138]

4.2.2 The Black Box Problem

The black box problem refers to the lack of transparency and understanding of the decision-making processes behind recommendation algorithms used in music streaming services.[139] This issue is of particular concern as these algorithms play a significant role in shaping our musical preferences and consumption habits.

Despite the increasing use of these algorithms in the music industry, their functioning and impact on users' choices remain opaque, creating challenges for users and regulators. Some critics argue that the opaque nature of algorithms makes them hard to understand, even by

---

[136] For example, Shapiro 2005, pp 234 onward.

[137] Spotify R&D 2023.

[138] CDEI 2023, 1.2.

[139] Pasquale 2015, pp 3.

their developers. Overall, the public understanding of algorithms is a pressing issue.[140] Their opacity may pose a threat to cultural diversity in the sense that it can reinforce existing power structures and inequalities. If the algorithms used in decision-making processes are not transparent, it becomes difficult to hold those in power accountable for their actions. This can lead to decisions that prioritize certain cultural groups or perspectives over others, further exacerbating existing cultural inequalities.

One of the main reasons to the black box problem and the issue of governance is limited access to data. Platform algorithms are trade secrets, and even if the financial data could be traced, the commercial role of user data is even harder to measure.[141] As noted above, Frank Pasquale argues that there is a need for greater transparency and accountability in the development and deployment of these algorithms to avoid potential discriminatory or biased outcomes, noting also that even transparency isn't a cure-all for the black box problem.[142] Improving transparency is necessary but moving it from theory to practice is more difficult than it sounds. First of all, the legibility of AI requires expertise the legislative actors may lack, and the complexity and fragmented nature of algorithms makes it difficult to clarify, what data exactly should be disclosed, without infringing privacy. Concrete measures for monitoring have been suggested, but it remains to be seen, what implications these approaches have when put to practice.[143]

4.2.3 Diversity and bias

Implicit and inadvertent bias through design creates another means for discrimination. Bias it its simplest definition means significantly and systematically favouring content – in this case music or artists – over others. Ranaivoson specifies this as imbalance or inequality of

---

[140] CDEI 2023, 6.

[141] CDEI 2023, 6.

[142] Pasquale 2015, pp 8.

[143] CDEI 2023, 6.

coverage and then continues to describe four types of biases: selection bias, presentation bias, overfitting, and the filter bubble.[144]

From the consumers perspective, **selection bias** or "the unobserved population problem" happens when a system is biased to recommend content with more historical data, in this case user data such as likes or listening rotation.[145] It is connected to the "cold start problem" described above, as historically unknown, "cold" content does not get recommended. From the creators' perspective this can be described as the **popularity bias**.[146] Popular songs tend to dominate streaming services, while lesser-known songs and artists struggle to get noticed. This bias can affect not only the music that gets played on streaming platforms but also the way that music is produced and marketed.[147] One of the main reasons for popularity bias on music streaming is the way that streaming services are designed. Streaming platforms often use algorithms that are based on popularity to determine which songs and artists to feature on their front pages or playlists.[148] As a result, popular songs and artists get even more plays, while lesser-known songs and artists remain hidden from view. This cycle creates a self-fulfilling prophecy, as the more popular a song becomes, the more likely it is to get played.

Popularity bias on music streaming also affects the music industry as a whole. Record labels and artists often prioritize making music that they believe will be popular on streaming services, rather than taking creative risks and producing unique music. This can lead to a homogenization of music, where songs all sound the same and there is less diversity in the music that is produced. As a result, smaller artists who are not interested in producing music that is designed to be popular on streaming services may struggle to find success. This is also connected to the tendency of platforms to recommend and promote their exclusive content, an example of the **presentation bias**.[149]

---

[144] Ranaivoson in Albornoz & García Leiva 2019, pp 109-110.

[145] Ranaivoson in Albornoz & García Leiva 2019, pp 110.

[146] CDEI 2023, 4.1.

[147] Knees in Wethner et al. 2022, pp 170.

[148] Spotify Newsroom 8 Mar 2023.

[149] Ranaivoson in Albornoz & García Leiva 2019, pp 110.

Overfitting or **overspecialisation** occurs when recommendation lacks novelty, i.e., when it recommends content that is very similar to what the user liked in the past.[150] **The filter bubble problem** is described in more detail below.

Compensating or correcting these biases and solving the problems in section 3.2.1. above are all intertwined. Additionally, as noted in many of my source materials, measuring bias is inherently difficult[151] and criticism about algorithmic bias tends to surround issues considering sources of bias, rather than outcomes.[152] Pasquale argues that because of the competitive market and profit reaching, the discussion on the problems of automated recommendation has often been reduced to tackling purely technical problems.[153] The CDEI review found similar results, and notes that precise, measurable outcomes are understandably favourable for, for example, policy makers and that technical understanding of bias might thus be easier to comprehend.[154] Demands of diversification of recommendation systems have resulted in movement from developing new methods to making these methods more accurate and precise.[155]

However, by treating recommendations as purely technical problems, data scientists risk overlooking the social and ethical implications of their work. As I've argued above, development may be focused on maximizing profits or efficiency, without considering the wider impact of the recommendations on civil liberties, and social justice. Rather than measuring bias in results, just acknowledging the fact that an algorithmic system is fallible and prone to bias because of its inherent operating mechanisms, I argue, we would be getting fairer results. Furthermore, perpetuating systemic unfairness, even if only in technical inputs and outputs, the system itself becomes part of the oppressive structure.[156]

---

[150] Ranaivoson in Albornoz & García Leiva 2019, pp 110.

[151] Aguiar et al. 2021, pp 2.

[152] CDEI 2023, 2.2.

[153] Pasquale 2015, pp 8.

[154] CDEI 2023, 2.2.

[155] Ranaivoson in Albornoz & García Leiva 2019, pp 111.

[156] Burke in Wether et al. 2022, pp 146.

For example, the Toronto Declaration (explained below) notes that "- - people behind the technology bring their own biases, and are likely to have limited input from diverse groups in terms of race, culture, gender, and socio-economic backgrounds."[157] Algorithmic bias might also be prone to reinforce existing inequalities, because of reflecting existing social norms that discriminate against, for example, minorities and women.[158] Therefore, it is important to ensure that data scientists take a more holistic approach to their work, considering the ethical, social, and legal implications of their recommendations. Additionally, it is essential that individuals and society as a whole are provided with transparency and control over the algorithms that shape their lives. This includes access to information about how algorithms work, the data they use, and the impact they have on society.

4.2.4 Filter bubbles and echo chambers

The filter bubble phenomenon refers to the idea that when individuals use personalized recommendation algorithms or news feeds, they tend to receive content that reinforces their existing beliefs and preferences, while filtering out opposing viewpoints. Essentially, people end up living in a bubble of information that confirms what they already believe, making it difficult for them to encounter different perspectives and ideas.[159] Eli Pariser, a social media expert, has raised these concerns regarding the use of recommendation algorithms in digital media. Pariser's book, *The Filter Bubble*, highlights the dangers of personalized algorithms that create an echo chamber effect, limiting users' exposure to diverse content. Similarly, in the context of music streaming services, recommendation algorithms that are designed to maximize user engagement and retention may prioritize popular or trending songs over diverse and niche music genres, leading to homogenization of users' musical taste.

The echo chamber problem is closely related to the filter bubble phenomenon. It describes a situation where people only hear and engage with views that align with their own, leading to a reinforcing loop of ideas and opinions. This can happen when people surround themselves

---

[157] The Toronto Declaration 2018, 20.

[158] Fakuda-Parr & Gibbons 2021, pp 35.

[159] In the realm of music recommendation, Allen et al. 2016, pp 4.

with like-minded individuals or only consume content that is in line with their existing beliefs.[160]

When it comes to music recommendation, both the filter bubble and echo chamber can be problematic. Music recommendation algorithms use data about an individual's listening history to suggest songs and artists that they might enjoy. However, if an individual only listens to one type of music or genre, the algorithm may only suggest similar types of music, reinforcing their existing preferences and making it less likely for them to discover new or different genres. Moreover, the music recommendation algorithm might not present the listener with music that challenges their current musical taste. This means that the algorithm may not expose the listener to new music and ideas that might broaden their horizons.

The concerns about homogeneity have centred around the potential to keep unknown artists from getting popular. However, it's important to note that homogeneity can mean aesthetic homogeneity as well. Song may look and sound the same to Spotify's automated feature measurement methods, without repeating the same songs or artists.[161]

The filter bubble and echo chamber phenomena are further emphasized by the individualistic nature of music listening habits of today. Music listening happens increasingly on-the-go via mobile devices, on headphones, and this combined with personalization allows consumers to create their own private environments.[162] This may have resulted in a more individualistic way of listening. Individualistic feedback loops are a theoretical threat and have been criticised as such but based on Gigerenzer's notion of algorithms computing predictable outcomes, I argue that feedback loops may well be an inherent trait of algorithmic decision making.

---

[160] CDEI 2023, 5.1.

[161] Chodos 2019, pp 101.

[162] Brown & Krause 2020, pp 89.

4.2.5 Human touch

There are signs that the music streaming platforms are listening to these industry concerns.[163] Spotify has also explicitly answered to diversity concerns of indie music creators.[164] According to Aguiar et al. 2021, for example, the New Music Friday playlist favours indie artists and music by women.[165] That playlist is human curated, so it does not apply to my thesis directly, but gives a measurable indication of Spotify changing its way according to industry discussion. However, it is worth noting that human curation might be more responsive to industry criticism and easier to change course.

In their essay in *Perspectives on Digital Humanism,* Robin Burke makes the case for incorporating fairness into recommendation systems, asking the question: "- - how is harm or benefit from a system distributed over different individuals and/or different classes of individuals?"[166] Burke proposes rethinking the whole system on personalisation, shifting the focus from pleasing the user to integrating other stakeholders' needs better into the system, arguing that the current system has forgotten the supplier, i.e. the creatives. I must agree with Burke, especially against the backdrop of music industry's fair remuneration problems.

Also, encouraging active participation of users and user-driven listening might increase diversity, as it seems that it tends to be much more diverse than algorithm-driven listening. When people choose their own music, they are more likely to explore new genres, artists, and songs that they might not have otherwise discovered. They may also be more likely to listen to a wider variety of music, rather than sticking to the same popular songs and artists recommended by algorithms.[167] "Participation ensures that applications are responsive to the needs of the people they are meant to benefit and that they do not produce harm (intentional or unintentional) to that population. Participation is also means by which rights-holders can hold public and private actors accountable for the impact of AI on their well-being."[168]

---

[163] Bello & Garcia 2021, pp 5.

[164] Spotify Newsroom 2020.

[165] Aguiar et al. 2021, pp 15.

[166] Burke in Wethner et al. 2022, pp 145.

[167] Anderson et al. 2020, pp 2.

[168] Fakuda-Parr & Gibbons 2021, pp 35.

"It may be, in other words, that a good music recommendation, by definition, is something passed from one person to another, and that it bears a much smaller relationship to the audio signal than is often supposed (even by the people who suppose that it doesn't matter). If so, the rise of automated streaming may herald a collective shift not just in where and what we listen, but *how* we listen, and how we conceive of musical affection."[169]

---

[169] Chodos 2019, pp 101.

5   Going Forward – New Demands of the Digital Age

> "Data's liquidity tends to undermine outdated regulatory formations and erode the paradigms that used to underpin a society's conventional right to self-governance. Everything is in flux."[170]

In the way the UDHR and the UNESCO Convention have shaped the way of culture as an industry, there is a possibility, and maybe more pressingly a need to address the revolution digitalisation and streaming have caused. In this chapter I will briefly look at some of the instruments proposed internationally to respond to the need to bring human rights and cultural diversity to the digital realm.

5.1   Ethics or human rights?

States, companies, and other stakeholders have recognised the implications of digitalisation on human rights by drafting ethical guidelines and other internal frameworks. It seems that by and large, corporations have been slow to adopt human rights regulation or law, opting for a softer wording of "ethics". While these guidelines do not carry legal legitimacy, according to Fakuda-Parr & Gibbons (2021), they are creating narratives and ultimately amounting to what may become international consensus on governing AI.[171] Guarding against potential problems, corporations in technology are also able to increase shareholder value. This done by partnering with governments could increase transparency and reduce risks of so called "ethical washing".[172] It must also be noted that along with ethical washing, there are problems when it comes to self-regulation, especially with recognising different cultural demands. For example, Arogyaswami (2019) has somewhat critical remarks on 'Big Tech culture' and the lack of diverse, possibly dissenting voices from within.[173]

To an extent this choice of words is understandable, as the challenge for "universal" regulation (a concept which should be evaluated critically, as per, for example, Otto, 1997) is

---

[170] Burri et al. 2021, pp 231.

[171] Fakuda-Parr & Gibbons 2021, pp 33.

[172] Arogyaswami 2019, pp 836.

[173] Arogyaswami 2019, pp 835.

the balancing between control and the possibility of stifling innovation. Possibly for this reason, the EU Commission's High-Level Expert Group on Artificial Intelligence chose to base their guidelines on ethics. *The Ethics Guidelines for Trustworthy AI* were published in 2019. They are based on international and European fundamental rights but emphasize four ethical principles that are to be realized through seven requirements. Human rights are not explicitly enforced.[174]

5.2 UNESCO

In June 2017, the Conference of the Parties to the UNESCO Convention approved the Guidelines on the Implementation of the Convention in the Digital Environment (the Guidelines).[175] The guidelines aim to help governments, civil society organizations, and other stakeholders navigate the challenges and opportunities presented by the digital age in protecting and promoting cultural diversity. They provide a framework for policy and regulatory measures that can foster creativity, facilitate access to cultural expressions, and support the development of digital cultural industries. The guidelines emphasize the importance of ensuring that cultural diversity is preserved and promoted in the digital environment. Overall, they recommend strategies for expanding access to digital cultural content, including through the use of open licenses and the development of digital platforms that enable creators and users to share and exchange cultural expressions. They also address issues such as intellectual property rights, data protection, and privacy, calling for a balanced approach that takes into account the interests of all stakeholders.[176]

Reaffirming the basic principles of the Convention, the Guidelines assign the parties the sovereign right to formulate, adopt and implement protectional and promotional measures regarding cultural diversity in the digital environment.[177] From the streaming services' point of view, one of the most interesting parts of the Guidelines is the invitation for the parties to

---

[174] EU Guidelines 2019.

[175] UNESCO Guidelines, pp 87.

[176] UNESCO Guidelines, pp 88.

[177] UNESCO Guidelines, pp 88.

"- - update their legislative and regulatory frameworks for public service, private and community media as well as independent media organizations to promote the diversity of cultural expressions and the diversity of media in the digital environment."

However, Albornoz, referencing the global report on the implementation of the Convention, notes that beyond improving measures for digitization, very few parties have designed or implemented digital culture policies.[178]

In November 2021, UNESCO published its set of *Recommendation on the ethics of artificial intelligence.* Its goal is to "- - bring a globally accepted normative instrument that focuses not only on the articulation of values and principles, but also on their practical realization, via concrete policy recommendations - -".[179] It's addressed to both its member states as well as private actors, urging them to share the responsibility to take part in global and intercultural dialogue.[180] Even though the emphasis is on states as AI actors and normative authorities, UNESCO also addresses businesses directly.[181] Nevertheless, member states are still the main duty-bearers in implementing the Recommendation, as they are "encouraged" to engage all stakeholders in cooperation or urged to "ensure".[182]

The Recommendation has eleven policy areas, each addressing an area of life algorithmic decision making may have an impact on. The seventh of them is dedicated to culture.[183] From the point of view of streaming, two points are specifically significant:

"97. Member States should promote awareness and evaluation of AI tools among local cultural industries and small and medium enterprises working in the field of culture, to avoid the risk of concentration in the cultural market."

"98. Member States should engage technology companies and other stakeholders to promote a diverse supply of and plural access to cultural expressions, and in

---

[178] Albornoz & García Leiva 2019, pp 34.

[179] UNESCO Recommendation 2021, pp 5.

[180] UNESCO Recommendation 2021, pp 4.

[181] For example, UNESCO Recommendation 2021, point 78., pp 14.

[182] UNESCO Recommendation 2021, pp 3.

[183] UNESCO Recommendation 2021, pp 16.

particular to ensure that algorithmic recommendation enhances the visibility and discoverability of local content."[184]

The Global Report of 2022 also directly references the Recommendation, urging member states to implement the Recommendation in their territories.[185] The Global Report also notes that increasing discoverability and online distribution of cultural goods calls for cooperation between online platforms and the rights holders.[186] Recalling the Convention, it urges for wider transparency and availability of data.[187]

5.3   The Toronto Declaration

The Toronto Declaration is the result of collaboration between human rights organisation Amnesty International and digital rights group Access Now, and it was published in 2018. Its main goal is to call on governments and private companies to protect human rights in the digital realm, especially in machine learning and artificial intelligence. Its focus is on the right to equality and non-discrimination.[188]

The Toronto Declaration explicitly references the UDHR and emphasizes the importance of human rights in the development and deployment of AI. The declaration states that the development of AI should be guided by the aim of protection, promotion, and respect of human rights. The Declaration recognizes that AI has the potential to impact human rights in significant ways, and therefore, it is important to ensure that AI is developed and used in a way that is consistent with human rights. In particular, the Toronto Declaration emphasizes the importance of ensuring that AI does not reinforce or exacerbate existing biases and inequalities.[189] The authors recognize that AI systems can perpetuate discrimination and bias if they are trained on biased data or designed in a way that reinforces existing inequalities.

---

[184] UNESCO Recommendation 2021, pp 16.

[185] UNESCO 2022, pp 115.

[186] UNESCO 2022, pp 113.

[187] UNESCO 2022, pp 115.

[188] The Toronto Declaration 2018, About.

[189] The Toronto Declaration 2018, Preamble.

Therefore, the declaration calls for the development of AI systems that are designed to promote fairness, inclusivity, and non-discrimination.

The declaration also emphasizes the need for transparency and accountability in the development and deployment of AI. This includes ensuring that AI systems are designed in a way that allows for human oversight and control, and that individuals are informed about how their data is being used. The authors of the declaration argue that transparency and accountability are essential for protecting human rights and ensuring that AI is used in a way that benefits society as a whole.[190]

---

[190] The Toronto Declaration, part ii.

6 Conclusions

In my research, I have aspired to study the role of human rights in the digital realm. Using Spotify as an example, I've explored the impact of streaming on music culture, the concerns the ever-evolving technology has raised in the creative community, focusing on recommendation algorithms and their potential impact on music discovery and exposure. Furthermore, I wanted to discover how the international community, especially the UN, has reacted to the digitalized world.

Music streaming services are constantly transforming the music industry and the way people access and consume music. MSPs offer users access to an immense catalogue of music from all over the world, providing unprecedented opportunities for music discovery and exposure. However, the sheer scale and complexity of these platforms, combined with the use of recommendation algorithms, have raised significant concerns about cultural diversity and the right to culture. Today, recommendation algorithms are a critical feature of MSPs, and they are designed to help users navigate the vast amount of content providing personalised music recommendation. As my research has shown, concerns over algorithms perpetuating biases, prioritizing music that is already popular and creating so-called filter bubbles are not unfounded. Listening to these concerns is important.

However, it's important to note that algorithms themselves are not inherently good or bad. They are simply a tool that can be used for a variety of purposes, depending on how they are designed and implemented. It's up to us as individuals and as a society to ensure that algorithms are used ethically and in ways that benefit everyone.

Culture and commerciality have a complex relationship in music streaming. On the one hand, culture plays a significant role in shaping the music that people create and listen to. Music is often reflective of the values, beliefs, and traditions of a particular culture or community. It can serve as a means of expressing cultural identity and preserving cultural heritage. On the other hand, music streaming is inherently commercial. The music industry is driven by profits and revenue, and streaming services like Spotify are no exception. These companies rely on subscriptions and advertising to generate revenue, and they – understandably, even – may prioritize popular, mainstream music that has the potential to attract a large audience and generate revenue.

As a result, the music that is promoted and recommended on streaming services may not always align with the cultural preferences of certain communities or subcultures. This can lead to a tension between cultural authenticity and commercial viability. Some artists and fans may feel that their cultural traditions and identities are being commodified and exploited for profit, while others may argue that exposure on streaming platforms can help to promote cultural diversity and inclusivity. In some cases, streaming services may attempt to address this tension by promoting diverse and culturally specific playlists and genres. For example, Spotify has created playlists for different cultural communities and subcultures, such as Latinx, Black, and LGBTQ+ audiences.[191] However, there is still a need for more equitable representation of diverse cultures and communities throughout the music industry, both in terms of the artists that are promoted and the revenue that is generated from their work.

Active participation in cultural life, both creating and consuming, is vital for the livelihood of artists and the creative industry as a whole. If there is even slight evidence that our current system with the constant influx of information may be hamstringing participation, the industry must react. Currently, the ways to engage seem to be dictated by market powers, and obviously commercial marketing is also essential in spreading information to consumers of culture. But other incentives must be encouraged, too.

Cultural diversity has its foundation in the right to express and access culture. Ensuring cultural diversity in the digital environment is essential for artists, musicians, songwriters – music creatives – as it allows them to reach new audiences and expand their creative horizons. This is very much a human rights issue. Music streaming services have the potential to play a vital role in promoting cultural diversity, and the flip side of that coin means they have the potential to act as gatekeepers. The opacity of the algorithms gives disproportional power to the platforms, and that power is over artists. In its current state it seems that protection and promotion of cultural diversity is in the hands of the most powerful player in the industry: the market. However, the need and urge to protect and promote is embedded in the international treaties and agreements. By ignoring the artists, musicians, songwriters and composers, the international community is forgetting its responsibilities, and trusting on algorithms to do the work is only making matters worse. If the right to culture is the operating right for artists, it should be that for the whole industry. I argue that the implications music's digitalisation has

---

[191] Spotify E&I Report 2021, pp 19.

had and continues to have, must be taken seriously, and recognising the human rights implications is crucial. "With great power there must also come – great responsibility."[192]

For example UNESCO has done significant work and research, but adaptation of regulation and guidelines, it seems, is yet to happen. Encouraging communication and bringing the language of human rights on to the table is essential in creating a common terminology on what is meant by "responsible AI" or diversity of recommendation.[193] It might seem like stating the obvious, but there is pressing need in increasing participation and diversly bringing all stakeholders to the table.[194] But combining the different sets of languages and cultures is obviously a hard nut to crack. Cultural context, professional backgrounds, education, mindset, and subjective human understanding all impact communication, and it seems that for example technologists and policy makers don't share the same language.[195] Pasquale remarks that educated citizenship today requires both understanding of government as well as understanding those companies that have the power to shape our culture and society.[196]

There are signs of positive development as well. Some of the big tech companies have shown explicit interest in human rights action,[197] and building those bridges further and emphasizing cooperation has shown positive results, both for music creatives and the companies' shareholders.[198] The potential of human rights as a universal language for governing the digital realm has been brought to the table, and just the amount of companies' ethical guidelines shows signs of somebody somewhere caring. Those in power should reflect positively on the realm they operate in.

In my research I learned profoundly that human interaction increases diversity. This holds true both in automated decision making and in real life. Thus, the main point of my research is this: *Everything is interconnected.* From the commercial and financial agendas behind the

---

[192] Comic book *Amazing Fantasy #15*, written by Stan Lee.

[193] Fakuda-Parr & Gibbons 2021, pp 42.

[194] CDEI 2023, 6.

[195] Blume & Rauchbauer in Wethner et al. 2022, pp 103.

[196] Pasquale 2011, pp 217.

[197] Fakuda-Parr & Gibbons 2021, pp 41.

[198] Arogyaswami 2019, pp 836.

necessity to filter the vast amount of music, the biases embedded deep into our society hampering with access to culture, to the influential international cooperation that set the bedrock for what culture as an industry is today.