Using Music Streaming Services:
Practices, Experiences and the Lifeworld of Musicking

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A thesis submitted to the University of Oslo in accordance with the
requirements of the degree of Doctor of Philosophy in
the Faculty of Humanities

August, 2015

Acknowledgements

I cannot think of anything so incredibly difficult and at the same time so at heart interesting and cool as working with this dissertation. That is, especially since the purpose of the project has been to explore the meaning and practices of individual everyday music experiences.

To be a PhD student has been a huge privilege and I am forever grateful for the past three years. My sincere thanks go to:

- **Clouds and Concerts** for being an awesome project with interesting research objectives and great people! Thank you Anne Danielsen, Arnt Maasø, Yngvar Kjus, Marika Lüders, Wenche Nag, Beathe Due, Ola Løvholm, and the rest for stimulating discussions, challenges, courses and comfort.
- **Arnt Maasø** for being my supervisor, and for providing me with faithful support and motivation, and always-interesting perspectives to the research project.
- **Terje Rasmussen** for following up as an enthusiastic supervisor when Maasø had other duties, and for extending and guiding my phenomenological informed aha experiences towards the submission.
- **Nancy Baym** for co-supervising me and for always offering smart, helpful and concrete proposals. Not least, thank you for inviting me to spend two months with you and the fantastic Social Media Collective at Microsoft Research New England (including weight lifting and inspiring chats with Tarleton Gillespie, Annette Markham and the rest!)
- **The Department of Media and Communication** at the University of Oslo, for office space, coffee, and for great colleagues. Anders Lysne, Terje Colbjørnsen, Niamh Ní Bhroin, Anders Larsson, Jon Inge Faldalen, Charles Ess, Espen Ytreberg, and Anders Fagerjord deserve particular thanks, in addition to my office mates Bente Kalsnes, Kim Johansen Østby, Mulatu Alemayehu Moges - we stayed our hours! Also, thank you, Stimulus-Respons!
- **The Department of Musicology** at the University of Oslo, for great seminars, nostalgia and good colleagues. Thanks to Målfrid Hoaas, Arve T. Thorsen and Alexander Refsum Jensenius for helpful administration anytime I needed it.
- **Nils Nadeau,** for editing the language in this dissertation with great expertise, and also for editing my consciousness. Both improved considerably.
- **Alexander Eidsæther,** for providing me with fresh numbers from TNS Gallup.
- **The pilot participants,** Marianne Stengle, Hilde Stenseng, Ole Nylund Hagen and Per Ole Hagen, for testing the methods and for testing me. Per Ole deserves an extra thank you for help with the appendixes.
- **My beautiful friends,** for support, love and "likes" in the everyday life.
- **My family.** Thank you Mamma, Pappa, Bente, Ole, Kari, Hans Jørn, Siri, Henrik, Ole and Hans for taking care of me, each other, and the two I love the most.
- **Mats and Astrid**. Thank you for following me and waiting for me, and for always being in my heart.

Lastly, the project would have been impossible without the twelve informants! Thank you for your generous contributions that provided me with unique narratives from your everyday music-streaming experiences—as glimpses of insights into your *lifeworld of musicking*.

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Thesis Summary

This study is among the first to be explicitly concerned with music-streaming services from a qualitative user perspective. It sheds light on how music in general, and streaming technology in particular, is perceived, made sense of, experienced and practiced in the context of the individual streaming user's everyday life. Its research perspective is inspired by sociological phenomenology, starting with Alfred Schutz's action-oriented approach to understanding intersubjective meaningful experience. This perspective informs both the methodological model and the theoretical framework of the study, which is otherwise interdisciplinary and eclectic.

The research was conducted in Norway, which currently boasts a globally pioneering streaming market. The study relies on a mixed-methods design using twelve heavy music-streaming users (ranging from seventeen to sixty years old) as informants. I began by devoting two months to sampling users' self-reported practices and experiences with music-streaming services, combined with online observation and logging of all streamed tracks during this period. I followed up with individual in-depth interviews that were conducted while looking at the personal streaming-service interfaces together with the informants. This design is original to the dissertation and intended to make immediate experience sampling convenient for the informant. It is therefore also relevant for grasping everyday experiences of a taken-for-granted nature that arise in the context of mobile media and the ubiquitous Internet.

I develop my arguments through a discussion that draws on theoretical frameworks that fundamentally revolve around notions of human action, which is also a focus of my analyses (via user practices and experiences). The principal study finding involves the extent of the role that music has assumed in daily life as a result of streaming services. Streaming-related musical meaning is found to be intensely self-referential and personal, and streaming presents itself as a malleable lifeworld resource. I also argue that music-streaming services afford involvements in diverse modes of experience and practice that are realised through the role and impact of these services in everyday life, as demonstrated by the micro-dynamics that follow upon the act of streaming among individuals, the technology, the music and the context. The dissertation's overall structure is divided in two: (1) the covering paper that will survey the research project as a whole, and (2) four articles written over the three-year course of the project.

Sammendrag av avhandlingen

Denne avhandlingen er et tidlig kvalitativt bidrag til musikkstrømmetjenester som forskningsfelt. Studien undersøker hvordan musikk generelt, med vekt på musikkstrømmetjenester spesielt, blir oppfattet, brukt, opplevd og gjort meningsfulle i brukernes hverdagsliv. Studien er inspirert av sosiologisk fenomenologi, og tar utgangspunkt i Alfred Schutzs handlingsorienterte tilnærming til å forstå intersubjektive, meningsfulle opplevelser. Dette perspektivet reflekteres både i avhandlingens teoretiske og metodiske rammeverk, som utover dette er grunnleggende tverrfaglig og eklektisk. Studien er gjort i Norge fra 2012 -2015, og i hele perioden har Norge vært (og er fortsatt) et av verdens mest etablerte markeder for musikkstrømming.

Studiedesignet kombinerer flere metoder med utgangspunkt i en dagbokstudie. Over fire perioder i løpet to måneder rapporterte 12 aktive strømmebrukere mellom 17 og 60 år sine hverdagsopplevelser og praksiser med musikkstrømmetjenester. Dette materialet ble supplert med Internett-observasjoner av informantene og ved å loggføre all musikken de strømmet. Jeg fulgte opp med individuelle dybdeintervjuer som ble gjennomført mens vi samtidig kikket på og snakket om informantenes egne strømmetjeneste-kontoer. Designet er originalt utformet for denne avhandlingen med tanke på å etablere en tilpasset metode for umiddelbar selvrapportering, spesielt nyttig for studier av hverdagsbruk av mobile Internet-medier. Denne studien demonstrerer at metoden også er egnet til å få brukerne til å reflektere over dagligdagse opplevelser, også de som gjerne blir tatt for gitt.

I avhandlingen utvikler jeg et argument som bygger på diskusjoner og forestillinger om menneskelig handling, som også er fokus i analysene (i form av *opplevelse* med og *bruk* av strømmetjenestene). Et hovedfunn er knyttet til musikkens sentrale rolle i brukernes hverdagsliv, som forsterkes med bruk av strømmetjenester. Musikkopplevelser med strømmetjenester tar utgangspunkt i den enkelte brukerens hverdagskontekst og er grunnleggende personlig. Jeg finner også at musikkstrømmeteknologien ikke inviterer til én type musikkopplevelse. Snarere er strømmetjenester grunnleggende heterogene og rommer flere ulike modus for å oppleve og engasjere seg i musikk. Disse realiseres i samspillet mellom brukerne, musikken og musikkstrømmeteknologien slik det utspiller seg i hverdagen.

Chapter 1: Introduction

During the first decade of the new millennium, a multitude of Internet-based music distribution and consumption solutions appeared, including online broadcasters, file-sharing networks, media players and online music stores. Listeners increasingly turned to the Internet to access music in diverse ways, via peer-to-peer systems, piracy and purchase. From around 2005, multiple music-streaming services also launched and have now established a new online format for music distribution and consumption.[1] Ten years later, music-streaming services remain in a formative phase, and diverse service models (subscription, interactive radio, free streaming, download stores) continue to appear and either succeed or fail. Clearly, music-streaming services engage the much more sprawling dynamics of distribution and ownership models, designs and characters or inclinations, and public debates continue to rage around who are the winners and losers in this game. Nevertheless, music streaming has grown: in 2014, the list of licensed online music services numbered over 400, originating in over 150 territories (IFPI, 2015), which explains the increasing attention they have demanded in the international marketplace.

Likewise, statistics indicate a corresponding increase in international music audiences, particularly in the Western world. In 2014, an estimated 42 million people worldwide were paying for a music subscription service, up from 28 million in 2013 and 8 million in 2010 (IFPI, 2015). A rapidly expanding group of people deals with music-streaming technology on a daily basis, and it is these *users* that I have made the subject of my research. In this dissertation, I will address what characterises users' music-related practices and experiences at a time when music-streaming services have come to comprise the main source for everyday music consumption. How music engages us, and how we manage its consumption and cultivate our tastes and practices, are the issues that ultimately propel this dissertation.

This study is based on the assumption that music-streaming services will soon be (or are already) an everyday medium for individual music listening. In 2014, global digital music revenues increased by 6.9 percent, and for the first time, the music industry saw its revenues split evenly between digital and physical channels (at 46 percent each), with music subscription services representing the major driver for the digital growth (IFPI, 2015). Norway, where I conducted this study, currently has one of the world's leading music-

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[1] Throughout this dissertation, I will employ *format, medium, technology, platform* and *service* as more or less overlapping labels for the general subject of my discussions about music streaming.

streaming markets, with 88 percent of the total digital music revenues in 2014 deriving from subscription streams (IFPI Norge, 2014). The two major music-streaming services, Spotify and WiMP Music/Tidal,[2] are enjoyed by seven out of ten Internet users (TNS Gallup), and statistics also show that record sales have dropped drastically, and music piracy has been virtually eliminated, as a result of music streaming (IFPI Norge, 2014).

This situation begs for scholarly investigation, and as a prominent trend in Norwegian music culture, the public's embrace of new online music services was indeed the principal motivation for the major research project that encompasses this dissertation, *Clouds and Concerts: Mediation and Mobility in Contemporary Music Culture*.[3] The main objective of this dissertation in particular is to explore how the societal ascent of music-streaming services has led to changes in people's music-related experiences and practices. From the user's perspective, this study will shed light on how music in general, and streaming technology in particular, is perceived, made sense of, and experienced in the context of this technology's rapid and wide-ranging assault upon the current music market. I also hope to develop a deeper understanding of the ways in which human–technology interaction informs and accommodates everyday life. Through my research, I want to understand how this music medium might fundamentally influence, alter and even generate the *experiences* of those who use it. In this regard, the dissertation represents an important contribution to contemporary audience research within the interdisciplinary field that links media and communication studies and musicology, insofar as it examines the sprawling impact of everyday media use and music listening on contemporary Western culture.

Main Contributions and Findings

The key contributions of this dissertation, in brief, are as follows: (1) to offer a contemporary account of the concept of musicking (Small, 1998) by framing music streaming as a meaningful everyday activity; (2) to provide a micro-analysis of what music-streaming services afford, and, by developing a notion of a *lifeworld of musicking*, to demonstrate how this technology underpins everyday life; (3) to develop theoretical

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[2] In the summer of 2015, WiMP Music was relaunched as Tidal in Norway. In this dissertation, however, I will generally refer to it as WiMP Music, because this was the name of the service while the study was conducted.
[3] As a PhD student, I have been affiliated with the research project *Clouds and Concerts: Mediation and Mobility in Contemporary Music Culture*, which represents a collaboration between the Department of Musicology and the Department of Media and Communication at the University of Oslo. Telenor and WiMP Music have also contributed to the larger project but did not impact my research in any concrete way. Professor Anne Danielsen and Associate Professor Arnt Maasø headed the project, and the Research Council of Norway supported it. For more, see http://www.hf.uio.no/imv/english/research/projects/cloudsandconcerts/.

concepts to address characteristic user experiences and practices with music-streaming technology; (4) to introduce an original methodological model that relies upon immediate sampling of everyday Internet-based experiences with mobile media; and 5) to generate original research regarding user experiences with a still-developing music format, based on empirical material addressing those users in the present streaming marketplace.

The dissertation's methodological and theoretical contributions, in tandem with its solid empirical contribution, are closely related and form a basis for further academic research into the currently underexplored area of music streaming. Equally importantly, they shed light upon the nature and meaning of contemporary music consumption as it takes place via music-streaming services. Because I have developed my arguments specifically through a theoretical discussion, it is hard to highlight the study's main findings ahead of that discussion. I will speak to them briefly in what follows, and then develop them more fully elsewhere in the dissertation.

One main finding involves the extensive role that music has taken on in the individual's everyday life as a result of streaming services. People engage in music streaming in a host of everyday situations. These involvements arise around simply listening to music, of course, but they also arise around daily tasks, and the ways in which music streaming is incorporated into their planning and execution. Thanks to the closely integrated relationship between user and streaming technology that develops through this daily use, streaming activates a particular kind of taken-for-granted 'mode of access' to music, and this affects how music is experienced through streaming.

For example, musical meaning increasingly comes about in relation to the function and role of music in a particular daily situations, either in terms of a call to action to enhance the situation (doing homework, relaxing, exercising and so on) or in terms of a secondary activity or background element to accompany the situation. This means that sometimes, while streaming, the user devotes little attention to the music, while other times, it is experienced as quite profound.

Importantly, music is no less relevant to daily life just because it is taken for granted. On the contrary, this study finds that music streaming provides musical meaning that is intensely self-referential and personal, and even basic to how individuals perceive themselves, others and their immediate surroundings. Music via streaming technology now underpins what the mundane, familiar and recurring in the everyday. This means that streaming services enable music to serve as a malleable lifeworld resource.

Another essential finding in the study relates to how the format of music streaming invites users to actively take part in shaping their experiences. Users test, share, curate, sneak-peek, plan, explore and improvise as part of their everyday music management. As a *user-generated experience*, then, music streaming also involves emotional, cognitive, psychological and physical processes. Put differently, what the streaming format is, invites, implies, and insists upon, depends on *active users* who are willing to embrace and develop their personal practices, experience and sense making as part of their user experience.

It follows, then, that music-streaming services favour and cultivate multiple modes of experience and action that respond to the individual user. The streaming experience can be slightly or greatly affected by the technology, and user involvement can vary in its source, strength, style, character, purpose and mode of perception. The study concludes, that is, that the meaning of user practices and experiences with music-streaming services—in fact, the essence of the streaming technology itself—is fundamentally heterogeneous. It comes to this realisation through the process of shedding light on the role and impact of these services in everyday life, and on the micro-dynamics that follow upon the act of streaming, among individuals, the technology, the music and the context.

Thesis Structure

This dissertation represents a so-called article-based thesis, meaning that its overall structure is divided in two. This introduction begins the first section, a covering paper that will survey the research project as a whole, as follows: in chapter 2, I will review the relevant existing research, and in chapter 3, I will present the research questions for the project. I will present my methodological considerations in chapter 4, while chapter 5 positions the study within the frameworks of the relevant theory—here, I will also highlight key findings and concepts from my articles. The dissertation's second section consists of four articles written during the three-year course of the project. The articles will be presented briefly in my outline of the research questions in chapter 3 and summarised via abstracts in chapter 6. Their variance in use of methods is also presented in chapter 4, and they implicate the larger discussion in chapter 5.

As this study is among the first to be explicitly concerned with music-streaming services from a qualitative user perspective, I must begin by introducing the platforms' basic structures and features. I will then present the two services that are the focus of my research,

WiMP Music and Spotify, and the justification for using Norway as a case study for research on new media experiences.

Music-Streaming Services

Music-streaming services are Internet applications based on a delivery system that enables vast amounts of digital data to be stored in the 'cloud'—that is, the large hubs and data centers comprised of networked servers that are connected to the Internet.[4] The provider transfers service-hosted content such as music or video files from the cloud to a user via a broadband Internet connection. Through a range of related service models, this media content is thus made available to users without the need to download the files. The content is instead experienced in real time as a continuous stream of data. 'To stream (music)' describes the process of the music-streaming service as a delivery system, not the medium itself. In this study, I will use *streaming music* as a verbal form of description of the processes related to users' interaction with music-streaming services.

To use as little bandwidth as possible, services tend to stream *compressed* audio files, which are delivered in small 'packets' of data that can be buffered on personal digital media devices, and then played immediately (Harris, undated). This means that the streaming format is able to make vast music archives available to users in flexible ways, via Internet applications (apps) on both desktops and mobile devices, including PCs and Macs, iPhones, Android and other operating systems, Squeezebox, Sonos and similar airplay clients.

Features and Conditions

The largest on-demand subscription services[5] (including Spotify and WiMP Music) normally offer a set of standard features with which users can interact. Through participatory arrangements requiring active involvement, users are encouraged to customise the service's content and organise their music into personal playlists for either online or offline use[6] on diverse personal devices. Users can *queue* the order of songs or randomise the content of

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[4] Definition borrowed from pcmag.com (retrieved August 8, 2015 at
http://www.pcmag.com/encyclopedia/term/39847/cloud).

[5] I explain diverse business models like *on demand* and *subscription* later in this chapter—see 'Distribution Models: Access and Context'.

[6] *Offline* implies that the user has access to files that are downloaded to a local device, most often a mobile phone, without needing an online Internet connection to listen. Results from the Clouds and Concerts research project (Maasø, forthcoming + Maasø, 2014b) show that offline mode is the most common mode to listen to music on the mobile by WiMP users in Norway.

albums or playlists during listening with the *shuffle* feature. Most music-streaming services also include a search field and browsers with which to look up music.

These interactive user features often work in tandem with features that include varying degrees of automation. By offering pre-manipulated, pre-compiled and pre-shaped content, services also offer subscribers readily available playlists and content highlighted by the service itself. A relatively recent tendency of music-streaming services is to offer more multimedia content, including rather seamless experiences with video, text and music (Slette, in Jones, 2014).[7] Carefully calculated metrics and algorithm-driven features shape the ways in which music is both supplied and accessed. Service providers also analyse user data and offer tailored experiences based on previous interactions.

Through somewhat standardised automated and participatory features, music-streaming services take on a uniform structure but with inherent variations. Like vinyl, cassettes, iTunes files and MP3s, the music-streaming services as a music format 'denotes a whole range of decisions that affect the look, feel, experience, and workings of a medium. It also names a set of rules according to which a technology can operate' (Sterne, 2012: 7). Any study devoted to related practices and experiences must account for these characteristics, and one contribution of this dissertation is its identification and deep exploration of three core qualities of the streaming environment that shape the user experience: the *intangibility* of the medium in which the music is made available; the *abundance* of the music in the services; and the *social network* capacity generally integrated into the platform. I will now discuss each of these qualities in relation to the user experience; in chapter 5, as well, I will return to them in the light of the relevant theoretical frameworks.

Intangibility: Music in the Cloud

The 'materiality' of music has always been contingent on technology (Sterne, 2012a), long before the phonograph introduced the sale of recorded music to the music industry at the beginning of the 1900s (see, for example, Suisman, 2009; Katz, 2004). One of the most remarkable aspects of recorded sound, however, has always been its relationship to the physical characteristics of its respective formats (Katz, 2004: 9). Since the 1950s, the mainstream consumption of recorded music has progressed from physical analog media like

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[7] This tendency is apparent in both Spotify and WiMP Music, and the music-streaming service Apple Music, launched in July 2015, maximises its multimedia interface, providing a bit of everything that has been embedded in music-streaming services so far: streaming radio, curated radio, a community where users can connect with artists, a music video bank, and so on.

LPs and cassettes, to physical digital media like CDs, to virtual digital media like MP3s, and only then to vagrant, shared, perpetually circulating online-based files (in diverse formats), which emerged around the year 2000 to eventually give rise to the music streaming in which I am interested here. With the Internet as the sole hub for contemporary music distribution and consumption, the technological condition of recorded music has finally abandoned every aspect of its longtime tangibility and materiality and now approaches a state of intangibility.

The truly intangible is incorporeal but also dynamic, subjective and ephemeral: intangible things 'cannot be touched, tried on for size or measured, smelled or seen, displayed on a shelf, and are exceedingly difficult to quantify' (Shostack, 1977, in Laroche, Bergeron and Goutaland, 2001: 27). In the wake of the ubiquitous Internet, we have seen a new generation of online-originated products (including software and computer games), as well as existing products made newly available online as a complement to (or even in place of) their physical distribution (including newspapers, music tracks, photos) (Laroche et al., 2001). A growing audience of Internet users has grown accustomed to dealing with services and goods of ever-increasing physical intangibility and a digitised nature (Laroche, Yang, McDougall and Bergeron, 2005)—in terms of music consumption, this has included purchasing files in iTunes and acquiring and sharing files through piracy networks such as Napster or PirateBay. The intangibility of music streaming as such, however, remains an unexplored territory in relation to the practices and habits that have come to characterise the digital age.

This opens up for a range of interesting approaches to the everyday music experiences of users streaming music on the Internet. The cloud, as well as the mobile technology that brought about music-streaming services in the first place, is an intangible system that makes more music more available. The streaming business model derives from this intangibility as well and implies a whole new economy—the services make users into *renters* of access rather than owners of physical products.

From an experiential perspective, intangibility also gives rise to the increased ephemerality and fluidity of the user experience. For example, the artist Prince recently abandoned all streaming services except Tidal, which left a host of Spotify-subscribing Prince fans behind and added to the fast-growing legacy of what has been coined 'platform politics' (see, for example, Gillespie, 2010; van Dijck, 2013).
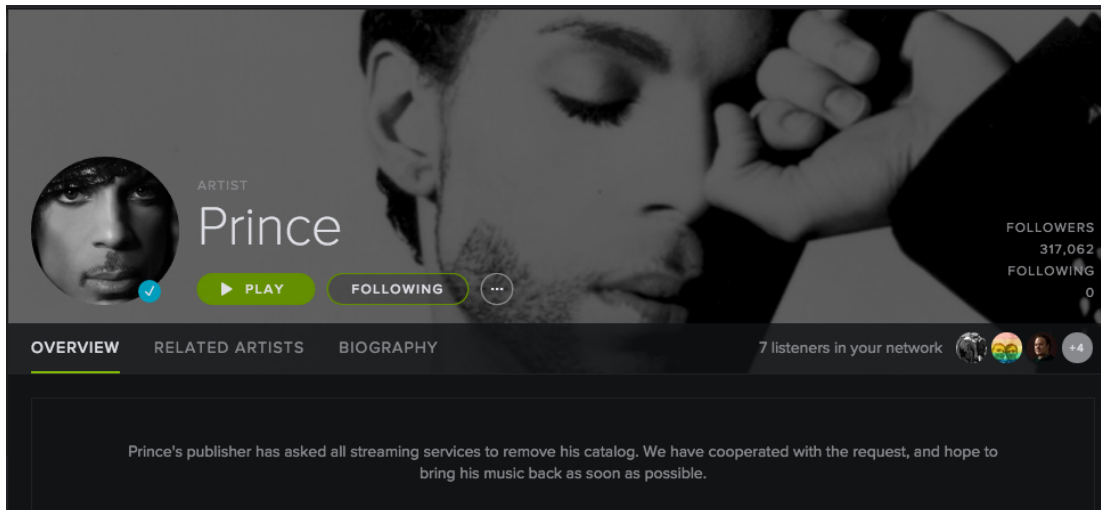
Figure 1. Screenshot from Spotify, July 2, 2015: Prince's announcement of the withdrawal of his complete music catalogue from Spotify. Since then, he has released a single track on Spotify, whereas his complete catalogue is available on Tidal and Apple Music as of August 7, 2015.

In terms of music *ownership*, the intangibility of music streaming raises concerns related to the sensation of being ruled by the streaming service owners and the structures and contexts they provide for users' music experiences and practices. After all, music listening as a personal experience fundamentally relates to notions of identity, belonging and psychological ownership (see, for example, DeNora, 2000; Juslin and Sloboda, 2010). In tandem with a streaming service's enabling of interaction and participation, users experience a different kind of ownership online, one that connects to the role of archives in the service, and to the user's level of knowledge and music-related recall. There is further agency involved in the decisions regarding how to maintain music in the service, and along the way, as music must be organised, stored, absorbed and retained within the changing frame of an online interface, a new notion of intangibility arises as well.

Abundance: Paradise or Paradox

Alongside the general development of music-streaming services, music databases have continued to grow during the period of this study as well. When I started this project in 2012, Spotify claimed to have fifteen million tracks available, and WiMP Music, thirteen million. Today, both Spotify and WiMP Music (now Tidal) boast about thirty million tracks in their services, and Spotify claims that twenty thousand new tracks are added to the service

every day.[8] The two services have remained more or less equal in total numbers over the course of this project, but their catalogues include some qualitative differences in terms of, for example, music artist nationality and genre. In both cases, however, the amount of music that both dedicated fans and casual listeners can access is far beyond anything that has been available via other formats or media.

Certain basic questions arise regarding one's music management when one has thirty million tracks on hand. Which practices are triggered, for what purposes, with what features, and to what effect are all interesting aspects of streaming service orientation and music navigation. There are also playlist practices to explore—how music is stored, within which systems and schemes, and how this effort is both implemented and perpetuated in ways that become meaningful to the user.

Other concerns relate to how one explores music via a streaming platform. This transcends simple issues of scale to encompass whether one's exploration is strategic or serendipitous and which service features are used—for example, service-highlighted recommendations or browsing and searching tools. It is also by no means clear whether listeners actually make use of the massive databases to try new music. Still, results from the study of streaming data in Clouds and Concerts, indicate that users of WiMP Music indeed utilize this abundance, for instance concerning the large number of different artists an average user listens to over a nine-week period (around 100), and to a very little extent continue to listen to the same favorite artists over time or the following year, choosing music which is novel for each user over music streamed before (Maasø, 2014b and Maasø, forthcoming).

These questions all evoke an older quandary that concerns exactly how people in technology-driven societies actually deal with the information overload that inevitably comes about, according to Herbert Simon (1971). A wealth of information can lead to a poverty of attention, demanding, in turn, that we shape and allocate our attention efficiently (Simon, 1971: 40–41), in the present case with regard to both music listening and service information. Pressure upon our decision-making sometimes leads to a 'paradox of choice' (Schwartz, 2004), which refers to the reality that having too much to choose from sometimes results in less satisfaction with our choices. The Internet, however, has also been labeled a 'paradise of choice', whereby 'The paradox of choice turned out to be more about the poverty of help in making that choice than a rejection of plenty' (Andersson, 2006: 174).

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[8] Statistics retrieved July 2, 2015, from Tidal: https://support.tidal.com/hc/en-us/articles/201167102-How-much-music-is-available-in-TIDAL- and Spotify: https://press.spotify.com/au/information/

How we make our choices and thus develop our practice determines whether our basic experience of music streaming is oppressive or liberating. In this regard, individual skill and cleverness, previous experience and depth of knowledge are basic aspects of our experience of technology and the products, including music that it enables. In many ways, issues of music abundance are intensified as a result of streaming's intangibility, because it is simply impossible to remember what we might have heard and enjoyed in times past. This impacts both how we can retrieve music from the abundance of the cloud but also how we refer to or rely upon music information in general, including album and track titles, artist names, background information, lyrics and related visual information.

In sum, topics of interest that are consequences of the abundance and intangibility of music-streaming services tend to revolve around the experience of the platform as challenging and/or empowering for users. The issues that come up are both value laden and related to practical implementation, as we will see as we turn to the third core aspect of music streaming platforms: their social network features.

Social Network Features: Music as Personal and Social

The main purpose of the dissertation is to identify characteristic experiences involved with the cultivation of one's personal music interests using music-streaming services. Notions of selfhood in relation to music are relevant to all of the topics I address, and I regard music streaming services as personal media (Lüders, 2008; Rasmussen, 2014) as much as social media. Still, the technology literally embeds a social network within itself, and the ways in which one experiences individual notions of the self are often strengthened when positioned in relation to the notions of others (see, for example, Giddens, 1991; Simmel and Wolff, 1964), and this is exactly what the social features of music-streaming services enable users to do. I would argue that the social features of streaming technology situate streaming media as both personal and social and comprise a core aspect of the experience of music streaming.

Just being online allows the ready sharing of music via a streaming service—telling friends about artists, albums, tracks and playlists can be done either by sending them links via email and SMS or by posting directly to Facebook, Twitter and other sites. Both Spotify and WiMP Music also enable users to connect with others directly within the service via Facebook, which offers access to friends' playlists and favorites, as well as feeds of others' recent or ongoing activity.

In addition to issues of interest concerning users' general attitudes towards social network integration and online connectivity with regard to music consumption, the streaming services' social network integration touches upon basic human questions as well. In terms of social media, one must determine one's individual boundaries regarding what is personal and what is shared or social (Baym, 2010). Seeing friends' music and sharing one's own music involves notions of personal taste and preferences, both in terms of the listening self and of one's sharing patterns with others. Users choose to customise patterns of sharing via privacy settings and selectivity of music or recipient, for example, practicing what is known as 'impression management' and activating self-identity (see, for example, Goffman, [1959] 1990). Because both friends and actual artists can be followed online, streaming services sometimes act as opinion leaders or consultants regarding whom users follow (see, for example, Granovetter, 1973, Rainie and Wellman, 2012). More generally, we might ask how the social streaming network is viewed as a resource for music discovery. The ways in which users think about music and social networking are impacted by streaming's qualities of scale/scope and intangibility, as well as the everyday nature of streaming practice in many different contexts.

Social network integration as a core service characteristic differs in part from the two others—abundance and intangibility—because while the latter two are persistent conditions, the user may deselect the social networking features at will[9]. Nevertheless, the option alone activates key aspects of the user experience of streaming, whether it is exploited or not, and I see it as equally relevant.

The opportunities and challenges that accompany the three core characteristics of music streaming engage with both the technological structures that are embedded in the services and the human contexts that emerge in relation to them. They have therefore guided the organisation of my research and are reflected as structural units in the method design. They have also helped to bring coherence to the larger thematic narrative of the dissertation, because they represent touch points in all of the articles, as well as this covering paper. As already mentioned, these core characteristics will return in my theoretical discussion and the conclusion of this covering paper. Next, I will present the streaming technology's identifiable structures.

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[9] Spotify started out a with social sharing feature where all content was shared to all contacts as service default in direct after the Facebook-integration in 2011, Later, in more steps of development, the service has altered the settings towards more user control of moderating their social networks of sharing and following.

Music-streaming services have pursued and presented various models of business and distribution. As opposed to ownership models like the download stores of music distribution (for example, iTunes or Amazon), where consumers purchase a permanent license to listen to a given song as many times as they want, music-streaming services provide consumers with access to every song in their music catalogue for a limited period (Wikström, 2013: 105). These access-based models are managed through diverse payment systems. Soundcloud and YouTube are free; Spotify and WiMP Music (now Tidal), as well as Apple Music, Deezer, Rdio and Rhapsody, are not free, or not entirely free. Some services vary their subscription opportunities through family plans or pricing based upon level of access. Spotify runs a *freemium* (free and premium) business model, meaning that part of the product, possibly supported by advertising, is given away to a large group of basic users, while a premium, value-added and often enhanced version is sold to a smaller group of advanced or motivated users (Teece, 2010: 178). WiMP Music offers only pure premium models, often with a free trial period in advance of the charged subscription.

The economic models of music-streaming services follow the market and influence one another. The launch of Apple Music in July 2015 promptly set a new bar for the industry, given Apple's massive consumer base. Its offer of a three-month free subscription before fees apply prompted Spotify to offer a two-month trial of its premium account. While Tidal presently offers thirty days of free listening to its new users, when WiMP Music relaunched as Tidal in Norway, the new service attempted to retain users by offering them three months of free Tidal access.

The access model of music-streaming services is also often called on-demand music streaming, and it is my focus in this dissertation, because it involves more user interaction with the services and their music selection. In comparison, simpler models would include the radio-like music-streaming services Pandora, Songza, or iHeart Radio.

Given the continual service innovation in the music-streaming market, providers must continue to attempt to differentiate their services and maintain their profitability by offering new or unique 'contexts' for the user's music access (Wikstöm, 2012). These contextual characteristics and features result in distinct service profiles and characters, as well as the 'wrappings' of the online music experience. I will now summarise the basic contexts and features of Spotify and WiMP Music, the two services used by the informants who supplied this study's empirical material.

Spotify

Both Spotify and WiMP Music originate in Scandinavia, which partly explains the early and widespread use of music-streaming services in that region. Spotify was founded in Sweden by Daniel Ek and Martin Lorentzon in 2006 and launched in October 2008, and it has now penetrated fifty-eight global music markets (as of summer 2015).[10] In other words, Spotify has long dominated the international streaming market, and it continues to grow—between May 2014 and June 2015, according to the service itself, paid subscribers doubled from ten to twenty million people. The total user base has now surpassed seventy-five million people, meaning there are fifty-five million active free users (Ingham, June 2010).

The free version of Spotify provides listeners with access to its vast content, but advertising interrupts the listening experience, and there is a limited provision for skipping tracks during use or accessing music in offline mode. The premium subscription is about ten dollars a month, in Norway it is 99 kroner, and offers an ad-free experience with unlimited skips, offline listening on all devices and any track at any time. An additional context characterising user access to music in Spotify is its partnership with Facebook, through which users can share music and follow (and see) others' music by connecting with friends, acquaintances and even strangers (Cionsi, 2011). In addition, Spotify promotes features based on algorithms that provide users with particularly tailored music experiences. By noting what users listen to, which artists they follow and what their networked friends are listening to, Spotify is able to generate more precise, customised tips to enhance its browser, discovery and recommendation systems.

The provision of algorithm-driven content in Spotify has changed over the course of this study. When I gathered my data, algorithm-based features were provided via applications from external providers that users could add to their accounts. These apps delivered music aligned with specific moods or themes, or taken directly from music magazines, labels or festival organisers. In 2015, Spotify have abandoned the apps in favour of a new service interface that provided music according to mood, genre, hour of the day, season, decade, and other themed contexts. Such changes continue to appear all the time.

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[10] See the full list of territories where Spotify is available (as of 30 June 2015) here:
https://support.spotify.com/au/learn-more/faq/#!/article/Availability-in-overseas-territories.
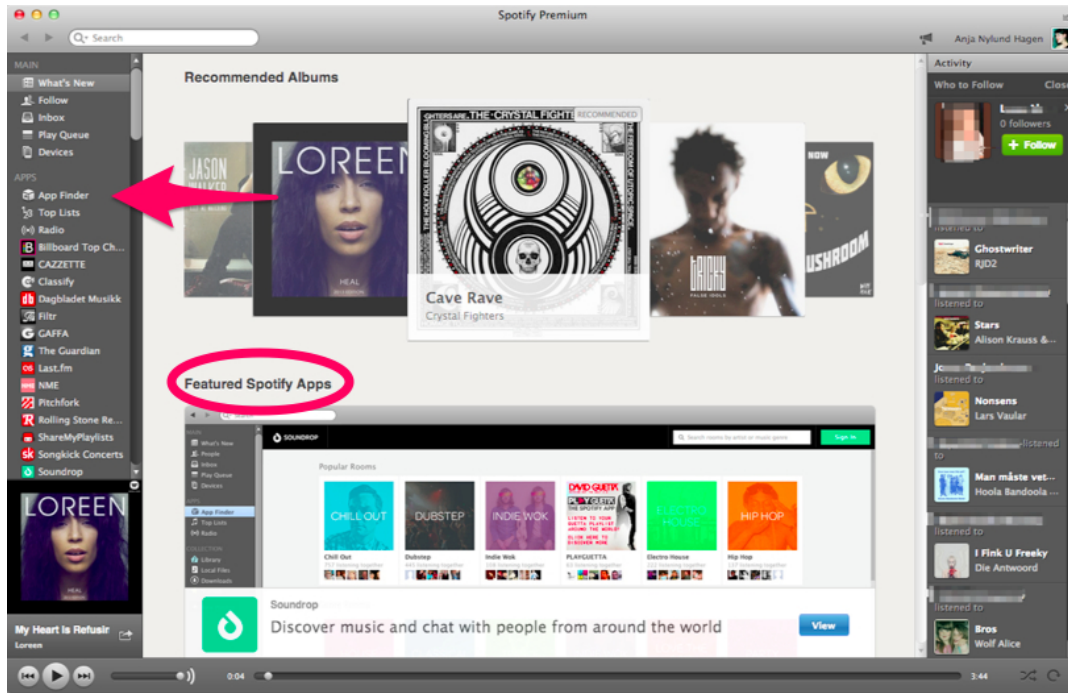
Figure 2. Screenshot from June 2013, of my Spotify front page (laptop) under the current top tab 'What's New'. Spotify's apps are highlighted in pink.
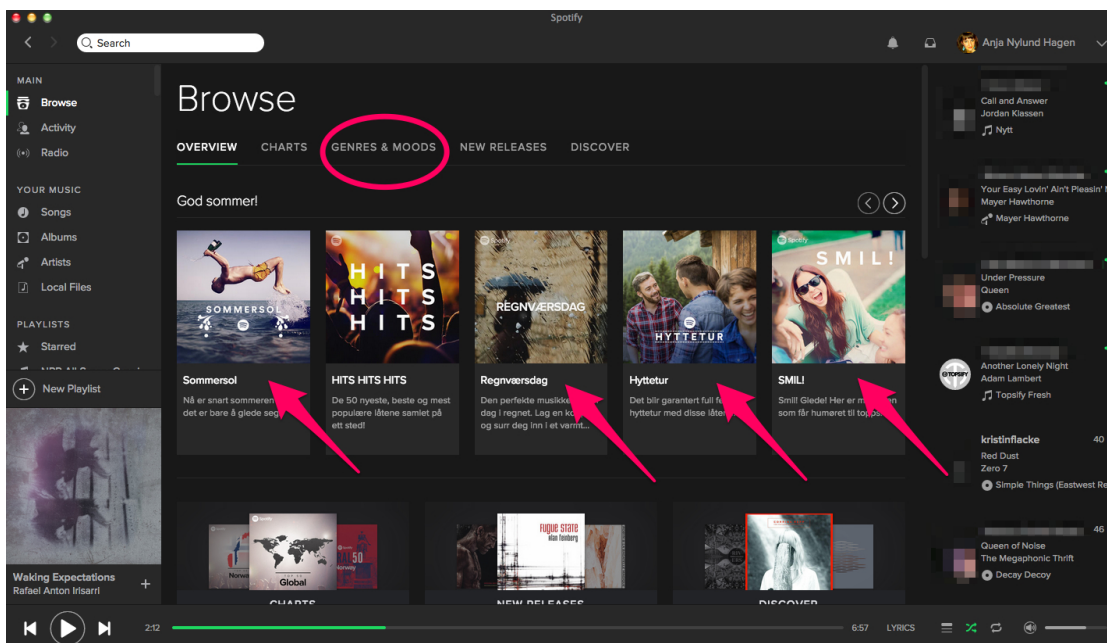
Figure 3: July 2015 screenshot from Spotify on my laptop under the current top tab 'Browse'. The apps have given way to more context-based provisions and tailored suggestions, marked with pink.

WiMP Music

WiMP (an acronym for Wireless Music Player) was launched in Norway in 2010 as a collaboration between the digital service provider Aspiro (aspiro.com) and the largest record store and music retailer in Norway, Platekompaniet (platekompaniet.no). In January 2015, a

group including rap artist Jay-Z bought the company from its current Norwegian developers and owners, Aspiro and Schibsted, and relaunched to the worldwide market under the name Tidal. The service is now available in thirty-eight countries[11], but as the main office remains in Oslo, Norway, its basic service profile has remained the same, at least so far.

What differentiates this service the most from its competitors is the prominence of its editorial teams, which primarily consist of former record-store clerks and are presented as a local and 'human' alternative for music streaming (Kjus, 2015), even though WiMP Music also uses algorithms and statistical estimates. These teams provide the service with curated editorial content, promote local music in each country, and compile transnational playlists dedicated to seasonal events and events with a musical news value (for example, new releases, festivals and concerts, or an artist's comeback or death). The editorial teams also offer magazine-like content (feature articles, reviews and artist interviews) and invite celebrity guests and musicians to present personal playlists.
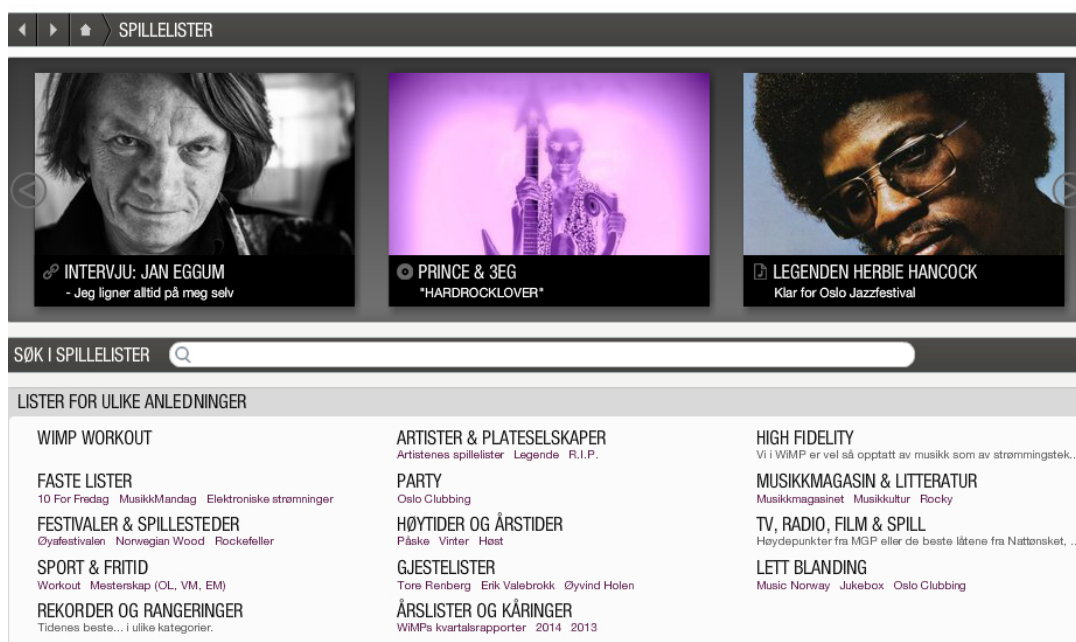
Figure 4. Screenshot from WiMP Music of August 2015 exemplifying highlighted editorial service content: an artist interview; a new single release; a catalogue flashback of a festival headliner; and various playlists for diverse contexts and purposes.

WiMP Music also features social network integration, with which to follow and share music, but compared to Spotify, it is not as remarkable as the service's commitment to a fully lossless sound experience. Exclusively for WIMP Music's premium subscribers (who pay

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[11] Totaled from Tidal Supports site 'Which Countries Is TIDAL Available?' (1 July 2015):
https://support.tidal.com/hc/en-us/articles/202453191-Which-countries-is-TIDAL-available-.

twenty dollars/pounds, or two hundred kroner, a month, which doubles the standard fee), the service delivers its music in better sound quality than its competitors (Nordby, 2013). WiMP Music is advertisement free and therefore offers no free access, which has buttressed an industry argument for more subscriber revenue going directly to musicians and copyright holders (Kjus, 2015). Another WiMP Music tendency that was particularly present at the time of data gathering in 2013 was its emphasis on album listening, as opposed to Spotify's inclination towards single track listening—presumably in part due to the ability to *star* single tracks, and not albums, when storing and retrieving music in Spotify. While WiMP Music, on the other hand, provided easy access to store full-length *Album Favorites,* in their original order, making this a likely user choice.

The Newness of Music Streaming

In this introduction I have described and characterised the music-streaming service as a distinct format for music consumption. The core qualities of abundance, intangibility and social network features, either separately or taken together, connect this format to larger discussions about current Internet experiences. Yet they also differentiate it, at least in terms of how music is consumed in the context and company of these qualities.

Given the rapid pace of technology development, this introduction gives at best a fleeting glimpse of what music listeners presently encounter with this technology. It is less these particular details than the overarching emphasis on the user, not the business model, that distinguishes the contributions of this study as a whole, however. This introduction, then, seeks to provide a frame with which to position and understand personal music-streaming experiences—a frame that is basic for this study but potentially also useful for further research on online music experiences.

While the design of these services' content and features foregrounds particular affordances and preferred uses, only the users themselves can supply any perspective on what happens next. This acknowledgment evokes an interesting notion that Gitelman and Pingree (2003) find in the claim of Rick Altman regarding the way in which any new medium emerging in the society must go through a period of 'identity crisis'—an uncertain and ill-defined state in relation to established and known media and their functions. While crisis is a strong notion of an identity, however, this metaphor is useful to address how a new medium's meaning, potential, limitations, publicly agreed-upon sense of what it does and for whom have not yet been pinned down. These ultimate meanings or functions of the

new medium can only arise over time in relation to its users' existing habits with established media and desires for other content and habits as well.

Drawing on this principle throughout the dissertation, I will also investigate the streaming media's undefined identity by exploring how technology acquires meaning through practices and implantation in everyday life. In this regard, it is useful to know what users find distinctive about their experiences with this technology, but also what appears to be new in their everyday relationship with music. The goal is to understand these media experiences in terms of how they acquire particular meanings, power and characteristics through their position in everyday life (Gitelman and Pingree, 2003).

Media and Music Use in Norway

Norway is a good starting point for the task of understanding what the implementation of a new medium means in terms of changed user habits and the economy of the music industry. As mentioned, the country boasts one of the globe's pioneering music-streaming markets, and I will next shed further light on this by looking at the overall media situation in Norway. To provide a picture of the Norwegian population as Internet users, I will also address social media use in Norway, in addition to the prevalence of music streaming in Norway. Unless otherwise noted, the numbers presented here derive from from TNS Gallup's second-quarter report on Internet and technology use among Norwegian households and individuals, completed in June 2015.[12]

Norway's infrastructure of broadband and mobile networks is well established and has a long reach, so that 96 percent of the population have access to the Internet, and 88 percent are online daily. In turn, 94 percent of Norwegian households have wireless Internet installed. The average Internet user is online about 140 minutes a day, and younger users are online longer (206 minutes per day among fifteen to twenty-nine year olds). Norway has also a great interest in new media technology, and the average Norwegian typically uses 2.3 electronic devices with Internet access per day, including desktop computers, laptops, tablets and smartphones (and 85 percent of the population has a smartphone).

This means a lot of online activity, which can be demonstrated by looking at the registration on social media networks among the Norwegian population. Among social

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[12] TNS Gallup's interview panel for the report *Interbuss Q2 2015* consisted of 1,132 people above the age of fifteen. I was obliged to receive the report from TNS Gallup's project leader, Alexander Eidsæther, in July 2015.

network users who report being *active* on at least one social media network, they are, on average, registered with three social networks in all. Users between fifteen and twenty-nine years old are registered on 4.5 social networks on average, whereas users over sixty years old are registered on 1.8 social networks on average. Only 3 percent of the population between the ages of fifteen and twenty-nine are not registered on any social network site. In terms of frequency, Facebook is the network that is most visited daily, followed by Snapchat, Instagram, Twitter and LinkedIn. A total of 49 percent of the population reports accessing social media sites from their mobile phone on a daily basis.

With these starting points, the path to an online service for music listening seems clear, and indeed, 52 percent of the Norwegian Internet population currently uses Spotify, and 19 percent currently use WiMP music. These two services are the biggest in Norway by far, with roughly seven out of ten Internet users accessing one or the other.
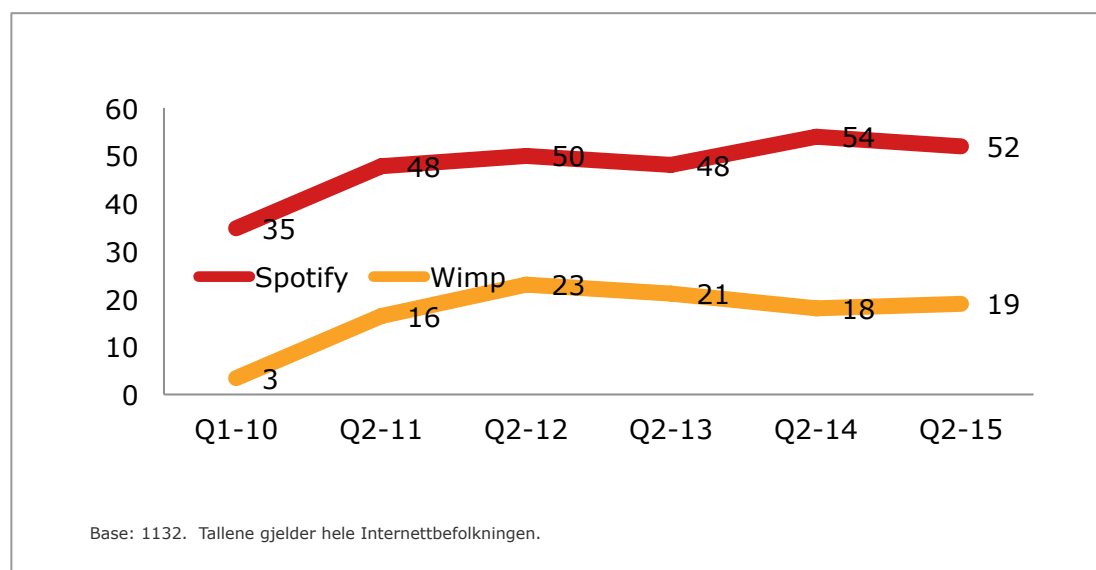

Figure 5 This table demonstrates percentage of the Norwegian Internet population accessing Spotify and WiMP from 2010 to 2015. Source: TNS Gallup.

Among the diverse devices used for music listening, the role of the mobile phone has grown exponentially, and 21 percent of the population reports accessing music from their mobile phones on a daily basis. This includes both music listening from local files and music streaming.

Results from the research project *Clouds and Concerts* also demonstrate that mobile streaming increases annually. Studying a total of 72 weeks of user data from WiMP Music each year from 2010 to 2013, the share of streams from mobile clients increased from 35 percent to 66 percent (Maasø, 2014b; Maasø, forthcoming).

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Yet even as the entire population increasingly turns to music streaming, it is the young music listeners' changed user habits that have had the biggest impact upon Norwegian music consumption in general. In December 2014, only 4 percent of the population under the age of thirty used an illegal file-sharing service as a source for music listening, and less than 1 percent responded that this was their primary music source. Among this same group of consumers, 80 percent reported using a music-streaming service in their daily listening (IFPI Norge, 2014).

This also impacts the Norwegian music industry, which has become increasingly optimistic in recent years thanks to music streaming, which they see as integral to being able to rebuild a substantial, healthy music economy after years of struggle. While physical sales decreased 36 percent and downloads decreased by 15 percent from 2013 to 2014, the percentage of streaming revenues in relation to the overall commercial music revenues in Norway increased from 65 percent to 75 percent (IFPI 2014). Also, from 2009 to 2014 music piracy and illegal file sharing has gone down by 80 percent since the advent of music streaming (IFPI Norge, 2014).

Taking into account its general technological optimism and solid economy, Norway can be regarded as a 'test laboratory' for possible future developments and implementations in terms of new media and Internet technology. This position gives the present dissertation great potential for significant international interest as well.

Summary

In this introduction, I have provided an overview of the dissertation's principal focus and contemporary context, and I have outlined its structure and contributions. I have also described the basic technology, features and conditions of music-streaming services as they currently exist. In all, the introduction provides a period image of music streaming and frames the contemporary situation surrounding the technology and its implementation in Norway. In the next chapter, I will situate the study in the context of existing research on online music technologies and personal everyday music listening.

Chapter 2: Situating the Research Field

The changing circumstances of the music industry since the advent of the Internet in general and Napster in 1999 in particular have sparked great public debate regarding the consumption and distribution of music. This debate has found its way to academia as well, inspiring research on issues related to *revenues from music sales* and *copyright*, as well as the emergence of new online *business and ownership models*, *file sharing systems*, and *music piracy.* Another topic concerns change in the *cash flows* among audiences, intermediary music providers, copyright holders and musicians. Lastly, scholars have looked at what *Internet technology* means for public music consumption, which is the theme of the present study as well. Music-streaming services appear in a number of these conversations, though it is admittedly a very new technology, even in a relatively young and fragmented field of research.

In the following review, I will concentrate on studies that help to situate the present project in a fairly narrow frame within the larger field of online music technology studies, although selected research from phenomenology, sociology, psychology, musicology and media and communication studies constitutes important contexts for the dissertation. In particular, I will look at studies that have explored the *Internet as a context* for music consumption from a user perspective and further highlight relevant research on *everyday music and media uses.* I will mostly stick to those projects that involve new music media, though there are others that work with more traditional technologies.

I will begin with studies of online music practices and experiences published in the last fifteen years or so, including articles as well as books. I will include research addressing various new media technologies (social music networks, file sharing and peer-to-peer networks, iTunes, iPods, music streaming services and so on), provided that it makes a contribution I consider distinct and relevant, and that it represents an important direction and approach in the field.

Before I look at this relatively recent research into the consequences of online technology on individual music consumption, however, it is worth mentioning the history of related concerns in academic investigation and critique. Technology's impact upon music as a commodity, and in terms of its consumption and as an experience, has been discussed ever since music began to be distributed to the masses in the early twentieth century (Adorno [1941] 1994, Benjamin [1936] 2008) and has occupied scholars throughout the history of recorded (popular) music (see, for example, Frith, 1986, 1996; Katz, 2004; Suisman, 2009).

Internet Technology and Music Consumption

The larger research project that includes this dissertation—*Clouds and Concerts: Mediation and Mobility in Contemporary Music Culture*—has over the years 2011 to 2015 prompted much research into music experiences using new online music services, and into live music festivals (as well as the interrelation between the two). It is one of the first projects anywhere to benefit from actual streaming data from a streaming service—nine weeks of streaming logs each year from 2010 to 2013 from the Norwegian streaming service WiMP Music enabled the project to develop a unique insight into how people relate to music in everyday life. The project's broad scope of interest has allowed for both quantitative and qualitative methods (focus group interviews, fieldwork, and expert interviews, as well as the various methods I have used here). Results have been disseminated nationally and internationally (see, for example, Cills, 2015; Kjus, 2015; Kjus and Danielsen, 2014; Maasø, 2014 a + b), and several more publications are forthcoming. Both the larger project and this particular dissertation are in fact situated at the crossroads of several research traditions, which I will present below.

At the beginning of the new millennium, Jones (2000) called for scholarly research to focus on everyday experiences with music in the context of new Internet technology, with an emphasis on *personalisation and individualisation* in the disaggregated online music market; *knowledge of music* and *evolution of taste* as consequences of the online media's search engines, 'recommend' systems and potential music exposure; the nature of fandom and *music affect in practice* as these took new forms of expression online; and, lastly, any impact on the discourses of *authenticity and value* as music moved towards these less-tangible media. The present study answers this call, as have others in various interdisciplinary fields dedicated to the heritage and ecology of online music consumption in all of its cultural, social, technological, economic and legal complexity (Nowak and Whelan, 2014).

Research into listening behavior has tried to understand the relevance and consequences of algorithms for adaptive taste and music preferences by using test groups to measure playlist experiences (Pauws and Eggen, 2002), or by testing software recommendation systems and the associated metadata from large music catalogues in file-sharing networks (Andric and Haus, 2006; Wang, Jianzhong and Shengfei, 2002), according to moods in the music (Laurier et al., 2010), or in relation to the semantic and acoustic qualities of the music (Ferrer and Eerola, 2010).

More sociologically oriented research on online file-sharing behavior has explored structures and patterns of use by, for example, addressing MP3 file-sharing in relation to issues of status and power, social conflict and resolution (Cooper and Harrison, 2001). As the spatial and physical distribution of music had changed, so too has its role as a meaningful part of people's lives, as music has come to be seen as less bound by geography or medium than by interest (Jones, 2002). Peer-to-peer practices have been addressed as Internet gifting phenomena that are driven by altruism regarding sharing as much as an interest in free music (McGee and Skågeby, 2005). Alternatively, file-sharing networks have also been found to be asocial, impersonal and anonymous environments populated by both altruistic givers ('citizens') and non-contributing takers ('leeches') (Adar and Huberman, 2000). Such perspectives on the user's role online have been critiqued for masking the technical dimension of the interaction and overestimating the user's ability to control or simply cope with the technical system (see, for example, Beuscart, 2005). Another critical approach has framed online music practices as labour, and hence a commodification of the pastime of music listening that favours the retailers and record labels (Drew, 2005). At the same time, exchange and gifting have been recognised as effectively de-commodifying music as a consumer good by way of users' constructs of individual and collective identities, following arguments derived from contemporary research on consumer culture (Arnould and Thompson, 2005; Miller and Horst, 2006; Miller, 2011) and sociology (Campbell, 2005). Beer (2005a) summarised the state of the music and the Internet in the early 2000s as characterised by competing utopian and dystopian rhetorical formulations that in turn informed conceptualisations and ideological representations of its relationship to music.

Another central approach to online music experiences has engaged with digitally delivered music's increasing accessibility, its new intangibility as a commodity, and its impact upon the revitalisation of music collecting. This approach has produced more or less optimistic theoretical assessments and predictions regarding music fandom, collecting, passion and control (McCourt, 2005; Burkart, 2008; Beer, 2008) and touched on certain themes of other contemporary Internet research, such as ubiquitous online access (Rifkin, 2001), the 'long tail theory' (Andersson, 2006) and online use as 'produsage' (production and usage) (Bruns, 2007). A few empirical accounts have proposed that processes of organising intangible music files into 'collections' return a sense of materiality to digital music (Kibby, 2009). Avdeeff (2012) has also examined the consequences of iPod technology for individual music engagement and taste formation, and playlist compilation has been linked to self-definition and to everyday passing of time (Schaefer, 2008;

Kristiensen, 2014). Skågeby (2011) has compared user values involving 'slow' cassettes mix tapes and 'fast' music-streaming media playlist making as related portable music media phenomena. Incidentally, Skågeby has also confirmed my impression that, aside from a good amount of technologically oriented work on automatic playlist generation (including those studies presented above), little research has been conducted into the social and personal uses of playlists (Skågeby, 2011).

In relation to the larger research field of participatory culture (Jenkins, 2006) and specifically the maintenance of relationships through social media (Lüders, 2008; Baym, 2010; and Marwick and Boyd, 2011), the social interaction of online music users has been found to exacerbate the tension between the communal and personal aspects of music maintained online (Jones, 2000). Studies of the development of virtual music communities (Poblocki, 2001), and of the dynamics of music in the cultivation of a sense of belonging and social interrelation (Van Dijck, 2007), have begun to unpack social online music practices, and music files, playlists and recommendations have been demonstrated to be vehicles of meaning to be shared among friends and acquaintances (Liu and Reimer, 2008; Komulainen, Karukka and Häkkilä, 2010; Leong and Wright, 2013). Baym and Ledbetter (2009) have identified friends with weak social ties sharing their musical tastes in the online music-streaming network Last.fm.

In terms of online music *discovery*, close friends remain very important (Laplante, 2011; Tepper and Hargittai, 2009), despite the user's ability to encounter music recommendations from larger, more diverse networks. Nag (2010) has uncovered diverse modes of online music discovery (self-initiated, social circles, music arenas and random), but in general, online sharing and music discovery recall the dominant patterns of pre-digital social music practices, including the positioning of friends as the main source of recommendations (Shuker, 2001; Russel, 1997). Further research into online music discovery would appear to be warranted, given the music-streaming services' potential to align with larger networks, such as artist communities and Facebook.

Research focusing on social interaction online has also found that sharing music with others involves negotiations of what identity to portray to whom, in terms of what music to share with whom (Voida, Grinter, Ducheneaut, Edwards and Newman 2005, 2006). This confirms that music management continues to be highly personal, and that some music can be too intimate to share (Jones, 2011), which, in turn, recalls pre-digital theories about reflexive self-performances through personal (music) consumption with possessions as

markers of identity (see, for example, Giles, Pietrzykowski and Clark, 2007; Goffman, [1959] 1990; Bolin, 2011).

Ethnographic research approaches have uncovered basic resonances between online music network dynamics and general musical (sub)culture dynamics, involving negotiation of common cultures, individual styles, identities and groupings (Ebare, 2005; Ayers, 2006). While this overview of relatively recent research has demonstrated that music is an important part of Internet culture, sociological and ethnographic research has further indicated that the Internet presents a 'special case' with regard to music relations, experiences and practices (Sterne, 2006a).

Music in Everyday Life

As presented in the introduction, the ubiquity of the Internet and mobile technology underscores the music-streaming service's potential impact upon daily life, which is an important background to this study. For example, in chapter 5 I engage with the concept of musicking, Small's notion of music as a relational set of meaningful activities rather than a work or thing with a specific ontology (Small, 1998, 1999). As an early contribution to the study of music as part of the everyday construction of meaning (DeNora, 2000), and of music as social life (Turino, 2008), musicking has been critiqued for being too readily adapted to any cause (Hesmondhalgh, 2013). It has been redefined more than once as well, including as follows: 'the context-specific activity of directly engaging with the materials of sound' (Borgo, 2007: 97), which would include online music media. Yet I have found that the concept *is* adaptable and heartily endorse the claim that it 'lends itself to empirical investigation, to the extent that musical world-making practices and their consequences can be tracked and documented' (Batt-Rawden and DeNora, 2005: 289).

Musicking has been described as a form of literacy that can enhance young people's learning skills (Cope and Kalantzis, 2009), and that links to the lifeworld of young people (Riddle, 2014). Riddle considers musicking to be an important part of the multimodal, hybrid and intertextual experience that aligns with the 'nature of instant messaging, [which] allows young people to enact performative and multiple enactments of their own self, adapting to the roles and relationships required of them in different social contexts' (Riddle, 2014: 240)

Another contribution to the study of music in everyday life is DeNora's sociology oriented, pragmatic theory of everyday musical meaning and affect (2000). DeNora sought to address the 'gap' between the *structure* of music and the *feeling* of the music as two

theoretical ends of a misguided spectrum. By acknowledging music's power at a level of daily life, we can approach it from every dimension of social agency: 'Music may influence how people compose their bodies, how they conduct themselves, how they experience the passage of time, how they feel—in terms of energy and emotion—about themselves, about others, about situations' (DeNora, 2000: 17). A related sociological approach informs Antoine Hennion's understanding of music as mediation at a particular moment in time (2007, 2008, 2012), which takes account of the musical work in all of its 'details of the gestures, bodies, habits, materials, spaces, languages and institutions that it inhabits' (2012: 81). An emphasis on understanding music's impact upon everyday life is reflected in the ecological understanding of what music affords (DeNora 2003; Clarke, 2005) and also critiqued for being to simplistic or optimistic (Hesmondhalgh 2007, 2008, 2013).

Everyday music listening has been approached from multidisciplinary perspectives involving the interaction between music and emotion, with Juslin and Sloboda's work as the principal contribution (Juslin and Sloboda, 2001, 2010). In particular, Sloboda's interest in ordinary, routine, habitual, multi-functional music experience is important for the present study, given the large number of mundane and very personal music experiences in everyday life. Sloboda also notes that research on everyday music experiences benefits from fieldwork, experience-based sampling methods and thick description (Sloboda, in Juslin and Sloboda, 2010: 503–504), which is very much in line with this study, and also applauds earlier ethnographic approaches to understanding people and their musical practices (such as Cohen, 1993; Born, 1995).

Hesmondhalgh (2013) has offered an important theoretical contribution to the understanding of music in everyday life and society that is adapted to the present day and hence very relevant to this study. By making the critical review of central perspectives upon musicology his account of why music matters highlights that 'we need to find enrichments in the more demotic, mundane and compromised forms of sociality to be found in modern urban life' (Hesmondhalgh, 2013: 101), as music relationships not float 'free of the profound problems we face in our inner lives and in our attempts to live together' (Hesmondhalgh, 2013: 171).

Nowak (2014) claims that the study of music in everyday life has too readily dismissed the kinds of material engagements that define our everyday listening practices. As we shall see, however, at least a few of these technologies and materials have indeed been studied at this point.

Mobile Music Listening

The release of the Walkman in 1979 anticipated a new approach to the meaning of listening, and the 'Walkman effect' as an urban strategy arose from the first known study of the mobile music experience (Hokosawa, 1984). Likewise, Schönhammer's (1989) brief study of Walkman listening looked at these experiences from the inside perspective of listeners and the outside perspective of observers of listeners using a phenomenological approach. Observers at that time tended to characterise people with earphones as dumb, antisocial, immature, egocentric, autistic, and so forth (129), evincing a discomfort with the separation of the 'earphone being' separation from the common, natural soundscape (Schönhammer, 1989: 129).

In the British cultural studies tradition, another well-known study of the Walkman has remained relevant to this day, thanks to its demonstration of new patterns in mobile music consumption and its linkage of those patterns to certain symbolic cultural meanings (Du Gay et al., 1996). A more recent revision of the study shed further light on the Walkman as a cultural artifact by comparing it to new mobile music technology (Du Gay et al., 2013).

Michael Bull's interviews with listeners about Walkman and later iPod use in the context of everyday life comprise an important benchmark for research on digital mobile music listening (2000, 2005, 2007). Through this technology, Bull showed, listeners manage their urban everyday spaces through an 'auditized look'. Bull's research informed several subsequent empirical studies of mobile music technology use, including a phenomenological approach to the sonic composition of the city (Thibaud, 2003), a look at mood management in everyday life from a health perspective (Skånland, 2011), a study of Russian youths (Goldenzwaig, 2014), a study of aestheticisation (Stenseng, 2008), a feminist approach (Werner, 2015), and the development of the notion of the *sound environment* as a theoretical and empirical model for understanding ubiquitous music listening (Nowak and Bennet, 2014). Relatedly, Williams's (2007) account of the ten functions of portable music use with iPods adapted Bull's work as well, with a strong emphasis on the fusion between the music and the technology. A negative take on the effects of mobile music listening can be found inBrabazon (2008) and Simun (2009).

Straw's discussion of music's materiality in relation to its current inclination towards mobility and aggregation also sheds light on everyday interactions with mobile technology (Straw, 2012). Also important is Kassabian's insight into what she calls ubiquitous listening

that is experienced *without* acknowledging the materiality of the musical format—that is, in the context of its 'sourcelessness' (Kassabian, 2013).

Sound Studies and Mobile Music Studies

As an emerging theoretical and empirical paradigm (in relation to the widespread understanding of media and culture according to visual parameters), the research presented above falls within the field of *sound studies*. An interest in gathering research that revolved around the history and philosophy of sound first emerged from the area of science and technology studies, which aimed to contribute a 'focus on materiality of sound, its embeddedness not only in history, society and culture, but also in science and technology and its machines and ways of knowing and interacting' (Pinch and Bijsterveld, 2004: 636). This field is highly interdisciplinary and associated with various academic works, approaches and methodologies emerging from the human and social sciences over the past hundred years (Sterne, 2012). An area of sound studies that is particularly relevant for my research is the investigation of users as active consumers of (music) technology as part of their management of everyday life. For a detailed overview and guide to the complexity of sound studies, see Sterne (2012b).

Recently, contributions have sought to engage with more discrete aspects of music technology and its implications for society, the industry and individuals. In an effort to introduce *mobile music studies* as a new scholarly sub-discipline, *The Oxford Handbook of Mobile Music Studies* (Gopinath and Stanyek, 2014) reviews the relevant literature along certain important intersections of existing areas of inquiry (for example, music and sound studies, communication studies, literary theory, history of science, performance studies). Mobile music studies do not break with existing scholarship but more narrowly conceptualises what it privileges. It attends to listening practices with mobile devices, as well as intersensorial and multimediatic experiences, and it limits its focus to the analysis of musical interpretation, styles and genres. The field maintains an interest in studying music as a commodity, and its markets and economies, as well as the demographics and population movements that are related to mobile music devices. Mobile music studies hence pursues the study of music in everyday life (as presented above) and draws attention to the listener as much as the music/sonic producer. By de-emphasising the formerly privileged producers of

the content, the field reflects its arrival after a century of musical automation (Gopinath and Stanyek, 2014: 26–27).

Nevertheless, a number of critical issues remain underexplored in mobile music studies, 'including questions of how existing styles and traditions have come to be experienced within the new mobile dispensations' (Gopinath and Stanyek, 2014: 26–27). The present study contributes to the need for experiential research in this field by offering new methodological approaches to the interpretation of music as part of everyday life.

Although I have presented multiple approaches and directions of relevant research in this review, empirically grounded investigation is still underrepresented in this regard, and I support Nowak's (2014) charge that existing research is either too music oriented or too technology oriented, and we must now look at how 'music technologies intertwine the variables of materiality and music within the everyday contexts of listening practices' (Nowak, 2014: 10). This dissertation's focus on the relationship between individuals and music-streaming technologies, and how this interaction generates meaning, is a new contribution. In relation to the larger field of media studies, this dissertation can also be situated among studies that ask what it means to live in a media-saturated world (for example, Ang, 1996)—one where digitised media (Beer, 2005; Poster, 2004) and ubiquitous computer activity (Galloway, 2004) characterise everyday life. It ties to audience research that tries to grasp our contemporary media culture through research on personal connections (see for example Baym, 2010), the construction of the self (Lüders, 2008; Rasmussen, 2014), sociability (cf. boyd, 2014; Rainie and Wellman, 2012) and everyday life (Bakardjieva, 2005). More specifically, it could be positioned within a sociologically oriented approach to media theory that is concerned with media as practice, whereby media provide an 'entry point for understanding the organization of human action' (Couldry, 2014: 4).

Chapter 3: Introducing the Research Questions

The overall objective of this study is to explore the ways in which the multifaceted technology of music-streaming services influences the user's everyday music experiences and practices. The main research question has remained more or less the same throughout the whole process, and it is twofold. The first part emphasises the relationship between users and the streaming-service technology in the context of everyday life. I approach this by studying user practices and experiences in relation to the following: *What characterises music listeners' practices and experiences with music-streaming services, when music streaming is the main source for everyday music listening?*

The second part of the research question emphasises how the human-technology relationship potentially also impacts the *human-music* relationship: *How does music streaming affect listeners' relationships to music?*

A further question highlights the novelty and particularity of music-streaming services: *Which characteristic aspects of using music-streaming services are unique, according to this study?*

These questions have guided the overall implementation of my research and sparked the discussion in this covering paper.

Research Questions in the Articles

The second part of the dissertation consists of four articles, referred to as follows in this covering paper:

Title	Reference	Status
Paths in the Online Music Jungle: Understanding Personal Practices with Use of Music-Streaming Services	Article 1	Submitted to *Participations: Journal of Audience and Reception Studies.* In review.
The Metaphors We Stream By: Making Sense of Music Streaming	Article 2	Submitted to *First Monday.* In review
The Playlist Experience: Personal Playlists in Music-Streaming Services	Article 3	Submitted to *Popular and Music and Society.* Published online, March 10, 2015.
Social Streaming? Navigating Music as Personal and Social *Co-written with Marika Lüders*	Article 4	Submitted to *Convergence.* In review.

Each article responds to an individual research question that relates to the main questions presented above but focuses on a particular theme and goal.

In article 1, I ask the following: *How do personal music-streaming practices, shaped by diverse socio-technological arrangements, generate meaningful user experiences?* The article approaches user practices from the perspective of trying to understand how their various aspects (technological, aesthetic, contextual, and so on) shape user experiences.

In article 2, I turn to users' sense making of the music-streaming technology, given how it is used and experienced, and the role users assign to it in everyday life. I draw upon the existing Internet metaphors of *tool, space/place* and *way of being* (Markham, 1998) to respond to the following questions: *How well do these metaphors explain music-streaming experiences? How might the limitations of these metaphors shed more light on contemporary online experiences, as exemplified by music streaming?*

Article 3 goes into detail on playlists as a central aspect of individual experience with and practices related to music-streaming services. It focuses on the user thinking that is behind structural and contextual schemes for aggregating playlists and asks the following: *How do streaming users describe and make sense of their practices and experiences of creating, maintaining, and using personal playlists?*

Relatedly, article 4 also concentrates on a limited aspect of the music-streaming experience, and the co-writer and I begin by asking the following: *To what extent do music listeners regard music streaming as social?* To further explore how users' notions of music as personal and social are reflected in music streaming, we look at practices related to and experiences with the social-network features of music sharing in the context of two further questions: *Why do users choose to share or not share music, and how do they negotiate the need to balance music as personal and social? Why do users follow strong, weak and absent ties in streaming services?*

Each article responds to its individual question(s), while together they provide the starting point for the broader theoretical discussion in chapter 5 of the covering paper.

Chapter 4: Methodologies and Methods: Understanding Experiences

A Phenomenological Approach to Music-Streaming Experiences

In this chapter, I will position this study within a phenomenological framework, present my methods and explain my reasons for choosing this design. I will then account for my procedures for gathering data and empirical material, and explain my strategies for analysis and interpretation. I will conclude by addressing relevant ethical considerations.

My goal with this thesis is to look at the ways in which user experiences with music-streaming services are realised and shaped in everyday life. I aim to explore how meaning contexts related to music streaming emerge within and then come to conform to our taken-for-granted stock of everyday knowledge about the world. The study's vantage point is the user's individually perceived experiences, and its conclusions will derive from intersubjective interpretation. That is, individual notions of lived human experience are both the empirical sources and the analytical objects of this study. Given this background, a methodological framework that is informed by phenomenology emerges in the 'matter of tracing the processes by means of which we give meaning to the world' (Benton and Craib, 2011: 84).

Originally, 'pure phenomenology' looked inward to examine how lived experience is perceived and represented in people's consciousness as the only means of understanding what people can really know about their lives (Hektner, Schmidt and Csikszentmihalyi, 2007: 4). Phenomenological human sciences then developed in turn to explore the structures of lived world experiences in everyday situations and relations. Alfred Schutz converted Husserl's burgeoning phenomenological philosophy into sociology and, inspired by Weber, added his perspective on action as subjectively meaningful behaviour oriented towards individuals' practices (Schutz, [1932] 1967). In the study, I will rely upon Schutz's phenomenology, which, in a contemporary setting, encompasses the use of media as a meaningful activity, as well as notions about how personal media might transform everyday life experience through their afforded interactions in time and space (Rasmussen, 2014). I will briefly present concepts from sociological phenomenology as methodological framework in this chapter however Schutz's phenomenology and other relevant theoretical frameworks will be more thoroughly discussed in chapter five.

A main concern throughout the development of the study has been *how* to grasp

others' perceptions, feelings and sense-making related to mobile media use and personal listening experiences. This concern relates to core discussions within the history of phenomenology, and directly to Schutz's methodological interest in what we can actually know about other people's lived experiences. Towards the resolution of this quandary, Schutz developed his theory of intersubjective understanding (1967), and it has proven quite helpful in relation to the methodological question addressed here. Schutz found that individual streams of consciousness are essentially inaccessible to anyone else, but that through interpretation and others' self-explication, a *genuine understanding* of other people is possible. The interested observer must pay attention to—and actually perceive—the motives behind what a particular person's activities are indicating (Schutz, 1967: 111)—that is, what someone's actions, statements and gestures are *meant to be*, not only what they are. This is to search for the subjective meaning of the human product, or, put differently, to ask what conscious experiences other particular people might be having of the complex of lived experiences that are occurring (or have occurred). Such a subjective understanding can only be attained, however, if the product is also generally understood—conceptualised as a constituted type, then grasped as an objectification endowed with universal meaning. Schutz's way of understanding experience, it is important to note, distinguishes between objectively and subjectively meaningful interpretations. An objective meaning exists only in a meaning-context within the mind of the interpreter, whereas a subjective meaning extends beyond this to the meaning-context in the mind of the informant (Schutz, 1967: 134-135).

With this more nuanced framework, Schutz extended Weber's view that the essential function of the social sciences is to be interpretive, and to understand the subjective meanings of social action (Schutz, 1967: xxi). This is also the position I take in this study as I seek an interpretive understanding of the subjective meaning of individual *everyday actions* related to music-streaming services. My approach to these actions adapts Schutz's definition of an action as a behaviour to which a subjective meaning is attached. Whereas Schutz's phenomenology concentrated on *social* action as relational behaviour between the past, present or future actions of two or more people, however, I align this study's meaningful actions with personal everyday uses of mobile music technology. More precisely, I study action as manifested in *experience*, here defined as the content of peoples' self-awareness of thoughts, feelings and sensations, accounted for as directly perceived from one moment to the next. My specific mode of orientation remains nevertheless the subjective meaning of the action and experience, again evoking Schutz (1967).

A relationship to sociological phenomenology also characterises the *everyday* aspect

of this study, which is essential to any approach to contemporary music experiences, given streaming technology's ubiquity and embeddedness in daily life. It is those aspects of music streaming that have become commonsense and taken for granted by the users themselves that are my main topics of analytical and interpretive interest. According to phenomenological thinking, this taken for granted attitude is what gives people the apparatus with which to distinguish things and everyday concepts from one another through a complex multitude of typifications of everyday action. These 'meaning contexts' are non-reflectively, naturally and non-theoretically organised and then used to identify, classify and compare modes of social action and interaction. They are, in short, the imperatives of everyday life practice and the frames within which lifeworld experiences are constructed (Benton and Craib, 2011; Rasmussen, 2014). The user must allocate attention to these meaning contexts, and what people pay attention to—and for how long and how intensely—determines the individual's self-awareness within and experience of the world (Hektner et al., 2007: 5–6). In what follows, then, I will study the user's *lifeworld* and distinguish among the individual experiences produced by people's immediate interactions with that world. I will return to this concept in the theory chapter.

In the practical implementation of this research, however, the main methodological challenges of phenomenology have persisted—that is, how 'to develop a reliable measure of the events occurring in the stream of consciousness over time' (Hektner et al., 2007: 6), and further, how to do so in a way in which meanings can be brought to the surface without being irretrievably disturbed (van Manen, 1990: 54). As research objects, experiences are complex, particularly because they are never neutral but instead inherently imbued with interpretation and the need for explanation (Hastrup, 2004: 467). As Schutz also stressed, the understanding of a subject's meaning is at the mercy of the interpreter's ability to relationally and quasi-simultaneously experience one's fellow human beings: 'The meaning I give to your experiences cannot be precisely the same as the meaning you give to them when you proceed to interpret them' (Schutz, 1967: 99).[13]

My means of dealing with this has been to develop a method design that creatively contributes to what has been called *systematic phenomenology*. This approach departs from phenomenology's focus on lived experience by attempting to use the tools of *empirical* investigation, including the available technology and progressive research designs. My aim,

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[13] This necessary distance between the researcher and the informants meanings has been used to criticise social phenomenology as 'too trapped in internal self-interpretation of the members in the lifeworld, and thereby inhibited in pinpointing structural problems' (Rasmussen, 2014: 47).

again, is to try to capture and understand people's fluctuating awareness of their experiences and how this awareness links to both external contexts and the contents of the mind (Hektner et al., 2007: 6). With regard to music-streaming experiences, this involves acknowledging both circumstantial and inferential aspects of lived experiences as subjectively meaningful, including conceptual meaning-making, everyday routines, once-occurring acts and momentary emergent meanings.

I will next explain how I developed this methodological framework and applied it to my research design.

Choice of Methods: Capturing Individual Experiences in Flux

When individual thoughts and reflections about lived experiences—that is, personalised ontologies—are being articulated, selves are being realised, and relationships, communities and worlds are being organised into perpetually solidifying frames of meaning (Markham, 1998: 223). In conducting this study, I have had to access these subjective meaning frames and the actions that realise them as experience. It therefore became clear that I needed to see experiences and activities being articulated *as they occurred*. I therefore designed a self-reported diary study so as to ask streaming users to write about their daily music-streaming experiences as they happened. This choice of method coincides with the Experience Sampling Method that has been developed in systematic phenomenology. This method aims to capture everyday life experiences by asking people to describe emotions, motivations and cognitive processes as they occur, by asking 'How do you feel about yourself *right now*?' rather than 'What do you think about what happened?' (Hektner et al., 2007: 6–7). People's limited attention span in these situations foregrounds a *psychological selection* of focus, and people's ability to self-reflexively assess these states and describe them from their unique internal points of view spur the initial procedures on which Experience Sampling Method relies (Hektner et al., 2007: 20–21) and also the diary-method I apply.

Given my interest in ordinary everyday experiences and how they fluctuate depending on contexts, companionship, time of the day and content of thoughts, this means of immediate sampling is the best way to answer to the challenge of the ephemeral. Likewise, music listening (as the main kind of streaming experience in question, but not the only kind) is subjective and sensational as well as transient and temporary. Self-reports made during or right after listening will happily avoid potential distortion associated with the use of retrospective inquires and give the best possible access to the inner reality of

people's actual lived experiences (Hektner et al., 2007: 7, 10). These reports will also provide detailed data about and firsthand narratives of situations to which the researcher would not have direct access (Burgess 1981: 79), particularly given this technology's intangible, mobile and flexible character.

The study also has a wider aim of identifying cultural features and trends that promote both individual development and cultural complexity (Hektner et al., 2007: 28)—an initial motivation for me in terms of studying contemporary music experiences in the first place is an interest in human-technology relationships as infrastructures (Livingstone, 2005: 1). These relationships consist of the artefacts or devices used, the activities and practices with which people engage while using them, and the social arrangements or organisational forms that develop around both those devices and practices. How these components, and the relations among them, become routine, established, institutionalised, variously fixed and ultimately taken for granted in everyday life goes straight to the phenomenological core of this thesis. I am convinced that an understanding of music streaming as perceived and shaped through close interaction among individuals, surroundings and technology will shed light on the larger tendencies and characteristics of contemporary culture as a whole.

A Multifaceted Phenomena: Capturing Media Contexts in Flux

Above, I argued for self-reporting as an appropriate method with which to start to capture ephemeral, everyday music experiences with intangible music media. Yet there is more to do: the notion of human-technology relationships as an infrastructure encompasses the complexity of current everyday contexts that are characterised by the ubiquitous Internet, perpetually connected mobile devices, information retrieved in fragments, and temporal and ad hoc community formations (Markham, 2012). The analytical goal of the study goes beyond the complexity of individual sense-making in several ways.

First of all, music-streaming services as Internet-based media are phenomena in flux, with evolving and dynamic environments and often-temporary services and arrangements (Feenberg, 2009). As a research context, that is, they represent unstable frames that change quickly. As I noted in the introduction, Spotify and WiMP Music have undergone large shifts in their service designs, content priorities, profiles, policies, scopes and ownership structures during the roughly three years of this study.

Furthermore, this particular mobile and flexible service structure complicates the picture. Music-streaming services boast multifaceted layers of content and features that at

once prompt and respond to diversity. Likewise, these services can appear slightly differently depending upon the type of device (and the device's manufacturer) being used (for example, smartphones, tablets or computers). This means that the medium in question encompasses even more potential interpretations. In all, the technology, the user contexts, and the user's sense-making represent three malleable and ephemeral structures that impact the user experience of music streaming and complicate the empirical research that is necessary to explore that experience.

Of course, research at any level involves abstraction from lived experiences (Markham and Baym, 2009: 152), and scholarly understanding derives from glimpses into necessarily delimited windows to reality in toto (Geertz, 1973: 20). Given that the processes of abstraction and selection I seek to engage are comprised of multiple aspects of context, structure and individual, I required further research methods so that the processes of abstraction and selection might work together in parallel. Given that it was also difficult to identify in advance the direction and dynamic of the study's relevant concerns, a set of combined methods would provide more points of entry into the 'flows and connection points between various elements of the media ecology system, where meaning and assemblages and imaginaries are negotiated in relation and (inter)action' (Markham, 2012: 8).

Methodological Contribution: An Empirical Model for the Concept of Remix

I have described the methods used here (online observation, logging tracks using last.fm scrobbling, close reading of screen shots, and supplementary interviews conducted with streaming services open) thoroughly in the respective articles. I will also describe the methods in detail later in this chapter. I devised this combination of methods specifically for this study,[14] as the best way to capture my informants' ubiquitous music listening experiences with mobile-streaming technology. The diary study procedures were tailored to provide informants with optimal opportunities to report seamlessly during everyday-life situations, then adapted according to individual preference and already-established media habits.

Based on my experience conducting research through a pilot study, I am confident that my method combination sets an important precedent for further related research. It further produced rich and purposeful data that allowed for deep interpretive understanding.

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[14] As part of the research project *Clouds and Concerts*, one master's thesis (Kristensen, 2014) was written using the same method combination, based on my research design.

Later in this chapter I will look at the ways in which reflexive inquiry was a part of the method as well, strengthening it further.

The diary method in itself represents a productive model for studies that stand to benefit from immediate sampling, while my combination of methods allows for an accumulated understanding to emerge from a complex, often-messy field of data. Approaching the object of study from different angles by capturing parts of a bigger picture propels a kind of interpretive understanding that is particularly relevant when the research object is fragmentary and ephemeral. For example, the first phase of data gathering, with its online observation in parallel with monitored diary entries, supplied a truly unique accounting of informants' in-process considerations about and experiences with music-streaming services. Equally important, it provided immediate entry points for the succeeding interviews. I had begun to get to know the informants, at least in part, before I even met them in the interviews, based on the empirical knowledge I managed to derive from their social media profiles, music habits and diary entries. This produced fruitful conversation and the ability to dive into particular topics with both focus and depth.

My methodological approach resonates with Annette Markham's notion of the remix as a powerful research design—one that is especially relevant to interpretive studies of the digital experience and the social entanglements that join humans, web 2.0 technologies and smart mobile devices (Markham, 2012). The idea of remix as method design, interestingly, even resembles digital culture: both represent fragmentary, fluid and layered structures that, through strategic compilation of content, have the potential to produce meaningful understanding in a context specific moment of time. In line with Markham's account, I have gathered my empirical data by sampling, borrowing and creatively reassembling units of cultural information in order to link the unfamiliar with the familiar in new, resonant ways (2012: 7). The remix approach embraces and extends the concept of bricolage—it is another label for the synergy that emerges from the combination of different methodological and interpretive perspectives in the analysis of digital artefacts (Kincheloe, 2001; 2005).

In the same way, my thinking regarding research boundaries as social and evolving processes, and my research strategy based on deep immersion into the informants' own definitions of their practices, also evoke methodological approaches that are inspired by ethnography. My detailed, complex and rigourous drive towards interpretive knowledge even evokes the 'thick description' invented by Ryle and made popular by Geertz (1973: 6). This notion describes a means of understanding what people do and connects to the

phenomenological framework of understanding subjective meanings that I discussed earlier. The body of 'thick-description ethnography' includes a multiplicity of complex conceptual structures that are overlapping and blurred, and that encompass strange, irregular or ambiguous information that the researcher must first capture and then render comprehensibly (Geertz, 1973: 10). In this study, I have tried to integrate abstract concepts (symbols, ideologies, identities, metaphors, structures, rituals, world views, actors, functions and 'culture' writ large) into the empirical data to 'write culture' or render mere everyday occurrences scientifically eloquent (Geertz, 1973: 28). Like the methodological model of the remix, the use of thick-description analysis means embracing and grappling with complexity in creative processes of interpretation, rather than always trying to simplify the picture. The goal is a precise description of a point in time that produces a fleeting and contextual understanding of the world that resonates with informants' lifeworld experiences.

Of course, empirical access in ethnography is only gained through the direct observation of events, which at best I managed only in part, via online observation and (approved) eavesdropping upon the informants' streaming practices. In other words, given the nature of music-streaming experiences, pure ethnography is problematic, but it is also true that fieldwork conducted via the tracking of individual users over time might produce a different kind of insight into the contextual uses of music streaming.

Testing the Methods: Pilot Study

The number of components of and decisions implemented in my method combination are numerous, a fact which, combined with the original character of the research design, necessitated the pilot testing of this study. In January 2013, therefore, I conducted a small study with four streaming users to test the basic procedures of the diary method. The participants were users of either one or both of the music-streaming services Spotify and WiMP Music. I knew the participants well and trusted them to give me honest feedback.

The pilot study demonstrated that the method design was appropriate for the purposes of my larger project. It also gave the opportunity to improve that design. One important insight involved the differences among the four participants' preferred ways of reporting on their behaviour. Two preferred writing reports from their mobile phones using Facebook Messenger or tweets.[15] The third handwrote reports in a physical book, and the fourth emailed me daily summaries. In this way I realised the importance of facilitating the

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[15] While I tested Facebook Messenger and Twitter as means of online reporting, I ultimately decided upon custom-tailored spreadsheets in Google docs. See the procedures section of this chapter for more information.

personal and contextual preferences of the informants tasked with such immediate reporting. One of the pilot informants also described the reporting process as labourious and said that it impacted his listening experience. In the end, then, I allowed for entries to be written directly after the listening session, as opposed to during it.

The pilot study further exposed gaps in the Last.fm scrobble logs, depending on whether the music streaming was happening offline or online. Spotify, for example, only scrobbled tracks during online listening, whereas WiMP Music also registered tracks played in offline mode. The scrobble also ignored those songs that had been abandoned by the user with thirty seconds of starting. Nevertheless, the pilot proved that Last.fm scrobbling was a valuable supplemental tracking mechanism and further provided accurate timestamps and information about track titles, bands and albums with no extra effort on anyone's part. Also, if individual reporting failed, the last.fm logs provided backup information that was still useful for prompting interview conversations based on actual listening patterns. Lastly, the comparison of diary reports with the logs' timestamps revealed whether listening patterns changed outside of the study's sampling periods, and whether listening patterns in fact correlated with the participants' diary notes.

The pilot participants gave me useful feedback on my initial instructions regarding the study procedures, and I became quite adept at setting up last.fm accounts with the correct privacy settings, depending upon the particular media device and streaming service in question. That is, the pilot provided me with both a fresh perspective on the relational processes between me and the informants and the practical knowhow and skills to handle the tools I had integrated into my method design. In particular, pilot testing showed me that personal informant briefings were necessary in advance of the study, from both an ethical and a practical perspective—they would ensure accurate following of procedures and informed informants, which would in turn help to guarantee reliable, consistent and valid data. I will describe my informant briefing in last section of this chapter, where I present the ethical considerations that arose in relation to my study.

Informants: The Sample

As mentioned, this study is purposely targeted toward understanding user experiences and practices related to music-streaming services. This methodological strategy, which included the systematic recruitment of informants, included my decision to privilege streaming users who were already familiar with the technology, in order to capture experiences from people displaying originality in their practice and the ability to reflect about their choices and

execution. I recruited heavy users of Spotify and WiMP Music, the major music streaming services in Norway—my informants, that is, had to have been subscribers for at least one year, and to have streamed music five to seven days per week.

I also wanted to include streaming users who confined their music experiences exclusively to online formats, in addition to those with experience from other music formats (for example, iTunes, CDs or LPs). To secure my 'digital natives', then, I overcompensated in the direction of young people by visiting high schools in the Oslo area of Norway in winter 2013 (see appendix 1 for school recruitment details and appendix 2 for the informant proposal). I also sought informants by circulating information about the project on Facebook and Twitter, requesting interested users to contact me (see appendix 3 for the online recruitment notice). I knew none of these informants prior to the study.

Given its research aim and methodological design and direction, I felt that the study would benefit from a small sample of heavy streaming users observed over time. Individual experiences vary according to context and situational goals, and multiple issues of understanding arise within each human-technology encounter,[16] so I systematically selected my informants to ensure depth of understanding of the experiences in question, as well as a wide range and combination of possible uses of the technology. In the interests of some variation in the responses, as well, I made sure to include an even distribution of both WiMP and Spotify users, men and women, and, as far as possible, ages and affiliations. See the table in appendix 4 for a detailed account of the informants.

From the very beginning of the recruitment process, I emphasised the fact that participation required a willingness to share one's experiences during listening, because self-reporting as a method does not appeal to everyone (Hektner et al., 2007: 34). Happily, my sources turned out to be open-minded, articulate and eager to share their experiences. They were also dedicated music fans, though I did not necessarily require this quality. The study's material understandably presents streaming users who have invested more than most in maintaining their streaming services. Obviously, a sample including less enthusiastic or experienced streaming users would present different challenges but represent an interesting corollary to the present study.

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[16] See chapter 1 for an overview of the issues raised concerning the fundamental characteristics of music-streaming services.

Generalisability

With a total of twelve informants, this study is not generalisable in a statistical sense and did not produce findings that can be transferred readily to other contexts, given the nature of its object of research as the human experience as such. But as Geertz pointed out, it is not only statistical inference that can enable the move from 'local truths to general vision' (1973: 21), and researchers should always strive for generalisability in other ways. According to Markham and Baym (2009) sense-making regarding experiences in contemporary life yields much to qualitative research based on thickly described conditions of local specificity in time, place and culture, as I have done here in Norway.

Despite the small sample size, the empirical material is rich and enables great insight into contextual everyday contemporary music practices. As there are no stable, shared metrics for assessing personal experiences across individuals, Hektner and his colleagues advocate for the utility of capturing emotional, motivational and cognitive components of individual experiences, then analysing fluctuations of each variable's value around this subjective mean (Hektner et al., 2007: 21). Some data points represent common accounts of music streaming, which correspond to general patterns in human-technology encounters. Others shed light on individuality and uniqueness through their complex specificity and pronounced circumstantiality (Geertz, 1973: 23). They display their own logic but are also meaningful in comparison to others.

I would further argue that the sample of heavy users supplies avenues to generalisability in other ways within the contextual frame of the study. First of all, the study's ability to address the subjective meanings of individual experiences contributes to the general phenomenological account around understanding human beings' lived experiences. This derives from the fact that concepts of comparative specification and substantive generalisation are not diametrically opposed but rather aligned (Mjøset, 2009: 53). Knowledge of what makes a case special, in a sense, is only possible in the context of general knowledge (Mjøset, 2009: 52). For example, when the exact pattern of a subjective experience is revealed in an analysis and then measured against comparative references to a broader picture (for example, other users' experiences or one's own alternative experiences, or simply knowledge of alternative user patterns supplied by the technology), its specificity feeds back into a more general knowledge, in which denser and broader typologies, concepts and models of contextualised understanding reside.

This means, in dealing with human experiences, that no view is more right than another, and that research demands 'a both-and rather than an either-or orientation' (Markham and Baym, 2009: 176). In my analyses I therefore dwell upon cases that deviate from the data and include examples that do not fit the patterns, echoing Gobo: 'The variance is the only worry the researcher needs to take into consideration' (Gobo, 2004: 95). My goal is always ease of comparison, coupled with an ability to offer analyses that can be coordinated with others (Markham and Baym, 2009: 175), and I find that complexity also provides better generalisability.

Generalisability is further achieved in the context of an idea about social representativeness that transcends the limits of statistical representativeness. The analysis addresses essential aspects, basic motivations, crucial experiences and typical situations related to using music streaming services, and the variation among them—that is, it presents the characteristic mechanisms of the encounter between listeners and music-streaming services. The variables of use, that is, not the population, are generalisable, as patterns and tendencies in the intersection of music, technology and everyday life. In this respect, the study provides breath and diversity that capture both the potential of the technology and the individuality of human experiences, which makes its conclusions relevant on a general level.

A third factor supporting the study's contribution to generalised sense-making is its combination of theoretical and empirical models applied to its arguments. Understanding emerges when we analyse data rigourously and reflexively; by drawing on existing theoretical frameworks, this analysis contributes explanatory value in relation to the relevant academic areas. The theoretical concepts articulated in this dissertation likewise propose hypotheses for future research in the field, as we shall see.

Gathering Data: Review of Procedures and Material

Diary Study: Procedures and Material

In the diary study, my initial instruction to the informants was to write reflections about their experiences during or straight after every 'listening session' that involved streaming services. A listening session was defined as an period of music streaming that lasted without breaks that lasted one hour or longer. If an hour were to pass between one streaming session and the next, the latter needed to be registered as a new listening session. Breaks in streaming sessions that were shorter than one hour were classified as changes within the

same sessions, and informants were asked to report thereafter by reporting these intern changes in the streaming session.

In the interests of securing reports of an everyday nature, mirroring listening patterns that were as normal as possible according to the informants' everyday life, and eliminating the possibility of planned listening during the sampling period, I did not tell informants about the exact sampling dates in advance, only that they would occur in March and April 2013. SMS and emails indicated when a period was about to begin and end (see appendix 5). These communications sometimes included a request for a retrospective report—that is, a note about the informant's most recent listening session as well. The sampling periods were targeted to coincide with the listeners' usual music-streaming situations, meaning that the study sought *event-contingent* experience sampling rather than experience sampling at moments determined by the researcher (Hektner et al., 2007: 11, 40). Unpredictable dates meant that some periods went by without any listening registered, which is normal even among heavy listeners. Sampling periods also occurred on abnormal days—during travel or special events in the informants' lives.

In total, the four sampling periods lasted just over nine days and covered all seven days of the week, which meant a fairly representative sample of the various activities in which the individuals engage, and therefore both multiple and redundant responses (Hektner et al., 2007: 41). I was interested in capturing experiences derived from routine-based listening as well as extraordinary situations. I divided the sampling into four smaller periods rather than a whole week at a time so as to avoid informant reporting fatigue.

Diary entries revolved around seven questions (appendix 17 describes the informant instructions regarding how to answer the questions, and presents the questions themselves). To avoid overburdening the informants, I gave them plenty of freedom to choose the style, format and length of their reporting. At minimum, I requested location, date, time and source of streaming, which gave people an option for quick reporting that could still be linked to the timestamps in last.fm. I also required an answer about what type of music they were streaming, in the interests of capturing the informants' own labels and language for their music. I encouraged them to use whatever vocabulary was comfortable when talking about music, rather than trying to apply the 'correct' music terminology. The three last diary questions were left open—informants could decide whether they wanted to answer them from one listening session to the next, as well as what parts of the streaming experience/practice they wanted to emphasise (see appendix 17).

The pilot study demonstrated the value of adapting methods for reporting experiences to the informants' preferences and expectations. For the purposes of convenient online reporting, I created a spreadsheet using Google docs that included the seven questions. Its exact form was unique to each informant, and I distributed them as personal links attached to the diary alerts I sent via SMS and email (see appendix 5a). The link could be opened and responded to from smartphones, tablets and computers (appendix 5b). Four informants used the spreadsheet as their main method of reporting their streaming experiences (see appendix 6, 'spreadsheet diary'), while three combined it with other methods.

One informant wrote daily emails as his preferred reporting method. Another emailed me documents in which she had collected all of her periodic diary entries, including transcriptions of her handwritten notes but also dated screenshots of notes from her phone, pictures from her streaming interface, and photographs she had taken during her listening session (see appendix 7, 'word doc diary'). The online reported diary entries had the benefit of being instantly submitted, meaning I could follow updates as they were recorded.

This was not the case with the handwritten diaries, which four informants preferred as their main method (see appendix 8, 'handwritten diary'). To get an overview of those experiences and to be able to adjust the instructions if necessary, I decided to collect the handwritten diaries halfway through the sampling period and hand out new ones. Inconclusive or weak reports were not a problem, whether online or handwritten, which presumably meant that my instructions had been effective. With just a few exceptions, all of the informants wrote daily entries during all of the sampling periods, from one to seven times a day. The length and style of the entries varied, ranging from keywords listed as bullet points to long and thoughtful narratives. One informant completed a notebook before two rounds had ended, then continued writing on loose sheets of paper. Three had included reports on more dates than those I had announced. In one case, the informant had not received the alert regarding the second sampling period and missed a round of reporting. Periods completing without any music listening occurred for two informants in one round each.

Online Observation: Procedures and Material

Facebook and Twitter

During their briefings, all of the informants had given me permission to add them as friends on Facebook and follow their Twitter profiles. I did this in order to supplement my general impressions of their Internet use, and to see whether they used social media for music-related activity, particularly in relation to their music-streaming services. Only two identified themselves as active Twitter users, and in fact their profiles were not particularly relevant to the study—one used Twitter almost entirely for work-related content, and the other mostly sent direct tweets to friends, sometimes about music, that were not visible on her Twitter profile.

On the other hand, all of the informants had Facebook accounts, though their engagements varied. I added them as friends and browsed their profiles ahead of the diary sampling. Then, during the four diary periods, I observed these Facebook profiles daily. The majority did not use Facebook actively in relation to their music streaming, yet some had overviews of artist and bands they 'liked' and 'followed'. Three men in particular foregrounded their music interests actively on Facebook by posting music-related content via their music-streaming services and also in other ways. In the interviews, references to informants' Facebook pages sparked conversation about online music sharing, regardless of whether they used Facebook for music-related content or not. My Facebook relationships with the informants lasted until January 2014, when I 'unfriended' them at the conclusion of the study.

Last.fm

This study demonstrated the value of using the music site last.fm as a logging tool in academic research, particularly with regard to capturing the details of individual music listening. With Spotify and WiMP Music connected to last.fm, I could track what the informants listened to from day to day, or even in real time, through the last.fm service feature called *scrobble.* Except for the few shortcomings discovered in the pilot study, the last.fm connection supported the self-reported entries with precise time stamps and the titles of the music played (see appendix 9 for screenshot). This feature also made it possible to ascertain whether the self-reported entries actually reflected music streams from Spotify or WiMP Music, and whether listening patterns changed during testing periods (in comparison

to untested days). As to the latter, it did appear that the awareness of taking part in the study slightly increased some of the informants' streaming activity during the sampling period.[17]

The last.fm scrobbles required regular monitoring, and I began to track them immediately following the introductory briefing, during which I connected last.fm to the given informant's music-streaming service. In that briefing, I also prompted the informants to connect last.fm to all their streaming devices, if they alternated among several. I offered telephone support to a few of them in this regard. I incorporated the last.fm scrobbling as a means of both controlling and simplifying the diary reporting, to compensate for the inherent weaknesses of self-reporting as a method. Happily, it also turned out to supply some interesting empirical data as well. For example, it captured patterns of listening that not had been reported in the diary, for example cases of repetitive listening, and thereby prompted interesting stories in the follow-up interviews. It also enabled me to capture interesting details about particular events beyond the ordinary—for example, a lists of continuous tracks streamed during a two-day long computer party one of the informants hosted.

Interviews

I used the empirical material to prepare semi-structured, in-depth interviews conducted according to customised guides that combined fixed questions for all of the informants with unique questions based on the data I had. The interviews allowed my informants to elaborate upon interesting aspects of the data and sometimes shed new light upon it.

My interview guide template followed a themed structure based on the core characteristics of the music-streaming services in question for this thesis (intangibility, abundance, and the social network features) in addition to questions about the informant's previous listening history and other interests. I also asked for reflections about their experiences with participating in the study. The order and emphasis of the themes I addressed varied (see appendix 10 for an example of an interview guide).

It was useful to have informants bring along their preferred music-streaming device, so that we could look at their service accounts as we spoke and dig deeper into the details and content described in their diaries. Informants also seemed to speak more extensively with the streaming interface in front of us. I could even ask informants to demonstrate how

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[17] I discuss reliability in the last section of this chapter.

they executed certain practices and features, such as how they scrolled or browsed. What they paid attention to told me a lot about what they did (and what they said they did).

I scheduled the interviews from late April through June 2013 at a place and time determined by the informants (see appendix 4). I offered them coffee and lunch or snacks. I recorded the interviews but also took notes and then wrote memos regarding the most important themes according to my immediate impressions directly after conducting them. The interviews lasted between forty-five and sixty minutes and were transcribed verbatim using HyperTranscribe, then coded in HyperResearch.

Observing Streaming Account Interfaces

Immediately after I recruited the informants, I began observing their service profiles in Spotify and WiMP Music. I knew that these overviews would provide partial insights at best, depending upon their individual privacy settings, but I wanted to see what content I could access, as an early indication of an informant's social streaming profile. I then returned to these initial observations in the interviews. During the sampling periods, I systematically followed the informants directly via the respective services' following features, if I was able to according to their account settings.

Along with my initial observations, I also started to capture screenshots from Spotify and WiMP Music, particularly of the content mentioned in the diaries, and I continued to do so while processing the data. Through this effort I came to realise that access to detailed playlists and streaming interfaces *throughout* my analysis was crucial to those parts of the study where insight depended upon specific content. In August 2013, then, I asked all of the informants to provide screenshots with interface overviews from at least one of their streaming devices, as well as screenshots of specific playlists from the data. All except one sent me the screenshots, and I obtained written permission to use them as illustrations in this presentation (see appendix 11).

With two informants, interestingly, this late request sparked off a sporadic email exchange that lasted a few months. On their own initiative, they sent me updated reports on their ongoing music streaming, along with the images. I formally ended my online informant relationships by telling everyone that the data gathering was complete, and then I broke the Facebook and last.fm connections in January 2014.

Systematising the data

The combined data sets consisted of a large volume of information in multiple formats of varying quality.

Table 1 Overview of data size from the different sources

Data set	Number of data	Description
Interview transcripts	537 pages	1,5 line spacing 12 points Times New Roman See appendix 14 for an excerpt.
Interview memos	12 pages	1,5 line spacing 12 points Times New Roman
Diary: Transcripts of handwritings	33 pages 56 entries	1,5 line spacing 12 points Times New Roman The entries vary in style and length as described above, and see appendix 8.
Diary: Spreadsheet entries	121 entries	The entries vary in length and style. See appendix 6.
Diary: E-mail entries	11 entries	These vary in length and style.
Diary: Word doc entries	54 pages 4 images	1,5 line spacing 12 points Times New Roman See appendix 7.
Tracks logged in last.fm from 8 March - 8 May 2013	9775 tracks	Totalled via www.mymusichabits.com. This website offers statistics from last.fm (see appendix 12). The number is indicative, providing a *smaller* number than the actual number of streamed tracks, given the non-counting of skipped tracks and offline streaming in Spotify.
Screenshots	Facebook: 19 Spotify: 54 WiMP Music: 34	The numbers include both the screenshots I captured, and those sent to me by the informants after the sampling period. See appendix 11.

I had to systematically and rigorously coordinate the data sets in order to conduct an overview. This process then structured the following work, and in fact acted as a preliminary analysis, roughly sketching out patterns and structures to inform the coding and analysis.

I started out by assembling all of the respective raw data from each informant. In addition to online data, I had transcriptions of the physical diary entries as well, which I had read carefully for themes and keywords. Online entries did not need transcribing but did need careful perusal, during which I noted key topics in order to begin to construct my analytical categories. When my informants had combined more than one reporting method, this also had to be coordinated after sampling dates.

I arranged each informant's last.fm streaming log into an individual document according to the timestamps of what was streamed when during the sampling periods. The tracks were grouped to correspond to the listening sessions described in the diaries and marked with keywords or diary note excerpts so they could be conveniently retrieved and linked to a full diary report (see appendix 13). When Facebook provided additional relevant information, I noted this in the log lists with references to relevant screenshots from the Facebook content.

Transcribing and Coding

A sorting and aligning process involving a pre-analysis structuring also took place as I transcribed the interviews. Using HyperTranscribe, I prepared transcripts by listening repeatedly to the recorded interviews in sections in order to capture the conversation verbatim. While this was time consuming and repetitious, it was also a chance to become very intimate with the material and make links among the data sets. To help in this regard, I also highlighted topics in the transcriptions that directly referred to other data sets by marking them *@diary*, *@last.fm*, and *@facebook*.

I also systematically noted themes and events that stood out in the material, as repeating patterns, topics linked to related theory, or things related to the three characteristic aspects of music-streaming services (abundance, social network features and format intangibility). I wrote keywords related to these prominent themes and events as temporary codes with capital letters direct in the manuscripts (appendix 14). This temporary coding turned out to be detailed and precise enough to supply the first steps of the subsequent analysis. By working closely with my informants over a significant amount of time and subsequently aligning their data sets, I had come to know the empirical material very well. Of course, over time and upon further targeting of my analytical aims, I came to require a more systematic coding.

Moving to the qualitative research software called HyperResearch, I then constructed forty-two codes, which I applied strategically to lines or paragraphs as I re-read the transcriptions and anticipated my article analyses. I explained these codes through a codebook (see appendix 15). HyperResearch made the retrieval of data much easier, because I could apply more codes to the same texts when multiple meanings occurred, and I could generate analytically purposeful code reports based on selected codes. Given the precision of my codes, I soon produced strategic and systematic overviews that were useful in diverse analytical situations. Of course, I would never rely on software alone—given the complex character of the study design and the phenomenological alignment of its anticipated conclusions, a human perspective is crucial to the interpretation of the actual lifeworld experiences behind the data.

From Data to Analysis: Analytical Strategies

The overall analytical strategy I use in the study is hermeneutic, phenomenological interpretation, and ideas and configuring decisions arose both early and late in the research process. For example, the initial 'mapping' of exactly what music streaming as an activity involves (where and when it happens, how it occurs, what triggers it, and so forth) was a useful starting point for the development of an efficient method design. Already at this point, an inclination to use *abundance, intangibility* and *social network integration* as structuring features also evolved, and it would come to influence the design, implementation and end results of this thesis.

Another early decision that influenced the analytical process was to allow dynamic frames of the implementation into the method design. For example, I could engage with informants continually to remind them about procedures while subtly adapting the diary inquiry by rewording diary alerts or requesting certain emphases in the reports. The ongoing and subsequent submission of additional data sets supported this ongoing analytical effort, so that I could use data from the first sampling periods to shape and sharpen the interview guidelines, while information presented in the interviews could provide new insight into the existing data. One consequence of this dialectical exchange is that I have used the data throughout my research period, not only at the beginning. When questions arose and gaps in the analytical categories appeared, I always returned to the data to fix things. Certain details in the data only began to make sense as I returned to it over and over again.

While the interview data is the most prominent (and most cited) empirical material of the analyses, all of the data sets have been actively exploited, chiefly in relation to the dialectical exchange described above. In addition, I was able to layer cumulative meanings upon the music reported by the informants. I systematically listened to parts of it at various times in the analytical process, from the transcription of the diary notes and coordination of the data sets through the preparation of the individual interview guides, the interviews themselves, and the writing of my analyses. These listening experiences enhanced my interpretation of my informants' contextual, practical and experiential accounts of their music streaming practices and musical identities.

Even after ending my specific Internet-based relationships with my informants, I continued to monitor the public parts of their online accounts as I prepared this thesis and gleaned further insight along the way. This last analytical strategy completes my particular realisation of the aforementioned methodological remix, in that I have *generated* layer upon layer of informational units, *played* and experimented with various combinations of elements, *borrowed* ideas by quoting the theories, concepts and articulations of others, *moved* forward and been moved forward by shifting perspectives and changing questions, and *interrogated* rigorously throughout the whole process (Markham, 2012: 10–15). As a result, this study buttresses Markham's claim that remix as an approach allows for more freedom to explore and interpret contexts that defy easy encapsulation.

Emphasised Data and Analytical Filters

In the previous section, I accounted for my overall strategic approach to understanding in this thesis. Nevertheless, at a more localised level, each data set has suggested further individual analytical approaches that are reflected in the four articles, which have individual goals and respond to unique research questions. The interpretive filters that I apply, and the data that I emphasise in each article, are therefore adapted and applied as needed.

The table on the next page identifies the empirical material and analytical method upon which I have relied in each article.

Articles	Emphasised Data	Analytical Emphasis
Article #1: Personal Paths in the Online Music Jungle	- Diary notes - Interview transcriptions - Memos / fieldnotes of interview observation	- Action in the streaming interface - Variation in applied practices - Personal routines, implementation - Variation in what influences the practices
Article #2: The Metaphors We Stream By	- Diary notes - Interviews	- Informant formulations - Meaning in language - Individual sense-making
Article #3: The Playlist Experience	- Diary notes - Interviews - Screenshots of playlists / interfaces - Online observation (Spotify / WiMP Music, last.fm)	- Close study of playlists (structure, content) - Informants' explanations of playlists - Contexts of playlists, as derived from diary notes, interviews and last.fm logs
Article #4: Social Streaming? *Co-written with Marika Lüders*	- Diary notes - Interviews - Facebook and Twitter content - Spotify / WiMP interfaces - Focus group interviews (Clouds & Concerts)[18]	- Observation of patterns of following and sharing online (in the streaming interfaces and Facebook and Twitter) - Arguments for sharing and not sharing - Arguments for following - Overall experience of social features

Ethical Considerations

The complexity of this study design brings up issues with regard to research ethics as well, and in the last section of this chapter I will therefore account for my relevant ethical considerations and the processes of reflexive inquiry I incorporated in order to provide rigour and transparency to the study.

Briefing and Consent

As mentioned, I learned from the pilot study that informant briefings prior to the investigation were necessary. The study design demanded clear instruction to the informants

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[18] Between 2010 and 2013 the research project *Clouds and Concerts* conducted 23 focus-group interviews with 124 Spotify or/and WiMP Music users. Arnt Maasø was primarily responsible for this method, and designed the interview guide in collaboration with Beathe Due and Anne Danielsen, also with input from the rest of the research group (including me). Maasø, Danielsen and Due shared the moderator job and were helped from research assistants in the work of transcribing and coding the interviews (These were funded by Telenor through a separate grant). In writing article 4 Lüders mainly managed the focus group data, and I mainly managed the other data, although I am well familiar with the focus group material as well and have also handled it directly in the work with the article.

to avoid later misunderstandings and clarify expectations. Hektner and colleagues agree that to ensure more precise data gathering and predictable participation among informants, a thorough and honest explanation of the study is crucial (Hektner et al., 2007: 54). Successful and ethical informant briefing involves an obligation to respect human dignity and to ensure that research subjects are given all of the information they require to obtain a reasonable understanding of the research in question and its field (National Committees for Research Ethics in Norway, NESH, 2006). I therefore had to make sure the informants were well prepared regarding my expectations and well aware of their rights.

I therefore arranged individual briefings of thirty to sixty minutes each in person with all but one informant, who lived about six hundred kilometers away. I briefed her by telephone. I met the informants at their places of work or study and followed a detailed and consistent briefing guide (see appendix 16). I began by explaining the overall aim of the study, then systematically mapped the basic information I would seek regarding the informant's music and media usage. The briefings demanded a certain amount of small talk about music streaming and music listening, which was a good way to begin to know the informants and instill a sense of trust and collaboration. As mentioned, I also asked the informants to connect their music streaming accounts to last.fm (two of them already had this application, so I simply obtained their last.fm nicknames). I helped with the new accounts and checked that they were secure, so that only I could see the scrobble logs. I stressed that they should delete these accounts once the data was gathered.

I also went through all of the anticipated diary questions with the informants and gave them written instructions on how to answer the different parts (see appendix 17). I handed out physical diaries to everyone and instructed them on the online diary alternatives. I noted that my aim was to experience their personal voices as they described their typical music-listening experiences, and that I did not mean to test their level of music knowledge or their technology skills, or evaluate their personal tastes. I simply asked them to stream music in their normal way but take some notes at the same time.

Lastly, we both read through a letter summarising the components of the investigation, and I made sure to clarify the notion of voluntary participation with the opportunity to withdraw at any time, after which the informant consented to take part in writing (see appendix 18). Only at this point did I mention their compensation after the interviews were concluded—a gift card for 500 Norwegian kroner. I meant this gesture to guarantee completion of the study but not to motivate participation in the first place.

Any study of the ways in which technology participates in people's inner lives requires the researcher to get their permission, and it requires the informants to speak freely. In relation to both the self-reporting and the interviews, I made it clear that I was not asking for information of a private or compromising nature. Informants were given plenty of latitude to leave out details they did not wish to reveal, and this complies with conventional research ethics regarding respect for individuals (NESH, 2006).

While personal music experiences do not necessarily reveal information of a sensitive character, music can connect very powerfully with individual notions of identity, self and lived experience. The present study's research topic resonates with a recent trend towards studying Internet-based technologies as arenas for expressing or negotiating identity, with the aim of addressing everyday experiences and personal music listening that is managed through a partly public Internet technology. This alignment raises questions regarding which rules to apply in terms of personal data collected from the Internet (Segadal in Fossheim and Ingierd, 2015: 36).

Regarding the informants, a promise of confidentiality often heightens people's sense of their ability to speak freely (Turkle, 2011: 7), which relates to 'the need for freedom combined with the protection of privacy' (NESH, 2006). The informants were guaranteed anonymisation during the research process and in the ensuing publications, and they are referred to by nicknames, accompanied by their actual ages. Work involving online content, however, also entails an effort to render all people and personal data unidentifiable, as online content can be readily traced via searches. My observation of informants' accounts, and especially their Facebook pages, brought with it the potential of accessing information of a sensitive nature that was beyond the scope of the study. In addition, both Facebook and the streaming interfaces gave access to third-party information. While all of this has provided background context for my overall impressions of the informants, I never directly referred to it in the study. My Facebook observations about music-related practices informed my conclusions, but I did not republish any content directly.

Anomymisation also characterises my references to content from the informants' streaming accounts. Although I had acquired consent to use this material, and parts of this content was intended to be public in the first place, a proper acknowledgment of the informants' privacy entailed anonymisation of this kind of content as well. In the study, for example, I always reconstruct playlist titles, which 'does not imply inventing examples, but

making required changes in order to maintain the original meaning and message while ensuring the original content cannot be retrieved through searches' (Lüders in Fossheim and Ingierd, 2015: 82). In its simplest form in the present study, this also encompasses the translation from Norwegian to English.

Vulnerability

Ethical concerns also arise regarding the vulnerability of the people being studied. In this study, some of the informants were minors (seventeen or eighteen years old). They were old enough to give their informed consent (above fifteen years old), according to the Norwegian Data Inspectorate (Lüders in Fossheim and Ingierd, 2015: 83). Nevertheless, I was careful to use simple and precise words in my informant dialogues.

Another ethical concern revolved around using last.fm as a tool for academic research. While it was voluntary, the linking of Spotify and WiMP Music to last.fm could appear to lock in information about user patterns on an advertising site. However, in this particular case, all of the participants were already online through Facebook, Twitter, Spotify or WiMP Music, and I determined that a private last.fm account did not represent any additional risk.

Lastly, this research project implies the gathering of personal and non-public information, and consequently I was required to report the study to the Privacy Issues Unit at the Norwegian Social Data Service (NSD). They have ensured that the project, including the processes of recruitment of informants and the management of personal data, was conducted according to Norwegian privacy laws.

Framing the Informant Experience: Situating the Study

Related to my use of informant diaries as a research method, Burgess emphasises that the 'subjects of research become *more* than observers and informants; they are co-researchers as they keep chronological records of their activities' (Burgess, 1981: 79). This statement may be exaggerated, however. Study informants, unlike researchers, report without any distance from the material, without theoretical context for the topic in question, and without knowledge of the others involved in the study. Nor do they report on their experiences with my methodological purview, only with the awareness of the study that they were given in the briefings.

The informant's role as a self-reporter presents interesting challenges to the practice of reflexive inquiry, due to the distortions and contamination that can mar self-reported studies (Hektner et al., 2007: 9). Informants might misunderstand procedures or questions, or they might characterise their experiences according to cultural or social references that get lost in the researcher's subsequent interpretation. Informants can also become bored or lazy, or they might distort or simply forget what happened. The phenomenological alignment of this dissertation further complicates the identification of potential hazards—it is only the informant who is expert in his or her own lifeworld, and it is very hard to find the right tricks to elicit what the informant otherwise takes for granted (Lally, in Markham and Baym, 2009: 161).

In the interests of reliable and valid data, I have striven for transparency and rigour in my research, and I also included a discussion of the informants' participant experience in the interviews. In line with other research approaches that foreground context, my process implied that both the outcome and processes of the study are significant and must reflect great sensitivity to both the historical and the cultural specificity of daily life routines and cultural understanding (Mjøset, 2009: 47). In the following subsection, I will provide some empirical examples from the participant-experience part of the interview in order to demonstrate the ways in which this reflexive inquiry has strengthened the dissertation.

Dear Diary: A Report about the Self-Reports

The informants referred to their overall experiences of participation in the study as 'quite ok', 'perfectly fine', 'exciting', 'great fun', 'incredibly good', 'just cool' and so on. No one reported any negative experiences, though I emphasised my interest in hearing about those as well. These conversations also indicated that sampling discrete experiences over an extended period of time meant that they all grew gradually more comfortable with the self-reporting, a fact that has been used to argue for the validity of methods like ESM, as opposed to one-time questionnaires, for example (Hektner et al., 2007: 104). For some informants, diary writing was natural from the beginning, while others needed time to find their way to their personal voice and otherwise determine 'what's really the deal here?' (Sofia, age 30). Some of them addressed the way in which self-reporting went from feeling strange and unnatural to feeling more familiar and even comfortable and good. This happened both over the whole two months of the sampling and over the course of each individual sampling period. Nina (age 27) remarked that seeing her own words on paper

during the first sampling period made her feel embarrassed—'like a teenager, you know . . . Dear Diary' (Nina, age 27)—but it also felt good, as it helped her channel her melancholy, as an example of additional user experiences of taking part in the project. Others noted that the diary writing was good because it made them pause for a moment in their everyday lives and reflect on things they otherwise would ignore.

Increased Self-Knowledge: Grasping the Taken-for-Granted

Some informants emphasised the ease of reporting as the reason for their good informant experience; it did not demand too much from them, and they usually listened to music anyway, so participating was very convenient. Interestingly, the majority also addressed the experience of participating as genuinely fun and exciting, to a degree beyond an interest in accommodating the study.

This resonates with the claim that increased self-knowledge is a common motivator when ethnographic subjects participate in research (Turkle, 2011: 7). I did not ask my informants whether self-knowledge was an initial motivation for signing up, but it was clearly a happy consequence of participating, and one that helps to explain the overall satisfaction with the study experience. Almost everyone explicitly mentioned that they had become more aware of their personal media and music-listening habits. They had also come to realise how tastes and preferences corresponded to contexts or moods, and how music listening had become integral to their everyday routines. For this group of music enthusiasts, this was valuable insight, and some even referred to it as eye-opening or surprising.

Ultimately, my informants' enhanced self-knowledge also demonstrates the successful application of my methods in the dissertation. When a fresh awareness comes about regarding otherwise taken-for-granted everyday practices, the resulting insights will inform the study itself as much as the lives of the self-reporting participants. This also positions self-reporting as an effective method for examining lifeworld experiences with personal online and mobile media That is to say, it has what it takes to bring the taken-for-granted to the fore.

Reliability

The interview conversations that addressed informant experiences also supplied a means of considering the material's accuracy in according to my intentions with the method design.

For example, in this part of the interview some informants mentioned that they occasionally forgot to write notes during listening and had to report their experiences in retrospect—something I had also noted as mismatches between the timestamps of the digital entries and the last.fm logs. Some informants also noted at this time that there were certain listening situations that did not lend themselves to reporting, such as when hosting a party or when listening particularly closely.

Still, the advantage of generally soliciting immediate sampling (Hektner et al., 2007: 104) more than compensated for a handful of delayed reports. When this did happen, I was able to follow up afterward, by including a reminder in the sampling-period alert message. I also made sure to talk about these occasions in the interviews, which further generated descriptions of a particular type of music experience and helped in the conducting of my contextual meta-analysis.

The informants' self-awareness of their participation in the study is clear in several reports where they refer to aspects outside of the music to which they were listening. A few informants also included small meta-comments and even 'hedged' their own descriptions, marking them with 'haha' or smiley faces, for example. Nathalie's (age 17) diary notes even includes statements like 'I don't know if this is of relevance for your study, but . . .' Her concern about being 'too boring or repetitive' also came up in the interview, where she could not remember to have said anything exciting at all in her reports. Interestingly, she had produced some of the richest and most precise diary reports, including playlists descriptions, pictures and screenshots.

I was always sure to ask about whether taking part in the study had affected the informants' music streaming, and some mentioned that they had noticed certain small changes. Jenny (age 18) mentioned that she had listened to music a bit more than usual, because reporting made her think more about music, which made her want to keep listening. Marius (24) recalled that after four days of intense listening to the same album, he purposely moved on, because 'I became conscious of taking part at your thing [the study] . . . at the same time I thought: this will be a finding as well'.

No one admitted to actually avoiding certain music during the sampling periods, and most of them described their listening patterns during the sampling as the same as other days. Using the last.fm logs, I was able to confirm this stability to their listening patterns by comparing their listening both during and outside of the sampling periods.

In sum, thanks to the reflexive inquiry that characterised the research, I did not encounter inconsistencies, incorrect reporting, failure of motivation or any other concerns to

the extent that the empirical material's reliability is in doubt. I achieved a productive level of trust with the informants and managed to access the relevant experiences at the relevant depth. The diary material was rich, honest and straightforward, beyond my expectations. The informants collaborated well, followed the procedures as planned, and completed the study.

While the level of reporting varies among the twelve informants, I did not have a problem with either over-reporting or underreporting. I handled the data myself at every stage of the research process and conducted the study according to the norms of ethical research, including a high degree of reflexivity in order to guarantee a transparent research context. I therefore consider the conduct of the study to be successful, and the original method design to be valid and worthy of emulation.

Chapter 5: Theoretical Discussion: A Lifeworld of Musicking

I have explored multiple experiences and practices with music-streaming services in my investigation of contemporary music listening. The analyses in the four articles unpack examples of action and meaning-making related to how music is cultivated and listened to in contemporary everyday life with streaming technology. They also address experiences related to dealing with the technology of the services and devices used for music streaming. Yet articles alone have limited room in which to raise larger theoretical discussions about the issues. In this chapter, then, I will discuss key patterns that emerge in the articles in light of a larger theoretical framework that will help to answer the research questions.

Inspired by phenomenological sociology, which seeks insight into the perspectives of ordinary people, I have developed an interpretive approach that is supported by the idea of methodological remix. Just as I combined several methods, I also combine several relevant theories rather than strictly adhere to just one. This project's origins in both musicology and media and communication studies speak to an interdisciplinary approach in the first place. In what follows, I will take advantage of eclectic concepts from the social sciences and the humanities to facilitate a solid basis for enquiry into user experiences with music streaming.

The objective is to understand how meaningful everyday music experiences are characterised, take shape and are realised in the context of music-streaming technology. I also look at how this technology affects the listener's relationship to music, using a notion of music-streaming services as a medium in its crisis of early adolescence, as I presented in the introduction chapter. After all, they represent the new arrival among more established music formats, and their meaning and potential are still in the formative phase: 'The "crisis" of a new medium will be resolved when the perceptions of the medium, as well as its practical uses, are somehow adapted to existing categories of public understanding about what that medium does for whom and why' (Gitelman and Pingree, 2003). In the end of my discussion, then, I will try to pin down the nature of music-streaming services as per today—that is, to 'diagnose' the medium in line with my primary research question.

An Emerging Pattern: Music Streaming as Involvement

My four articles focus on diverse aspects of my informants' ways of dealing with the music-streaming services Spotify and WiMP Music, and their associated experiences. Article 1 concerns users' personal music-streaming practices, distinguished as either user-motivated or service-facilitated. Article 2 concerns how users make sense of music-streaming services,

particularly through various metaphors. Article 3 addresses experiences and practices related to personal playlists. Article 4 considers how users experience and deal with the social networking features of music-streaming services. The articles all look at what music-streaming services are and what they offer to users, and address how users exploit and experience these potentials in the diverse contexts of their daily lives. Insight emerges through personal narratives about everyday music listening and observation of what people actually do with, in and through their services.

The article analyses agree that the use and experience of music-streaming services are shaped by many socio-technological factors, arrangements, concepts and partners that relate to both the structure of the technology and the contexts of the users—that is, music-streaming services are used, experienced and made sense of *heterogeneously*. Relatedly, it is clear that users both initially approach and develop practices in relation to previous music experiences and listening within other formats. Music streaming also ties in to notions of identity and self-image specifically as a music listener, and it is related to how one looks at others too. Music streaming is thus both personal and social, and it intersects with lived everyday life according to differing patterns of use and diverse contexts. From these patterns and contexts, however entangled, blurred and overlapping they might be, important aspects of practices and experiences with use of music streaming services start to emerge that, taken together, give some indication of how online music-service models influence individual human-music relationships.

In other words, in the interests of understanding of what comprises contemporary individual music experiences, we must scrutinise the dynamics that arise between the context and the structure of the music-streaming technology and its users. In what follows, I will discuss theories addressing individual user experiences in relation to technology structures, as well as theories addressing how individual experience inherently implicates the human contexts of our everyday lives. These theories all fundamentally revolve around notions of human action, which is also a focus of my analyses (via users' practices and experiences), and they all connect to Alfred Schutz's framework of phenomenological sociology, whereby one studies actions in order to develop an understanding of the subjective meaning of experience. Schutz's theory of this relation among action, experience and meaning will come up again later, but, in brief, it begins with a definition of action as the execution of a projected act, of which the *experienced meaning* and the orientation of the action are to be found in the corresponding projected act (Schutz, [1932] 1967: 61). In

relation to this study, the theoretical orientation towards unpacking user experience is directed to what informants *did* with their streaming services, and what their doings led to.

Music Streaming as *Musicking*

In my pursuit of concrete courses of scholarly interaction regarding what users do in relation to their music-streaming services, I encountered a multitude of music-related actions or involvements. Service users are compiling, searching, browsing, testing, skipping, sharing, following, deleting, adding, subtracting, reordering, curating, hiding, repeating, sneak-peeking, planning, exploring, improvising and, of course, listening, in their individual everyday music-streaming engagements. These actions involve emotional, cognitive, psychological and physical processes such as dreaming, celebrating, enjoying, annoying, forgetting, remembering, distracting, focusing, resting, energising, affirming, endorsing, convincing, exposing, flashing, alienating, immersing, learning, living, loving, and merely *being*. This is to say that these listeners' relationships to music are developed as *music-related processes* via personal practices that actualise how music streaming is experienced as relevant to everyday life. Users are not only observers or listeners but also participants in this regard.

This perspective on music as activity and process resonates with Christopher Small's concept of musicking (1998; 1999). Small developed the verbal 'to music', or musicking, as follows: 'To music is to take part, in any capacity, in a musical performance, whether by performing, by listening, by rehearsing, by […] composing, or by dancing' (1998: 9). He even enlarges musicking to encompass all of the doings that facilitate a performance, such as selling concert tickets or working as a roadie or stage manager—activities that 'are all contributing to the nature of the event that is a musical performance' (1998: 9). In fact, to pay attention to a musical performance, even when recorded, is also to music, and in this regard Small then defines musical performance as

> an encounter between human beings that takes place through *the medium of sounds organized in specific ways*. Like all human encounters, it takes place in a physical and a social setting, and those, too, have to be taken into account when we ask what meanings are being generated by a performance. (Small, 1998: 10, my italics)

In this, musicking is fundamentally social and becomes *relationally* meaningful 'whether active or passive, whether we like the way it is being done or not, whether we consider it constructive or destructive, sympathetic or antipathetic' (Small, 1999: 12). This is also to

say that the individually *experienced* act of musicking is what defines the meaning the user gives the musical performance.

In the context of this study, musicking successfully labels and describes the activities and processes related to music streaming as events, which resonates well with the informants' self-reported involvements. Throughout, I will use musicking to refer to individually performed practices with music-streaming services, and to what conceptualises the musical event as lived experience with and through the streaming medium.

Small's musicking as subjective and socially meaningful music activity resonates with Schutz's theorisation of social actions as subjectively meaningful behaviour (Schutz, 1967). Of course, with regard to streaming services, the *relational aspects* of how the musicking becomes meaningful are not primarily or mainly social, or even necessarily directed towards other human beings at all, as Small initially emphasised in his account (1998: 12). As already introduced in the methods chapter, I have therefore adapted Schutz's approach to meaningful action to accommodate *personal everyday* music streaming rather than *social or collective action*, whether daily or otherwise. The *relational meaning of musicking* within streaming services derives from the individual users' encounters with the music-streaming services (the applied technology on a device), their contextual surroundings (potentially including other people), and themselves. The user's involvement is the starting point of the music performance, and it is the reference point with which the user explains the experiences. While it is therefore relevant to develop a viable notion of *individual and user-generated musicking*, in which social aspects of musicking remain as part of these individual contexts.

While Small's notion of musicking is not limited to the social relationships that emerge in music-related activity, they are basic to his original concept, particularly in relation to live music performances, which, of course, involve other people much more directly than music streaming does. Small usefully engages the larger relationships that appear in the wake of these social actions as well—patterns that connect us to ourselves, to other people, and to the natural and even supernatural world (Small, 1998: 13, 200). In relation to Small's work, this dissertation touches on some of those same patterns in people's *individual* uses of music-streaming services, in relation to the larger meaningful relationships in their lives. To understand music-streaming experiences and practices is to understand certain individualised processes of meaning making and the ways in which they unfold in relation to everyday technology. It is also to understand how people experience the

'meaning of music' with this technology, as refracted through its affordances and conditions.

Music-Streaming Services and Everyday Life

The everyday processes of music-streaming services are all fundamentally individual and various, but they still represent examples of musicking that flow into one another, and into other events in users' everyday lives. They take place in fragments of time and are experienced as time in fragments, and they appear to arise naturally, immediately and conveniently, enabled by the flexible and approachable music-streaming technology. The way in which these individual music 'performances' are executed seamlessly in everyday life positions music-streaming as an 'infrastructure' consisting of the streaming 'artifacts', the user activities, and the social arrangements developing around them, to use Sonia Livingstone's term. This integration of streaming applications in everyday life also represents an argument for choosing this study's compound method design and direct self-reported sampling in the first place—one can only grasp the media user's activities and practices in relation to the *media in context* and *social arrangements* that arise around them, and further in relation to the ways in which they are relational, routinised, established, internalised and ultimately taken for granted in everyday life (Livingstone, 2005: 1).

As I noted in the methods chapter, I have incorporated this notion of infrastructure into this study, which supplies a strong empirical sense of the ways in which users integrate music-streaming technology into everyday contexts, and therefore enable *music* to be an increasingly vital part of an experienced everyday state of being. Music (and music-streaming services) is so present in these users' experienced lives that it becomes part of the state of taken-for-grantedness that Rich Ling attributes to current mobile phones use as well (Ling, 2012). By always being there, the mobile phone has become a meaningful part of how we approach others, and how we orient ourselves (Ling, 2012: 3). Likewise, music streaming can be so interwoven that it can even inform our experience of everyday life, less with regard to the media use as such and more with regard to how 'sentiments of intimacy, trust and social capital are socially differentiated according to different social practices and spheres, with or without media' (Rasmussen, 2014: 43). We attribute meaning to music streaming according to its potential to mold, affect and define individual experience. Music streaming, that is, impacts the user's experienced lifeworld**.**

A Phenomenology of Everyday Action, Experience and Meaning

Before I explain the concept of lifeworld and continue discussing how musicking feeds into it, I will take one step back and address how my initial emphasis on action (that is, the study's engagement with users' involvements) directly connects to my study's focus on experience, meaning and practice. Schutz's definition of meaningful action was based on the experienced meaning and orientation that derive from a corresponding projected act (Schutz, 1967: 61). He also clarified that any notion of the *meaning of the action* is a shortcut of sorts, because meaning cannot actually be attached to the action itself. When we talk about the meaning of the action, we are speaking metaphorically about how we direct our attention to our experiences in such a way that we constitute them as a unified action. That is, 'when an interpretive sociologist examines an action, he [or she] assumes that it has unity and that this can be defined' (Schutz, 1967: 62). It hence follows that meaning is not to be found in the experience itself but in an individual's reflective attention to it: 'Rather, those experiences are meaningful which are grasped reflectively' (Schutz, 1967: 69).

This is to say that all human experiences by no means are meaningful, but they are nevertheless lived—over the course of the day, a whole range of experiences that are never reflected upon remain pre-phenomenal (Schutz, 1967: 70). They are experienced, but not reflected on; they are lived, but not thought. Meaning rather emerges when the individual singles out an elapsed lived experience and constitutes it as meaningful through a reflective glance. When this *act of attention* is directed retrospectively to what triggered the now-meaningful experience in the first place, we begin to develop a sense of meaningful behaviour and meaningful action (Schutz, 1967: 70–72).

This reasoning grounds Schutz's insight into the phenomenological interconnection among meaning, experience and action, and it underpins both the methodological procedure and the ultimate object of this study. Schutz remarks, 'It is clear that turning the attention to behavior and action are species of turning the attention to experience in general, which of course thereby becomes discrete' (1967: 71). In this case, my informants' self-reflections and my observed actions of music streaming (together comprising a remix methodological model) detach and produce an understanding of the subjective experience of musicking.

Attentional Modifications

As mentioned above, our acts of attention determine which experiences are transformed from simply lived to meaningful, and here, Schutz draws on Husserl to label these processes

'transformations of attentions' or 'attentional modifications' (Schutz, 1967: 71). These modes of attention can be difficult to distinguish from one another but in tandem produce the specific meanings of our experiences. Musicking, for example, is a mediated activity that can stimulate attention or modify or alter acts of attention that range from actually comprehending to merely noting to hardly noticing to leaving completely unobserved (Schutz, 1967: 73). Like acts of attention, processes of everyday musicking are diverse—casual or immersive, fragmentary or continuous, foreground or background, and the articles in this dissertation reflect this fact. The lived experience of musicking depends upon the particular kind of attention it is given at the moment in question.

Musicking Taken for Granted

Returning to music-streaming services as infrastructures, this particular medium affords a mode of access to music that strongly impacts the processes of attentional modification that might or might not attend it. At the same time, the addition of music to everyday situations is now commonplace, and musicking relates to a spectrum of daily tasks, routines and serendipitous asides. Whether actively pursued or taken for granted, music streaming produces a wide range of affective, cognitive and even physical connotations. Part of Schutz's theory, interestingly, explicitly concerns the fact that meaningful actions in everyday life are of a certain character that appears to make further analysis spurious. Schutz explains that meaning-making and self-interpretation of these taken for granted everyday experiences are therefore only *pragmatically* determined according to the interest of the reflective glance directed upon them. We only bother with processes of meaning making if the surface meaning, the meaning that states the normal in everyday life where meaning-interpretation is not necessary because our knowledge of the surface is quite enough to get a grip about what happens, is not enough to orient ourselves to our own or others' behaviour (Schutz, 1967: 74). This means that while musicking actively steers the listener's attentional modifications and generates meaningful music experiences, it is also taken for granted as a natural part of the user's lived everyday experience. It has become so normal that it manifests meaning without further explanation, whether this inherent meaning is *stated* or otherwise: 'That some content of consciousness is thus taken for granted still leaves it open

as to whether any kind of existence or reality is credited to that content, i.e. whether it is given in positional or neutral consciousness' (Schutz, 1967: 74).[19]

With my point of departure as Schutz's phenomenological analysis of the act of attention, I have now presented a description of meaningful everyday musicking as in a taken-for-granted mode which supports the understanding of music streaming services as infrastructure media, also being naturally integrated as part of what is taken for granted in everyday life. Streaming technology, now ubiquitous on personal media devices, has become part of what people expect and experience of themselves and their everyday lives. The taken-for-granted account of music in everyday life, as well as the format distributing it, hence represents an important understanding of the streaming media. This characteristic relates to the users perception of the music and the technology, and concerns the position it has received in the users' lives.

Of course, my data is the product of a research process that already represents an attentional modification of the informants' reported experiences. Despite my efforts to enable direct and seamless reporting, their everyday mode of taken-for-grantedness was disrupted by the fact that I asked them to report on their experiences. Nevertheless, as part of a larger situation that is already amenable to such modification, my study simply joins a chain of processes that are inherent to music-related meaning making. The reported diary-notes and the tracks logged in last.fm reflect individual experiences of something that otherwise had been taken for granted. The dissertation is therefore able to demonstrate that musicking with streaming services produce meaning in everyday life in a taken for granted manner.

The Role of Music in Everyday Life

It now remains for me to address the *role of the music* itself, and to do so I will rely upon Tia DeNora's theorisation of musical affect in practice (2000). Music has power at the level of daily life and is implicated in every dimension of social agency (DeNora, 2000: 17). Paralleling Schutz's observation that experience and action do not possess meaning in and of themselves, DeNora describes limitations to music as well: 'With regards to music, then, the matter of its social significance is not pre-given, but is rather the result of how that music is apprehended within specific circumstances' (DeNora, 2000: 23). This is not to dismiss

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[19] This level of taken-for-grantedness is also reflected in the reflexive meta-analysis in the last part of the methods chapter, where I discuss the reliability of the data.

music's specific nature or properties but to critique the notion that music's semiotic force is to be found solely 'in music itself', as opposed to its reception (33). DeNora believes that musical meaning must be considered in relation to specific listeners at specific moments in specific circumstances, as well as in relation to music's specific properties: 'music's materials provide *resources* that can be harnessed in and for imagination, awareness, consciousness, action for all manner of social formation' (DeNora, 2000: 24). Music is part of the construction of the reflexive self in everyday life, and intimate musical practice—the private and one-to-one forms of human-music relationships—is an ideal vantage point from which to approach this construction (DeNora, 2000: 46).

DeNora's account of musical affect in practice, which more precisely is about how music 'works' on humans in everyday situations via its potential to modify the listeners attention, evokes the other accounts of meaning making and music experience upon which I will draw in this dissertation, beyond the aforementioned phenomenological approach. The mobile technology and online access to ubiquitous music with music streaming services heightens the need for exploring this perspective, given the increased quantity of music we hear, as well as *how* we listen. Anahid Kassabian, in fact, advocates for a whole new interdisciplinary field of music studies, as far too little has been said about 'most of the relationships between most musical events and most people in the industrialized world' (Kassabian, 2013: 19). This call links to this dissertation's aim to understand everyday experiences and practices with music streaming services, which I now will continue exploring further by addressing the music's role in everyday life.

Mundane Musicking

First of all, the introduction of individual musicking into certain daily tasks, situations, and purposes or moods recalls Sloboda's argument that mundane music experiences are not always primarily *aesthetic* in nature (Sloboda, in Juslin and Sloboda, 2010). Instead, they mean something in relation to a functional mode that highlights goal achievement, including mood regulation (Sloboda, in Juslin and Sloboda, 2010: 508). This is perhaps most explicitly demonstrated in my close reading of personal playlists in article 3. The systematization of playlists according to inherent schemes and structures is an act of individual musicking that produces functional everyday structures in the user's life. Likewise, the *social* functionality of music clearly motivates acts of musicking that involve social and personal identity, collaboration and social belonging (see article 4).

The ubiquity of music allows for more prodigious listening, which weakens its relative intensity: 'Frequent events tend to not be very surprising, so they tend to elicit weaker emotions' (Sloboda, in Juslin and Sloboda, 2010: 495). The attention given to music can be limited and fragmented when everyday life intrudes upon it, and the consequences in experience and practice of musicking as a *secondary* activity are apparent in all of the articles. A sense of 'backgroundedness' influences the way in which streaming practices are developed to be more manageable, applicable and hands-on in everyday life (article 1); the way in which playlist structures and content are intended to modify (or are modified according to) the rhythm of everyday life (article 3); the way in which we determine whether everyday moments of musicking are suitable to share (article 4); and the way in which we pursue our general sense-making with regard to music-streaming services (article 2).

Sloboda also underscores the individual level of meaning making in everyday music listening. With music transmitted through online service environments, the mode and origin of the production of the music are de-emphasised or hidden (a consequence of recorded music in general, according to Sloboda), as opposed to 'non-everyday events' in which musical choices and backgrounds are explained and articulated (Sloboda, in Juslin and Sloboda, 2010: 499). My informant accounts indicate that how users experience this lack of background information depends on their basic approach to music and their previous history with other formats. Some users find that the streaming media increase the distance between the music and the basic information about it in comparison to other recorded formats. Other users, and especially younger ones, did not worry about this, either because music information was not considered integral to their music experience or because as 'digital natives', they were used to retrieving it online.

Nevertheless, a consequence of this lack of information about the music, according to Sloboda, is that the everyday emotions generated by the music are more self-referential and personally motivated than outwardly referential. The musical meaning hence appears in relation to non-musical contexts (e.g. the environment or the body) in these settings compared to more musical controlled settings, e.g. a concert (Sloboda, (Sloboda, in Juslin and Sloboda, 2010: 501) where musical meaning is more likely to attach the music, the performers, the instruments. In this dissertation, I also reckon with the idiosyncrasy of personal music making and place the individual at the center of the relational dimensions among which the performed music event (in this case, music streaming) takes place.

In other words, in the context of understanding music-streaming experiences and practices—musicking realised in the complex interplay between the properties of the *music*,

the capacities of the *technology*, the meaning-making processes of the *individual*, and a host of *everyday contexts*—the *role of music* is individual, manifold, variously functional and variously aesthetic, and thoroughly present in the user's everyday life though with varied emotional, attentional and affective intensity. This position, and the taken-for-granted nature of music-streaming services in general, supports David Hesmondhalgh's description of the need for a broader understanding of musical affect, including both aesthetic experiences and other affective states (such as relaxation or invigoration) (Hesmodhalgh, 2013: 14). Hesmondhalgh further suggests that musical affect needs to be related to questions of values and ethics, which also are important questions related to this project as part of what characterises music streaming services and their practices and experiences: 'This would involve considering how we might value music's contribution to the affective dimensions of people's lives, to their moods, feeling and emotions' (Hesmodhalgh, 2013: 14).

This recommendation from Hesmondhalgh, in tandem with Kassabian's call for new conceptions for ubiquitous listening, brings me back to my use of the *lifeworld* as a useful notion with which to frame experiences and practices with music-streaming services. In fact, this dissertation responds to Hesmondhalgh and Kassabian by proposing that music-streaming services *enhance* music's role as a malleable lifeworld resource through its taken-for-granted position in daily life.

Music-Streaming Services and the Lifeworld

According to Schutz's sense of Husserl and Heidegger's phenomenology, the notion of the 'lifeworld' is a means of addressing the *a priori* aspect of reality as acknowledge both by common sense and by its taken-for-grantedness (Rasmussen, 2014: 46). Here, the lifeworld will encompass and label those individual experiences that are produced via an immediate interaction with our surroundings. The lifeworld accounts for both human agency as a whole and its subjective and experiential dimensions, and it is therefore useful for addressing meaning production in relation to the self, others and the world (Rasmussen, 2014: 52). It also helps to explain the relational sets of meaning informing acts of individual musicking, such as the everyday use of a music-streaming service.

My use of lifeworld here recalls Small's *gestures of musicking* as an attempt to articulate the many kinds of complex social relationships that arise when one takes part in a music performance (1998: 200). Like Small, I realise that neither gestures nor lifeworld can precisely *articulate* the relational meaning in question, which only emerges in the lived experience and, as mentioned above, our reflections upon it. Still, the notions are useful, and

I prefer lifeworld in this case, because it is somewhat more flexible. Small emphasised communication in his coining of the phrase *gestures of musicking*, drawing on Gregory Bateson's theory of metamessages and gestural languages (Bateson, 1972, in Small, 1998). In my understanding, the meaning of the gesture (of musicking or otherwise) arises in relation to how it is directed *outwards*. Meaning-making is hence socially relative, because it is performed and received in the context of and by other humans, as is the case in relation to live music performances, which were Small's main focus.

In contrast, music streaming in everyday life is not so much communicative as self-reflexive and personal. It is directed primarily *inwards*. This is also true of the way we use music-streaming services on personal media devices through headphones—this musicking is individually performed and exclusively perceived. Lifeworld encompasses this kind of meaningful experience more effectively than the gesture does. The lifeworld, in effect, is the deeply individual, constantly changing context within which our fundamental understanding of our surroundings emerges. The lifeworld experience of musicking derives from traditional lifeworld norms such as value, participation, compassion and morality (Rasmussen 2014), yet it also encompasses the social and contextual relationships through which music streaming is performed, and the user's one-to-one relationship with the technology. Another contribution of this dissertation, then, is its demonstration of the way in which the notion of the lifeworld contributes to phenomenological sociology.

The Lifeworld of Musicking

It is in the lifeworld that human assumptions of what counts as real, normal, expected and preferred are stated. The notion of a *lifeworld of musicking*, by extension, helps us to engage with music's affective impact upon everyday life. This argument is supported by Terje Rasmussen's observation that the idea of a lifeworld is greatly helpful to make sense of daily life changes because it accounts for the individualisation of identity formation and the personalisation of media (Rasmussen, 2014). This dissertation does the same. In relation to music-streaming services, its analyses demonstrate some of the ways in which 'media technologies mediate and reproduce the lifeworld in different ways' (Rasmussen, 2014: 45). Individual music-streaming engagements include 'personal, tacit and reflexive considerations of personal life and integrity in the "re-embedding" of agency in the world of social systems' (Rasmussen, 2014: 52). The analyses also describe how musicking confirms, challenges, molds, establishes and endorses notions of identity and sociality. Furthermore,

creativity, competitiveness and personal politics inform user practices, as does self-reflexivity deriving from both personal preferences and tastes as well as broader notions of social exposure and the structures of small and big (daily) life events.

In other words, users' notions of everyday experience are tied to the mediated music system and the musicking itself in ways that extend, differentiate and personalise the lifeworld. This dissertation's demonstration of a lifeworld of musicking includes empirical examples of Rasmussen's theoretical account of a *networked and mediated lifeworld* as a realm in which individuals' particular values, practices, habits and rituals take place through, with, and within the media and music that surround them.

Body, Time, Space, Others

Four fundamental themes are often referred to as basic to the experience of the lifeworld: lived space, lived time, lived body and lived human relations (van Manen, 1990: 18). These are called 'existentials' because they 'may be seen to belong to the existential ground by way of which all human beings experience the world, although not all in the same modality, of course' (van Manen, 1990: 102). The lifeworld of musicking as presented in this dissertation connects to all of these themes. Firstly, musicking applies essential influence to control, impact and regulate *lived spatiality*, as the *felt space* (van Manen, 1990: 102) of the environments in everyday life. Music opens up and closes, focuses and frames spaces—that is, music surrounds the users in ways that also, as mentioned above, modify their spatial attention. This also affects the users' felt experience of themselves in this space. For example, music can make them feel less distracted by their surroundings, which helps with concentration; it can also offer a sense of privacy.[20] Article 2 also shows how the spatial experience of music-streaming services is reflected in the language of the informants as they try to make sense of it.

As infrastructure media, music-streaming services impact the users' experience of lived time, and this is clear in the analyses as well. Mobile music streaming supplies constant and ubiquitous music, and so it fills more time, according to my informants, bringing pleasure and relieving boredom. The amount of time spent on musicking then becomes part of a norm or expectation in terms of how everyday life ought to be. The article analyses also include lifeworld experiences related to lived time, as opposed to clock time or

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[20] See, for example, Michael Bull (2000, 2007) and Hilde Stenseng (2008) on the spatial experience of mobile music listening.

objective time (van Manen, 1990: 104). Users address the way in which their temporal being in the world is impacted when the rhythms and moods of music are added to their everyday moments. This was reported as addictive or habitual as well as serendipitous and even quite sudden, as an immediate, immersive, time-changing experience (see, for example, article 2).

Furthermore, musicking relates to the lifeworld of corporeality because it can trigger a unique experience of the body in the act of listening, through, for example, feeling fitter, happier, more capable, more comfortable, and so on. Music's *functionality* extends to examples of musicking as a planned practice intended to induce or accompany experiences of a corporeal character, such as relaxing, working out or dancing.

The last 'existential' in relation to the lifeworld of musicking involves 'the lived relation we maintain with others in the interpersonal space that we share with them' (van Manen, 1990: 104). Notions of *relationality* are found in all of the articles, but article 4 is entirely dedicated to the theme of social relationality. Introducing the concepts of *social* and *musical homophily*, it highlights patterns of *following* others (with strong, weak and absent ties), and patterns of *sharing* one's own music with others, and it demonstrates how musicking is a personal and social lived experience, where the *lived other* strongly relates to the *lived self* and vice versa. This relationality among streaming users is also underscored via the concept of *social awareness* in relation to the users' boundaries regarding what is personal and what is social in the music they stream.

Between Services and Users

I have thus far explained how music-streaming services are subjectively meaningful as instruments for individual musicking, and how both the technology and the music influence the user's lifeworld. My aim with the dissertation, however, is to take into account the structure of the whole music-streaming experience as the primary phenomenon to be explained. This experience involves external, internal, subjective and objective aspects. The phenomenological account of understanding experience encompasses a *structural* dimension that is summarised in the following question: What relational structures obtain with respect to human-technology relations? (Ihde, 1990: 27).

A structure not yet identified in the discussion, apart from my earlier introduction of the notion of infrastructure media, is the music streaming services' engagement in these processes. As a distinct music format with unique qualities, features and contexts, music-streaming services are shaped in ways that favour their intended uses, but we know little about how users actually approach and/or apply them. In addition to addressing music-

streaming services' influence on lived experience, then, this dissertation supplies heterogeneous empirical accounts of these encounters. To shed light upon exactly what characterises these encounters and how they produce meaningful experiences, I will turn to the concept of affordance.

Affordance: Understanding Encounters

Affordances are the ways in which a thing or an environment is naturally perceived. The concept has been adopted by a number of academic fields (including cognitive science, human-computer interaction, activity theory and phenomenology) and hence remains somewhat malleable to this day. The theory of affordances was originally developed (and the word itself coined) by psychologist J. J. Gibson as part of his 'ecological approach' to how observers visually perceive, and act within, their environments: 'The *affordances* of the environment are what it *offers* the animal, what it *provides* or *furnishes,* either for good or ill' (Gibson, 1986: 127, italics in original). Gibson suggests that what individuals perceive (and pay attention to) when they look at objects are its affordances, not its qualities (Gibson, 1986: 134). Media, substances, surfaces, objects, places, and also other humans and music bring with them affordances that determine their interaction with the individual, and different environments/things afford different behaviours to different people (Gibson, 1986: 128–29). This dissertation's interest in what characterises practices and experiences with music-streaming services involves, in effect, what those services *afford* in terms of how the technology triggers distinct individual performances of music in relation to other formats. What is afforded results from the interactions arising from the meeting of technology, person, music and context. Affordances are, as such, properties of the music-streaming services, the devices on which they are applied, and the music that interact according to the capability of the user. This means that the structures that contribute to the encounter are always there but not always foregrounded as such (Gibson, 1986: 139).

What Music-Streaming Services Afford: Involvements

The music-streaming services constrain what the user can do with/in them, yet at the same time they enable possibilities that have become inseparable from the user's way of life (Gibson, 1986: 139). Affordance theory accounts for humans' interpretive capability and sociological gaze in understanding and experience, which enable technologies to be regarded in various ways according the human's individual, social and cultural references. Still, these

interpretations 'rely upon some conception of the technologies "inherent" characteristics' (Hutchby, 2003: 582). Using a text metaphor, this statement means that technologies can be *read* differently, and this is echoed here in the informants' diverse sense-making and use of their music streaming services. For example, the readings presented in article 2 of music-streaming services as tools, spaces, ways of being and means of transformative mediation are all valuable but also telling, in that they are all rooted in the array of affordances made available by the technology.

The affordance theory positions itself between the social construction of technology (SCOT) and technological determinism and in this way supports the other concepts with which I approach music streaming in the thesis. Gibson's original affordance concept, as pursued by Hutchby in direct relation to human-technology encounters, dovetails with Small's idea of musicking and Schutz's approach to understanding experience to inform my focus on perceptions as decisive for *actions*: 'More specifically, actions in the course of mundane *inter*action involving some degree of technological mediation' (Hutchby, 2003: 587). What the streaming services afford provides the conditions for the actions that are possible with them, so affordance theory lands on the line dividing organised and spontaneous user activity and technology's array of action capabilities (Hutchby, 2003: 586). In terms of music streaming in daily life, affordances are what foster the relationships that produce the *real-world courses of interaction*, and, when those are modified into meaningful actions, they inform the *lifeworld courses of experience*.

We must deal with these conditions before we try to answer the question of what music-streaming services actually afford, and in this regard it is useful to return to my identification of the music-streaming services' core qualities, which are the *intangibility* of the medium in which recorded music is made available; the *abundance* of music to choose from and listen to; and the service-integrated *social network* which allows users to connect with other users to follow and share music. Taken together, which is the way in which users find them, these conditions result in *ubiquity, flexibility* and *sociability* with regard to music in everyday life. This arrangement is provided in the service environment with complexity and multiplicity, fluidity, and ephemerality, as well as choices, through a diversity of features and contexts.

In tandem with these core qualities themselves, I also looked at how they might impact users, specifically in terms of interacting with the technology. Clearly, there are risks and benefits, opportunities and constraints, and possibilities with the services that are both positive and negative. The services raise issues concerning subjectivity, sociability,

ownership, autonomy, inadequacy, knowledge, memory, history, and ability (skills, cleverness) in relation to the user's personal relationship to music and management of the service in question.

Ultimately, the environmental conditions of music-streaming services afford agency with regard to individual music cultivation, a state that might also be described as *involvement*. In other words, unlike other music media, music-streaming services afford *user involvement* in the interests of desired, adapted and efficient music experiences in the context of the aforementioned conditions of abundance, intangibility and social network features. These various involvements factor into the decision-making and management of handling the music and the technology, and they impact related notions of selfhood and sociability. Put differently, the streaming format, in terms of what it is, implies, insists upon or invites—what it *affords*—is active listeners. The afforded involvements of music streaming, manifested as practice, experience and sense making, embody the individual, everyday performances of musicking.

This is not to say that other music formats do not afford involvements characterised by both variety and autonomy, both according to and across the given format's intended uses. But user involvements are at the heart of music streaming, and this dynamic is relatively unprecedented. Music streaming services afford the involvements that are musicking.

Negotiable Encounters

As a lifeworld experience, music streaming is realised as a user involvement according to the attentional modifications and individual meaning-making processes I touched on earlier. However, using the notion of affordances also offers a means of synthesising a disparate set of empirical investigations of technologies in situated social interactions, with both the materiality of the technologies and the observable orientations of the users simultaneously taken into account (Hutchby, 2003: 584). By adopting this position, I am acknowledging that the streaming technology's potential is decided not only by human constructs but also by certain constraints. The technology encompasses non-negotiable features that, in certain situations, dictate what people do (Hutchby 2001, 2003), though users are not necessarily made to react as the service intends.

We might see the afforded involvements as the *users' orientations* to the constraints and opportunities of the technology, or, alternatively, as the *services' efficient partaking* in

the patterns of user action. Both of these perspectives upon affordances are correct ways of explaining the encounter, of course, as they address the interaction between the users and the technology. Likewise, both positions acknowledge that the music-streaming technology is *inherently* complex and multifarious in nature. As a starting point for the individual music experience, music-streaming services are negotiable with regard to how they afford user involvement. To clarify this quality, I will next position the structures of streaming technology within a platform framework.

Music-Streaming Services and Platform Principles

The 'platform' has arisen as a common description of the online media service, used by users, in providers' self-characterizations, and in the broader public discourse (Gillespie, 2010: 349). Its flexibility is an advantage but also a challenge. On the one hand, platforms display identifiable aspects of participation and interaction. Music-streaming 'platforms' thus appear available and neutral to the user and are touted that way as a *discursive term* on interested websites, which happily debate what the technology is and is not, and what should and should not be expected from it (Gillespie, 2010: 359). The conceit of the 'platform' prompts marketing messages as well. On its homepage, WiMP Music recently claimed to provide the following: *Ubiquitous music. On all devices. Wherever you are. To you who love music* (11 May 2015). Likewise, Spotify declared: *Music for everyone, Play the music you love,* and *Go with the moment* (11 May 2015). This kind of rhetoric aligns with the notion of the platform to tempt potential users with freedom, flexibility, choice and ability to connect and create.

At the same time, the streaming market is tough in terms of its economy and level of competition, so platforms bring with them implications regarding what will be hosted and what users will do with it, including certain behind-the-scenes interventions. Actual platform configurations can be difficult to perceive for ordinary users, but they shape the user experience nevertheless (Clark et al., 2014; van Dijck, 2013; Gillespie, 2010, 2015; Gillespie, Boczkowski and Foot, 2014). For example, the platform's implications of service provision bring with them the possibility of control over the user as the consumer of the service, which means that the user is not entirely in charge (Clark et al., 2014).

The economic aspect of the platform as a conceit also encompasses the provider's direct access to use patterns, which creates a basis for extensive user analytics. Platform providers make knowledge about their users a big part of their service—intricately

programmed algorithms, for example, determine what is foregrounded or played based on input from (and the past history of) the user (Gillespie et al., 2014: 174). Programmers observe previous listening, patterns of use, and the users' social connections, then make adjustments accordingly, as happens elsewhere on the Internet, which is in fact an aggregation of very dynamic processes and temporary arrangements that are constantly tweaked in response to users' needs and platform owners' objectives (Feenberg, 2009).

Van Dijck (2013) looks at platforms as microsystems that can be dissected into techno-cultural constructs (encompassing the alignment of *technology, users* and *content*), as well as socioeconomic structures (that intertwine *ownership* statuses, *governance*, and *business models*). These two layers play off of one another in the microsystem—the development of new technologies, for example, is inseparable from the emergence of user practices, which are themselves dependent upon the given platform's organisational level (van Dijck, 2013: 25). Multiple such microsystems give rise to the dynamic ecosystem of connective digital media.

In the context of this study, music streaming's platform principles provide users with convenient access to vast amounts of content and allow them to participate in more personalised relationships with both the technology and the music it offers. At the same time, despite the openness insisted upon by both platform and user rhetoric, the platform sets up practical, technical, economic and legal conditions, but stray far from the hands-off neutrality suggested by the aforementioned 'platform' rhetoric (Gillespie, 2010: 358).

Platforms of Musicking

It is important to recognise the adaptable and interconnected structures of online music-streaming platforms in research like this, because doing so situates the use of these services within more general discourses regarding new media, and it demonstrates the fact that the development and use of these services involve multiple and entangled processes. My article analyses deliberately differentiate between what users are able to do with their streaming services and what they actually do with them. In article 1, for example, the platform discourse resonates in my division of the afforded involvements of music-streaming services into *user motivated* and *service facilitated*. The article also addresses the ways in which the use of platform-provided content compares to more autonomously driven user patterns. The alignment of the music-streaming platform as a microsystem in relation to a wider ecosystem comes up in article 4, where I look at users' somewhat conflicted descriptions of the role of Facebook in their streaming practices.

Although my sense of musicking is informed by platform principles, I have not emphasised power relations between users and service providers, or the potential conflict between person and technology. I did try to get at the *users' notions* of how the platforms impact their activity and experiences, however, engaging with what van Dijck calls the techno-cultural layer in the platform microsystem, which consists of users, the technology and the content rather than socioeconomic structures (van Dijck, 2013: 25). My focus on user experiences and practices with music streaming services, foregrounds individual user microbehaviors and everyday activities going on at a particular moment in time in this microsystem. Given the ambiguity of platforms for users characterised as both 'intensely empowering and disturbingly exploitative' (Clark et al., 2014: 1449), what users say about the platforms must become increasingly relevant to scholars who are interested in understanding them in the field of new media studies.

Likewise, a phenomenological and sociologically oriented approach to platforms and algorithms enables nuanced perspectives upon what platform providers try to do when offering tailored, 'relevant' and 'optimised' user experiences based on analytics and algorithms. 'Relevance' is relative, of course—'as open to interpretation as some of the evaluative terms media scholars have already unpacked, like "newsworthy" and "popular"' (Gillespie et al., 2014: 175). I would add that this unpacking must be thorough and continuous, at least when these kinds of notions and terms are applied to individual processes of meaning-making. Just as there is 'no independent algorithmic metric for what *actually* are the most relevant results for any give query' (Gillespie et al., 2014: 175), there is surely no metric regarding what presents itself as valuable and provides *experienced* relevance, optimisation, functionality, beauty, quality and so forth within the lifeworld.

My research thus links to the contemporary scholarly interest in the influence of the platform on participation, the exercise of creativity, and social interaction, beyond simply acknowledging its influence (Clark et al., 2014: 1447). Using the affordance perspective, I have sought to address the nature and power of users versus platforms as an *interaction* rather than a collision of unrelated interests. I have underscored that music-streaming services can foster meaningful experience in terms of user involvement, whether or not the user in question appears to accept or otherwise exploit them. In any case, these interactions nurture the lifeworld of musicking, confirming the platforms as part of what defines the users self-understanding and lived everyday experience.

The Nature of Streaming Service–Afforded Involvements

To arrive at the above conclusion, I have developed a theoretical perspective that emphasises *actions*. Using the concepts of *musicking, lifeworld, affordances* and *platforms*, I have argued that music-streaming services afford involvements that feed into a lifeworld of musicking. This statement summarises a main finding of the dissertation at the macro level of understanding experience. In turn, my data also enables a more granular elaboration upon these involvements, and the richness of details in the examples of musicking enhances the articles. In each encounter between user and technology, the platform's conditions and capacities and the user's capabilities are reckoned against one another in the context of the music's properties and the environmental surroundings. This underscores the individuality and temporality of user experiences with music-streaming services, which appear in more modes, as we shall see.

Relatedly, in article 1, I make it clear that music-streaming services do not afford single, fixed actions but rather a range of *modes of action* that accommodate both careful planning and serendipitous encounters. These services also afford diverse *modes of experience* that relate to listening and encountering music, as well as dealing with the technology. Any sense of the actual nature of musicking in this context must emerge within these diverse modes, or styles, of experience and action. For example, the articles demonstrate variation in involvement in terms of *strength*—that is, how actively the platforms help to generate the musicking, and how much attention and energy the user returns to the process. The negotiation between user and platform includes decisions, deliberations, observations, considerations, examinations, convictions, persuasions, strategies, tactics, selections, solutions, workarounds, collaborations, sentiments, associations, responses, exposures, performances, and on and on.

Likewise, involvements are differently coloured in terms of the *content and purpose* they foster, and the *character and style* with which they are enacted. This kind of musicking involves the social and personal, public and private, curated and appropriated, in styles of interaction that are immediate, gradual, controlled, casual, static, dynamic, fluid, fixed, practical and personal and so on. Here, we might find that Bolter and Grusin's notion of media genealogy is useful for untangling these relations (2000). In their understanding of contemporary media as remediation, they also sought those affiliations and resonances within a given medium that impact formal relations within and among media as well as relations of cultural power and prestige (Bolter and Grusin, 2000: 21). The genealogy of

music streaming services connects with a host of other music media,[21] but in what follows I will concentrate on Bolter and Grusin's logics regarding the way in which a medium connects to the audience's perception: *immediacy* and *hypermediacy*.

Immediate Musicking

Evoking Kassabian's notion of the 'sourcelessness' of ubiquitous listening—that is, the way in which people are saturated by music in contemporary society (2013)—streaming can appear almost sourceless as well, and my article analyses reflect examples of immersive experiences with a real impact upon how everyday moments are perceived. These experiences relate to the experiential dimensions of the four 'existentials' of phenomenology, lived time, lived space, lived body and lived other (van Manen, 1990), and in article 2, I categorised these experiences as personal ways of being and transforming mediations.

This analysis, and the related user experience of music streaming, connects to the media logic of *transparent immediacy* (Bolter and Grusin, 2000). According to Bolter and Grusin, media evolution aspires to this state of experience, thanks to its apparently insatiable desire for more seamless, rapid and convenient technological solutions. Music-streaming services are a case in point, promoting immediacy through their physical trappings (generally mobile devices and headsets) and their features, all of which brings the music closer to the user: 'In its psychological sense, immediacy names the viewer's feeling that the medium has disappeared and the objects are present to him, a feeling that his experience is therefore authentic' (Bolter and Grusin, 2000: 70).

The immediate transparency of music-streaming services is reinforced by the aforementioned taken-for-granted position of the music and this technology in the user's everyday life. They allow for frequent, casual, fragmented and random musicking that is attached to daily tasks yet accommodates *moment-sensitive* immersive and transforming music performances (see article 2). The notion of immediate musicking also grounds the argument from article 3 that besides fluidity as a main characteristic of music streaming services (McCourt, 2005) they foster integrity, intensity and intimacy as a perceptual

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[21] In fact, this study could have drawn further upon music-streaming services as *remediation*, the particular ways in which new media refashion other contemporary and older media, and the ways in which users perceive this heritage from existing media and draw on it in their uses of a new media (Bolter and Grusin, 2000). The analyses reflect remediated practices that include, for example, orienting oneself in record stores, making personal music collections, reading fanzines and music magazines, making cassette mix tapes, following music charts and top lists, chatting, lurking and connecting in social media networks, and listening to radio, albums and tracks.

interpretation of the immediate streaming experience. Then, 'immediate musicking' sheds light upon the nature of the service-afforded involvements, of fleeting and distracted attention that still have power to generate important, authentic and real everyday music experiences, as described by my informants.

As a platform condition, rather than a state of experience, these immediate music involvements are very technology dependent and derive directly from the ubiquitous Internet, the services applications and their interfaces with buttons and scrollbars, the software involved in the technology, and the loudspeakers, headsets and devices that host the technology and the music. On top of this is the content of the music-streaming itself, presented through features that allow the user to deal with the format's core qualities (abundance, intangibility and social networks) in both automated and participatory ways. Interestingly, automated features driven by algorithms like *shuffle* and *radio*, and casual streaming while engaged in the everyday, are just as likely to facilitate strong moments of immediate musicking as careful and planned listening.

Hypermediate Musicking

At the same time, this user accounts that inform this study demonstrate a multiplicity of afforded involvements. Aside from the immediate experiences of profound and casual listening described above, music streaming as an activity is also foregrounded in how the *experiences with the technology* appear to be an equally important dimension of what constitutes the music-streaming experience. Bolter and Grusin's other logic of users' media perception, *hypermediacy* (Bolter and Grusin, 2000), is most useful here, in that it rejects the idea of *total mediation* in favour of an explicit mediation. The feeling of immediacy is replaced by the need to make constant decisions regarding what information is desired and how to receive it (Rasmussen, 2014: 93).

Among the numerous user involvements I summarised in the introduction to this chapter (compiling, searching, skipping, sharing, following, curating, hiding, sneak-peeking and so on), most should be regarded as examples of users acting directly *upon the opaque media system*. In other words, the compound, multiconditional, (re)mediated interface of the music-streaming service affords involvements based on pure hypermediacy, which Bolter and Grusin define as follows: 'the insistence that the experience of the medium is itself an experience of the real' (Bolter and Grusin, 2000: 71).

Compared to the experience of immediate perception, the meaning of hypermediated experiences is perceived gradually and is layered, often over time—for example, in terms of the long-term social recognition or payoff to be derived from sharing music and following others (see article 4). Article 3 also features examples of musicking *enacted over time*, in terms of playlist making as a pastime that evokes former collector practices. Hypermediated musicking can also appear to be *emerging over time*, as when the activity that inspired a given playlist becomes part of the user's everyday routine or habits.

Where immediate musicking is moment sensitive and ephemeral, hypermediated musicking is *context sensitive* and often appears more permanent. The act of streaming is planned, performed, made sense of and experienced in relation to a given context, which the user is conscious of and purposely develops.

The nature of hypermediated musicking as such benefits from the service conditions of abundance, intangibility and social media networks, which represent an enormous potential for context-specific music-related meaning making in everyday life. However, successful hypermediated musicking requires that the user successfully navigate these circumstances of musicking, as they are distributed among platform features and user logics and preferences on personal devices to be purposefully applied in the multiple contexts of daily life.

As a perceptual interpretation of the streaming experience, hypermediated musicking explains the service-afforded involvements that include active and conscious dealing with the technology and its content. As described by my informants this nature of the music streaming services also fosters experiences of integrity, intensity and intimacy when content and practice is successfully acted into hypermediated musicking.

Summarising Musicking: Main Findings and Further Research

In this chapter I have discussed characteristic practices and experiences with music-streaming services based on how they are presented in the articles that constitute the second half of this dissertation. In the articles, these multiple and various user involvements are thickly described according to structures of understanding that emerged as I rendered and interpreted my data. The articles present, respectively, music-streaming involvements as *personal practices* developed for various purposes based on diverse service capacities and user capabilities (article 1); the *users' self-understandings* of their involvements with music-streaming services interpreted as *tools, places/spaces, ways of being* and *transforming*

mediations (article 2); processes of making, using and maintaining *personal playlists* (article 3); and *practices and awareness* related to the social features of the services (article 4). I will summarise the articles' main findings in the next chapter.

In the preceding chapter, as well, I discussed users' experiences and practices with music-streaming services as meaningful everyday activities using action-oriented theoretical frameworks. In reviewing those involvements from that position, I was able to characterise them further, outside of the themes of the articles, and to draw some conclusions regarding how streaming technology influences the users' relationships to music. I am now able to challenge the notion of new media as vague or ill defined (Gitelman and Pingree, 2003), at least as far as music-steaming services are concerned. My definition of this platform is based on both the meaning and the functions of the technology, as shaped by everyday adaptations and user habits, and by a perceptual, conceptual and practical understanding of what it is and does for the user.

By converting Small (1998) and Schutz's (1967) theories into frameworks highlighting music streaming as *individual musicking*, I can frame the experiences and practices associated with music-streaming services as taken-for-granted processes of relational meaning making that closely accompany users in their everyday lives. I reached this understanding by exploring the ways in which users perceive and act upon the streaming technology, and by exploring the various roles of the music in the everyday.

Hence, one response to my twofold research question is that, rather than talking about a clear *human-technology* relationship impacting the *human-music* relationship, I might instead point to a *listener-music-technology* relationship whose aspects are so closely integrated that the relationship itself has become part of the normal infrastructure of daily life. Users give manifold and multifunctional roles to the music—roles that are aesthetic, individual and practical, and that contribute greatly to daily life management, and they do the same to the technology, as perceived within the overarching media logics of immediacy and hypermediacy (Bolter and Grusin, 2000).

The music-streaming technology is experienced as meaningful in relation to the ways in which the user encounters music in the context of daily life, which depends, in turn, on what the services afford in the same situations. Individual musicking is enabled by the music's ability to 'work' on the listener through properties and expressions that trigger the listener's attention. And it is the mobile and taken-for-granted technology that enables this to happen variously throughout the unfolding of the everyday.

This means that the music-streaming platforms' core qualities—*intangibility,*

abundance and social network features—also influence how users maneuver and experience music in various situations, from their work desks, their pockets, their bedsides and so on. The platform's configured and conditional presentation foregrounds notions of ubiquity, flexibility, identity, sociability, fluidity and ephemerality, based on what the technology itself can do. Put differently*,* music-streaming services *afford an active listener* as the main characteristic of practices and experiences related to them. It is important to acknowledge that streaming technology is driven by platform principles, and that service providers work hard to keep users both comfortable and active in the platform environment.

The recognition of the many factors that impact the user experience—the technology, the actual person, the context and the music—then allowed me to break down these afforded involvements by mapping variations in the balance struck among, and the impacts of, those factors. Another main finding is hence that these involvements appear within diverse modes of experience and practice in terms of their origins, styles, strengths, characters, contents, purposes and so on. The individual user experience depends on which steering factors dominate the practice. Moreover, music streaming appears meaningful in different ways in relation to users' lives. Among the group of heavy users affiliated with this study, musicking supplied agency, meaning making, goal achievement and aesthetic experiences at the level of the everyday. The present dissertation offers insight into not only how people currently live their lives with music but also how our interaction with the technologies that surround us has affective value within our individual processes of meaning making, and takes part in our habits and rituals. The music-streaming service has now filled the role of malleable lifeworld resource, and the musicking it enables, as a phenomenological experience, therefore impacts personal integrity, social identity and the lived experienced of time, space and body. Musicking is also individual in terms of its experiential character, and the emotional, attentional and affectional intensity it is given, although it always also relies on its social context.

The notion of musicking developed in this thesis is supported by Bauman's observation that the casting of members of a society as *individuals* is a trademark of the contemporary modernity (Bauman, 2000). It happens through people's *daily re-enacted activities*, through which they are also 'forming society out of their life actions while pursuing strategies plausible and feasible within the socially woven web of their dependencies' (Bauman, 2000: 31). The work presented in this thesis also resonates with Ihde's statement that 'technology is only what it is in some use context' (Ihde, 1990: 128). In the case of music streaming, users are only variously aware of the technology's 'state of

being' as the context of use sweeps the whole specter of the everyday, also including the taken for granted.

As a lifeworld resource, then, music streaming claims individual everyday awareness through involvements that are sensitive to moments, contexts, others and selves, as well as the technology and music as lived experience.

Evoking McLuhan, Rasmussen observes that 'new media bring new aspects of reality to the fore, while others move to the background' (2014: 91), and this is useful in terms of discerning what the streaming media's core qualities offer to the lived experience. In short, it is the *action* of it, not the media itself that makes meaning. The scope of this research is user oriented, after all, but it also contributes to an understanding of music-streaming services as an interactive, participatory music *format*. As a contribution to 'format theory', then 'it invites us to ask for the changing formations of media, the contexts of their reception, the conjunctures that shaped their sensual characteristics, and the institutional politics in which they were enmeshed' (Sterne, 2012: 11).

An understanding of music-streaming services as a format that is dedicated to (more or less) active listeners, and to music as an activity, sheds light upon how new media has developed and continues to develop. As I explained in the introduction, music-streaming services tend to offer access to music via *contexts* (Wikström, 2012), and increasingly these contexts seem to highlight the contemporary, the circumstantial and the mundane, which is exactly the character that emerged from my informant data. WiMP Music and Spotify continuously try to enact musical representations of smaller and bigger events that are thought to be relevant to their subscribers' daily lives. This observation relates to what Katz (2004) has named the *phonograph effect*—that is, the processes through which the manifestations of music recordings (technologies and formats) impact musical life. While a particular format might prompt 'users to react to its distinctive attributes, the value of the technology lies in the hands of those users. Just as the technology shape the activities of its users, their activities shape the technology' (Katz, 2004: 190).

The phonograph effect of music streaming, then, not only affects users' individual practices and experiences of music in the everyday but also 'shapes the very way in which we think about music: what it is, can, and should be' (Katz, 2004: 47). That music streaming's phonograph effect points to the apparently mundane is not to say that music is less important, but rather that it is more so, because, through streaming, music meets us where we live, everywhere, all the time. It is worth reiterating that musicking is not a new phenomenon but a longtime part of a fundamental social relationship between art and

society (Small, 1998). The technological age has simply increased its scope and its reach—in light of contemporary society's ubiquitous music and Internet technology, the pendulum of music and meaning has swung towards more activity-oriented practices and experiences. Likewise, the growing festival culture foregrounds active involvement as the key to musical meaning as well, and participation and presence are fundamental to the festival experience.

This dissertation's interpretation of the music-streaming service as an interaction among individual, social, contextual, technological and musical factors likely represents a historical construct that will change. The tendencies of current everyday music consumption that I have tracked are perhaps only valid at this particular point in the cultural history, as technology, and our practices and experiences with it, will continue to develop rapidly. Still, this study provides an empirical-theoretical portrayal of a current value system of music consumption, and of the experiences and meanings that derive from its practices, and it is therefore hopefully more viable for the long term than music-streaming technology is predicted to be by some.[22]

Further Research

By looking at what people actually do when they stream tracks and handle music through music-streaming services, this study unpacks common arguments, experiences and practices related to everyday music consumption in the contemporary society. It also explores characteristics of streaming media as experienced by the user. Its objectives, methodological approach and design have far-reaching potential for further development in the related areas of sociology and phenomenology, media and communication studies, and musicology.

For example, this study's informant group of heavy users who were also dedicated listeners and early adopters of new technology could be complemented by a group of more casual listeners. One wonders whether the platform's impact upon user experiences and practices would be different in that case. Other demographic variations (age, format experience) would also be significant, in terms of both the implementation of new technology and the role of music in everyday life. One could also explore the study's empirical findings by introducing the theoretical concept of remediation (Bolter and Grusin, 2000) or by framing music streaming as a process of personalisation and domestication

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[22] Music streaming (in this case, Spotify) is 'the last desperate fart of a dying corpse', according to Thom Yorke from Radiohead (quoted in Dredge, 2013).

(Silverstone and Hirsch, 1992; Silverstone and Haddon, 1996; Rasmussen, 2014). Other approaches might engage cultural and social differences among users.

In terms of studying music streaming as lived experience, it is tempting as well to go even deeper into the rhythm of individuals' everyday lives by investigating the role of music streaming in certain particular situations, perhaps using more ethnographic methods.

All of the abovementioned possibilities for research involve perspectives related to notions of quality in the user experience with music streaming, and quality can be extended to the other partners involved, like musicians, record labels and service providers. The notion of quality also has the potential to function as a critical concept that might be useful for unpacking standards, characteristics, expectations and attitudes related to music-streaming media from a range of perspectives, including informational, aesthetic, technological, musical, cultural, economical and symbolic. It might also touch upon trending issues in the public debate regarding the music industry, including fair-trade music marking (Tjellaug, 2015) or the contemporary pro-rata model versus a more user-centric model of music revenue distribution (Maasø, 2014).

Chapter 6: Summary of Articles

In chapter 3, I presented the main research questions for this dissertation, which concern what characterises human-technology and human-music relationships in relation to the use of music-streaming services. In what follows, I will summarise the main findings of the related articles, which respond to more focused research questions.

Article 1: Paths in the Online Music Jungle: Understanding Personal Practices with the Use of Music-Streaming Services

This article explores the diverse ways in which users perform and approach music-related practices with music-streaming services in everyday life and concludes that music-streaming services mean different things to different users in different contexts, despite the essential similarities of the services themselves. A main variation in practice derives from whether the user takes a technology-centric or user-centric approach, and this choice is already a unique affordance of these services, which allow for diverse modes of action, and hence of experience, by accommodating careful planning and serendipitous encounters. In this article, I explore personal practices along a continuum ranging from *user-motivated* to *service-facilitated* music streaming, according to which socio-technological arrangements are shaping the particular user experience. These arrangements encompass the services' action opportunities, ranging from participatory to automated, as well as the listeners' contexts for streaming music, as well as their capabilities and habits/whims. I conclude that meaningful music-streaming experiences depend upon the users' experience of control, choice, trust, integrity in their practice, and sense of balance between themselves and the technology. Likewise, users give different weight to notions of cleverness, creativity, convenience and efficiency. Lastly, as 'possession rituals', streaming practices appear to be more meaningful when they enable users to filter this intangible and abundant content through a functional and customised system of appropriation.

Article 2: The Metaphors We Stream By: Making Sense of Music Streaming

In this article, I use the concept of the metaphor as a means of exploring how users make sense of their experiences and practices with Spotify and WiMP Music. In their everyday music streaming, users bring specific approaches, expectations, purposes and abilities to the technology, and these things accumulate into the roles and meanings that are then re-presented using certain streaming-related metaphors. This article frames these metaphors as individual human gestures of sense making that can be unpacked via the interpretation of the informants' thoughts and claims. I also use metaphors as an analytical filter that helps to comprehend partially what cannot be comprehended totally: other peoples' feelings, experiences, interpersonal communications, and self-understanding. Drawing on existing metaphors of Internet experiences (Markham, 1998), I find that music-streaming services can be made sense of as *tools* for music-related jobs*, spaces/places* for exploring music and communicating with others, and *ways of being* that often connect to everyday contexts and notions of identity. However, because mobility, ubiquity and online applications on personal media devices have come to characterise today's Internet, these metaphors only partly capture music-streaming experiences, and I therefore introduce a fourth framework to address moment-sensitive, music-aided sensations: *transforming mediation.* I also discuss whether this *is* a metaphor, as well as how it captures the immediate, serendipitous, fluid, fragmented and casual music experiences that can be characteristic of music-streaming services.

Article 3: The Playlist Experience: Personal Playlists in Music-Streaming Services

Music-streaming services encompass features that enable the organisation of music into playlists, and this article looks at how users describe and make sense of practices and experiences of creating, curating, maintaining and using personal playlists. Its findings suggest that the heterogeneous management of personal playlists follows individual logics that derive from structures in the music, in the technology, and in the users' everyday contexts. I demonstrate how playlist organisation ranges from static to very dynamic and can be randomly played or played as ordered. I also discovered significant variation in playlists' longevity—some were made for temporary, context-sensitive ends and others were meant to be more permanent. The curatorial practices involved in playlist content responded to a host of individual priorities: standard music classifications, everyday routines and habits, relations to others, communicative aspects, states of mind, moods and notions of identity, and so on. An experience of control over the music and the technology, and also over the everyday situation and even oneself, derives from well-implemented playlist practices. Playlist practices are hence also processes of rendering streaming technology more personal and practical.

Article 4: Social Streaming? Navigating Music as Personal and Social

Co-written with Marika Lüders, researcher at SINTEF, Norway

Music-streaming services embed social features that enable users to connect to one another and use music as social objects. This article examines a central aspect of the social nature of the online music experience by exploring how the features of *sharing* music and *following* others through streaming services are experienced within an ongoing negotiation of music as at once personal and social. Our findings suggest that users incorporate various versions of *social awareness* into their non-sharing, selective-sharing, and all-sharing approaches to music streaming. Social awareness also informs users' experiences of following strong, weak and absent ties in their streaming networks. We found that relations to peers can be differentiated specifically in relation to sharing versus following. We also found that social ties of different strengths are characterised by different configurations that we describe according to *social* and *musical homophily*. Regardless of the fact that music-streaming services prominently feature social networks, we continue to question how social the streaming experience actually is, because it is the *individual's* boundaries of being social that define the streaming experience. We find that social streaming is characterised by an ongoing, situational negotiation of oneself, and a heightened awareness of others in relation to one's own music listening. Negotiations of music as personal and social, in other words, are basic to the shaping of music-streaming experiences.

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Part Two: Research Articles

Title	Status
Paths in the Online Music Jungle: Understanding Personal Practices with Use of Music-Streaming Services	Submitted to *Participations: Journal of Audience and Reception Studies.* In review.
The Metaphors We Stream By: Making Sense of Music Streaming	Submitted to *First Monday*. In review
The Playlist Experience: Personal Playlists in Music-Streaming Services	Submitted to *Popular and Music and Society.* Published online, March 10, 2015.
Social Streaming? Navigating Music as Personal and Social *Co-written with Marika Lüders*	Submitted to *Convergence.* In review.

Article 1: Paths in the Online Music Jungle: Understanding Personal Practices with use of Music-Streaming Services

Summary

This study explores the ways in which users cultivate everyday music interests with music-streaming services. The analysis relies on a mixed-method study, combining self-reported diaries, online observation and in-depth interviews of twelve heavy users in Norway. The study suggests that music-streaming services mean different things for different users, despite their essential similarity. I analyse these variances as diverse modes of service-afforded interaction and experience. Streaming-practices are explored as user-motivated and/or service-facilitated, as two ends coined to indicate diverse socio-technological arrangements shaping the uses, including diverse technological action opportunities embedded in the services, and the listeners' contexts and capabilities. The article finds that meaningful music-streaming experience emerges according to the users' experienced control, choice, trust, integrity in their practice, as distributed among themselves and the technology. In both modes of experience, practices as 'possession rituals' appear meaningful when they enable turning the intangible and abundant streaming-media into functional and customised systems of appropriation.

Introduction

Music-streaming services are online music databases designed as software applications for computers, mobile phones and tablets, among other things. Through the use of streaming services on personal media devices, music can accompany the listener to most everyday contexts. In Norway, where this study was conducted, seven out of ten Internet users access one of the two major services, Spotify and WiMP Music (TNS Gallup), and 80 percent of users under thirty years old use a service daily (IFPI Norway). This means that music streaming has become a mainstream source for everyday music listening. Norway has also the third leading international music-streaming market with 88 percent of the total digital music revenues in 2014 from subscription streams (IFPI).

Music-streaming services represent a music distribution model in which access is valued over ownership, linearly programmed channels, and objects or units for sale (Wikström 2012; Mulligan 2013). Through subscriptions, users can access vast music archives through different service interfaces, either free of charge (in advertising-based models) or for a monthly fee (in premium versions without advertising). Access-based music-streaming

services have tended increasingly to differentiate themselves and maintain profitability by offering 'contexts' for the audience's music access (Wikström 2012), including customisable features and music selections that adapt to the user's preference. Despite the importance of standing out in the increasingly crowded market of online music providers, music-streaming services are similar but with some difference in terms of content presentation and features. These generally interactive services offer a range of features that enable subscribers to share, discover, organise and be creative with their music, as well as service-selected news, magazine content, playlist suggestions and algorithm-driven modifications of suggested listening patterns.

Although changes in human behavior are never solely technology driven, the increasing popularity of music-streaming services brings with it noticeable structural shifts in the relationship between music and listener. In the interests of understanding what this means (which is an overall aim of this study), I will discuss three aspects of the mediating music-streaming environment that particularly influence this relationship. The first aspect is the sheer abundance of music that is available through these services—more than twenty-five million tracks force users to deal with or align systems of choice, storage and searching in relation to their listening. The second aspect is the intangibility of the format, which raises issues concerning how music is approached when service users are renters of access rather than owners of physical products. Music 'in the cloud' also questions the place of archives, ownership and mobility in relation to music listening. The third aspect involves the social network features that are embedded in these services, and the related issues of music listening as personal or social, private or public. I have already dealt with the third aspect elsewhere (article in review). Users reckon with these three aspects of music-streaming services through what I will refer to as *socio-technological* arrangements, as we will see below.

Research Question

With music-streaming services as a principal resource for music listening, a mediated atmosphere characterised by musical abundance, format intangibility, device flexibility and social connectedness has become the everyday norm. This calls for further investigation, as contemporary music experiences arise within a complex negotiation between various service contexts and arrangements and the listener's personal and social contexts. Wikström calls for an investigation of the values that derive from context-based music-service experiences

(2012: 19), which aligns with my interest in the user's experienced value from listening to (and interacting with) music through streaming services, and particularly the ways in which meaningful experiences emerge from the user's approach to technology. This study seeks to unpack meaningful music experiences from a practical perspective, in response to the following question: *How do personal music-streaming practices, shaped by diverse socio-technological arrangements, generate meaningful user experiences?*

To answer this question, I will start by outlining a theoretical framework for the conceptualisation of the technological environment of music-streaming services and the ways in which users encounter it. I will then apply the framework in the following analysis of music streaming practices in relation to various patterns of use, including listening planning, music exploration and the audience's experience of service information. Lastly, I will discuss these practices in terms of their efficiency and the different ways in which they become meaningful to users.

What Music-Streaming Services Are, and What They Offer

Scholars have begun to shed light on what happens during encounters between multifaceted technologies and individual users, though these discussions tend to be ideological in the way in which they oppose conscious human activity and the 'technological unconscious', 'the potent, active technological environments that operate without the knowledge of those upon whom they are taking an effect' (Beer 2009 in Van Dijck 2013: 32). Grasping precisely how the 'technological unconscious' actually affects the user experience is problematic, however, given its inherent ineffability. Here, I will instead focus on what users actually do, and what they say they pay attention to, in their use of music-streaming services, including arrangements that are otherwise downplayed by service providers who tweak the content to maximise service profit (Gillespie 2010). This point of the ambiguous appearance, which is typical for online media services, might be better illustrated if we conceive of music-streaming services as *platforms*.

The digital media industries have increasingly embraced the notion of the platform as a discursive frame that encompasses user-generated content, streaming media, blogging and social computing (Gillespie 2010). Typically, online media platforms have specific configurations. They host libraries or archives of content that can be adapted, organised, highlighted, curated and demoted in subscriber participation. Such practices promote an

affective sense of user ownership, yet the content is never actually owned or controlled by the users but only accessed by them (Clark et al. 2014: 1458–59). The platform notion for users also implies financial value on the provider's part—for example, in terms of incorporating subscription systems for access to content and data analysis of user patterns. Furthermore, platforms are configured with algorithms that are often difficult to perceive for ordinary users, but still have influence on the user experience of music streaming. Intricately programmed algorithms sort and deliver content on online media platforms, and programmers try to tweak them toward public benefit and/or financial gain (Clark et al. 2014: 1458–59). This means the providers partly control what users act upon, and that the user experience of platforms is based on a technology constantly evolving and is a subject to change.

Music-streaming services such as Spotify and WiMP Music, understood as platforms, appear open and neutral to their users while incorporating certain behind-the-scenes interventions that impact the experience (Gillespie 2010: 358). Service providers need not necessarily emulate traditional gatekeeper roles (like, for example, broadcasters or records stores), but platforms do have implications regarding both what is hosted and what users do with it. Platform owners drive decisions about content, availability, organisation and participation (van Dijck 2009) and shape certain conditions: 'It is merely a question of what kind of conditions, and with what consequences' (Sandvig 2007 in Gillespie 2010: 358). This study looks at the implications of music-streaming services specifically by addressing how user practices arise and thrive in relation to what services provide. This approach recalls Avdeeff's (2012) examination of the consequences of iPod technology for individual music engagement, which found that users had deep emotional connections with both the music and the technology that imprinted themselves on taste formation and other characteristics of daily life.

Platform Arrangements: Service Facilitated and User Motivated

Music-streaming platforms offer users diverse options for interaction that can be categorised based on what initiates the user activities: Are they what I have coined *service facilitated* or *user motivated*? These categories are not necessarily exclusive. In fact, they often overlap and are related, but they still enable to demonstrate two different takes on user interaction with music streaming services. The latter derives from arrangements that ask users to participate actively in the service interface and privileges characteristics such as immediacy,

speed and fluidity with regard to grouping or sorting music files effortlessly (McCourt 2005: 250). This encourages the cultivation of individualised planning and performance in everyday music listening. Self-generated selections from these vast streaming libraries can be organised into personal archives comprised of both dynamic and static playlists that are arranged according to a wide variety of structural and contextual schemes and logics that answer to both personal and social purposes (Hagen 2015).

The former derives from arrangements that offer music access without the need for user participation. From a provider perspective this is important given that many online media users complete service profiles and check those platforms either sporadically or regularly but only rarely post anything (Lomborg 2015; Crawford 2009; van Dijck 2009), as a parallel to how online music participation might appear. This means subscribers can take advantage of service-facilitated content in the form of readymade playlists, editorial content, news updates and highlighted releases that are often themed and timed according to specific provider contexts or logics, or exclusively presented as part of the service's marketing strategy. Music-streaming services also offer options for convenient and even instant listening through algorithm-based configurations, such as the 'shuffle', which offers tracks in a random order; the 'radio', which provides an endless stream of music; and the 'related artists' feature, which presents tailored listening suggestions. In other words, music-streaming services as automated technologies offer service-facilitated content options and listening possibilities that can be enjoyed without any thought or intention on the user's part.

Of course, user agency is complex, and most people combine these alignments and otherwise develop diverse practices for diverse purposes. How users act upon and attend to content, and what they contribute online, varies to a great extent (Crawford 2009). In addition, in media environments where boundaries between content, information and commerce are frequently redrawn, user roles are particularly multifarious (van Dijck 2009). Still, the distinction between *service-facilitated* and *user-motivated* activity are terms introduced to begin to unpack the ways in which users draw on these diverse platform arrangements.

Automated and Participatory Technology Arrangements

This continuum spans *active* user participation driven by individual agency and involvement and *passive* user consumption with no or little effort required from the user (partly because

the service does the work). These extremes have typically been caricatured by media scholars through a somewhat overstated emphasis on either technology's influence on a person or a person's (enhanced) opportunities thanks to technology. These two theoretical extremes bring up various consequences and eventualities regarding the human-technology relationship, according to scholars' previous work in the field. For example, Henry Jenkins's (2006) notion of participatory culture gave rise to a very optimistic estimation of current consumer culture, media production and circulation, with users positioned as empowered participants in a democratic system. Among other things, this notion implies meaningful social interaction via networked technologies wherein users can connect, thereby liberating themselves from settled groups to navigate among multiple networks (Rainie and Wellman 2012). Online environments can also be seen to further expand the scope and reach of the active consumers, perhaps by enabling them to participate as producers of user-driven content (Bruns 2006). Relatedly, Campbell has conceived of individual users as 'craft consumers' (2005) who not only exercise 'control over the consumption process, but also bring skill, knowledge, judgment, love and passion to their consuming' (27). Individuals consume as part of the satiation of a desire to engage in creative acts of self-expression by employing mass-produced content as 'raw material' for creation of new 'products' often intended for self-consumption (24, 28). Online participation as curatorial practice represents another perspective on user agency and foregrounds the ad hoc expertise of adding editorial perspective to the aggregation of content created by others. This work, of course, depends on the requisite related skill set and/or knowledge of the content in question, and it can lead to collecting, organising, preserving, filtering, crafting a story, displaying and facilitating further discussion (Liu 2010; Changtao et al. 2013). Curated playlists in streaming services can even reflect digital subscribers' perspectives upon the meaning of owning a collection, through personal effort and careful maintaining of service content (Hagen 2015).

In the aforementioned models, the user is regarded as an active and rational actor, carefully allocating and exploiting available online resources to maximise personal utility or gain. On the other hand, outspoken critics of the 'mass society' regard users as consumers—passive, manipulated and exploited victims of market forces, or 'dupes' (Slater 1997 in Campbell 2005: 23–24). Platform owners are then 'sponsors' over users (Gillespie 2010); through their service configurations and associated regulations, providers control the conditions within which content is achieved, practiced, participated in and consumed.

This recalls Baudrillard's (1968/1996) deterministic conclusions regarding what happens when automatism comes to characterise machines: 'Automating machines means sacrificing a very great deal of potential functionality because in order to automate a practical object, it is necessary to stereotype it in its function' (110). Though initially directed elsewhere, Baudrillard's perspective sheds new light on the assorted music provisions and algorithm-driven features that are often the default settings of music-streaming services. Defaults in software applications are usually intended to channel user behaviour in certain ways (Van Dijck 2013: 32) and hence introduce the possibility of the restriction of that behaviour, as they 'continually pushing objects into dangerous abstractness' (Baudrillard 1968/1996: 111). Ultimately, these processes limit user choice by offering fewer opportunities at the outset, forcing people to become mere spectators (110).

Interface Interaction and Affordances

Human agency, in tandem with both automated and participatory platform arrangements, influences user practices in music-streaming services. User-motivated and service-facilitated music streaming are hence undertaken through an interaction with a system that engineers the provision of music and manipulates the content. Usually, this system also allows individual users to manipulate the options. In both cases, the role of the service interface—the part of the service linking software components to hardware and user devices—is prominent (Van Dijck 2013: 31). This service interface has two aspects. An invisible interface is concealed from users and controlled by platform owners, who can make changes to it, such as hiding or revealing certain icons, contents or features. The visible interface generally contains 'technical features (e.g., buttons, scroll bars, stars, icons) as well as regulatory features (e.g., the rule that a personal profile is required before entering the site)' (Van Dijck 2013: 31). Features of the visible interface actively influence users' connections to content as well, thanks to the same type of coded information that controls the invisible interface. Both interfaces represent important opportunities to influence the user experience (31).

In what follows, I will explore what users themselves perceive (that is, for the most part, the visible interface), and particularly the issue of whether users view their ability to control their experience as a benefit of the technology or a triumph of human over machine (Markham 1998: 124).

In this regard, the concept of *affordance* is useful for describing those fundamental properties that determine how a thing or an environment could be used or perceived (Gibson 1986). Psychologist J. J. Gibson developed the concept as part of his 'ecological approach' to understanding how observers visually perceive their environments, but it has proven equally relevant to human encounters with digital technology—in the present case, for example, in relation to what music-streaming interfaces (as they are displayed on a given device in a given context) seem most inviting to users. Affordances equally much rely on the online platform environments and the individuals' behaviors (129), so different layouts or music choices afford different behaviors for different individuals (128). The concept of affordance offers a means of synthesising a disparate body of empirical data concerning 'technologies in situated social interaction', taking into account both the materiality of the technologies and the observable orientations of their users simultaneously (Hutchby 2003: 584).

Given their diverse platform arrangements, music-streaming services have the potential to afford diverse practices, again ranging from user motived to entirely service facilitated. As I will demonstrate in this article, we must also assume that audiences are diverse in their motivations, potentially resistant to the technology and also diversely literate. This diversity among users are further enhanced given that the mediated content is socially diversified, the channels are technologically convergent, and the mediated communication processes are interactive (Livingstone 2005).

Depending on the affordances in question, user practices might alternately exploit diverse platform arrangements or countermand the service's intentions, recalling de Certeau's (1984) characterisation of human actions and navigations as 'operations' of everyday habit and routine (93). He categorised those tensions occurring between individual and institutional readings of affordances as either *strategies* or *tactics*. With regard to music-streaming services, strategies refer to providers' definitions and organisations of the streaming environments and the available user resources, whereas tactics refer to the individual users' agency in terms of activities aimed at devolved and purposeful control (de Certeau 1984: 35–37). Shaped by a host of such socio-technological arrangements, music-streaming services now supply a range of diverse possibilities that lend themselves to de Certeau's categories as we try to understand how meaning emerges from them.

Given the challenges associated with trying to grasp what people do with personal media applications, I apply a combination of methods to my investigation. To avoid the potential distortions associated with retrospective inquiries (Hektner et al. 2007: 7), I began with a diary study. Self-reported informant diaries represent 'insider' accounts that the researcher cannot acquire in any other way. I asked my informants to write diary entries on every music-listening session that involved music streaming during four sampling periods (of two or three days apiece) that were announced via SMS and email only just as they began and ended.

Diary entries were shaped around seven pre-supplied questions that revolved around the listening context (location, date, time), the music context (what music, from which source, why listen to it now, how the music was found), and the listening experience (a description of music use, parallel activities, the social or personal setting, distractions, and related emotions). Entries took form of handwriting in notebooks, emails, word documents, screenshots from personal media devices, or replies in spreadsheets created in Google Docs.

To complement the diary entries, I observed the informants streaming service accounts and Facebook profiles during the months of their diary reporting, and had obtained consent from all the users and also the Privacy Issues Unit at the Norwegian Social Data Service (NSD). I also logged their listening via the scrobble feature in the music service Last.fm, which enables one to process and distribute information from music streaming. This tracking mechanism allowed me to determine that listening patterns did not change significantly during the testing period.

I followed up with in-depth semi-structured interviews that lasted between forty and sixty minutes. The informants brought along the devices they used most for music streaming, and it proved very relevant to look at their streaming accounts with them, discussing choices and experiences specifically in relation to the content and features embedded in the given service. The interviews were recorded, transcribed verbatim, and coded in HyperResearch, and all of the informants were anonymised.

The shifting character of the practices in question inclined me to dig deeper into a restricted sampling of experiences rather than seek to develop a broader cross-section. In this way I could account for the wide potential of service opportunities in terms of features and content as well as individual variation in use and practice among users. I recruited heavy Spotify and WiMP Music users who had maintained their subscriptions for at least a year and streamed music five to seven days per week. Six informants (ages seventeen to eighteen) resulted from visits to three high schools in the Oslo area of Norway. Six more informants were engaged through the release of information about the study on Facebook and Twitter, to which twenty people (between the ages of twenty-one and sixty) replied, none of whom were known to me previously.

The informant group included five male and seven female streaming subscribers, including high school students, advanced degree students, and professionals in various positions. The sample was skewed young so as to guarantee useful data from individuals who turned to online platforms exclusively for their music experiences. I complemented these informants with some older people who had experience with physical music formats and pre-streaming online music formats as well. All of my informants turned out to be passionate music fans who shared generously, sometimes producing detailed reflections multiple times a day. The study data therefore reflects users who invest more time than most in their streaming services.

In coding this data, I first conducted a thematic analysis to generate my codes and categories. This type of analysis allows for the identification of general issues ahead of a larger analysis, yet the actual relevance of these preliminary codes and categories arises only in the process of coding the actual data (Ezzy 2002). I then deductively applied a pattern-matching logic to compare the themes that had emerged in the coding to the concepts that were most relevant to my study. Through this comparison, I began to unpack the human-technology encounters between listeners and music-streaming services, encompassing evolving, contextualised and meaningful experiences and practices. The following account is neither comprehensive nor mutually exclusive with regard to these practices, but it is an important place to start assessing the significance and societal influence of this hugely popular pastime.

Music-streaming services initially provide the same type of frame for music listening to all users (if we disregard specific differences among the services included for diverse devices). Nevertheless, this study clearly demonstrates that music-streaming services are perceived as distinctive—that is, they mean different things to different users, despite their essential similarity. Furthermore, these users—dedicated music listeners and competent navigators of the technology—realise these music experiences in different ways, via alternative modes of engagement.

The users' handling of their music-streaming services was influenced by several contextual factors, starting with one's degree of involvement, personal skills and practical knowhow, both regarding music in general and the service in particular. Previous experience with related music technologies, as well as online applications hosting other types of content, mattered as well and further impacted their expectations regarding an optimal music experience (with a streaming service or otherwise). Streaming practices were also tied to values regarding music and knowledge about music, and to one's devotion to routine. In addition, different devices fostered distinct streaming practices—for example, music streaming with smartphones was often arranged differently than music streaming on computers.

Ultimately, what determines personal streaming practices remains elusive, but general profiles regarding technology-centric versus user-centric approaches and experiences clearly emerged. Interestingly, what informants did first when opening the streaming interface was very telling in this regard. Certain rather basic service features were central to the everyday music experiences of some and completely ignored or even missed by others. This indicates how differently music streaming services are approached by users. 'Opening procedures' included browsing the interface, checking the news and headlining music selections, entering personal playlists, typing in the search field, rearranging orders in permanent playlists, and returning to the listening that was underway from the last time the service had been used. These opening procedures obviously tended to change from one time to the next, because music streaming happens in multiple contexts and for various purposes, and services are hosted on everyday media that are frequently checked and handled. Nevertheless, how the users reflected on their opening procedures indicated patterns in the

service orientation, and whether uses were led by habitual patterns of whims. It also gave hints of whether the user's practices mainly relied on trusts in the service versus trust in one self.

In sum, the diversity in users' service orientation pointed back to multiple contextual and structural factors of both the users and the technology. This heterogeneity in starting point of music streaming supports the need for a further investigation of what individual user orientations comprises. I will therefore continue exploring the two ends of user-motivated and the service-facilitated music streaming by analysing user practices and experiences from these two ends of service arrangements.

User-Motivated Practices

Streaming users often develop personal practices intended to optimize and control ephemeral music listening in various settings. They do so both before and during the listening itself, as Nina (age 27) indicates:

> Just before I left [for work that morning], I saw the new album with Mvula posted under 'New Albums' in WiMP [...] Have been waiting for that release, but could not remember the date. Was therefore pleasantly surprised when I saw it online. I downloaded it offline on my phone immediately [...] Because I am often tired in the mornings and because I'm not so happy for the job, it is important for me to listen to music that I know is good, or that I think can wake me up a bit and get me in a good mood. The songs I heard now worked out fine. (Nina, diary note, 8 March 2013, last.fm log: 8:59–9:15)

This statement demonstrates Nina's purposeful listening planning and well-defined preferences for her morning music.

For others, listening planning occurred at more regular intervals.

> I often plan a week ahead. So often I think on a Sunday: What happens this week? And then it often appears naturally to upload [music] [...] for example, I kind of begin a preparation for a concert on Monday or something like that, if the concert is later that week. (Marius, interview, 28 May 2013)

Likewise, listening planning happened in relation to the regular updating of offline content

as part of one's planning for special events, travels or holidays: 'I wanted to feel Toronto along with Joni [Mitchell], kind of. Yes, it actually was a conscious choice [...] I plan my music usage before traveling. I do indeed. Create playlists to fit the moods I expect to be in' (Sofia, interview, 6 May 2013). Marius anticipated his routine listening needs as well: 'Offline, iPhone: *Black Flag, First Four Years, Misfits, Static Age*: I needed music with lots of energy for interval training on the treadmill' (Marius, diary note, 8 March 2013). In an interview, he clarified that he uploaded these albums an hour prior to the workout session: 'To workout that day I knew I needed those albums' (Marius, interview, 28 May 2013).

Nathalie (age 17) also described immediate, routine listening planning in several diary reports. She tended to create temporary playlists for things like an afternoon of schoolwork or to walk to a friend's house. These playlists typically included up to ten tracks, and she often deleted them right away after use. She also maintains instant listening planning by *queuing* that is, immediate ordering of a small number of tracks right before she starts listening. She chooses the queued tracks with a particular purpose or mood in mind to ensure that she enjoys the benefits of controlled listening.

Along with queuing tracks for instant listening, informants also favoured the 'shuffle' as part of their listening planning. In contrast to the deliberate ordering of queued tracks, shuffle randomises both playlists and album tracks. Some informants therefore admitted to frequent *skipping* of tracks during shuffle mode, which can be regarded as a microstrategy for music streaming. Also continually reworking everyday playlists by immediate adding and subtracting tracks to them, or executing active content management by tinkering with the phone in the hand, are other practices on micro level.

Planning either during, right before, or well in advance of the listening itself represents a user-motivated modulation of service-supplied streaming options. Of course, all of this planning must work within (and derive from) the features offered by the services themselves. Kristoffer (age 21) summarises the bind of customising the inherently generic: 'I usually listen to music that is approved anyway. Because I already have *chosen* it, there is relatively little risk taken in the listening pattern' (interview, 2 May 2013).

Dealing with Indecision

Related to how personal streaming practices are implemented in order to optimise listening

in diverse (and often mobile) situations, users also find advantageous ways of dealing with the 'tyranny of choice' in music-streaming services—that is, the sense that there is too much music from which to choose (Mulligan, 2 Oct. 2013). For example, Nathalie's affinity for controlled listening has fostered a particular way of dealing with this abundance: 'When I'm not sure of what I want to listen to, I listen to *Glee*. Good music and well-mixed selection of songs that get me in a good mood' (diary note, Nathalie, 22 March 2013).

When the vast amount of music access becomes overwhelming rather than exciting, as well, many informants turn to the service's offerings rather than their own efforts: 'I noticed that by starting [my] listening with the shuffle feature activated in WiMP Music, it became easier when I didn't know exactly what to listen to' (Anne, 35, interview, 21 May 2013). Jenny relies upon Spotify for ideas when boredom rather than need or preference drives her listening: 'Then I just open Spotify, and maybe then the song I listened to previously is still on, or I just jump into a playlist or a song or just *anything*' (Jenny, 18, interview). Service platforms, then, can be impartial guides or patient advisors when one either cannot or will not act for oneself, either in particular situations or in day-to-day streaming.

Service-Facilitated Practices

Erik (age 18) genuinely trusts WiMP Music to facilitate his music experience:

> For a long while, I did not turn onto my own playlist at all, but went directly to WiMP Music Top 40 new albums, and new Norwegian albums [...] And the VG Toplist is also pretty good [...] I might go further into [other] lists as well, and then, I let it spin from there, on and on and on. (Interview, 16 May 2013)

Erik depends on WiMP Music for his daily music listening but reserves his investment of self for his own playlists: 'That is *my* music. When I look at it, I feel, kind of, my personality is reflected in it. The quiet songs mirror the kind of topics I care about' (interview, 16 May 2013). Service-provided playlists, on the other hand, suit the distracted listening of everyday situations and extend his musical reach beyond the comfort zone of his own lists.

For other informants, the 'radio' feature, which supplies streams of related tracks based on algorithms, supports music listening: 'It chooses on the basis of what I want. For example, if I take [my] vantage point from *Star* [a playlist], I start the "radio" and it will find the songs

that suit me best, based on the playlisted songs' (Louise, interview, 23 May 2013). Louise's confidence in and enthusiasm for this algorithm-based feature demonstrate an indulgence in the whims of technology with regard to personal listening experiences. Many others liked the radio feature for background listening:

> When we cleaned our apartment [to move], I used the radio function in WiMP Music a lot […] you can choose by genre […] I've not used it much before, but I really liked it. It was a nice way to discover music that I otherwise would not come across. (Nina, interview, 12 June 2013)

The precise ways in which informants regarded music, discovered through music-streaming services did diverge, however, as we will see in the next section.

Exploring Music with (and without) Music Streaming Services

Music-streaming providers understandably hasten to accommodate music exploration, offering vibrant front pages, with contextualised content that is increasingly service exclusive. Several of the informants remarked that Spotify and WiMP Music were useful means of staying up to date on music, whether they checked back only sporadically or, like Nina, developed deliberate routines regarding their interaction with the interface:

> I tend to scroll down—I'm not so interested in the top 40 charts and so on but very interested in the news. First I scroll down to tab 'new songs'. I look here first. Then I scroll up again and click on 'new albums', also looking through that tab. In fact, I do this a few times a week'. (Nina, interview, 12 June 2013)

In addition to these welcome discoveries, whether regular or random, via the interface, users also tended to adopt a generally open-minded, explorative mode when on these platforms. Some applauded WiMP Music for its useful and distinctive editorial content and acknowledged the group behind these informed and original suggestions and their topical or historical relevance. Others applauded Spotify for the artist recommendations that came with the feature 'related artists', which was described as convenient, nice and fun, relevant, high quality and door opening. 'Artist biographies' were also described as useful. Interestingly, Sofia (30) noted that these features only worked on her computer, not on her phone, which was frustrating: 'It really feels like "no, this is *so* wrong" when I'm not able to access it'

(interview, 6 May 2013). These particular personal practices of music discovery, then, were not adaptable to alternative streaming devices.

Others wondered at the supposed relationships among the suggested artists linked by this feature: 'I think Spotify offer some quirky and odd couplings there' (Jon, 60, interview, 8 May 2013). Håkon (age 17) was skeptical regarding the quality of the artist biographies on the services and preferred to seek music information from other sources, such as *Wikipedia*. His misgivings extended to the radio feature itself: 'I have tried the radio feature, but honestly I didn't find it interesting. I favour following my own choices' (Håkon, interview, 7 May 2013). This skeptical attitude opposes those relying on the streaming service to keep oriented on music. In related cases, it was less the streaming service itself than a host of complementary sites (Shazam, Facebook, Twitter, blogs, other online music sites) that kept users up to date, even as they continued to stream music all the while.

Using the search function according to one's personal knowledge, or actively browsing a service's archives, were both offered as examples of self-generated music discovery within the streaming platform. Spotify and WiMP Music automatically supply predictive searches, meaning that word suggestions appear successively in the search field as each letter is typed. For some informants, this characteristic undermined their independence and even frustrated them. Informants called the suggestions from predictive searches 'a mess', entirely useless if the spelling was incorrect, and 'confusing' when multiple alternatives popped up. This automated platform setting ultimately made these informants distrust and thus avoid the service's search feature.

On the other hand, there were also examples of streaming practices based on creative uses of the search functionality. Contextual searching with non-music-related words like *exam*, *May 17* (Norway's constitution day) or *Sleep* became Jenny's (age 18) favoured streaming practice, and Emma liked to conduct searches based on completely random words: 'Let's say […] I search on *apple*' (Emma, age 17, interview, 11 June 2013).

Dealing with Visual Information

Among users' distinct and personal practices around dealing with the possibilities of the streaming service were those based upon *visual* (rather than auditory or written) information. Both Spotify and WiMP Music routinely make use of visuals in their presentation of

music—tracks and albums are listed with cover illustrations, and service provisions are highlighted with icons or themed images that vary with the service and the device on which they appear. My informants varied significantly in their use or acknowledgment of this aspect. Some thought the visuals looked okay but barely noticed them in general. Others explained that their attitude towards online album covers differed from their attitude towards the actual physical formats, but they could be helpful nevertheless: 'The red album, kind of—it was something red. Where can it be? [Scrolling] As you might have realised, I do not remember album titles, so then it [the cover] might help me' (interview, Anne, 35, 21 May 2013).

Louise (age 17) explained how the visuals in Spotify had clear relevance to her ability to remember and to orient herself on the service: 'I've kind of learned what all the songs look like' (interview, 23 May 2013). She admitted to allowing images to actively influence her listening decisions: 'If I don't recognise it [the image that appears as she swipes her thumb to skip within the playlist], I often just scroll further'. Though he did not favour the editorial content, Håkon (age 17) allowed visuals to attract him to new music: 'Boring album artwork just makes me not want to listen [...] At least initially it can be essential whether it's a cool picture [or not], because hence I check it out. If not, I maybe do not check it out' (interview, 7 May 2013).

Jon (60) has a different take. Like Håkon, he wants to benefit from the visuals in Spotify and likens the process of scrolling through online illustrated album listings to browsing records in boxes or on shelves. Unfortunately, he observes, 'You cannot flip to the backside of the cover […] and I think that's a problem!' (interview, 8 May 2013). Jon has always read CD and LP covers and booklets carefully, and his preferred music experience is closely intertwined with the relevant background information (names of performers, composers, albums, tracks, and so on). Music-streaming services do not provide enough of this sort of information, in his opinion, either visually or otherwise, and he feels unable to cope with the music as a result. He continues testing platform features in an attempt to fill these gaps. Marius's (age 24) music experiences also derive from having a good grasp on the music by obtaining and reading music-related information, but he manages to accommodate this by turning to alternative information sources—for example, when an online cover 'screams at you because it is so familiar', he can find the rest of the information elsewhere to generate a

'fairly good knowledge of the names [album title and performers, for example]' that are relevant (Marius, interview, 28 May 2013).

Music Storage Practices

It is clear by now that users handle these technological platforms and resources differently, whether the interaction is primarily user motivated or service facilitated. This holds true for 'keeping' the music they stream as well. Both Spotify and WiMP Music offer diverse service-facilitated features for systematic organization and storage, such as various ways to mark albums and tracks as favorites and so forth. Several of my informants used these features and considered them to be satisfactory. Users' personal practices of purposeful music storage varied more dramatically. Elsewhere, I have discussed personal playlist aggregation according to individual sense-making schemes and logics, often achieved with both autonomy and integrity (Hagen 2015). Here I will elaborate upon certain practical measures with one's playlist, in the interests of controlling, retrieving and recalling music in the services. These *storage practices* are intended to optimise the experience and exploit the possibilities of such an abundant and intangible environment.

Playlists practices converted to *storage systems* often contain original albums and artist selections, as opposed to selectively curated collections of single tracks. Jon (age 60) finds this practice to be more helpful than service-facilitated storage systems. He sometimes loses himself in the digital music environment: 'Online, you have searches, right? It isn't always that easy to remember what to search for. Hence I have aggregated some music, simply to have it gathered' (interview, 8 May 2013). His practice, in other words, emerged from a need to retrieve or recall music rather than the desire to cultivate curatorial practices or plan listening as such. Likewise, Sofia (age 30) found that the names of the artists she found in Spotify were impossible to remember if she did not develop a proper storage system. This made streaming different from physical formats, whose distinct covers and general tactility imprinted information upon her more successfully. Sofia addressed this by developing a purposeful streaming practice: 'To get more ownership of the music, I have started to add it into that single list. When I later add the music again [into separate playlists], then I know where to look for it' (interview, 6 May 2013).

Playlist practices as storage strategies also involve the offline manipulation of one's music, which can align structurally with the aforementioned user-motivated *listening planning*.

However, as opposed to context-sensitive planning practices, offline content spurred its own form of listening practice, based on the simple fact that it was available offline. As such, this practice resembles service-facilitated content provision more than user-motivated content provision.

Discussion: Service-Afforded Modes of Experience and Practice

This analysis has presented a range of personal and contextualised user practices that arise from the encounter between music listeners and music-streaming services. Through these practices, meaningful user experiences reflect the socio-technological arrangements with which they are shaped and the purposes to which they respond. People's dependence upon music-streaming services to address everyday music interests raises the issue of the technology's role in shaping both practice and experience, using, among other things, affordance theory (Hutchby 2003: 447). This is not meant to advocate for technological determinism but to account for the influence of technology upon otherwise entirely human choices. As has been made clear, music-streaming services do not afford single, fixed actions but a range of *modes of action* that accommodate careful planning as well as serendipitous encounters. These modes encompass practices derived from both service-facilitated and user-motivated action opportunities, as well as various combinations thereof.

The user experiences that align with these modes of action are equally multifarious and multifaceted, meaning that music-streaming services also afford diverse *modes of experience* related to listening and encountering music, as well as dealing with the technology. I will explore the relation between modes of action and modes of experience with regard to music streaming in what follows.

Meaningful User-Motivated Music Streaming

One mode of action afforded by music streaming arises when users pay attention to the given service's potential and participate directly in the experience, in terms of planning their listening well in advance, just before and even during their streaming. Kristoffer's observation that because he chooses the music, he risks relatively little (interview, 2 May 2013), demonstrates the confidence that some users feel with regard to the affordances of these platforms.

The notion of curation also added meaning to some user-motivated music streaming. As a

constructive model/metaphor aimed at addressing information overload online (Liu 2010: 3), curation informs users' listening planning and storage strategies. My informants also appeared to confirm Changtao and colleagues' observation that most online users view curatorial practice as personal rather than a social (2013: 667). Likewise, I found that music streaming is personal as well, and active user involvement enhances its value. Playlist 'production' can even be regarded as a craft or an expertise—a skill that accommodates creativity and self-expression and turns service-based models into more personalised or 'humanised' objects (Campbell 2005: 28).

The present study indicates that users do not want to feel bullied by or dependent upon the music-streaming service in relation to the cultivation of their personal music interests and meaningful experiences. If they can self-determine their experience, they are happy to embrace the service and its affordances, even when they generate unanticipated results. Fundamental convictions related to individual experiences of musical integrity, encompassing nostalgia, choice and taste, can be called into question if users feel that they are in control. If, on the other hand, users get lost in the abundance and intangibility of the platform, their experience suffers.

Meaningful Service-Facilitated Music Streaming

Of course, user involvement (and 'control') is as much service facilitated as it is user motivated, given the established power structures of online media. User-motivated practices also generally steered and shaped by platform owners, even when (or especially when) this fact is not obvious to those users. That is to say, *user-motivated streaming in relation to platform affordances* is not the same as *user-motivated streaming in relation to platform configuration*. The former relates to the modes of action triggered by the human-technology encounter, while the other is an alignment or characteristic of the platform itself. Service-facilitated streaming practices, then, derive from certain arrangements that supply adequate or complete user experiences without the active involvement of the user.

With service-facilitated streaming, users value the opportunities provided by prioritized interface provisions (playlists, editorial content and highlighted albums) and algorithm-driven features. For example, the study data showed some of the ways in which instant satisfaction derived from top-ten lists and the radio feature, among other things, in listeners' daily routines. When meaningful user experiences result from service-facilitated streaming,

it is clear that the users' *trust* in the service provision has been earned (with interesting parallels to how trust in oneself propels user-motivated streaming). When engaging in practices related to music discovery, users directed trust based on previous experience towards selected features of the service interface, such as 'radio', 'related artists', artist biographies, general editorial content, various charts and following others. Service-facilitated music discovery also lends itself to an exploratory user mode that is characterised by open-mindedness to a broad range of new music.

The user's experience of personal choice remains relevant to service-facilitated streaming practices, yet here the choices concern other aspects of the experience—convenience, informality, immediacy, a wide selection and the ability to explore are more important than autonomy, personalisation, curation and control. Users developed practices around dealing with the service's information so as to best retrieve, recall, survey, and record details about the music using both visual and aural triggers. Some users valued service-provided features for the ways they could help with their own individual strategies, and this overlaps with user-motivated playlist practices such as listening planning and content curation. However, they differ in their intent—while user-motivated playlist practices are geared towards optimised listening or personalisation, service-facilitated playlist making is a form of storage strategy necessitated by the user's (often inadequate) capacity for dealing with the service's information or aligning to the service's model.

Ultimately, and perhaps unsurprisingly, service-facilitated music streaming practices produce meaningful user experiences in more ways. First of all, service-facilitated content and features become meaningful to people as they come to depend on them to supply convenient, casual and instant music streaming to their everyday life situations. This is particularly impactful, given music's potential omnipresence via personal and mobile media devices. Vast music archives made available through reliable and convenient service solutions accommodate meaningful experiences of music discovery and currency as well. Last but not least, users benefited from the given service's guidance in using streaming technology and became loyal to and familiar with the service as a result.

Personal Paths and Purposeful Contexts

This study demonstrated that the diverse modes of action and experience afforded by music-streaming services intersect with a multitude of personal practices. Whether their tendency

was towards service-facilitated or user-motivated engagement, however, my informants were able to deliberately and thoughtfully articulate their reasons for acting as they did. This means that an awareness of one's personal practice and preference characterised both types of user, recalling de Certeau (1984), and all of the informants could be considered active, calculating and rational actors rather than exploited dupes (Campbell 2005: 23–24). Baudrillard's fear of absence in user activity and the dangerous abstractness as a consequence of automated objects (1996: 111) was not realised in this study, and the users neither seemed to be nor experienced themselves to be 'hermetically sealed off' by the streaming platform's provisions, even as they made full use of them.

Instead, I found that the mindset that informed a majority of the personal practices revealed in this study aligned with de Certeau's tactics, despite the fact that they mostly happened *within* platform configurations, not across them. Just as de Certeau's pedestrian had his own way of walking in the city, through which meaning was created during the act itself (1984), music-streaming users also develop successful ways of navigating the technology and a personal style for dealing with the service's conditions. Personal streaming practices clearly involve conscious and informed choices of actions applied through an interaction with the music-streaming technology. Along the way, certain socio-technological arrangements foster various modes of experience in line with the users' tacit knowledge (practical consciousness, implicit awareness, and so forth) to generate meaning from everyday life practices. In this way, users become 'unrecognized producers, poets of their own acts, silent discoverers of their own paths in the jungle of functionalist rationality' (de Certeau 1984: xviii, in Rasmussen 2014: 58).

Similar to the aforementioned tendency of online music distributors to provide contexts, solicited or otherwise, for the user's access to their music (Wikström 2012), this study also locates a similar tendency in its informants' tactical practices of personal streaming. In particular, there are two distinct 'user paths in the jungle of functionalist rationality'—user-provided contexts that are related to the goals of these streaming practices. One relates to *the purpose of personalisation*: personal streaming practices comprise a user kit that empowers users with a sense of uniqueness within an otherwise generic service model. The other relates to the *practical purposes* of personal streaming practices—that is, the goal of making the service more user-friendly and applicable to everyday life. A meaningful experience

emerges in tandem with efficient, convenient and purposeful arrangements that make an environment characterised by abundance and intangibility easier to navigate and position within everyday life.

Meaningful music streaming, then, is an 'emptying-out and wearing away of their [the music-streaming services'] primary role. They become liberated spaces that can be occupied' (de Certeau, 1984: 105). This is born of necessity but bred as an opportunity to leverage one's skill and trust into meaning and satisfaction via the exact platform offered to everyone else as well. It is the practice, not the service that allows one's personal music interests to be realised.

The Matter of Personal Practices

McCourt states that in a world full of cultural services, '"value" is not an inherent character of the product, but the manner in which it reaches the consumer' (2005: 251). Consumption as a 'cultural practice', then, emphasises the manner in which the meaning of a product can be transformed by the context and manner of its use. Personal streaming practices thus make sense as 'possession rituals'—activities that fulfill the important function of enabling consumers to 'take ownership' of the service in question (Campbell 2005: 26–29). More precisely, I would argue that, through personal streaming practices and diverse modes of experience, users are able to undermine the omnipresence of the service model and their positioning as renters of music. Through personal and practical manipulations of music-streaming technology, the one manifests one's human and transforms various intangible formats (and a sheer abundance of music) into a functional and customised system of appropriation.

With regard to (heavy, dedicated) music streaming, the dichotomy between active and passive consumption appears rather imprecise, because tactical and even strategic operations are evident in either user-motivated or service-facilitated approaches. That said, the ease and abundance introduced to users through digital technology arrangements replace, to some degree, the equally strategic operations that once underpinned people's music cultivation. The extent to which digital platforms have substituted for these processes entirely merits further research, perhaps among more casual streaming users.

Conclusion

Music-streaming services are clearly various in character and conditions. These technologies afford different modes of action depending on what users focus on when encountering them. The modes are realised as a range of personal streaming practices that are influenced by diverse socio-technological arrangements. In this article I have explored these arrangements along the continuum *user-motivated* and *services-facilitated*. I have also explored difference in meaning attached to user practices deriving from two contrasting opportunities offered by the services: *participatory arrangements* requiring active user involvement in planning and arranging content, and *automated arrangements* and content provisions requiring only the user's initial activation. By drawing on and being drawn by the diverse service capacities for listening and other music-related activity, users with different capabilities and needs can exploit the technology in their daily lives. These include platform configurations that enable service providers to observe and influence the user's activity as well, by either allowing or limiting certain action opportunities. Regardless, users of all inclinations and abilities embrace their roles as consumers and listeners (Van Dijck 2013: 159), as this study demonstrates.

With this analysis it seems clear that music-streaming services also afford diverse *modes of experience* according to which human-technology entanglements actually realise them, which recalls de Certeau's reading of cultural activities as products of both systemic mechanisms and of the web of everyday life experiences (de Certeau, 1984). I would argue that personal streaming practices *generate meaningful experience* in a way reminiscent of de Certeau's notion of *tactics*—they are the responses and operations of subjects voluntarily working creatively, strategically, and even imaginatively within the processes of a dominant system (Rasmussen 2014: 57). This study sheds light on the ways in which we use, and in turn shape, new media and lays bare some of the tensions underpinning the normalisation of new media in everyday life through processes 'of gleeful appropriation as well as critical resistance' (Van Dijck 2013: 155). The study also aligns with a key trajectory in current media scholarship 'to further develop our understanding of how diverse kinds of online media have become a condition in and out of the private, working, and institutional lives of ordinary people' by analysing approaches to new media in relation to meaning making (Lomborg 2015).

By looking at what people actually do when they stream tracks through Spotify or WiMP Music, this study unpacks common arguments for choosing and executing individual practices and reveals the cleverness and creativity involved in molding services into more personal or practical versions of themselves. What the music-streaming technology affords also demonstrates that the technology's influence on its users is not benign or neutral but instigative of the negotiations and compensations that arise around these platforms. People solve streaming according to its possibilities and their needs, this study shows, to the benefit, it would appear, of both the user and the technology for music to take part as experience in the everyday life.

Acknowledgements

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Article 2: The Metaphors We Stream By: Making Sense of Music Streaming

Abstract

In Norway music-streaming services have become mainstream media for everyday music listening. This article examines how 12 heavy users make sense of their experiences with Spotify and WiMP Music (the Norwegian equivalent to Tidal). The analysis relies on a mixed-method qualitative study, combining music-diary self-reports, online observation of streaming accounts, Facebook and last.fm scrobble-logs, and in-depth interviews. By drawing on existing metaphors of Internet experiences the article demonstrates that music streaming can be made sense of as *tools, spaces/places* and *ways of being*. Music streaming as *transforming mediation* is further introduced and discussed as a fourth framework for understanding online experiences that particularly arise from the mobile and ubiquitous characteristics of contemporary Internet technology.

Introduction

Since the 2000s, Internet platforms made for music streaming have become everyday sources for general music listening. Audiences add music-streaming services to personal media devices, like smartphones, tablets, and computers. These are often thoroughly integrated into users' everyday routines and thereby allow streamed music to be with listeners in a more flexible fashion than ever before. Music is streamed at work and at home, on the move or when commuting, and when alone or in the company of others.

Music-streaming practices have grown along with the list of international providers, which among others now includes Spotify, WiMP Music (launched as Tidal in the US), Pandora, Deezer, Beats Music and Rdio. These services offer users access to vast music catalogues through individual account subscriptions that can be free or require a monthly fee. The music is provided via interfaces that usually offer both predefined listening recommendations and opportunities for individual music management. Streaming is perhaps most common in those parts of the world with extensive Internet coverage and a saturation of mobile media devices. Contemporary Norway, where this study was conducted, is one such place. In 2014, music streaming accounted for 75 percent of the total revenues in the Norwegian market of recorded music, and 80 percent of the Norwegian population under thirty years old used a music streaming service on a daily basis (Ifpi Norge, 2014). In Norway, then, music streaming is entirely commonplace, which introduces a host of new issues around everyday music listening. The ways in which music and listeners interact with one another within music streaming services, for one thing, demands further investigation. This paper examines the ways in which a small group of heavy music-streaming users makes sense of their experiences with the two major services in Norway, Spotify and WiMP Music.

Metaphor as a Way of Understanding

Via their personal practices, users bring specific approaches, expectations, purposes, and abilities to music-streaming services that accumulate into the roles and meanings that are then re-presented within certain streaming-related frameworks. The complex stories that derive from users' interactions with, in, and through technology (Markham, 1998, p. 85) form the basis for how the users approach streaming at a very personal level. This almost alchemical transformation evokes linguist George Lakoff and philosopher Mark Johnson's insistence upon the importance of metaphors in peoples' sense-making (Lakoff and Johnson, 2003, p. 243), and the investigation of individual experiences through these metaphors can be a useful point of entry into their workings.

The essence of metaphor is the understanding of one kind of thing in terms of another, a process that is typically based on cross-domain correlations in our experience that give rise to perceived similarities (Lakoff and Johnson, 2003, pp. 5, 245). Metaphors are well established in linguistic practices, but Lakoff and Johnson have claimed that metaphors permeate the way people think and structure their understanding as well. Just as linguistic metaphor is a natural part of human language, then, *conceptual metaphor* is a natural part of human thought (Lakoff and Johnson, 2003, pp. 3, 247).

Consciously or otherwise, both the linguistic and the conceptual levels of metaphor are embedded in our everyday thinking, use of language, and activity. The metaphors people use to explain their experiences can either highlight or hide various aspects of things, as they come to represent coherent structures in our understanding (Markham, 2003, p. 3). Some of our deepest and most abiding human concepts, such as time and causation, are grounded in correlations of understanding that exist within our experience. Such metaphors form the basis for our most basic understandings and are important to how we live our lives (Lakoff and Johnson, 2003, p. 62).

The things that surround us play a role in constraining our conceptual systems, but only to the extent that we interact with and experience them. Metaphorical understanding is hence partially culturally determined and/or dependent upon past individual experiences. Certain metaphorical concepts are also shaped by the common natures of our bodies and brains, and by the shared ways in which we are grounded in the world (Lakoff and Johnson, 2003, pp. 154, 245).

Metaphors, in the end, represent the ways in which human beings get a handle on the concepts they relate to in lived experience. In this article, they will be regarded as individual human properties of sense-making that can be approached through interpretation, at the

same time as I use them as an analytical filter that help to comprehend partially what cannot be comprehended totally—other peoples' feelings, aesthetic experiences, interpersonal communications, and self-understanding (Lakoff and Johnson, 2003, pp. 193, 231). Shared, implicit frameworks of meaning allow experiences rooted in the individual to become available (explicable, even familiar) to others. In this way, metaphors have proven helpful in scholarly research—for example, in the investigation of personal experiences with new technology and media based on the Internet.

Metaphors of the Internet

When mainstream use of the Internet was in its infancy worldwide, Annette Markham investigated lived experiences of what it means to go and be online (Markham, 1998, 2003). She found that Internet users made sense of their experiences in computer-mediated contexts by use of different metaphors: "For some, the Internet is simply a useful communication medium, a tool; for others, cyberspace is a place to go to be with others. For still others, online communication is integral to being and is inseparable from the performance of self, both online and offline" (Markham, 1998, p. 20). The metaphors *tool*, *place/space*, and *way of being,* created frameworks that addressed individual user experiences with the Internet. They also emphasized the diversity that was inherent to how technology (albeit an infinitely complex one) could be experienced. Markham first discussed the three metaphors along a continuum (Markham, 1998) but later concluded that human experiences are shaped intertextually and contextually, and evolve fluidly over time (Markham, 2003).

Other scholars have investigated metaphors related to Internet based media as well. White and Le Cornu embraced the metaphors of *tool* and *space/place* to capture distinctions between Internet-based *information gathering* and *social networking*, and Internet users as *visitors* or *residents* (White and Le Cornu, 2011). Sally Wyatt concluded that Internet-derived metaphors in the journal *Wired* had not only descriptive functions but also normative connotations. The future of science and technology might even be thought of as actively created in the present through contested claims and counterclaims regarding their potential, using language, practices, and objects as keys to their construction (Wyatt, 2004, p. 257). The explanations people and society use regarding applied technology significantly influence how it is thought about, responded to, and interacted with. The metaphors of *tool*, *space/place*, and *way of being* appeared in both user discourses and pop-cultural depictions of new communication technologies, advertising, news media, scholarly works, and software discourses (Markham, 2003, p. 1). Metaphors mediate between structure and

agency, but it is always actors who choose to repeat old metaphors or introduce new ones. Hence it is only through the continuous monitoring of the metaphors in play that we can thoroughly unpack the work they do (Wyatt, 2004, p. 258).

Changed Internet

Given the rapidly developing nature of Internet based media and genres, the ways in which people experience them are in constant flux. Today Internet technology is entirely mobile and ubiquitous in large parts of the world. Wireless access is now standard, and Internet applications are designed to run on a host of media devices. This impacts how and when Internet based media are used, interacted with, and embedded into users' everyday lives. Relatedly, Anahid Kassabian has introduced the notion of *ubiquitous listening* to begin to describe the act of listening as a simultaneous or secondary activity shaped to cope with the constant presence of music in modern life, for example via smartphone apps and streaming services (Kassabian, 2013, p. 18). Jonathan Sterne has likewise noted that digitized music formats are now designed for listening via headphones (while outdoors or in noisy places), via background sound sources, and via computers with loud fans and poor speakers—that is, "for casual listening, moments when listeners may or may not attend directly to the music" (Sterne, 2006, p. 835).

In this article, I will investigate everyday listening experiences as they arise via music streaming services. To this end, I will also address contemporary Internet experiences, and I will therefore begin with the aforementioned Internet metaphors of *tool*, *space/place*, and *way of being* and ask the following questions: (1) How well do these metaphors explain music streaming experiences? (2) How might the limitations of these metaphors shed more light on contemporary online experiences, as exemplified by music streaming?

Methods and Material

Given the influx and interpretive character of individual experience, I will apply several methodological models to my investigation, the design of which incorporates stated assumptions and strategies, actual practices, and a range of personal experiences. In the hope of avoiding the potential distortion associated with retrospective inquiries (Hektner et al., 2007, p. 7), I began my work with a diary study. Self-reported informant diaries can provide "insider accounts" of situations to which the researcher does not have direct access. Participants were asked to write diary entries on every music-listening session that involved music streaming over the course of four sampling periods of two to three days each. SMS and e-mails told participants when these sampling periods were about to begin and end.

Diary entries included seven questions revolving around the listening context (location, date, time), the music context (what music, from which source, why listening now, how the music was found), and the listening experience (a description of music use, parallel activities, the social or personal setting, distractions, and related emotions). Entries took the forms of handwriting in notebooks, e-mails, word docs, screenshots from media devices, or replies in spreadsheets created in Google Docs. I encouraged the participants to use normal, everyday language in these reports, because the individual user discourses were key to observing the metaphors that were in use there.

To complement the diary descriptions, I observed the participants' streaming-service accounts and Facebook profiles during the months of their diary reporting. I also logged their listening via the music-service Last.fm's "scrobble" feature, which finds, processes, and distributes information about digital music listening. This alternate tracking mechanism allowed me to determine whether listening patterns changed during the testing periods (they did not). The diary study was followed by in-depth semi-structured interviews that lasted between forty and sixty minutes. All participants brought along their most-used streaming device to the interview, which allowed them to elucidate their experiences in concrete detail by directly referencing their actual streaming accounts. The interviews were recorded, transcribed verbatim, and coded in HyperResearch.

Participants

To enable deep looks into experiences happening on an everyday level of practice, I chose to rely on a small sample of experienced streaming users. I systematically recruited Spotify and WiMP Music users who had opened their account subscriptions at least a year previous, and who streamed music five to seven days per week.

Six participants (ages 17–18) were recruited after visits to three high schools in Oslo and Akershus, Norway. Six more were engaged by circulating information about the study on Facebook and Twitter, requesting interested users to contact me. Twenty people (ages 21–60) replied, none of whom were known to me previously. The total participant group included five male and seven female streaming subscribers (encompassing high school students, advanced degree students, and workers in various positions). The sample had a predominance of young participants. This was to secure experiences from listeners who confined their music experiences exclusively to online formats, in addition to participants who had former experiences with physical music formats.

All of the study participants turned out to be passionate music fans, and all of them generously shared their experiences—most wrote detailed reflections, sometimes multiple times a day. The study data, in turn, therefore presents users who invest more time than most in their streaming services.

Analysis

The accumulation of data aggregated through diverse sources over time produced a comprehensive impression of evolving and contextualized experiences. In analyzing the diary entries and interviews, my conclusions tended to emerge through my interpretation of the metaphors in use, and, indeed, the participants' language derived directly from systems of conceptual metaphors (at once structuring and impacting how they approached the technology and what they emphasized about the experience) (Lakoff and Johnson, 2003).

In coding the data, I firstly conducted a thematic analysis, whereby codes and categories were induced from the information. A thematic analysis allows for general issues to be identified prior to the larger analysis, yet the nature of the resultant codes and categories arises only in the process of coding itself (Ezzy, 2002). I further deductively applied a pattern-matching logic when comparing themes that had emerged in the coding with the pre-existing Internet metaphors. This comparison became structural to the analysis, yet the user patterns that did not match the established metaphors were equally important. In that idiosyncratic data, online experiences differing from existing frameworks inductively could reveal new ways in which contemporary Internet experiences are conceptualized.

Findings: Heterogeneous Experiences, Fluid Understandings

The following analysis demonstrates that human conceptualizations of personal experiences are fluid and have fluid boundaries, which Markham noticed as well (Markham 1998, 2003). Individual sense-making corresponds to personal practices, skills, and needs, and it develops over time. Terminologies shift in line with how experiences change from one situation to the next, according to human activities and motivations (Markham, 1998, p. 87). The ubiquitous Internet underscores this: music is listened to, and hence also contextualized and made sense of, in a whole host of situations.

Put differently, boundaries in sense-making appear blurry, contextual, and based on ad hoc constructions of understanding. In studying an Internet technology made for music listening, it is important to recall, as well, that music experiences are strongly interpretive and subjective. Music's expressive qualities and affective potential also affects the sense-

making of online music experiences. To a degree, the user data fluctuates between addressing music experiences originating in perception and experiences originating in user practices with the listening technology.

In this study, music streaming was well integrated into all of the study participants' everyday lives; nevertheless, this integration was accompanied by varying expectations and approaches. In particular, it seemed to matter whether music streaming had entirely replaced or was merely complementing other music formats. What format, streaming services or otherwise, defined one's listening habits also played a role in the sense-making. Previous listening practices were reflected in the participants' thoughts and expectations regarding their streaming.

Lastly, general attitudes toward technology were reflected in users' language about and sense-making of music streaming, particularly in relation to accounts within the tool metaphor. There, the technology is often associated with primarily objective properties as opposed to subjective processes (Markham, 2003, p. 5). All of the participants saw their streaming services as tools in some way, but generally within a range of alternative sense-making frames as to how those tools were applied.

Music Streaming as Using Tools

Internet based media as described via tool metaphors understand the technology as an extension of our senses or bodies that allow us to magnify or amplify certain capacities of them (Markham, 2003, p. 5). Marius (age 24) is an eclectic music listener who alternates several formats as tools for playing music, including WiMP Music (daily) and Spotify (occasionally). Yet he remains loyal to physical music formats, so this development has been bittersweet. He also finds that streaming services make music consumption too passive: "For me, I think it's more a convenience thing, being so extremely accessible and easy to use [...] My record collection, that's what's really personal to me, while WiMP is more like a way for me to listen to the albums 'on the go,' which I don't have the ability to do with my vinyl collection" (interview, 28 May 2013). Marius primarily streams music he knows from elsewhere—when making playlists, he often reconfigures music from his vinyl collection or transfers existing playlists from iTunes. He is ambivalent about how his specific tastes tend to align with the databases offered by the streaming services. For example, he has found that his knowledge about American emo-rock extends beyond WiMP's catalogue, though it has surprised him by suggesting curiosities in other genres with which he is very familiar.

Marius's specific exploitation of WiMP Music derives directly from his existing collector practices and is best captured by the tool metaphor of the *conduit*: the streaming service literally and figuratively conveys his existing collections and knowledge about music to new places "as a medium for transmission of information from one location to another" (Markham, 2003, p. 5). By comparison, Jon (age 60) and Kristoffer (age 21) experience their streaming services as, respectively, *prosthesis* and *container*—the two other predominant metaphor-inspired discourses surrounding the Internet as a tool (Markham, 2003, p. 5).

Diverse Approaches, Diverse Tools

Jon works in the music business and uses Spotify on a desktop computer at work. His streaming practice derives from many years of record listening; he prefers streaming album tracks in their original order, is reluctant to develop playlists, and dislikes listening with headphones on mobile devices. Spotify accommodates his daily use, despite some inherent drawbacks. For example, Jon finds background information (names of composers or performers, label identification, year of publication) to be inadequately reported by the streaming service. This makes him nostalgic for the days of browsing physical stacks of compact discs or records as a way of reminding himself about his listening history. With streaming, it is different: "You have to do searches, right, and it's not always easy to know what to search for" (interview, 8 May 2013). His onetime cultivation of traditional music reviews, newsletters, and magazines as sources of information has also been marginalized amid the rapid and abundant flow of online music. He now has to embrace service features that supply him with listening suggestions, such as "related artists" and news flashes. He even has to use the scrobble feature in Last.fm to remember what he has listened to recently.

Metaphorically speaking, Spotify serves as a tool whose features bring the world of music closer to Jon by extending his reach the farthest (Markham, 2003, pp. 4–5). It serves as a music-memory *prosthesis* that enhances his ability to retrieve, recall, and gather music he might otherwise forget about altogether when streaming. Still, even Spotify pales in comparison to physical formats for him, because it does not provide the experience of information that he derives from CD booklets and LP covers.

On the opposite end of the spectrum, Kristoffer has gathered music in Spotify for years in vast playlists, mostly sorted by genre, that grow continually as he adds new tracks to them. His music-streaming service metaphor, then, is a *container* in which he stores music (Markham, 2003, p. 5) through skillful aggregation. His most popular playlist has close to twenty thousand followers through the streaming service network, demonstrating

his success as a music authority. In turn, Spotify, as owner of his lists, has become quite personal to him through his role as container administrator: "It's like much of my musical taste has been gathered there. You can say I've kind of put a lot of effort into it" (interview, 2 May 2013).

Users who articulate their music streaming experiences with tool metaphors base their practice on preexisting and generally extensive musical knowledge. In each of the tool frameworks, the transmission of information is highlighted as a key feature of the technology, even though these users have diverse goals for their practices. Markham's claim that tool metaphors tend to ignore the complexity of knowledge as a process (Markham, 2003, pp. 5–6), however, also seems accurate here. How the users experience the tool depends to a great extent on whether it brings opportunities or limitations to their existing music knowledge.

Within the tool approach to streaming, users fit the metaphorical typology of Internet users as *visitors:* with varying technical and intellectual capacities, they approach technology with concrete tasks, and benefit from a service's efficiency and goal-oriented functionality, yet it not always serves them perfectly (White and LeCornu, 2011, pp. 5–6). Kristoffer's statement above, nevertheless reveals that his online engagement has a personal and social character. This particularly is evident in relation to others' (and his own) online appearance, for example, in how "digital identity" is projected, maintained and developed online, aligning the typology of Internet *residents* (White and LeCornu, 2011, pp. 5–6). This character anticipates another metaphorical approach to Internet technology: construing it as spaces or places.

Music Streaming as Entering Spaces/Places

Within a space/place framework, people interpret Internet technology in relation to their bodies and senses, both spatially and temporally. It is perceived as a distinct environment, or as a series of spaces with developed architectures, boundaries, and multiple entry and exit points. Access to other listeners thorough integrated social network systems in the space/place, also allows for music streaming services to be interpreted socially, as sociocultural milieus (Markham, 2003, pp. 6–7) where value is assessed in terms of senses of social presence, relationships, identity as well as knowledge (White and LeCornu, 2011, pp. 4, 6).

As such, Kristoffer's tool metaphor of Spotify as a container overlaps with an understanding of it as a *place* he has colonized and made available to others. Interestingly,

his diary descriptions demonstrate a specific spatial orientation through their language, as is often the case among the participants in this understanding of the technology. He "enters" the service and "goes back and forth" between the streaming application and online music sites (diary notes, March and April 2013). In fact, such spatial in-and-out orientations arise naturally within container metaphors (Lakoff and Johnson, 2003, p. 29). As bounded physical beings, people experience the rest of the world as "outside" and then project in-and-out orientations onto surrounding objects and environments. The container, or the streaming service as such, already implies an inside and an outside that makes sense as a space/place as well.

Likewise, Sofia (age 30) spends a lot of time "inside" her streaming account, which she considers to be personal, and even intimate and private: "Spotify is not social at all, it's just my little space" (interview, 6 May 2013). Drawing upon features such as "radio" and "related artists," artist biographies, and friends' playlists, she interacts with Spotify as a spatial and temporal construction—a socio-cultural place that accommodates meaningful interactions and activities (Markham, 2003, pp. 6–7). S*he* discovers new music there that she wants to "make her own". To this, Sofia's architectural experience of Spotify has been indicative to her experience, with careful location planning supporting her with a more user-friendly navigation (White and Le Cornu, 2011, p. 5). Initially, she found online music exploration uneasy because "I got lost in" (interview, 6 May 2013) having too much music available. Sofia then developed a playlist made solely for storing music that was *new to her, to "know where to look for it"* (interview, 6 May 2013). She had cultivated more ways to customize her space—to make it "less anonymous" than "just that really narrow, long list to scroll"—by including more visual elements and so forth (interview, 6 May 2013). Nevertheless, she acknowledges that it is her own responsibility to keep track of her listening in Spotify: "It really just means I have to organize myself in a different way. Furnish my library differently. But I think that's just a matter of time" (interview, 6 May 2013).

Shared Spaces

The self's relation to others surfaces in the ways in which four study participants share their streaming accounts with family members. For example, Erik (age 18) rigidly distinguishes his only WiMP Music playlist from his younger sister's in a clearly place-related fashion: "Over here the playlist is named 'Erik' with a smiley, and over there you have, like, my sister's playlist with her heart [emoticon] on it. So it's like, here are my songs, and over

there she keeps hers" (interview, 16 May 2013). This boundary is as real as any other—so real, in fact, that Erik's only knowledge about his sister's taste in music derives from living with her rather than interacting via WiMP Music, the digital space they both share.

On the other hand, Jenny (age 18) shares Spotify completely with her twin sister, whose taste in music resembles hers, even though she must surrender some control to do so. In her interview, Jenny could not explain the appearance of star-marked tracks in her playlists, which therefore must have been her sister's contribution (interview, 29 May 2013). Likewise, Nina's (age 27) husband had suddenly added albums in WiMP Music's "favorites" section that she would never have placed there. During her interview she experienced another moment of loss of control—one caused by service limitations that restricted account access to limited users simultaneously. Note the spatial perspective she applies to her shared service experience: "No! There you have the disadvantage of [sharing the account] . . . Now my husband logs in and then he logs me out! He surely sits at home now, he plans to go hiking tomorrow and what music to bring. Now he has logged in with his phone, and hence I'm out" (interview, 12 June 2013).

Nonetheless, Nina likes sharing the streaming service with her husband as a way to cultivate common music interests at home. An everyday listening session during dinner preparation involves alternating responsibility for playing tracks, making conversation about the music, and even offering each other short music quizzes (diary note, 7 March 2013). In the evenings, they sometimes "hang out" in WiMP Music as well, testing features, browsing the "space," checking out news, and updating the account. Nina compares it to hanging out in real record stores, like they did when they met: "Now we can sit at home and do it, which is actually really fun" (interview, 12 June 2013). This vignette demonstrates how space metaphors, such as "hanging out" in a streaming service, are often rooted in familiar, physical experiences (Johnston, 2009, p. 4).

WiMP Music allows Nina and her husband to ornament their physical home as a social space when having guests too. "Dinner ditties," "Lamb&stuff," and "Dusk Delicious" are playlists they have assembled together for specific occasions—"though the visitors do not always care about it, we at least believe it's a good way of setting the mood" (interview, 12 June 2013). Sometimes WiMP Music even becomes the center of the attention at their parties: "At some point, we agree to put on one and one song each, so everyone gets to decide some of the music. It almost makes a sport of choosing the best song, and preferably songs new to the others [...] The atmosphere is good! We have fun and talk a lot about music

[...] We comment on almost every track selected in WiMP Music" (diary note, 8 March 2013).

The ways in which Nina and her husband make a figurative home in WiMP Music and invite it into their literal home as well demonstrate a seamless level of integration into everyday life that evokes the streaming service as a *way of being*—the third metaphor for making sense of the Internet.

Music Streaming as a Way of Being

Internet mediated technology interpreted as a way of being primarily engages with "the self and how the self interacts with and makes sense of the world. Technology does not hold a position as object outside the agency of the human. Rather, the categories are collapsed, to varying degrees" (Markham, 2003, p. 10). For high school student Nathalie (age 17), music streaming is personal and very meaningful. Her extensive listening, day and night, is enabled by playlists she has edited according to her musical intuition and everyday routines.

Some of her playlists are temporary and often even abandoned or deleted after a listening or two. One example is the type of playlist that provides her with relaxing music as part of her schoolwork routine: "I made the playlist *Concentrate* cause that's exactly what I have to do for eight hours of schoolwork today" (diary note, 8 March 2013). This list was deleted by the end of the day, however: "I am very picky about where my songs belong and I remove playlists as often as I make new ones" (diary note, 3 April 2013).

Her permanent playlists, on the other hand, relate to a host of contexts, from recurring pursuits like exercising, to familiar moods or emotions—that is, either to inspire them or to indulge in them. She has playlists sorted by theme or topics including favorite artists, TV series, or common musical features, playlists that represent people she knows and even a self-titled playlist with the "soundtrack of her life": "Songs I would have played if my life was a movie. I am selective and careful with songs I add to this list, so far there are only four, haha. In addition, I don't want the list to be named Nathalie, but I don't know what the film about me should be called anyway, so I'll keep it temporarily" (diary note, 8 March 2013).

Nathalie's playlists are always work in progress, and she changes tracks and titles regularly. Music streaming, then, might be understood as part of this seventeen-year-old girl's identity work—something that is ephemeral, searching, and changing, in line with the impulses that grip her in her everyday life. Music listening is closely integrated into Nathalie's changing everyday-life context, and her streaming practice reveals a

contemporary approach to using technology as something that "just happens," which aligns, in turn, with Markham's way of being metaphor: "This is not something you 'do,' but something that just 'is'" (Markham, 2003, p. 5). Nathalie's Spotify use is an expression and a negotiation of herself, both with and through the technology (Markham, 2003, p. 10). Her streaming links to her thinking and activities, and to her emotions and moods, so that life and technology merge through an all-encompassing act of mutual mediation that is linked to notions of self-identity.

An alternative example of music streaming within this metaphor is Nina's practice. Earlier, we saw how space/place thinking informed her streaming at home with her husband. When listening alone with her smartphone, however, music streaming means something else to her. In this case, she usually works with only one active playlist at a time, where she aggregates her current favorites and plays them on a heavy rotation daily. The drawback here is that she grows tired of the tracks and must replace the given playlist with a new collection. In her interview in June 2013, she had just created "Summery Sun" to replace "Spring-like Winter" as her mobile-phone current playlist. "Fight Face" and "Fucklife&dance4ever" are other playlists representing periods or events in Nina's life, such as the times when she completed and defended her MA thesis, respectively (e-mail, August 2013).

Nina rarely returns to a previously discarded collection in her everyday listening, yet she does archive her playlists in her streaming account. With titles serving as hooks for remembering a time or an event, these playlists supply her with detailed flashbacks to earlier chapters in her life, which resonates with Markham's observation that users, through the design, oversight, and exploitation of information across contexts, can create, organize, and enact personalized worlds (Markham, 2003, p. 10). Nina's relationship with her streaming service is not context sensitive like Nathalie's, but it does demonstrate how playlists evoke the past, or a specific way of being, in a particularly pointed fashion.

Nathalie and Nina's integrated streaming interweave technology and humanity, allowing either to act as an agent within the social structure (Markham, 2003, p. 10). These ways of being on streaming sites shed light on any understanding of the ways in which personal media have shifted Western mindsets in fundamental ways. The self's relation to technology is closer than ever, and the distinctions between technology, everyday life, self, and others are beginning to break down (Markham, 2003, p. 9). In this relation and exchange, users are neither residents nor visitors, exactly, because the technology has become such a part of how they look at and experience themselves.

Experiencing Contemporary Internet Technology

So far, I have demonstrated different ways in which music-streaming experiences are organized conceptually. Markham's metaphors, describing Internet experiences from the late 1990s, have proven relevant to contemporary online practices, here exemplified through music streaming. It is likely premature to generalize gender from such a small sample, but it is nevertheless striking that most men experience technology as using tools, while most women relate their experiences to personalized spaces, ways of being, and notions of identity. The analysis thus far also indicates that such experiences are fluid and overlapping, and understanding of the experiences adapts according to different listening contexts and purposes.

The connections I have drawn in the analysis, however, only partly capture today's music-streaming experiences, because the original metaphors barely touch upon Internet experiences via mobile media (Markham, 2003, p. 10), which have now become commonplace. The collapse addressed by the way-of-being framework between technology as a separate construct and technology as a transparent lens through which to view the world (Markham, 2003, p. 10) is more real than ever: the Internet has become truly ubiquitous. As Internet applications have overtaken personal media devices, online experiences have even come to dominate everyday routines and practices, and the sense-making we apply to them: "I listen to more music, more often, because it is so easy," Sofia (age 30) states (interview, 6 May 2013). And this attitude is widespread: all but one participant admitted to more frequent, varied, and informal music listening than ever before thanks to the sheer availability of music via personal media devices. In the next section, I will review some characteristic music-streaming experiences that derive directly from this ubiquity.

Shuffling, Skipping, and Sporadic Listening

Earlier, Kristoffer (age 21) used both container and space/place metaphors for music streaming, and he has creative ways to describe his everyday music management as well. Regarding his home listening practice, he writes: "Music is mostly a background element 'living its own life.' I am a major user of the shuffle functionality and very often allow playlists with hundreds and/or thousands of songs to govern themselves in the background" (diary, 7 March 2013). His biggest playlist has the festive title "Music lives and shuffle is a pal," reflecting his satisfaction with the shuffle feature. He often relies upon shuffle to suggest a random progression through music he has collected in these huge playlists (the containers he mentioned sharing with others). In his diary, he frequently reports music listening as "not planned," "spontaneous," or "an impulsive action because I had some time

available." Sometimes he does not pinpoint a purpose for playing music, or he acknowledges "desire to create a good mood" or provide "a relaxing background atmosphere." He often claims to be unaware of what tracks are playing, and he describes his attention as sporadic and drifting (diary notes, 7–8, 20–22 March and 20–22 April 2013).

When he is on the move, Kristoffer streams music from only one playlist, including seventy favorite tracks he has aggregated for repetitive shuffling. The playlist is available offline on his smartphone, which he keeps in his pocket while he listens. The phone serves as a remote control to allow for skipping shuffled tracks, which he uses as an efficient way to fast-forward within the system. His intuitive preferences therefore determine his listening choices—he "just jumps and jumps until it's perfect" without actually examining the playlists. If the current track does not appeal, "It requires very little from me. [Laughs.] Simply to press *until I suddenly get to the 'Oh, this is very nice!'"* (interview, 2 May 2013). Though it can be fragmented, he finds shuffled listening to be comforting: "I often play music when I commute on the subway. It's like a routine, and it makes the time fly a little faster. The music plays an important role. I listen more deeply when I travel" (diary note from the subway, 21 March 2013).

The shuffle functionality was popular with many participants in this study, particularly when music streaming accompanied other activities or tasks. Shuffling music allows attention to drift in relation to the demands of the situation and the music in question. For Anne (age 35), the WiMP Music shuffle makes instant listening decisions when she cannot make up her mind or is tired, though she admits to becoming impatient with it at times as well: "I listen more, and I'm less impatient, when I listen to a whole album and not playlists at random" (diary, 23 April 2013). She wonders why she gets this way: "Maybe it's expected that something very fun happens when the next song starts?" (interview, 21 May 2013). When she is fresher, she prefers full-length albums in their original order, but this listening demands more attention, along the lines of reading books. She recognizes the advantages of both modes: "Each has a value for its use!" (interview, 21 May 2013).

Louise (age 18) depends on music when she is on the move, yet she always relies on random choices: "I just click, double-click on the playlist, because with the shuffle activated, it [the streaming service] finds out what to play on its own" (interview, 23 May 2013). Once in a while she gives her full attention to the music, especially when a song's lyrics capture her mood at the moment. Otherwise, she often jumps to the next track: "And from this I've got a very bad habit where I switch at the end of the song, because I get so impatient from waiting, like when it's fading down" (interview, 23 May 2013).

Emma (age 17) is the only participant who never used her computer in music streaming. She streams music exclusively from her smartphone, which she carries with her everywhere, and she has developed a tendency to pick songs randomly from her Spotify playlists to fill the gaps in her day: "When I have time, maybe suddenly I've got four minutes not doing anything, or maybe I wash the dishes or something, then I just put something on. Hence I don't spend time finding something [to listen to]" (interview, 11 June 2013). Like Kristoffer and Louise, Emma finds that brief or sporadic periods of listening can be intense: "If I listen for shorter stretches of time, I am more focused on the music" (interview, 11 June 2013).

Overall, Anne, Kristoffer, Louise, and Emma's streaming practices pave the way for intuitive and effortless music experiences to arise in whatever contexts they may find themselves. Their streaming devices are deeply embedded in their lives, even practically attached to their bodies, throughout the everyday. The streaming services in these uses offer a relatively low threshold for individual music management, with minimal effort or attention on the part of the user. Participants emphasize service features that provide immediacy, flow, and direction so as to optimize listening on the move, in brief in-between moments, in the background, and alongside other daily life

Ubiquitous Music, Casual Streaming

These experiences recall Kassabian's notion of ubiquitous listening (Kassabian, 2013) and Sterne's notion of casual listening (Sterne, 2006). Listening via streaming sometimes blends into the users' larger environments without calling conscious attention to itself as an element or an activity (Kassabian, 2013, pp. 9–10). The ubiquity of streaming via mobile devices impacts the amount of attention that is necessary to give to the music, recalling Sterne's observation that certain music technologies allow less attention to be paid to the music they supply (Sterne, 2006, p. 835).

Clearly, *casual streaming* is a characteristic mode of music streaming. Yet this form of listening is meaningful nevertheless**.** Users embrace casual streaming practices for their convenience, so as to be able to play more music more frequently, effortlessly, and unconsciously**.** Interestingly, the same features that trigger restlessness in some users seem to enable more profound listening for others, including the ability to skip, pause, and restart. The casual attitude of streaming aligns in both practice and context with casual gaming, "defined by the easiness of the game experience in its expanded sense, covering the whole experience from the accessing of a game, to playing it" (Kuittinen et al., 2007, p. 110). It

involves modes of engagement that are interruptible and demand only sporadic attention, with content designed for only a few minutes of consumption at a time. The casual user experience addresses various modes of leisure and answers to different meanings, situations, and mentalities, such as "killing time," "filling gaps," or just generally "relaxing" (Karlsen, 2013, p. 138; Richardson, 2012, pp. 143–144

Overall, casual online practices represent the socio-technological arrangements that facilitate efficient and meaningful everyday experiences with Internet applications. In casual music streaming, listening is not planned in terms of content, length, location, practice, or purpose, but valuable listening (either restless, superficial, relaxing or profound) can arise nevertheless.

Moment-Sensitive Music Experiences

Sense-making of casual streaming experiences primarily revolves around the self, and how the self interacts with and realizes the world in tandem with applied technology. The human-technology collapse typical of Markham's "way of being" framework is once again evoked here (Markham, 2003, pp. 9-10). Still, the way of being violate the sense-making exemplified earlier by Nina and Nathalie, who saw music streaming as a *context- and identity-sensitive* way of being, expressing, and negotiating their self-identities, life experiences, and relationships via thoughtful and controlled, rather than casual, technology use. These latter examples indicate that music streaming influentially and intuitively mediates and moderates human experiences as listening happens. Markham briefly addressed this as part of her "way of being" framework as well (Markham, 2003, p. 10), but it has multiplied in tandem with the ubiquitous Internet. As technology has become ever easier to use, online access has become more ubiquitous as well, fostering an increased human-technology integration that has become evident, in turn, in internalized user practices. Users' assumption that they will be able to get online and add whatever music they want to various everyday life situations to moderate and mediate their experiences of the world, has now become an operative condition of streaming practices. In other words, with casual streaming, the listener's sense of meaning and experienced self is shaped by the current *moment* of listening rather than context- or identity-sensitive streaming arrangements. Casual streaming nurtures *moment-sensitive* listening experiences that make sense as *momentary ways of being* shaped by the instant (and then constant) presence of music.

Perceptions in Sound Environments: Music-aided Sensations

Streamed music, then, might be more often sensed than actually heard, and it becomes meaningful in ways that emphasize the affective potential of music over its potential for semiotic decoding (Kassabian, 2013, p. 18). In this, casual music experiences recall the mental processes related to sensation. Sensation results from, among other things, the immediate external stimulation of the auditory organ, and it appears as a physical feeling or perception to which the listener can intuitively surrender. In sense-making, discrete physical sensations are refined or interpreted in light of individual experience and a conscious recognition of the elements of one's environment.

In relation to music listening, processes of perception can be helpfully contextualized using Nowak and Bennet's definition of *sound environments* (Nowak and Bennet, 2014), which offers insight into what happens between audiences and (generally ubiquitous) music in everyday life. In a listener's sound environment, music is diffused among particular contexts according to the variables of *time*, *space*, and the *individual's corporality*: "These three variables are intertwined to explain how listeners perceive and pay attention to music, and draw on the social mediations of music, through time and space, as well as on the individual interpretation of music" (Nowak and Bennet, 2014, p. 9).

From this perspective, *music-aided sensations* emerge in everyday listening in one's interaction with the variables of the sound environment, yet the streaming practices are of a casual character. For example, the things that Erik (age 18) pays attention to while he streams music on the bus give rise to his moment-sensitive streaming experiences: "Often I just look out the window, but in a way, when you look out the window with music in your ears, it gives a completely different experience. [Without music] it's more like, oh yeah, there it is, a house, there it is, grass, and there are some trees. The music makes so much more out of how I experience things, in a way" (interview, 16 May 2013). Though this listening is only nominally organized, the music impacts his surroundings nevertheless**.** This makes the music streaming meaningful to Erik, because it makes a mundane moment *different*.

Relatedly, Kristoffer explains his music streaming experiences as follows: "It's sort of a diversion of time and it gets your mind off [of other things]. It's not too fun riding the subway in half an hour, and it feels good to listen for a minute, just dream away for a while" (interview, 2 May 2013). Kristoffer's response to music, in tandem with his sound environment, mediates his sense of time itself, so that a long *thirty minutes* becomes one felt

minute, even as his surroundings become more interesting and his personal preoccupations, less so ("it gets your mind off [of other things

Music Streaming as Transforming Mediation

A large part of this study's data revolves around how music streaming fosters listener *sensations* that are alternately described as profound, intense, superficial, restless, banal, overwhelming, and sporadic. The participants also describe music-provided *feelings*—good moods, consolation, amusement or diversion, relaxation, distraction, focus, and engagement. *Without* music at their beck and call, on the other hand, participants all experienced impatience, discomfort, "pain in the soul," frustration, stress, and emptiness.   Such momentary sensations generated by music streaming underscore the sense making of the experience as a mediation rather than an "object" in and of itself: "It does something [to listeners] and makes [them] do something, in a particular situation and in relation to the body, through media and devices, thanks to other actions and other mediations" (Hennion et al. 2000, in Nowak and Bennet, 2014, p. 14). The platform is mediator, rather than an intermediary: "it shapes the performance of social acts instead of merely facilitating them" (VanDijck, 2013, p. 29).

In other words, mediated everyday moments provided by sensational responses to music in a given sound environment **s**eem to underpin everyone's casual streaming experience. Streaming acts as a catalyst for the moment-sensitive experience, mediated via its affordances of both speed and immediacy, as well as ease of use, as it elicits its sensations flexibly, frequently, and relatively effortlessly, and without compromising other tasks or activities.

This characterization relates to Paul Virilio's description of the Internet according to "its speed of dissemination . . . speed is information itself" (Virilio, 1995 in Johnston, 2009, p. 5). In the context of ubiquity, we must also account for technology's *speed of transformation*, as it manufactures new experiences regarding the listener's perception of time, immediate surroundings, and even personal state of being.

Presence and Distraction

The understanding of music streaming as transformation gives weight to Larissa Hjorth and colleagues' claim that the concept of *presence* remains remarkably persistent even in the era of smartphones (Hjorth et al., 2012, p. 43). Presence is "understood as a psychological state in which the person's subjective experience is created by some form of media technology with little awareness of the manner in which technology shapes this

perception" (Hjorth et al., 2012, p. 54). It involves experiences of being physically present yet absorbed by a technologically mediated world from elsewhere. Presence appears to characterize those experiences of music-aided sensation when music streaming suddenly captures the listener's attention and time, if only for a moment, and then fades away again. In its strongest form, streaming generates absorbed experiences related to the ways in which immersive music experiences like dancing or playing music can elicit absorbing experiences of being in time. When experiencing music as sensation, the listener is in its *presence* (Danielsen, 2006, pp. 193, 203)—or, rather, in the transitory sensation of music as it is perceived then and there.

At the same time, music streaming as everyday activity does not consistently or constantly supply such intense and absorbing experiences. Because it is casual, this kind of music streaming also triggers superficial or trivial music experiences, though these too can be perceived as mediation of the moment, in that the music makes the listener feel like his or her everyday time is being better spent.

Via casual streaming, participants find that boredom is avoided, new atmospheres are created, and that tedious everyday tasks become less so. This happens when music fills in short gaps or idle moments in one's schedule or supplies a secondary or background option. Within the deliberate use of music streaming as mediation, casual streaming exerts control over the listener's immediate everyday-life environment, actively blocking out other surrounding sounds or supplying a desirable distraction.

Mediation as a Metaphor?

A metaphor works when it enables the understanding of some aspect of a concept (Lakoff and Johnson, 2003, p. 97). This study suggests that casual streaming is a standard mode of music streaming. Casual streaming fosters moment-sensitive, music-aided sensations that are able to mold listeners' everyday lived perceptions. This way of understanding online experience is a significant aspect of how people make sense of their music-streaming experiences. It also emerges directly from the mobile and ubiquitous characteristics of the Internet technology, and hence it differs from other, earlier ways of understanding, or metaphor.

Within this understanding, intuitive perceptions of present sound environments constitute the core of a moment sensitive streaming experience. When participants talk about these experiences, the descriptions are not figurative, in the sense of using tools, entering spaces, or acting according to certain ways of being, but rather literal, denoting actual

sensations. This understanding of streaming is thus not *mainly* metaphorical at all, but rather made sense of at a pre-conceptual level of understanding.

Moment-sensitive streaming experiences are "experientially basic because they characterize structured wholes within recurrent human experiences" (Lakoff and Johnson, 2003, p. 117). Such *experiential gestalts* often refer to natural kinds of experiences that are "product of our bodies (perceptual and motor apparatus, mental capacities, emotional makeup etc.)" or products of interactions with our physical environment (for example, moving or manipulating objects; see Lakoff and Johnson, 2003, p. 117).

Furthermore, Lakoff and Johnson claim that because so many concepts that are important to us are either abstract or not clearly delineated in our experience, we still must grasp them by means of other concepts that we can understand in clearer terms (Lakoff and Johnson, 2003, p. 115). For example, human experiences concerning our bodies, such as sensations, can be better understood by providing them with "the right kind of structure to allow us to get a handle on those natural kinds of experiences that are less concrete or less clearly delineated in their own terms" (Lakoff and Johnson, 2003, p. 118). With the metaphorical traction of seeing abstract experiences as activities or substances, for example, we then "can refer to them, categorize them, group them, and quantify them and, by this means, reason about them" (Lakoff and Johnson, 2003, p. 25).

More precisely, music streaming described as individual sensation or perception is neither a clearly discrete nor a bounded understanding, but it nevertheless appears real and is experientially basic. Music streaming described as mediation, on the other hand, allows for sense-making in clearer terms, because it enables us to pick out parts of these experiences and treat them as discrete entities of a uniform kind (Lakoff and Johnson, 2003, p. 25). With *mediation viewed as activity*, this can be done with regard to how the experience unfolds through spatial, temporal, or corporal orientations in the listeners' sound environment. With *mediation regarded as a substance*, the experience relates to concrete changes that are caused by music and experienced as transformation. With this resolution, in other words, mediation comes to represent a fourth metaphor for understanding music-streaming experiences when they are moment-sensitive and experientially basic sensations that occur in casual, everyday music listening

Conclusion

Using her notion of ubiquitous listening, Anahid Kassabian argued that we know ourselves in and through our musical engagements: the music we hear, the quantity of it, and the ways

in which we listen to it all demand closer attention as everyday life engagements (Kassabian, 2013, p. 18–19). In this article, I have examined music listening as an everyday life engagement by analyzing different ways in which listeners encounter music through streaming services. I have found that as we come to know ourselves in this way, we also come to know the technology we are applying, as well as some of the ways in which it can make sense.

In this analysis, music-streaming services appear multifaceted and present multiple understandings that are pertinent to the users' experiences. Metaphors can help us here, because they appear naturally in the language people use to explain their experiences, and they are fundamentally grounded in people's conceptual

Established Internet metaphors provided useful perspectives with which to begin but can only partly cover the spectrum of contemporary streaming experiences. For example, certain experiences deriving directly from the ubiquity of the Internet and mobile applications fell outside these existing frameworks. Nevertheless, by matching current user experiences to existing metaphors, however imperfectly, new means of understanding them arose, even as the ongoing relevance of these existing metaphors was likewise reasserted.

That is to say, experiences with music-streaming services were made sense of as tools, as places or spaces, as ways of being, and as moment-sensitive, transforming mediation. These four understandings address different aspects of the individual streaming experience and confirm, in fact, that multiple metaphors can apply to a single concept (Lakoff and Johnson, 2003, p. 108). These understandings capitalize upon certain service features and capacities that are emphasized according to individual approaches to music listening and technology use.

This study certainly demonstrates the complexity of individual online experiences that has been occupied previous Internet research. Streaming experiences evoke both abstract and concrete frameworks of understanding, and they are accounted for as processes and products, medium and outcome (Markham, 2003, p. 11). Listeners encounter the technology as visitors and residents (White and LeCornu, 2011), yet they also transcend these typologies to experience the technology as an integral part of their sense of self or intuitive behavior.

This level of complexity is heightened when mobile and ubiquitous Internet characteristics are included in the user experience, in turn incorporating notions of immediacy, serendipity, restlessness, fluidity, and fragmentation. At the same time listening happens casually, informally, and even randomly in a host of mobile contexts. These

experiences are also of a highly sensational character and encompass notions of mediated presence and distraction, as well as perceptional responses to time, surroundings, and the body. In all, these hallmarks of contemporary Internet experience underscore that the sense-making of music streaming is compound and ephemeral, as is also the process of making sense of the sense-making, first and foremost because the studied object is and must be accounted for as a lived experience.

Above all else, metaphors then can help us address what *gets defined*, and the *role of the defining*, in the processes of sense-making (Lakoff and Johnson, 2003). Metaphors are especially useful in relation to experiences that appear complex in multiple ways, as we try to understand, account for, and interpret them as individually lived and, as such, transient. Likewise, processes of sense-making accompanying individual confrontations with new technology seem to benefit from being approached via metaphor. Through metaphors, experiences of an abstract or alien character are sifted through individual networks of attachments, awakening and connecting to our memories of past experiences, and in this way serving as potential guides to future experiences (Lakoff and Johnson, 1980, p. 140).

Given Norway's strong inclination toward music streaming, the aim of this study has been to provide interesting perspectives on a general understanding of contemporary *music consumption,* in addition to contemporary online experiences. Music listening and its apposite experiences increasingly elicit the online and digital realm. Nevertheless, experiential responses to music and other online content continue to be made sense of according to inherently human variables. The metaphorical understanding of music streaming in this study therefore ranges from products or content to consume to tools to use, activities to do, lifestyles to perform, spaces to enter, control to be exerted, changes to undertake, and simply the unfolding experience of everyday life. Music streaming as tools, as places/spaces, as ways of being, and as mediation of lived experience, therefore, in different ways, is at once real and present in users' lives, because these are the metaphors we stream by.

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Article 3: The Playlist Experience: Personal Playlists in Music Streaming Services

Abstract

Music streaming services encompass features that enable the organization of music into playlists. This article inquires how users describe and make sense of practices and experiences of creating, curating, maintaining, and using personal playlists. The analysis relies on a mixed-method study, including music-diary self-reports, online observations, and in-depth interviews with 12 heavy users of Spotify or/and WiMP Music. The findings suggest heterogeneous management of static and dynamic playlists based on structural and contextual schemes of aggregating music. User control motivates different playlist practices that demonstrate new ways of collecting music via streaming services but also derive from pre-digital collecting.

Introduction

> Is it wrong, wanting to be at home with your record collection? It's not like collecting records is like collecting stamps, or beermats, or antique thimbles. There's a whole world in here, a nicer, dirtier, more violent, more peaceful, more colorful, sleazier, more dangerous, more loving world than the world I live in; there is history, and geography, and poetry, and countless other things I should have studied at school, including music. (Hornby 83)

In the novel High Fidelity, Nick Hornby describes the contents of a record collection as more powerful (or at least more interesting) than real life. Originality governs the acquisition, combination, and organization of one's records, and is the reason for the solace they provide. In contemporary Norway, where this study has been conducted, music-streaming services have supplanted records and CDs, as well as other digital music formats, to become the mainstream technology for everyday music listening. Norway is a leading international market when it comes to music streaming. In 2013 music-streaming revenues accounted for 75% of all recorded music revenues in Norway (Ifpi Norge), and seven out of ten Internet users accessed one of the two major services, Spotify and WiMP Music (TNS Gallup). Both these services are able to supply more than 20 million tracks—a truly extensive range of music that is available to both average listeners and hardcore fans.

In this atmosphere of music abundance, listening and collecting are in flux. People listen to more artists than ever before (Maasø) using streaming technology on their personal mobile devices. This service model transforms Hornby's obviously very possessive sense of music ownership into the relatively carefree, even whimsical status of the renter of access to vast musical archives via online subscription. As a renter, one assembles and maintains a personal playlist (or one chooses among playlists that are available for subscription from other users or the service provider).

By looking at practices and experiences related to these personal playlists, this article investigates how people still manage to "collect" music in the age of the streaming service.

I begin with the following research question: How do streaming users describe and make sense of their practices and experiences of creating, maintaining, and using personal playlists?

By examining what is important to streaming users when they create and use their playlists, I will shed light on individual user logics, structures, and preferences regarding content creation, organization, and music use in this relatively new digital context. I will first review the existing literature as I begin to construct my analytical framework.

The Literature

Practices related to streaming services have yet to occupy researchers to any extent, even though the use of music-streaming services continues to grow, especially in the Western world. Referring to the values that reigned in collecting in the pre-digital era can help us begin to contextualize the perspective on collecting music in the digital age. Walter Benjamin's "Unpacking My Library," for example, commemorates the magnificent rituals of the book collector and emphasizes three qualities in particular: ordering—"For what else is this collection but a disorder to which habit has accommodated itself to such an extent that it can appear as order?" (Benjamin 60); owning—"The phenomenon of collecting loses its meaning as it loses its owner" (67); and desiring—"To renew the old world—that is the collector's deepest desire when he is driven to acquire new things" (61).

Jean Baudrillard distinguishes collecting from the inferior activity of accumulating (22), noting that objects have two possibilities: they can be utilized or they can be possessed (8). The first refers to the ways in which people harness things in the interest of asserting practical control in the real world. The second refers to the subjective and social status of the object divested of its utilitarian function and abstracted from any practical control. Its destiny is now to be collected, rather than used (8). Baudrillard further finds that the practices of "true" collecting include pursuing a succession of singular objects, cultivating the passionate abstraction that is called possession, and, of course, seeking out, categorizing, gathering, and disposing of objects themselves (8–10). The collection cannot exist as such without an internal scheme that may speak to others but always, first and foremost, speaks to oneself (22). The collection's value is often individually assessed. Roy Shuker insists that "[t]here is no 'typical' record collector" (237); his study describes significant variation in the given fan's association of recordings with identity formation and life history, accumulation and completism, and discrimination and connoisseurship (237).

Whereas Baudrillard, Benjamin, and Shuker consider the collection of physical things, the present article considers the collection of something that has now apparently surrendered its physical materiality: music. What role the music's material form, the music media's "thingness," plays in the storage, processing, and transmission of information (Straw 233) is of interest. "As key elements in the material culture of music, formats—like the 78 rpm record, vinyl album, and compact disc—were marked by distinctive sizes, storage capacities, and characteristic relationships between musical and nonmusical information" (233). Attending to a format's aggregative features can reveal inherent, and telling, differences—or what media theorist Friedrich Kittler (qtd. in Straw 233) would call a format's "storage capacity." For example, an LP's material form carries with it a distinctive protocol for listening, and for encountering a given performer's personality via the information and a deliberately ordered series of tracks (Straw 234). However, with LPs too, audiences have been able to subvert given music structures in personal listening practices, and customization has been cultivated in individual recording practices, e.g. in home taping and cassette mix taping. Nevertheless, digital formats like CDs and, later, MP3 files have made the disruption of artists' "album" presentations easier by enabling the listener to select and reorder at whim (Straw 234). Also, at least since the advent of Napster in 1999, online music practices including music downloads have facilitated mass customization of the musical experience with aggregation of songs independent of artist, genre, etc. (Jones 230) often with emphasis on single songs rather than albums (Jones and Lenhart 194).

This already hints at how the digital format affects the listener in the context of music aggregation. In understanding digital music collecting the user interface of MP3 players and online music services is key, incorporating a range of material infrastructures, processes, and practices (Beer 85). The properties or features of objects, or specific settings available to a given technology, invite particular uses (Ian Hutchby quoted in Gillespie, Boczkowski, and Foot 23). Still, users are always able to find ways around this attempt at interpretive closure so that any given object or piece of technology encompasses a range of intended or unintended uses. The relation between how something is supposed to work and how people actually use it will impact both the argument and the conclusions of the present article. Its detailed look at audience practices will engage both the technology's capacities and the user's capabilities and interests, specifically in light of contemporary conditions for consumption and the individual premises for music listening.

In comparing music-streaming practices with earlier ideals for music collecting (recall Hornby) one immediately encounters the dilemma that digital formats and streaming services make it impossible to "collect" music as such (Burkart 247) because the format offers music through subscription rather than ownership. Symbolic substitutes for physical collections must then arise through software interfaces designed to enable (or restrict) access to music and other cultural objects encoded in digital formats (247). These interfaces require us to cede control to technology in a way that in turn offends the music collector's sensibility: "The controlled life of the music user within the digital enclosure seems incommensurable with the empowered music user who once went to record stores and bought, sold, traded, and collected CDs, LPs, and cassettes, who retained the rights of first sale with which to build a collection" (249).

Nevertheless, as the forthcoming analysis will demonstrate, users continue to covet, collect, stockpile, and enjoy music in these digital formats as though music remained somehow a cultural object, which should be analyzed in relation to artifacts even if they are not artifacts but only software (Sterne 831 – 32). Digitized music via streaming services and MP3 files, after all, is "designed for massive exchange, casual listening and massive accumulation" (Sterne 838). These qualities have liberated recorded music from the traditional economy of exchange value, within which ownership status is central.

Relatedly, Marjorie Kibby found that music listeners who are actively engaged with their collections interact with digital files just as they did with physical formats. Digital music files play an important social and symbolic role in their owners' lives, and organizing, classifying, and aggregating them even gives the digital content a kind of materiality (441). While this is likely true regarding CDs and even individual MP3 files, Kibby's study does not encompass streaming services, where the continuity begins to break down, as the owner becomes the renter.

Changes in patterns of human behavior are never technology-led alone. Still, the popularity of music-streaming services manifests a shift in consumer behavior that is about to happen. The music distribution era with linearly programmed channels and objects or units for sale is now moving towards a consumption era where access is valued over ownership (Mulligan). Subscription models are cannibalizing sales of music: in Norway music downloads fell by 21% and physical sales fell by 29% from 2012 to 2013 (Dredge).

In this, new fan orientations and alignments with regard to this enterprise encompass hoarding, sharing, and searching activities as a means of creating self-reflective digital music collections (Burkart 248). In cyberspace, that is, people collect lists

rather than objects, and those lists serve as a form of personal expression that derives from but also supersedes the record collection (McCourt 251). Eighty-two per cent of all user-generated playlists in WiMP Music have unique names, confirming playlist making as a highly individualized practice (Maasø). As such, music is a complex example of compulsive acquisition because music collections are at once archives and participatory practices (Kibby 428), with users as content producers in relation to the contexts and structures of personal music consumption.

More precisely, online users have become content curators, providing editorial perspectives by highlighting particular content on websites and services that allow them to categorize and organize collections of content created by others (Changtao et al. 659). The concept of curation is a constructive model and metaphor offering a solution to the issue of information overload online (Liu 3). It is based on ad hoc expertise depending on skill sets and/or knowledge of topics or events, and is associated with multiple activities or interactions (i.e. collecting, organizing, preserving, filtering, crafting a story, displaying, and facilitating discussions). In socially distributed networks these activities are often interconnected and feed back into each other (3). Nevertheless, Changtao and colleagues found that a majority of online users view curation as a personal activity, rather than a social one. Online curation then might provide a more personal value to the curator by collecting and highlighting other sets of content than would be offered by using other methods, like search (667).

Digital music archiving hence involves new sets of values in relation to music collecting—the intangibility of digital files makes the music less emotionally valuable than a recording medium you can hold in your hand, Tom McCourt argues (249). Their visual and tactile aspects are reduced to simply data, metadata, and thumbnail images, and in this way they are unable to contain their own histories (250). Paradoxically, this lack of materiality and emotional resonance heightens the listener's interest in sampling, collecting, and trading music in new ways that make these experiences more intense and intimate than owning a physical recording (250). This is because digital technology offers more possibilities for modifying, altering, and recontextualizing original content in ways that heighten utility, power, and control for the users (251). Specifically, digital media make people want to compact music in archives, cultivate immediacy in the ability to sort and regroup files effortlessly, and devote attention to customizing this content. "Fluidity, rather than integrity, is the defining characteristic of digital technology" (251).

Digital music technologies now regularly govern the everyday experience of time and space (Bull) in ways that have become normalized as habitual and mundane music practices (Beer 85). The study of these reconfigured music practices is complicated by their inherent complexity and unpredictability, according to Beer (78). It is my hope that the present article will contribute empirically grounded observations regarding the precise implications of music-streaming services for this growing area of inquiry.

Methods

I will apply several methodological models to my engagement with people's sense-making regarding their playlists, incorporating stated assumptions and strategies, actual practices, and a range of personal experiences. I began with a self-reported diary study, in the hopes of avoiding the potential distortions associated with retrospective inquiries (Hektner, Schmidt, and Csikszentmihalyi 7).

I recruited heavy streaming users systematically to ensure that this study would capture people with prodigious abilities to use technology as well as a great deal of originality in user practices. Heavy users have had their streaming service subscriptions for at least a year and use it daily (five to seven days per week). I engaged half of the study participants following visits to three high schools in Oslo and Akershus, Norway. After circulating participation proposals to about 60 students, aged 17 to 18, I left with 16 acceptances, from which I chose six. I engaged the other half of my participants by circulating information about the project on Facebook and Twitter, requesting interested users to contact me. Twenty people, aged 21 to 60, replied, none of whom were known to me previously. Altogether, the final group of 12 participants included five male and seven female Spotify or WiMP Music subscribers and encompassed high school students, advanced degree students, and workers in various positions.

The initial instruction to the participants was to write diary entries on every music-listening session that involved streaming services during four sampling periods that lasted from two to three days. In the interest of securing reports of an everyday nature, participants were not alerted about the sampling periods in advance—SMS and emails indicated when a period was about to begin and end. Diary entries revolved around seven questions that focused on (1) the listening context (location, date, time); (2) the music context (what music, from which source, why start to listen now, how was the music found); and (3)

the listening experience (a description of the use of the music, any parallel activities, the social or personal setting, any distractions, emotions, and so on).

An earlier pilot study revealed that users would likely have different preferences for reporting their streaming experiences, so diary material was allowed to encompass handwriting in diary books, text messages, emails, screenshots from personal media devices, and replies in spreadsheets created in Google Docs.

Observation and Interviewing

To complement the diary descriptions of participants' online behavior, I followed their Facebook profiles during the two months of diary reporting. I also observed their "scrobble" activity via the digital platform Last.fm, a feature that finds, processes, and distributes information about digital music listening. This alternative tracking mechanism allowed me to determine whether behavior patterns changed during the testing periods.

The multiple components of the study's design made individual participant briefings a necessity prior to the investigation, and I managed this via face-to-face conversations with all but one participant (who lived some 600 kilometers away and was briefed by telephone). In these briefings I addressed research topics and ethical concerns such as Facebook friending, Last.fm observation, my frequent inquiries during the upcoming testing period, and the maintenance of anonymity. All participants consented in writing to take part in the study, and the Norwegian Social Science Data Services accepted the project.

The diary study was followed by in-depth semi-structured interviews that lasted between 40 and 60 minutes. Interview guides included a fixed section with standard questions and an individually adjusted section that followed up on the conversation and participant in question. All the participants brought along their most-used devices for streaming music. This helped me to develop detailed insights through precise questions, and helped the participants to speak more freely, because the content and practices in question could be elucidated in direct relation to the actual playlists. All interviews were recorded, transcribed verbatim, and coded in HyperResearch.

Also following the observation period, I continued to monitor the participant accounts in Spotify and WiMP Music and captured screenshots from these interfaces. This proved to be so valuable that, after the study had ended, I asked participants to continue to send me screenshots with overviews from at least one of their streaming devices and received permission to use these as illustrations as well. All of the participants except one sent

pictures that helped me to further ground my analysis. In addition, a sporadic email exchange continued for a few months with some of the study participants. I formally ended these relationships by informing everyone that the data gathering was complete, after which I broke the Facebook and Last.fm connections as well.

My accumulation of data over time produced a comprehensive impression of evolving, individualized, and contextualized user practices with regard to the fluctuating circumstances surrounding the music-streaming services. All of the participants turned out to be passionate music fans and were very generous about sharing their experiences. Most wrote relatively detailed daily reflections, sometimes multiple times a day, and this material predictably presented users who were investing more than most in maintaining their music collections. Obviously, less enthusiastic music listeners, or listeners who were less interested in sharing their experiences, would be harder to engage in this kind of investigation. My sources generated rich and detailed descriptions of music-streaming practices, from which I derived the following analysis using a bottom-up approach. All participant names and playlist titles presented in the analysis are anonymized.

Findings: Structures and Logics of Personal Playlists

All of the participating music-streaming users had personal playlists in Spotify or WiMP Music that they described as the playlists they used the most in everyday listening. Within the relevant 12 streaming accounts, the total number of personal playlists varied from one to 100, and the number of tracks in each playlist varied from a few to more than 1,000.

During the observation period of the study, ongoing playlist activity was evident. Some participants added and deleted entire playlists frequently; others modified and updated content or titles of existing playlists. Some simply streamed the playlists without changing them much at all. This variation in playlist manipulation indicated that users demonstrate a lot of individuality in how they approach music-streaming services, and further that playlists can be regarded as either closed or open "units" of music, depending upon how static or dynamic they are. In the analysis that follows, I will rely heavily upon these two terms as opposite poles of playlist behavior, though I remain aware that, in fact, most people combine them to different degrees and ends.

Static Structures

With a static playlist, the user basically retains the original aggregation of music for the life of the list. Tracks ordered within the structure of original album releases represent (and inspire) numerous static playlists, even though the streaming service enables the individual to reinvent the album as he or she sees fit.

Personally created playlists become static when the composition or editing of them stops. Sometimes the playlists are felt to be complete; other times they are forgotten, abandoned, or replaced. A playlist can become static immediately after it is created, or more gradually, as was the case with the playlist Sofia (30) made for her 30th birthday party. She assembled the playlist (titled Gibberish) in the weeks leading up to the party, in collaboration with invited friends from her Spotify network. The playlist remained static after the party, though Sofia still listened to it occasionally (diary notes/ interview, 6 May 2013).

Another typical situation in which playlists turn static arises when "best of " playlists for a given year are abandoned as the next year arrives. This does not imply that users never listen to them anymore but rather that the lists go from active to archival. The aggregation of favorite tracks in "best of " playlists was a common practice for several study participants. Marius (24) felt that music-streaming services made it very easy to summarize a year musically, thanks to their immediacy and responsiveness: "So if I hear a track that is immediately good or I return to [it] several times, I drag it into the list there" (interview, 28 May 2013).

Dynamic Structures

As mentioned, dynamic playlists can become static over time, but static playlists can be revived as well. Once-static content, imported from external sources or other self- made compilations, can supply a resource for a new playlist. Emma (17) consistently used copies of her existing playlists as a basis for new ones in Spotify. She deleted some songs, kept others, and added new ones, so that tracks began to overlap across her playlists.

Truly dynamic playlist management generally implies a steady increase in content; more of the study participants manipulated by adding than by subtracting. Still, for some users, deletion was part of the dynamic playlist process. During my interview with Louise (17), she spontaneously removed a Rihanna song from her playlist because it was too hip hop for her taste: "If I get tired of them [the tracks], I don't like them anymore, so then I just delete them" (interview, 23 May 2013). Louise's frequent playlist updates led her to maintain only one personal playlist in Spotify, titled Star, in addition to a static list featuring her favorite band, Maroon Five. She consistently updates Star according to her latest

preferences. Just before I recruited her, she had cleared the playlist of content, because it was a "mess." Yet by the time of my interview with her three months later, Star again had 193 tracks, including "Avril Lavigne, and actually a lot of rock, but also some kind of hip-hop, but now I'm not fond of that hip-hop anymore. And soft rock. And pop in general. And a little bit of old songs and such, like jazz and [...] it's very mixed, in a way" (interview, 23 May 2013). This static/dynamic list demonstrated her restless relationship with different kinds of music

Temporary Playlists

In addition to updating existing playlists, a dynamic approach includes frequently creating new playlists. Nathalie (17) is very "playlist oriented," meaning that most of her listening sessions catered to playlists. She retained some of them permanently, adding to them according to specific strategies that I will present in the next section. She devoted others to certain passing occasions, such as a walk she happened to take, or a particular day at school. Often she deleted the temporary playlists right after the occasion in question had passed—the playlist titled March, which she described in her diary, was gone by the time of her interview in late April.

Nathalie put a lot of effort into sorting and placing tracks in her context-sensitive playlists, and she was accomplished at seeking and securing the music she wanted, fully exploiting the dynamic potential of the music-streaming service. She also benefited from the immediacy of the service, frequently reordering her playlists even as she was listening to them, using the queuing function: "I press play on the track I would like to listen to first, then place the others in line. As I said, I prefer to know what song I can expect up next" (diary note, 7 March 2013). She also created temporary playlists using excerpts from her various permanent playlists:

> I always listen to quiet music when I have to focus on important work at school. The Chillout list consists of well over two hundred unique songs. I tend to create temporary lists with selections from the Chillout list with up to ten songs at the most. I do this because I like to have full control over what I listen to [...] Right now I feel very tired, unfocused, and stressed. (Diary note, 7 March 2013).

Nathalie's workout playlist provides a conclusive example of her dynamic, temporary, and immediate editing. She found that it was hard to identify good music for exercising, so the tracks on her permanent training list remained relatively static for a long time. However,

when she rearranged the order of the songs, the content felt renewed: "I usually modify the set-up on this list, moving tracks up and down depending on what I prefer that day" (interview, 26 April 2013). The ways in which Nathalie tailored her playlists allowed her the sense of control she needed to appreciate the possibilities of streaming services.

Random Plays

In other words, Nathalie's music-listening preferences and practices do not jibe with streaming-service features that allow for the elements of surprise and randomness. One such feature is called the "radio," and it is typically used in tandem with personal playlists to automatically extend the user's music selection. This feature uses metadata tagged in the tracks to create streams of music related to the given playlist, so it represents a relatively effortless means of exploring new music defined by the "limitations" of a preselected playlist. Some users also find the radio to be helpful in expanding playlists with related music in the very moment of listening to them. Still, this experience can be mixed— sometimes the radio plays songs that users dislike or do not experience as related, demonstrating that algorithmic guesses at musical similarity can differ from personal preferences in this regard.

Some participants used the radio as a way to avoid making active listening choices. Another popular feature along these lines is the "shuffle," which introduces a lesser degree of arbitrariness into the listening experience because it works only with tracks from a predefined playlist, though it will play them at random. Kristoffer (21) said that he was "a heavy user of the shuffle functionality, and very often I let playlists with hundreds and/or thousands of tracks live their own lives with the shuffle" (diary note, 7 March 2013). This form of listening was at once dynamic and controlled for him, because he had personally endorsed the shuffle's options beforehand.

Participants also associated the shuffle with a particular mode of listening. In contrast to manually edited playlists or the prearranged "album mode," the shuffle almost insists upon somewhat distracted or casual listening, because the user cedes control to the software. Yet adjustments can still be made, even in shuffle mode, to fit the "logic" of randomness. Håkon (17) stated, "The newest release of the band Eluvative is like that [it requires an adjustment]. One track is called 'Epilogue' and one 'Prologue'. . . . It is okay to listen to them through [the first time], but I will instead delete those two tracks from the playlist [so the music suits the shuffle]" (interview, 7 May 2013). Håkon approached music at the level of independent tracks and found the album format redundant as a context. His

playlist practice demonstrates that even shuffle mode and distracted listening require effort on the part of the listener to remain in control despite letting the software direct the flow of the content.

Thus far I have presented various ways of managing playlists at a structural level. The ability to alter the order of, and the arrangements among, playlist tracks enriches the user experience by adding either elements of chance or possibilities for greater control. Yet the millions of tracks that are available from music-streaming services provide personal playlists that have been aggregated according to schemes that transcend the structural. People assemble playlists according to "themes, events, experiences, relationships, or as a sort of 'branding' akin to DJ practices for the creators," McCourt states in relation to MP3 files from P2P downloads (251), suggesting that users of flexible, personalized, and mobile streaming applications also find their own ways of managing music in playlists. I will next test this conclusion against the logic informing the personal playlists of streaming users.

Standardized Categories

Playlists made in accordance with outside systems of music collection and grouping occurred among the study participants. Some people imported self-curated collections from other digital archives, such as iTunes. Others remade playlists with content from their physical record or CD collections, in order to make that music available on their mobile streaming devices

As already noted, the album as such appears to supply a compelling logic for the personal playlists of Spotify users, while users of WiMP Music are offered a feature that allows them to mark album favorites within the platform, foregrounding particular albums in the streaming interface and thereby making album playlists redundant. Spotify did not have this feature during the study period, so playlists were saved in a long list that sometimes only partially displayed the whole title of the playlist. As the number of one's playlists grew, this characteristic made it increasingly difficult to scroll through the selections, particularly because titles (and playlist content) were hard to remember when they were cut off. Spotify has since introduced a feature labeled My Music, which incorporates the capacity to save whole albums and browse music by artist and album, making the platform's content more akin to a physical music collection.

Despite the relative prevalence of sorting tracks by album, streaming users still managed to insert themselves (or a shuffle) into the listening experience: Emma (17) noted, "I never remember track titles, so I just playlist the whole album to find a particular song

again. Some of these songs hence recur on several of my other playlists as well, so this [the album playlist] is really just an intermediary step" (interview, 11 June 2013). Another approach related to the "album playlist" is the aggregation of several albums into a longer playlist. This works equally well in either Spotify or WiMP Music and allows the user to sort content by performer while relying upon the ordering of existing albums. Along these lines, Jon (60) had collected all of the singles by a band called Mister Fox, which, as far as he knew, had never been released independently but only on compilations: "If you search Mister Fox, you get some peculiar French rappers and quite a bit of other stuff, so it is very nice to have it [all] gathered [in one playlist]" (interview, 8 May 2013).

Though Jon did not identify himself as a "playlist guy" as such, he did maintain several lists, sorted into different categories, such as all of the recordings of a single composition called "Theme de Yoyo" or the genre theme English jazz. The organizing logics of playlists like these resonate with existing classification categories in popular music as well. Artist, album, composition, and genre are standard groupings used to structure tracks as products, along with more esoteric categories such as producer, label, composer, or year of release. When music is aggregated in streaming services, people tend to turn to these sorts of grouping schemes first as they create personal playlists.

Individual Playlists

Recalling Kittler's concept of storage capacity, the streaming services have aggregative features whereby user participation enables listeners to become content producers of contexts and structures for their music consumption via personal playlists. Included here is the ability to split up existing aggregated structures (like original album releases) according to personal preference, indicating once again that playlist practices often benefit from a high degree of autonomy and individuality.

Participants' playlists demonstrated many schemes that transcended standard classifications. Some favored musical aspects: Håkon (17) had playlists sorted by the tuning of the tracks, named (Drop D) and other band (Drop C/C). He listened to them when he practiced the bass guitar to help him master the alternate tunings. Nathalie (17) described her playlist Unique as follows: "The voices of the artists stand out from 'the ordinary,' and that is exactly what is so fascinating [about these songs]" (diary note, 7 March 2013). Another of her playlists favored slow songs of gentle character—"The Chillout list is my library for quiet music" (diary note, 7 March 2013) for going to bed or doing

schoolwork. Along these lines, Håkon collected "kind of the most heavy stuff I have" (interview, 7 May 2013) on his playlist titled Roughish-rapid-rhythm-stuff.

Playlists also responded to themes or things outside the music universe, and there was truly no limit to the inventiveness here. Many of the younger participants used TV series and films as references—Nathalie's (17) playlists included Mystic Falls (representing The Vampire Diaries), Upper East Side (Gossip Girl), Oz (Wicked), and Lima to NY (Glee). Jenny (18) had a playlist with various recordings from Les Miserables, including the full-length version of the movie soundtrack but also orchestral and stage versions of her favorites that she had discovered in Spotify (interview, 29 May 2013). Anne (35), a hobby diver, had a playlist dedicated to water-themed music:

> So I thought, "Oh, I have to find some fun music," and I decided to gather all [of the tracks I could find] with a fish theme or ocean and sea themes. And that was a lot of fun because it's very random. Many of the composers might never even have seen the sea. So I started collecting it. Nonetheless, I thought a lot of it was crap [...] I add new tracks when I come across something. I have never listened to it, though. That's not why I have it. (Interview, 21 May 2013)

We saw above how streaming technology invites immediate and dynamic handling of playlists, which inspires a certain kind of arrangement. We now see how the sheer abundance of the online archives inspires a different kind of arrangement—more songs within certain categories are always potentially available, and the users can easily enter a "state of collecting" that responds to the true collector's perpetual desire to renew the collection (Benjamin 61). Anne's water playlist, then, is something to have, not something to use, recalling Baudrillard's description of the collector's urge to simply possess things. On the other hand, another common practice produces playlists inspired by or dedicated to very specific contexts, where the use trumps the possession, as we will see below.

Context-Sensitive Playlists

Above and beyond their presence on desktop computers, music-streaming services arose as applications designed for mobile devices like smartphones and tablets, meaning that users are able to listen to them in a host of contexts. The conditions and purposes of these contexts therefore often determine the music aggregations that users fit to them. In this case, however, there are very different levels of context sensitivity and exactitude versus flexibility.

Nathalie's (17) dynamic temporary playlists, for example, demonstrated extreme context sensitivity—she made many obvious adjustments in the interests of manipulating

the music according to a momentary listening situation or experience of self. Similarly, Louise's (17) constant editing of her single permanent playlist Star was also context sensitive, in that it was frequently updated to track her changing tastes in music. Both users located their motivation in the immediate listening moment, to which they responded through the exploitation of streaming's comprehensive and immediate search and retrieval functions.

A spirit of exploration governs playlists made in the interests of gathering current releases, exemplifying a context sensitivity that is directed at the immediate present. Sofia (35) had a playlist titled New Finery in which she placed tracks that were new to her, as a sort of staging area, before she decided whether they merited inclusion in her various other playlists. That way she never missed anything. Many users reported that they tended to update and manipulate these "main" current-release (or simply current-favorite) playlists more frequently than their theme-based or situational playlists as well.

Other examples of relatively permanent context-sensitive playlists were aggregations based on daily situations or routines. Playlists might be created to fall asleep to (sleep, fleabag), exercise with (make it count, sweating sweetheart, better go working out), study or work alongside (exam, study night, the work list, or kaam kaam ["work work" in Hindi]), or commute with (onthago, drive-by-smiling, homewards).

Social events inspired playlists too, including celebrations of a birthday and the constitution day, a payday gathering with colleagues, dinner parties, or just casual nights out with friends. Nina (27) recalled:

> Just before I was to defend my [master's] thesis, I made a playlist in Spotify called Fight Face. I was terribly nervous right before the exam, and therefore I needed some good up-tempo music that I really appreciated to make me "fit for the fight." And it worked out very well and made sure I was less nervous and ready for the exam. (Email from Nina, 14 October 2013).

Even holidays or seasons in life define playlists, titled things like Alternative Christmas, Upcoming Summer, Spring-Like Winter, or Summery Sun 2013. Erik (18) made a playlist to remember music from a cabin trip with his high school theater: "It has become, like, that I kind of associate the songs with exactly then" (interview, 16 May 2013).

This demonstrates that playlists made and used frequently during a specific period can become contextual representations in retrospect. Nina (27) tended to listen to only one playlist at a time; in the interview, this supplied her with detailed flashbacks of various playlist-associated periods: "It has been a long time since I've used it, but back then I played it a lot, really a lot! Used it back and forth to work, and at the office [in which] I worked at

the time—we had a radio we could plug the iPhone into, so I played it there too, as music to work with" (interview, 12 June 2013). Playlist titles thus serve as personal hooks for the period (and the theme or content) that the playlist represents:

> If you wonder about the name of the playlist Fuck Life&dance4ever, I made the list at the end of spring, when I was so sick and tired of thesis writing, job searches, and obligations in general that I instead felt the need to listen to some music with tempo—and dance away. [...] Away from all the tasks, the stress and such, hee hee:) That list I kept secret in my Spotify account—not because of the tunes chosen, but rather because of the name on the list and how I felt just at that time. (Email from Nina, 31 August 2013).

The Self and Others as Playlist Contexts

The email excerpt above demonstrates that Nina's personal mood, feelings, and temper informed the music she preferred—she tended to use the self, that is, as her context for making playlists. Such playlists were common among the study participants, but people's uses for them differed.
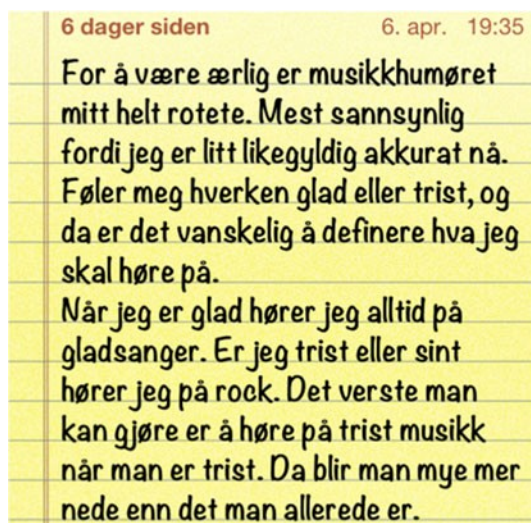
Figure 1. "To be honest, my music mood is a total mess. Most likely because I'm a bit indifferent at the moment, feeling neither happy nor sad, hence it's hard to define what I am going to listen to. When I am happy I always listen to happy songs. If I am sad or angry I choose rock. The worst thing one can do is listening to sad music when feeling sad. Then you become much more low that you already are" (translation from diary note, Nathalie, 6 April 2013).

Figure 1 is the screenshot of a diary note Nathalie (17) wrote on the tram, reflecting her own process for choosing playlists according to her mood. She was listening to the playlist reality isn't enough because she wanted to feel tougher (diary note, 6 April 2013). Anger management, tender, happytunes, floating fine, and daydreaming (feelgood songs) were other examples of playlists arranged by mood from the study participants.

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Likewise, the self is the obvious context for specifically biographical playlists. Nathalie's The soundtrack of my life included "songs I would have played if my life were a movie" (diary note, 8 March 2013). This list was highly dynamic, with continually changing content and titles, as she continued to search for herself and undergo introspective identity work.

In the biographical playlist Memory Lane, Anne (35) had gathered tracks representing "strange memories, good memories of a high sentimental value" (email from Anne, 25 August 2013). During the diary period, this playlist was named Guilty Pleasures. In the interview, however, Anne realized that she did not harbor any "guilty" feelings about the music or the time: "It's more a list to reminisce, I think" (interview, 21 May 2013). She then renamed it Memory Lane, which captured its function more accurately.

Some participants viewed mood, feelings, temper, memories, or biographical history as the most efficient and practical dictate for sorting music, because these various internal logics served as hooks for expediting the surveying of potential playlist tracks. These lists could be quite personal, like Nina's Fucklife & Dance4ever, or even intimate and private, or they could be shared through acts of communication and social identity management. For example, Nina shared other playlists in her streaming account. Some were "statement" playlists: Old Danish aggregated performers exclusively from her native country, to demonstrate the quality of Danish music to a colleague who doubted it. Likewise, she shared her Björk playlist. When she was younger, her interest in Björk made her feel different, because none of her friends liked the artist. As she grew older, the playlist became a statement about herself (interview, 12 June 2013).

Discussion: Fluidity, Curation, and Control

The range of ways in which the participants explained their personal playlists proves that music-streaming services invite multiple approaches to and uses of digital music. Applying individual strategies including selective uses of service features, the participants provided new and old music to numerous personal playlists. Some mentioned that service-provided suggestions sometimes inspired their music exploration. Still, neither editorial or commercial content highlighted in the interface nor algorithmically provided music suggestions was emphasized as particularly important in the playlist making, underpinning the autonomous music interest among this group of streaming users. Rather, a dialectic

between practices, intentions, sense-making, and experiences in the participants' accounts was crucial in understanding collecting, curating, and listening to music in this format.

Fluidity

The music-streaming service's capacity to create dynamic playlists allows the listener to conveniently and flexibly assemble music according to either long-term or fleeting preferences. This process can be experimental or calculated, depending on the approach. Streaming's dynamism resonates with its comprehensive and medium- specific storage capacity and allows for the insertion of new values into the enterprise of the collector, partly aligning the descriptions of McCourt and Sterne in this regard. Streaming's immediacy in navigation and accumulation lets the collector fetishize abundance as well as the attraction of the singular object (Baudrillard 8 – 10) and juxtapose passing fancy with long-lasting desire (Benjamin 61). This immediacy also helps the collector use, rather than simply possess, the playlist, adding a significant dimension to its meaning.

Music-streaming services encourage almost effortless editing and rearranging of playlist content, including the relatively instantaneous creation and deletion of whole lists. This can result in lively collector practices but does not appear to elevate the streaming experience over the collection of physical recordings in terms of either intensity or intimacy, as McCourt argues in relation to MP3 files (250). Instead, people seem to find streaming services to be much more impactful than physical recordings and even MP3 files in their everyday lives. McCourt's (251) assertion that fluidity is a defining characteristic of digital technology resonates with playlist use, even though, as discussed above, some playlists are relatively static. Others evince what I would call great integrity, in the sense that they are extremely coherent with rather than incidental to the context of the present moment or the user's experience of the self, whether they are intended to last forever or not. Playlists imbued with integrity in terms of the listening moment are acknowledged to be more intimate or intense, because they answer to an immediate need or desire. Streaming music is therefore fluid too, but perhaps not in the same way as collecting MP3 files, with regard to elevating integrity too as an experienced characteristic of the technology.

Curation

Other playlists reflect the urge to accumulate that tends to define the most enthusiastic

record collectors. The tendency to make playlists simply to keep them applies to both album-originated lists and self-curated collections like Anne's "water music." The related playlist practices often resemble what Liu calls an archivist approach to curation; finding, collecting, and aggregating content with the goal of pulling together a diverse set of content from different sources (2). In addition Anne's curatorial practice includes elements of storytelling in how she weaves together selected content based on a themed story that makes sense with explanatory text or commentary (3). We might also recall Jon's (60) summary of his Mister Fox music—"It is very nice to have it [all] gathered [in one playlist]"—as a reflection of an interest in collecting itself, rather than listening as such. Jon's classification is archival, yet it also includes an intention to catalog music more easily to retrieve it, which characterizes librarian curatorial activities (3).

We might thus wonder at Burkart's insistence upon the incommensurability of the activities of the music collector and those of the music service user (246). According to my findings, practices of gathering music into streaming playlists regarded as curatorial activity are clearly associated with principles of collecting. Still, Baudrillard might argue that music aggregation via playlists aligns with accumulating rather than collecting, because of the ease of acquisition of music through streaming services.

Related to practices of accumulation, Burkart refers to practices of music hoarding as ways of gathering music in digital archives in order to share it, which he insists is the best way to embed value in collections in intangible formats (247). I have found, however, that hoarding-like playlist practices ought to be distinguished from those of sharing. They make sense independently as curatorial activity inspired by the access to millions of tracks. This curatorial activity becomes meaningful as it includes similar mindsets to those of possessing collectable objects (Baudrillard 8) with the purpose of creating and maintaining playlists, simply to keep. Despite the obvious fetishization of quantity over quality that accompanies "music hoarding," the role of playlist curator remains relevant and important, both online and in one's inner world.

As Baudrillard states, "The objects in our lives, as distinct from the way we make use of them at a given moment, represent something much more, something profoundly related to subjectivity" (7). Though the "true" collector's requirement of object singularity even among those objects that are aggregated in succession is lost with digital content that is made to be shared among the masses, the act of aggregation itself activates the collector's originality and the value judgments that inevitably ensue. Caring for and preserving collections through stewardship, to engender long-term maintenance of and access to the

collection for posterity's sake, is a preservationist approach to curatorial activity (Liu 3) that corresponds with the idea of hoarding either static or dynamic playlists simply to keep

Curatorial practices also might reflect a digital renter's perspective upon the meaning of owning a collection, recalling Benjamin (67): the practices of creating playlists and then keeping them encompass experiences of exclusivity and subjectivity that bring about, in turn, a felt ownership of the music, or even notions of self-identity reflected through the playlist. Curating playlists hence also has a communicational potential in order to create compelling experiences or evoke responses among others, as demonstrated by Nina's shared Danish music and Björk favorites. These were purposefully arranged, verified, and filtered for presentation, almost with "editorial value" in terms of being assessed as relevant, reputable, and hence meaningful to share (Liu 3).

Streaming services enable practices of music aggregation other than those of dynamic music grouping, ungrouping, and regrouping. Curatorial playlist practices evoke classic record or CD collecting, and we see that the abundant archives of the streaming service become the stock from which to collect, rather than the source of countless playlists to apply and then dismiss as moments in life pass by.

Dealing with Technology

The album format's apparently paradigmatic influence upon the industry, the artists, and the listener indicates its likely future viability despite the digital platform's ability to disrupt it. The well-respected status of the album in particular applies among streaming users with histories of listening to CDs and LPs and users who privilege the comprehensiveness of the album. Hence original album releases will probably continue to constitute certain personal playlists, unless streaming services offer more immediate ways to foreground albums, like Favorites in WiMP Music or My Music in Spotify.

Nevertheless, when a user's playlists become overwhelmingly numerous, streaming services begin to appear inefficient and unmanageable as collection systems. The service's archive function can seem less than optimal when its interface is overwhelmed. This might explain why some streaming users prefer playlists based on their own individual schemes and context-based sorting rather than album- or artist-dedicated playlists. Their own titles serve as hooks with regard to labeling the aggregation or its purpose. In turn, we see streaming practices influenced by streaming technology (and, more specifically, that

technology's shortcomings), as more people abandon albums for personal lists because they can sort and review them more conveniently.

Playlist Purposes: Control

User control appears to be the underlying motivation for all the different ways in which playlists are aggregated and enjoyed, archived or manipulated, and even abandoned. This aspect of control, however, takes a variety of guises.

Playlists, first of all, represent a means of practical organization when one is faced with an endless archive, coupled with the ability to search and "claim" tracks within it. Whatever the motivation and intention regarding a given playlist, the user asks the same sorts of things from the streaming service: ease of use, accessibility of content, and an overview functionality that is effective and comfortable. Playlists become fixed entities in a technology defined, ultimately, by its fluidity.

Sometimes this practical purpose overlaps with playlists used as a means of individualization: control over this content, that is, implies control over the self. Music-streaming services provide the same vast archive and user features as starting points to all subscribers, who then overlay themselves upon the service via their playlist choices. The playlist represents what is unique to the individual in the context of a much larger, generic platform, and it demonstrates the persistence of the collector's uniqueness despite the circumstances.

Control in the context of playlists is also exerted through personal negotiation and expression of identity work. Playlists curated by moods, feelings, memories, or biographical/relational representations help the user experience mastery over the self, whether those lists remain private or not. Identity work can be furthered in particular through the dynamic manipulation of the playlist, within the immediate context the present moment and the experience of the self. Lastly, users can harness more or less context-sensitive playlists to structure or simply accompany daily life; without them, the sheer abundance of music in a streaming service is too overwhelming to manage effectively or "on the run."

In relation to these aspects of control in playlist use, Burkart proposes that digital music environments respond to the listener's interest in self-reflection by supplying seemingly infinite resources toward that end. He continues, "[The] desire to search would become presumably more intense if a music fan's entire database of digital music were

accessible through a single software installation on a central computer, or networked computers, and if an exhaustive list of music holdings could be generated from an online catalog" (248). This is precisely the case with music-streaming services, which then, through practices of both dynamic and static playlist management, proceeds to prove Burkart's final point: "From this line of approach, then, online music searching is a form of soul-searching that can relieve the collector's fetishes for packaging, acquisition, and handling of records" (248).

Conclusion

In this article I have described some of the tendencies of music listeners with regard to their personal playlists in music-streaming services. These accounts encompass practices, purposes, and motivations for making and using playlists, as well as various approaches to music and technology in general. Taken in tandem with the capacities of streaming technology, these aspects form the basis for the user experience. The playlist is as unique as the listener behind it.

We have seen that playlist activity via streaming services introduces new practices and habits but also derives from traditional physical collecting. While physical music collecting has often been about the hunt for rare gems, playlist collecting involves imposing one's will (and oneself) upon an intangible realm of endless abundance. But the hunt still motivates some streaming users; especially those who tend to carefully curate playlists rather than continually revisit dynamic ones. Other streaming users are much more interested in the streaming technology's immediacy and fluidity, which can add music to intuitive experiences.

In all, streaming users demonstrate the potential for individualization in consumption, whereby the meaning of a product (in this case, a playlist) can be utterly transformed through the context and manner of its use. Colin Campbell writes, "Such activities as collecting, gifting or stylizing hence could be seen as effectively 'negating' the product's status as commodity" (26 – 27). The playlist enables ownership of music even in streaming services because it undermines or narrows the impact of the service's shared features and content in the interests of elevating personal music selection above all else. When we ask our playlists to answer for our lives and selves, we transcend the generic platform from whence they came.

Music-streaming services encompass aggregative features that invite participation and enable listeners to perform as content curators of their music consumption. In the format of music-streaming services the participating listener thereby plays a role equally important   as the role of the medium in the storage, processing, and transmission of information, recalling Kittler's concept of a format's storage capacity (qtd. in Straw 233). It follows that to be a collector in this format requires active management of music into playlists.

The more we manipulate and actively maintain our playlists, as well, the more valuable and meaningful they become. This study hence aligns with Kibby's (441) observation that ownership of music is intensified among those users who actively engage with their collections by classifying and revisiting personal aggregations. In other words, playlist management is as important as initial playlist creation—sometimes the purpose of the practice is its performance alone.

The practices of playlist makers seem as various and complex as those of the record collectors in Shuker's study. Here, as there, rituals and preferences of collecting are culturally important as representatives of interwoven narratives of desire, compulsion, and identification, all informed by a fundamental love of music as well as notions of cultural value (Shuker 328). Media technologies, from this perspective, must be understood as complex socio-material phenomena and products of distinct human and institutional efforts. Furthermore, they serve as sites for the playing out of tensions between, for example, determination and contingency (Gillespie, Boczkowski, and Foot 6–7).

In conclusion, I would return to Nick Hornby's question of whether it is wrong to want to be at home with your music collection. My answer would be no, as is proven yet again by the many and various experiences of streaming users with their personal playlists. There is a whole world of meaning in one's music, whether physical or digital in nature, and no sign of abatement in our interest in it.

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Article 4: Social Streaming? Navigating Music as Personal and Social

Abstract

Music-streaming services embed social features that enable users to connect to one another and use music as social objects. This paper examines how these features are experienced within negotiations of music as personal and social through the acts of sharing music and of following others. The analysis relies on 23 focus-group interviews with 124 Spotify or/and WiMP Music users, and a mixed-method study including music-diary self-reports, online observation, and interviews with 12 heavy users. Our findings suggest that users incorporate social awareness in non-sharing, selective-sharing, and all-sharing approaches with strong, weak, and absent ties. These ties are characterized by different configurations of social and music homophily. Negotiations of music as personal and social shape how music-streaming services are experienced.

Introduction

Music-streaming services such as Spotify and Last.fm embed social features to enable users to connect with one another and use music tracks as social objects. Whereas music has always been social (Van Dijck, 2007), little is known about how people use social features as part of music streaming. This study investigates this aspect of digital music's social nature. In Norway, where this study was conducted, Spotify and WiMP Music are particularly popular, and in 2013 streaming revenues accounted for 66 percent of all recorded music revenues in Norway (Dredge, 2013).

Spotify and WIMP Music users can follow selected Facebook friends and receive feeds of music from them. Follow/following is currently asymmetrical, so that followed friends do not have to follow back. Spotify and Wimp Music users can also share music tracks and playlists as posts on Facebook and Twitter, or in email or SMS. Both services enable users to play music in "private mode". Social connections are hence embedded in these services in a two-way fashion. Sharing music is bound up with either explicitly or implicitly giving music recommendations; conversely, users can follow or browse others' pages and find music recommendations. In this paper we will look at how streaming services are experienced as social from the related perspectives of sharing and of following others.

We aim for a better understanding of how human ways of being shape individual user practices and experiences with technology, in this case music streaming services. Music listening is a communal and personal experience (Jones, 2011), and sharing music demands

an internal reckoning regarding what is appropriate to share and what ought to be kept private. Any study of online music sharing hence necessitates an examination of how music connects with identity. In what follows, we will review relevant research and link previous studies with relevant theoretical perspectives on identity, self-performance, and social ties, in order to construct our analytical framework and derive our research questions.

Self-performance, identity work, and music as personal

Networked technologies extend both social interactions and self-performances into public or semi-public spaces. In networked publics, different social contexts often collapse, which complicates self-performance (Marwick and boyd, 2011). We adapt to social situations and roles to satisfy expectations other people have to our performances, and in so doing we consciously edit the impressions we give, and likewise attempt to control expressions given off (Goffman, [1959] 1990). Goffman's theatrical metaphor of performances suggests that the self is shaped and staged according to contexts.

In modern society, self-identity is likewise viewed as an inescapably reflexive project dedicated to assessing questions about who we are, where we come from, and whom we relate to (Giddens, 1991). Throughout life, our sense of self emerges through social interactions with others, but it is also a product of our own internal definitions, generated via a dialectical interplay with how we perceive that others define us (Blumer, [1969] 1998; Mead and Morris, [1934] 1967). In this article, we study music-listening as personal, and how streaming-users consider their own experiences of social interaction in music streaming services, from the perspective of self-performances as reflexive practices, and the self as partly constituted through interactions with others.

The music we listen to often links to our sense of "inner self," expressing our current state of mind (Liu and Reimer, 2008), influencing our mood, and giving meaning to our everyday life and routines by organizing experiences and acting as a symbolic referent for actions, experiences and feelings (DeNora, 2000; Turino, 1999; van Dijck, 2007). Listening to music is therefore personal. It suggests interpretations and evokes memories so powerfully that the full details of one's listening practices may be too intimate to be shared (Jones, 2011). Voida et al. (2005: 194) find that listeners sharing music with others on their subnets in iTunes negotiate 'what identity to portray through one's own music library,' then note further that this type of identity work recalls Goffman's perspective on impression management (Goffman, [1959] 1990).

Relatedly, theories on reflexive self-performances are prevalent in studies of

personal music consumption. Physical music collections signal who we are because material possessions are valued as markers of identity (Giles et al., 2007). Digital music collections reveal similar autobiographical traces and sometimes resonate with significant moments in our lives (Kibby, 2009). Subscribing to the fact that people are reflexively aware of their self-performances (Giddens, 1991; Goffman, [1959] 1990), and that music listening and collecting are fundamentally personal, we will address how shareable music played through streaming services is.

Music discovery and listening as social

Music listening is personal, but it also promotes a sense of belonging and relates one's sense of self to one's larger community and even one's "generation" of peers (Van Dijck, 2007). Music listening is hence also social, and by extension, people often rely on their friends to discover new music (Laplante, 2011; Mesnage et al., 2011). In the pre-digital era, the sharing of music preferences happened face-to-face, but it also connected to technology via, for example, the deliberate preparation of mix tapes (Bitner, 2009; Jones, 2002). The social significance of music implies there is a need to understand key notions and characteristics of social relations, and how networked technologies, such as streaming services, potentially change the relationships we are able to maintain.

A key characteristic of modern social relationships is an emphasis on the relationship for its own sake (Giddens, 1991; Simmel and Wolff, 1964). Giddens (1991) refers to the emergence of "pure relationships" that exist solely for the emotional satisfaction they bring to life, as opposed to premodern relationships, which often arose within ties of kinship or social duties. In pure relationships, trust and commitment are mobilized via processes of mutual disclosure. Music further reflects the subcultures to which we belong (Laplante, 2011; Seshagiri, 2009). As a consequence, collaborative filtering benefits from the knowledge that is embedded in social networks (Konstas et al., 2009; Mesnage et al., 2011). Close friends remain important for users who are seeking new music (Komulainen et al., 2010; Laplante, 2011; Tepper and Hargittai, 2009). Of late, music files (and associated recommendations) have become meaningful shareable objects that in turn instigate social interactions among friends and acquaintances in social network sites (SNSs) (Komulainen et al., 2010; Leong and Wright, 2013).

Homophily, the tendency to prefer friendships or other kinds of bonds with similar rather than dissimilar others (McPherson et al., 2001), is relevant to a scholarly understanding of how and with whom music listeners connect and interact. In the context of

music-streaming services, homophily privilege similarity or resonance of music interests, and Baym and Ledbetter (2009) find that Last.fm friends share musical tastes even when their social ties are otherwise weak. They did not examine the role of weak Last.fm ties for discovering music, and we have little knowledge of the significance of weak vs. strong ties in discovering music in streaming services. Granovetter (1973: 1361) defines the strength of an interpersonal tie as resulting from a 'combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which characterize the tie'; he then distinguishes between strong, weak, and absent ties. Absent ties are those that lack any underlying relationship whatsoever, as well as those between people who are aware of each other, but whose relationship lacks substance. In retrieval and exchange of information the strength of weak and absent ties derives from the direct links they provide to non-redundant information.

When music listeners encounter strong, weak, and absent ties in music streaming services it necessitates alternative self-performances in the interests of maintaining a state of ontological security (Giddens, 1984). This psychological state is based on individual's trust in others and a low or manageable level of anxiety. In everyday social life, ontological security derives from our degree of control over predictable routines and encounters (Giddens 1984: 64). Through reflexive self-performances, individuals negotiate and adapt their routines in the presence of others to make social interaction safer in terms of controlled self-exposures (1984: 78).

Granovetter's theory of ties is complemented by the concept of networked individualism, which accounts for the ways in which networked technologies liberate us from settled groups and allow us to navigate among multiple networks (Rainie and Wellman, 2012). Networked technologies have allegedly enabled the emergence of limited-purpose and generally more fluid social networks (Benkler, 2006), and the possibility of navigating networks changes the way one accesses information and solves problems. Social networks benefit the individual, and those with diverse networks, ones that include many weak-ties, are able to access information, support, and advice from more, and more diversified, sources (Rainie and Wellman, 2012). As music-streaming services are integrated with Facebook, where users maintain strong as well as weak ties (Brandtzæg, 2012; Ellison et al., 2007), it becomes consequential to study whom people turn to when seeking new music. The resulting patterns shed light on the complex role of music listening as personal *and* social with regard to self-performance, ontological security, and social relations with networks of weak, strong, and absent ties.

Research questions and analytical framework

Our aim is to examine the ways in which the social features of music-streaming services are used and experienced, and the significance of these social features for both navigating and discovering music. We hence ask: To what extent do music listeners regard music streaming as social? We will examine streaming practices from the angle of friends and contacts acting as recommenders, and from the angle of sharing music.

Given the personal nature of music and its frequent investment with memories and emotions, any inquiry of this nature must consider the boundaries between personal and social. We therefore ask: *Why do users choose to share or not share music, and how do they negotiate the need to balance music as personal and social?*

Existing literature points to the importance of strong ties for discovering new music, based upon the impact of face-to-face interactions, yet through SNS-integrated streaming services, users relate to close friends as well as peripheral acquaintances. With streaming services, we might expect to see an embrace of weak ties as important recommenders. In this regard, we ask: *Why do users follow strong, weak, or absent ties in streaming services?*

These questions demarcate an analytical framework whereby personal and social streaming practices can be accommodated within the same register. Based on the above literature review, we can summarize the expected patterns as follows:

1. Music as a personal experience makes it a valued social object to share, yet at the same time challenges sharing beyond strong ties. Streaming services make such challenges particularly relevant as users connect with strong as well as weak ties.

2. Streaming services afford new opportunities to discover new music through weak and absent ties in ways that were much less prevalent in the pre-digital age.

Method

This explanatory case study (Yin, 2009) relies upon two sets of qualitative data. For the first set, we conducted 23 focus-group interviews with 124 users of Spotify and/or WiMP Music, aged 18 to 59, between 2010 and 2013 (66 participants were male, 58 were female, average age 29, median age 27). These informants were recruited at the pop/rock festival *Øya* in Oslo, Norway. The interviews were scheduled after the festival and conducted face-to-face. Before the interviews, informants filled out a survey that mapped the importance of music in their lives, and most of them regarded music listening as a key part of life. Our recruitment of informants at a music festival means that they were all likely to cultivate an above-average interest in music; they were also relatively young and urban. Still, we believe the

data provide insights into the habits of early adopters and avid users of music-streaming services. Focus group interviews were recorded, transcribed verbatim, and then coded and analysed using HyperResearch.

The second set of data involves findings from a self-reported study with 12 heavy users of music streaming services, ages 17 to 60, writing diary entries about their own music use during four periods of two days each in March and April 2013. Participants who had used streaming daily for at least one year were recruited after visits to three high schools in the Oslo area, Norway, and after an announcement of the study on Facebook and Twitter. The self-reported study aimed to capture streaming experiences when and where they occurred, according to the dictates of the Experience Sampling Method, which seeks to avoid the potential distortions of retrospective inquiries (Hektner et al., 2007). Participants did not know the sampling dates in advance and received an SMS or email when each new period of reporting was starting. Each time they listened to music through streaming services, they described the experience either offline or online. The diary entries were followed up by individual face-to-face qualitative interviews that lasted between 40 and 60 minutes. These interviews were recorded, transcribed verbatim, and coded and analysed using HyperResearch. The Facebook profiles and Last.fm scrobble logs of the diary participants were also monitored. The diary study contributed more contextual findings than the focus-group interviews and enabled us to consider streaming *practices* as well as streaming-related *claims* and *statements* from participants.

In coding and analysing our empirical data, we mixed inductive and deductive methods. We applied a simple deductive pattern-matching logic to our empirical material and compared the patterns we found in the data to the expected patterns described in the analytical framework section (Yin, 2009). We conducted a thematic analysis to generate codes and categories from the data. A thematic analysis allows for general issues to be determined prior to the analysis, yet the specific nature of the codes and categories arises in the process of coding the data (Ezzy, 2002). Beginning with the focus groups conducted in 2010, we assigned initial codes to the data through open coding. We discussed and amended these codes, then coded the interviews conducted in 2011 to 2013. For these focus groups, we developed additional codes to accommodate small changes in the interview protocols and themes discussed. The interviews with the diary participants were coded in a similar manner. As a final stage, we analysed how the themes that emerged through our coding and analysis fit the patterns we derived from relevant literature and theory (Ezzy, 2002).

Sharing music

Table 1 summarizes how the participants chose to share or not share music, and how sharing practices often related to music-listening as personal.

[INSERT TABLE 1 ABOUT HERE]

Streaming technology's ways of optimizing music sharing complicate people's sense making about their sharing. Their ideas about sharing involve both sharing through the social features that are integrated in the services and sharing through external social media. In the following analysis of why our informants chose to share music (and why they did not), we will discuss the ways in which music listening as personal both motivates and restricts sharing. We will further address how music sharing and impression management are linked.

Sharing and not sharing because it is personal. Annie (21) links music to life events in a way that resonates with research on the personal significance of recorded music in the pre-streaming era. For Annie, streaming services do not imply any change in her emotional investment to music or in the ways in which music moves her. She connects discovering and listening to music to particular experiences in her life to such an extent that sharing music is essentially meaningless, unless she can share the experiences as well:

> *Annie (21): If you [discover] music in another country or another place, and you develop a close relationship to it, and you share it with someone, and they haven't been there or experienced any of it, [then] they don't really understand the song or the artist. (...) There are things that are personal with music you have discovered yourself.*

This is not to say that *all* of the music Annie listens to is intertwined with particular life events, and she does share certain selected playlists. Most of our informants likewise connected at least some music experiences with life narratives and memories. For non-sharers, in particular, music listening was deemed too personal and intimate an activity to be shared at all. Billy (39) says: 'When I listen to music, nobody knows what I'm doing. And I like it to be that way.' Non-sharers see music sharing as a way to show off. Their primary motivation is to listen to music, not to invite others into their personal musical universe. Participants in all three groups listed in Table 1 (all-sharers, selective sharers and non-sharers) made efforts to save or stabilize their music listening by creating playlists to combat

the tendency for their listening to become fragmented and ephemeral through music-streaming services. As vehicles of practice and strategies, playlists can mirror personal histories and can be curated to reflect everyday life and different moods.

> *May (25): Yes, I have one list [laughs], [my] "now you're supposed to sleep" list, with calm music to make me tired. And I have a playlist for working out. And I have one that I have called comfort, and I have Christmas, I have 2012 and 2013.*

Sorting music into playlists consolidates one's personal ownership of music, even in a streaming context. For selective sharers and non-sharers, unshareable tracks and playlists include music that is too personal, intimate, or at odds with one's desired self-presentation, as well as music that simply seems irrelevant to others. A common argument against sharing is to protect one's contacts from too much unnecessary information, and sometimes shared music feeds are thought of as spam. Whether or not playlists are made public thus depends on their perceived shareability. Share-all participants regard all of their playlists as shareable, whereas selective sharers specifically prepare only certain playlists for sharing, as Felix (23) describes: 'Sharing music is very important. I try to make public playlists that can easily be found and with names that convey what kind of music they include.'

Whereas music can be too personal or profoundly significant to be shared, these same qualities also sometimes argue precisely for its shareability, because this music constitutes a valued social object, for specific friends, at least. Selective sharers in particular emphasize the importance of sharing music as a way to strengthen social bonds and spark future interactions:

> *Eva (27): Music that I like a lot, I want to give it to people I like a lot (...). "I like listening to this, it's so nice." It creates a bond.*
>
> *Andreas (25): It's kind of a catalyst for a future conversation. You send a link, and then you meet at a party later, and it's like, "Oh, you saw that," and you're on.*

In this case, sharing becomes more meaningful if it is "effective," as is indicated by Andreas's comment, "Oh, you saw that." Music as a shared social object is like a gift, as diary participant Nina (27) writes: 'You know what, he added the track [I had recommended] to his playlist with [his] personal favourites! It's like, YES!' Nina also describes how sharing can involve pride and competition. She is Danish, and when a colleague provoked her by disparaging the quality of Danish music, she shared a playlist with her personal Danish favourites to prove him wrong.

Friendships are characterized by a history of mutual trust and shared experiences that supply a feeling of belonging. People tend to select friends who are like they are (McKenna

et al., 2002; McPherson et al., 2001), and in this context music is a social object that contributes to shared experiences and strengthens social bonds. Spotify and WiMP Music provide opportunities to share selectively with chosen friends, yet as we will see next, not everyone is comfortable with more public forms of sharing.

Sharing and impression management. The connection between music and impression management, as emphasized by Voida et al. (2005), is confirmed by our findings here. Diary participant Erik (18) worries that his network would derive an inaccurate impression of him if people saw his devotion to pop ballads that 'someone else finds strange and depressing. I do not know if this is considered as typical *boy music* [either].' The need to cultivate a certain social reputation and avoid being judged on the basis of one's musical taste evokes the human need to maintain ontological security, which as explained by Giddens, is based on trust in others and low anxiety (Giddens, 1984). Non-sharers achieve this state simply by not sharing music, a decision often motivated by a desire for controlled self-exposure in one's interactions with peers. Sharing with confidence and trust requires more effort in terms of arranging and sorting playlists and toggling private streaming modes.

On the other hand, insecurity about how others might judge one's music can be a motivation for sharing music selectively. Selective sharers capitalize upon the social and symbolic roles of music in ways that steer sharing patterns and impression management. Motivations for making music public therefore include elements of reflexive self-presentation, with personal music-exposure regulated according to expectations of how others will perceive the music, or them, as a consequence of sharing. These users share particular recommendations and playlists, curated with effort and ingenuity, when they want to be associated with this music.

> *Tom (36): It's like, in Facebook, you share what you consider cool, right? Like, if you find something obscure, you share it.*
>
> David (24): If I'm cleaning the house, I typically listen to a lot of crap, or what I would normally characterize as crap. And then I turn off the sharing function.

The latter quote exemplifies how switching to a private session is part of selective sharing. Like David's listening mode when he is cleaning, other listeners pointed to streaming moments that they were less inclined to share. For example listening with the purpose of experimenting or exploring new music can be risky in terms of impressions management.

> *John (35): You have so many playlists that are basically nonsense anyway. (...) You need to maintain a certain integrity, right? Last.fm was mentioned, and I think what's kind of defining "guilty pleasures" is when you go and delete Last.fm updates.*

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With the integration of Spotify and WiMP Music with Facebook, listening patterns are potentially visible to different segments of one's friends. Research on self-performances in SNSs typically points to the challenge of social-context collapse, as users simultaneously perform for ties of various strengths (Marwick and boyd, 2011). Our findings outline a similar challenge with context collapse. In Spotify and WiMP Music, users can share music with specifically defined friends. This evokes the sharing of mix tapes that occurred between close friends in the pre-streaming era. But sharing can also include the exposure of one's music listening in general and selected playlists in particular for all connected Facebook-friends. These acts of sharing are performed for everyone, not only for strong ties and trusted peers. Share-all informants show enough confidence in their own musical tastes to share everything. They typically revel in the fact that they have no filters, literally or figuratively:

> Anne (29): I have my complete Spotify profile [set to] public. Of course, like with regard to [my music] credibility, there's an awful lot there that shouldn't be public. But I don't think about it.
>
> Mathias (28): Instinctively, I was like, "No, no, no, nobody must [see]," but I share too much about myself anyway . . . I don't care, I like to see what other people are listening to, and I have no shame with regard to what I'm listening to [laughs].

A few share-all informants explain that they sometimes take an ironic approach to their own music listening when others confront them with guilty pleasures that has been exposed through streaming. Other share-all informants claim that they are not affected by judgments regarding their music listening, even when their sharing reveals guilty music pleasures. These listeners appreciate and value music, but do not see it as revelatory of anything outside itself. Often they are simply confident enough to endorse whatever impressions their playlists might make. Guilty pleasures can even be regarded from a positive flip-side demonstrating self-confidence confirmed with rewards in followers and likes, and hence absolutely right with regard to impression management. As Daniel (26) says, 'I've noticed [that for] more and more people, like, it becomes cool to listen to things that are uncool.'
To recapitulate our findings with regard to why users choose to share or not share their music and how they negotiate music as both personal and social, for most of our informants, certain music is unshareable because it is too personal, and certain music is unshareable because it does not convey the preferred sense of self. Music that is at odds with constructive impression management is less shareable, except for the committed share-all participants. Music's perceived intimacy and transparency in terms of life events act to

inhibit sharing, but also make music into a valued social object for sharing with one's close ties, as an act of friendship, a reflexive selective self-performance, or the gesture of a music missionary.

Following weak, strong, and absent ties as social actions and in the context of exploring music

Our findings suggest that the notion of following in the context of music-streaming services attaches itself to diverse practices. Following, in general, means linking to social-network ties that are enabled by the given service's following features, producing updates and feeds that display current activity. Here, we use the related notion of indirect following to refer to paying attention to or tracking ties without formally following them. Both direct and indirect following incorporate the practice of drawing upon insights gained from accessing peers' listening patterns to discover (new) music. Following in streaming services is asymmetrical, which means that participants experience sharing and following as biased or unequal as to what is given and what is received:

> *Alexander (28): I've been using streaming services for about a year. (...) I feel I'm harvesting a lot, but I'm sowing very little. I use other people's lists.*
> *Ellen (27): I'm restrictive with whom I dare to show my music to, but I can take music from a lot of people. I'm like a black hole. I take everything and give very little away.*

Connections made via following in Spotify and WiMP Music are based on selected friends brought over from Facebook but can also include strangers. Some streaming users rely on close friends as music recommenders; others, on peripheral contacts: Table 2 summarizes the ways in which participants follow strong, weak, and absent ties, and further whether the participants' following-patterns primarily are socially or musically motivated.

[INSERT TABLE 2 ABOUT HERE].

Following strong ties. Streaming users who follow strong ties in Spotify and WiMP Music often use the streaming service as a social arena for interacting with friends and maintaining fellowship. In these cases, shared music preferences alone do not trigger following. Rather one seeks to enrich a friendship or gain insight into the strong tie's personal music universe. Strong ties are customarily regarded as safer relations, at least initially.

> *Albert (30): You can see other people's playlists, and you have a certain idea about the music preferences of people you know, and you can explore a bit based on what you know about these people. Mostly, close friends, really. This might extend over time.*

For most informants, however, social dimensions rarely predict the following of strong ties alone. Shared music taste is the reason why strong ties come to incorporate an aspect of music authoritativeness.

> *Malin (25): I have perhaps two or three friends with very similar taste in music, and I kind of stalk them on Facebook and ask, "Is there anything new?" [This happens] both ways, really, (...) we discover music for each other. Particularly my brother, if I see that he's been listening to something new, I know I will like it, and I just throw it into my playlist without checking it out, and then it comes up in my playlist and I'm like, "What's that? Oh, right, it was that," and it's like a pleasant surprise.*

Our informants argued that the respect and trust that make some ties strong transfer into musical recognition. Following strong ties is experienced as a safe and convenient way to expand one's music preferences.

> *Ingrid (30): But I think perhaps the biggest authorities are still those real friends, who are like almost startlingly interested in music.*
>
> *Mathias (28): No, only my friends, whom I know very well. I somehow think that if they listen to something not typical for "us," in a way, I respect them as individuals anyway, and I will give them a chance. And it generally turns out to be true, if they listen to something very alternative they consider cool, I usually also find it cool. Don't know if it is because I have a positive attitude toward them.*

The trust that is inherent in strong friendships sometimes encourages intense interactions with low thresholds for slipping into competitiveness. Diary participant Nina (27) has a relationship with one of her friends that is founded on their passionate music interests, yet they sometimes have divergent tastes. She likes to follow him in Spotify to 'keep a little eye on him.' By scanning his playlists and recent tracks, she derives information about what he is doing, which she then uses to her advantage in offline music-related conversations. Conversely, some informants do not find profit of any sort in following, and prefer talking with friends about music. Still others stress the benefits of acquiring music directly, without bothering to follow anyone. Yet they still appreciate personal recommendations:

> *Camilla (22): I might be somewhat old-fashioned, but I always get recommendations from friends, really. I have one buddy, who for some weird reason knows my musical taste, because every time he recommends something, it's a bull's eye.*
>
> *Anders (23): You have to tell me personally, "You need to listen to this," or else it just disappears in the deluge of things. I don't care if anyone publishes a link to their playlist. Because then it's for everyone and I'm not that interested.*

Our findings suggest that music recommendations from strong ties are valuable to our participants. In addition, they are recognized as trustworthy guidance regarding new music. *Following weak and absent ties.* Following weak ties connects to more exploratory and experimental modes of streaming. The comfort of following strong ties gives way to qualified and novel music references that make weak and absent ties into oftentimes amusing and productive sources of new music.

> *Ellen (27): It's not about personal relationships at all . . . it might be rather distant acquaintances. Like, I've just discovered that they [have] much that's interesting.*
>
> *Julie (40): I don't follow too many that I actually know [because that would be mostly] friends and children's music [laughs]. I follow a few people that I don't know, who I've just come across and who have proven to have great playlists.*

Informants follow weak ties selectively without primarily emphasizing the social relationship as reason for the connection. This form of following is instead motivated by perceived music fellowship or recognition. The most knowledgeable listeners in our study regard weak-tie relations as equal peers in terms of matching music interests rather than special friends.

> *Maria (32): Among my friends, I'm kind of the person who gives recommendations to others, so it's more with people I barely know, or know a little, but who I know are kind of at the same place as I am—who like the same music.*

Weak ties are regarded as qualified resources for following if they represent expertise or are thought to be up to date. John (35) trusts his group of weak-tie 'music editors' in Spotify. These are peripheral acquaintances who are on the same wavelength when it comes to being nerdy about music. Diary participant Marius (24) follows weak ties that he acknowledges as 'more than averagely interested in music.' He does not necessarily share their tastes but follows them to spark interesting online discussions about music. Thus, whereas musical homophily might initially motivate this kind of following, a sense of belonging and social homophily often come along afterward. People follow weak ties as well because they supply relatively effortless access to music, insights, and recommendations. Following them is a means of benefiting from an extended and knowledgeable network of music-listening peers:

> *Morten (50): I have three friends who are DJs, who create nice playlists. Yes, "friends", I have met them, but it's more like Facebook and that world. And there's one, he creates lists before Roskilde. It's great because then I don't have to.*

However, in relation to weak ties, formally following can be characterized by social ambiguity. For diary participant Nina (27), it feels like crossing boundaries to follow certain

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of her Facebook friends within a streaming service: 'I don't know why, but I'm afraid that if I follow them, they will think: "Why does she add me?" Because I feel I may not know them well enough.' One way out of this quandary is to indirectly follow weak ties by occasionally browsing their streaming accounts, but this requires more effort. Some participants described indirect following with terms like sneak peeking, lurking, and spying, indicating how following also can provide unexpected social insights as well as music recommendations.

Whereas following weak ties can cause insecurity with regard to the negotiated meaning of what following means in a social sense, following absent ties is liberated from any social expectations. When diary participant Jenny (17) needs music for a specific purpose, she searches for words like "sleep" and "exercise." Spotify accumulates the relevant content for her, and she then helps herself to playlists or selected tracks from strangers, some of whom she might later start to follow. Social connections are irrelevant here. Links to mood- or genre-specific playlists are also often shared on Twitter and other SNSs by people whom streaming participants might follow but do not necessarily know. Absent ties thus emerge as valuable sources: '[They are] an excellent way to discover new music. Like if somebody shares a playlist that suits a certain mood, like the "autumn list"' (Jane, 35).

Diary participant Kristoffer (21) shares all of his music and has become an important absent tie for thousands of followers. His experiences shed light on the particular social dynamics of absent ties. Specific genre searches in Spotify turn up several of Kristoffer's playlists as top suggestions, and they continually accumulate followers. His most popular list had nearly twenty thousand followers in May 2013. Most of these people are, of course, absent ties, reflecting not a symmetrical social relationship but rather a network formed around shared interests. Kristoffer rarely responds to messages from these followers or follows any of them in return, and they have no relationship history together besides a playlist connection. Yet Kristoffer is aware of his role as music provider for thousands of absent ties who are presumably also aware of him, in terms of receiving notifications about his playlist activity. Sometimes years old and far too numerous to engage with personally, these tie relations are of a permanent yet absent nature, resembling the asymmetrical and para-social relations that are typical of mass communication: they are one-sided, non-dialectical, and controlled by the performer (Horton and Wohl, [1956] 1986).

Following absent ties also encompasses connections with music personalities, such as critics, label employees, or musicians. Some users prefer not to choose whom to follow at all, instead relying on algorithms imported from Last.fm or other apps that measure music

compatibility. These suggestions, which encompass strong, weak, and absent ties, are thought to be more accurate predictions of potential musical resonance.

To recap, streaming services offer opportunities to discover music through weak and absent ties, and for some, these weak and absent ties are both credible and interesting as musical peers. A sense of musical fellowship then generally translates into a sense of social belonging. Yet we also see that following weak ties in particular includes experiences of social diffidence to the social relation.

Discussion: Social awareness in following and sharing

Conclusions about personal experiences are always grounded in the individual and are therefore hard to categorize unambiguously. In addition, it is hard to articulate (and to interpret) music experiences and motivations for being social. Personal practices can be inconsistent and sometimes arise without one's conscious awareness as to why or how they came to be. What people say sometimes diverges with what people do and think, and thinking and talking about music can be an act of self-reflexive performance in and of itself. The complex character of this kind of material is reflected in this analysis and underpins the extent and substance of the tables' analytical categories.

Our theoretical framework sought to do the following: situate people as actively shaping and staging performances according to the context; emphasize reflexive processes and social interactions in relation to the development of a sense of self; and seek for an alleged move toward a fluid and networked individualism. This framework guides the following discussion about what our findings imply for understanding human behaviour with technology. By integrating social features, music-streaming services inject social transparency into the realm of music listening. Consequently, a tension emerges between this expanded everyday use of music and the pressure to share and expose one's multifaceted listening patterns. Put differently, as a consequence of music streaming, the times and places for being social in music listening have grown, as have the range of content exchanged and the list of the social contacts to be included in these music-based interactions. These social features translate into listeners being conscious of whom they relate to and what they listen to. The music experience is thus characterized by social awareness, with regard to both following others and being followed.

Social awareness in following: homophily

Following others in the music-streaming services links to notions of self-identity via one's

perceived tie-relations. The listener's self-perceived musical character influences one's social conduct online in relation to strong, weak, and absent ties. Following is hence motivated by social awareness to peers in terms of specific expectations. These expectations reflect different notions of homophily, which is key to understand some of the dimensions from which users organize their social contacts.

Social homophily is a useful term for understanding motivations for following strong ties in music streaming. The listener's social awareness is hence based on socio-demographic, behavioural, and intrapersonal characteristics (McPherson et al., 2001). Following that is motivated by social homophily evokes the notion of sociability: play-forms of being together, where the association is valued as such, and where being together, rather than the specific content of the communication is of primary interest (Simmel and Wolff, 1964). That said, social homophily is not the only motivation for following strong ties in streaming services. Musical homophily matters too, i.e. these strong tie connections are also characterized by a purpose, moving beyond Simmel's notion of sociability. Similar music interests encourage bonding among close friends, and we trust music recommendations made by strong ties.

Musical homophily also promotes following weak and absent ties. Similarity in musical taste is the most common dimension of musical homophily, but one's level of dedication or knowledge is also relevant, even when tastes differ. Absent-tie connections driven by perceived musical homophily are welcomed for the same reason as weak-tie connections; namely, the non-redundant exchange of music information originating in an expanded music network. Following weak and absent ties, motivated by musical homophily, can initiate a sense of social homophily in turn, including feelings of belonging to a group or community.

Social awareness in sharing: control and ontological security

Most often social actions are steered by tacit or taken-for-granted qualities, ensuring feelings of ontological security (Giddens, 1991). This sense of ontological security can be threatened when social routines are absent, or in the case of music sharing, when lack of technological control implies the risk of undesired sharing of personal information. Non-sharers preserve their ontological security by avoiding the whole possibility. Their social awareness dictates the related verdicts that music is too personal or revealing to be shared, that technology is too transparent, and that sharing in itself can be inappropriate, unnecessary, or discourteous. The social awareness of selective sharers prompts them to use social features actively but without the degree of confidence that is required to share everything with everyone. They

are careful and deliberate in their use of the technology in order to perform controlled exposures of the self through music. The ways in which the self is reflexively maintained through social interaction (Blumer, [1969] 1998; Giddens, 1991, Mead and Morris, [1934] 1967) imply that negotiations regarding whether the music is suitable to share or not impact the social streaming experience. Selective music sharing as a performance of self changes according to assessments of the music's potential for impression management and of the networks' potential responses to it.

Nevertheless, total technological control is perpetually undermined by software service updates, which often include new features and changes of settings. In our study, even the most experienced diary participants were surprised when confronted with the level of detail we had uncovered through our monitoring of their activity, including music that they believed was not public at all. After these interviews, we saw playlists being blocked and opened, and settings being changed, all of which is evidence of the fact that social awareness is constantly developing, in line with reflexive self-performances.

On the other hand, not all of the conclusions our informants drew about sharing had their roots in social awareness and reflexive self-performance. Share-all participants made no effort to restrict others from their music, because they did not see music as a threat to their integrity. To some, the music, and the act of sharing it, simply extends a sense of self in which they have ample confidence to overcome issues of tie strength or specific music chosen.

The social experience of streaming: Networked individualism, social as a feature

Music-streaming services are used by individuals, often in situations that are considered personal. Also, streaming services archive personally meaningful music compilations. These characteristics place the individual at the centre of the streaming experience, regardless of the social networks that tend to feature so prominently there. As users incorporate their social awareness into their streaming practices, they begin to cultivate 'nuanced understandings of what to make public, which publics to make information available to, and how to intermix technologies of privacy with those of public narrowcasting' (Rainie and Wellman, 2012: 271). Following relations that arise via personal, active choice enhances the social experience more than those that come about via sites or apps that calculate compatibility. Skilled users draw on various aspects of homophily, depending on what they need from diverse types of ties. At the same time, users manifest their social awareness as 'parts of others' networks and they have a heightened sense of obligation to meet the needs of those who consider them social ties' (Rainie and Wellman, 2012: 272).

Interestingly, relations to peers can be perceived as fundamentally different in terms of sharing versus following. With regard to sharing, in an exploratory listening mode, peers can come across as unsafe in terms of impression management and trustworthiness. Yet with regard to following, peers come across as resources of value when exploring music. Positions taken as sharers or followers connect with different opportunities and restrictions. People in the networked age are generally free to act on their own, picking and choosing among various segments of their networks (Rainie and Wellman, 2012), but we find different patterns as in how people experience music streaming as social. To some, music listening includes experiences of highly personal dimensions that contrast the social service-features, and the increased time and place of being connected. The user experience of social streaming can be risky if it is not controlled adequately, and even intrusive if the time and place for social interaction are not adjusted to one's personal boundaries.

Social networking consumes time (Rainie and Wellman, 2012) and attention, as we have observed here in relation to the impact of social awareness upon the sharing of music. Challenges within this social system must be confronted as they arise, lest some runaway technology disrupt an otherwise carefully cultivated dynamic or persona. Nevertheless, experience with navigating new technology changes over time and with regular use. Confidence in one's music choices and perceived expectations related to personal taste can also evolve, as can social relations, which aligns the personal and social practices of music streaming with the changing character of the technology they use.

Conclusion

The social features of streaming services enable possibilities for connecting with and being influenced by others in the context of exchanges of music. Our findings point to a tension between sharing music and following friends and contacts. Strong, weak, and absent ties are equally relevant with regard to discovering new music, yet when it comes to sharing music, the trust and confidence that characterize strong ties are crucial. This, however, depends on the ways in which music and sharing relate to identity work. Social awareness is present in sharing and following, in user behaviours that are adapted to listening situations, and in reflections about tie relations.

Music-streaming services afford several opportunities for users to be connected and to exchange music, yet we continue to question how social the streaming experience actually is. When users receive direct music recommendations from others, this transaction confirms

a personal relation that has a social value. Music recommendations addressed to specific people or with concrete contexts in mind also confirm social positions. Yet the differences in user patterns and preferences that we have encountered demonstrate heterogeneity among an otherwise relatively homogeneous group of musically inclined and dedicated streaming users. This heterogeneity results from the different exploitations of the opportunities to use music streaming services, and it is increased by the ways in which streaming use affects social boundaries and impression management. An ongoing, situational negotiation of self and of music as personal or social, and a heightened awareness of others in relation to one's own music listening, are among the social consequences of the use of music-streaming services. We see how fundamental human characteristics sometimes get in the way of the assumed and expected networked benefits of technology. Our findings hence nuance Rainie and Wellman's (2012) account of networked individualism. Social features integrated into streaming services present potentials for extending networks, though how these potentials are realized depend on inherently human ways of being.

Limitations and further research

The main limitation of this study concerns the selection of informants in focus groups and the diary study, as they were all avid music enthusiasts and users of streaming services. Our findings do not necessarily reflect the average experience of music-streaming services. This limitation points toward the need for studies with more diverse participants.

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Table 1: Summary of sharing-types

The tables are formatted according to the Journal Convergence's requirements

Table 1: Summary of sharing-types from focus groups and diary study.

Sharing-type	Number of participants and typical motivations/reasoning
Share-all: 21 participants: 8 female, 13 male, average age: 29	
Share everything with everyone. Never use private sessions. Share to social media.	Music missionaries: want everyone to know about great music. Efforts in curating playlists make them relevant to share. Sharing music as a catalyst for future conversations. No filters: do not care about other people's opinions. Open as default setting, do not see the need to restrict. Followers and feedback motivate sharing.
Share selectively: 80 participants: 42 female, 38 male, average age: 28	
Selective playlists shared with everyone. Direct sharing with selective friends. Occasionally use private sessions. Share selected music in social media.	Motivations for sharing: Sharing as a gift, not for attracting followers. Sharing directly with friends with similar taste in music as an act of friendship. Sharing as catalyst for future conversations. Collaborative playlists with certain friends. Music missionaries: want everyone to know about selected music. Efforts in curating playlists make them relevant to make public. Active and conscious self-presentation. Motivations for not sharing: Impression management and insecurity about how others will judge their music. Guilty pleasures are kept private. Some music regarded as too personal and revealing to share. Context-collapse makes sharing difficult. Some playlists regarded as irrelevant for others, e.g., lists with narrow track coherence or specific-purpose lists (such as work-out music). Not sharing to keep music exclusive to oneself.
Non-sharers: 30 participants: 13 female, 17 male, average age: 29	
Do not share recently played music either in Spotify/Wimp Music or on Facebook/Twitter. Have no public playlists.	Sharing music is too personal. Self-performance, social reputation, insecurity about how others will judge their music. The account is not arranged systematically; lack of control over the content in playlists. Not interested in sharing. Sharing is too much hassle. Use music streaming services for listening to music and nothing else. Sharing is spamming and showing off. Prefer to recommend and talk about music face-to-face.
Uncategorized: 5 participants could not be categorized based on the interviews.	

Table 2: Summary of following patterns

Table 2: Summary of following patterns from focus groups and diary study.

Following pattern	Number of participants and motivations for following
Strong ties only.	33 participants, 21 female, 12 male, average age: 26 Social and music homophily motivate following.
Strong, weak, and/or absent ties.	41 participants, 18 female, 23 male, average age: 29 Social and/or music homophily motivate following.
Weak and or absent ties only.	26 participants, 10 female, 16 male, average age: 33 Music homophily motivates following.
Do not follow in Spotify or Wimp.	20 participants, 11 female, 9 male, average age: 28 Might still receive recommendations via email, messaging, Facebook, Twitter, genre-specific forums.
Uncategorized: 16 participants could not be categorized based on the interviews.	

Appendixes

Appendix 1: Details from Recruitments

Details from the recruitment on three high schools in the Oslo Area, Winter 2013

X High school
Thursday, February 7. 2013, 09:30 AM, "The hour of the Class"
Number of students: 25
Level of Class: 2vgs
Specialization subjects: science and Norwegian
Wanted to take part: 9
Spotify: 3
WiMP: 6

Y High school
Wednesday, February 13, 09:00 AM
Number of students: 10
Level of Class: 2vgs
Specialization subject: Music
Wanted to take part: 2
Spotify only
More students were none-users of music streaming

Z High school
Friday, March 1, 10:00 AM
Number of students: 25
Level of Class: 2vgs
Specialization subject: Media and Communication

Wanted to take part: 5
All Spotify

Appendix 2: Informant proposal

UiO : **Institutt for medier og kommunikasjon**
Det humanistiske fakultet
Anja Nylund Hagen: PhD-kandidat: a.n.hagen@imv.uio.no

Read more about the project Cloud & Concerts: www.bit.ly/skyscene

This is the informant proposal I handed out to students on three high schools in the Oslo Area, winter 2013.

Name: _____   **Age:** _____

Could you consider participating in a survey about music and the use of Spotify and WiMP in March - May 2013?   Yes ☐   No ☐

If your answer is Yes, I would like to know a bit more about you!

Are you interested in Music?
Yes ☐   A bit ☐   No ☐

Do you use: Spotify ☐   WiMP ☐   None of these ☐

If you use Spotify or WiMP -

- How often do you use it?
(Almost) every day ☐   Weekly ☐   Seldom ☐   Never ☐

- How long have you been using Spotify or WiMP?
Less than 1 year ☐   1 year ☐   2 years ☐   3 years or more ☐

How can I contact you?

Phone: _____   Email: _____

Facebook: _____   Twitter @ _____

This is information about the project as presented online at Cloud & Concert's website and shared on Facebook and Twitter to recruit informants. The original information was in Norwegian and has been translated in the dissertation.

[Published 22 February 2013, 7:23 PM]

Contact me if you want to join!
How do you use Spotify or WiMP in your everyday?

Could you consider noting what/where/when you listen to music during some days in March and April? And would you talk to me about it afterwards? Then I need you for my PhD research project.

The PhD is part of the research project Clouds & Concert

You have to

- use WiMP or Spotify several times a week.
- have used the service(s) at least for a year.
- be willing to write some short notes in a "diary" about what/where/when you stream music during three-four periods in March and April (two days each).
- talk to me about your music consumption for about one hour in the period between April and June.

You don't have to

- be interested in music or have knowledge about music.
- to spend more than a few minutes on writing in the diary to take part in the research.

If you participate in the study, you will remain anonymous, so no one will know that you have participated. You can also withdraw from the study at any time.

If this sounds interesting to you, I would be glad to hear from you!
Send an email to: a.n.hagen@imv.uio.no or call/text me at 911 64 716.
Then you will receive more information about how to do this (either you choose to do it on paper, email, text or in a web form) and what I expect you to write down.

Later we will schedule a time/place in the period of April to June that suits you for a talk.

Kind regards,
Anja Nylund Hagen
PhD Student

The study is part of the research project Cloud & Concerts at the University of Oslo. The project is headed by Anne Danielsen and Arnt Maasø (the latter is also my supervisor). You can read more about my PhD project here.

Below is an example of the link that circulated online via my Facebook- and Twitter network to recruit informants.

Figure 6 Screenshot from my husband's Facebook account. Captured 4 Dec 2014

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Name (age) Gender	Lives in	Affiliation	Music Streaming Service	Devices used for streaming music	Interviewed when and where
Erik (18) M	Akers-hus	Student High School X	WiMP Music	Samsung phone Laptop	May 2013 At his school
Jenny (18) F	Akers-hus	Student High School X	Spotify Premium	iPhone Laptop	May 2013 At her school
Håkon (17) M	Akers-hus	Student High School X	Spotify Premium	Android laptop	May 2013 At his school
Emma (17) F	Oslo	Student High School Y	Spotify Premium	iPhone only	June 2013 At her school
Nathalie (17) F	Oslo	Student High School Z	Spotify Freemium / Premium	iPhone Laptop	April 2013 At her school
Louise (17) F	Oslo area	Student High School Z	Spotify Freemium / Premium	iPhone Laptop	May 2013 At her school
Jon (60) M	Oslo	Employee	Spotify Premium	Desktop computer at work	May 2013 His office at work
Kristoffer (21) M	Oslo	Student Lower Degree	Spotify Premium	iPhone Laptop	May 2013 University of Oslo
Sofia (30) F	Oslo	Employee	Spotify Premium	iPhone Laptop	May 2013 Cafe in Oslo
Anne (35) F	Trond-heim	Employee	WiMP Music	iPhone Laptop	May 2013 Cafe in Trondheim
Nina (27) F	Oslo	Student Higher Degree	WiMP Music Spotify Freemium	iPhone Laptop	June 2013 Cafe in Oslo
Marius (24) M	Oslo	Student Higher Degree	WiMP Music Spotify	iPhone Laptop	May 2013 University of Oslo

			Freemium		

Appendix 5a: SMS Alerts

Example of diary alert sent on SMS including personal link to spreadsheet diary

Screenshot of music diary spreadsheet (question 1, 2, 3 and 7) opened on iPhone. Questions marked with * were compulsory to answer in every listening session. By pressing 'send' the answers were submitted.

Appendix 6: Examples of spreadsheet diaries from three informants

Figure 7 This diary exemplifies a mismatch between the timestamps of the reported music listening and the last.fm-registered timestamps.

Figure 8 Diary written at home and on the tram.

Figure 9 Examples of shorter diary entries.

De to siste døgnene jeg skulle notere musikkbruken min ble det nesten bare avspilling fra én spilleliste. Denne her: [Link to playlist]
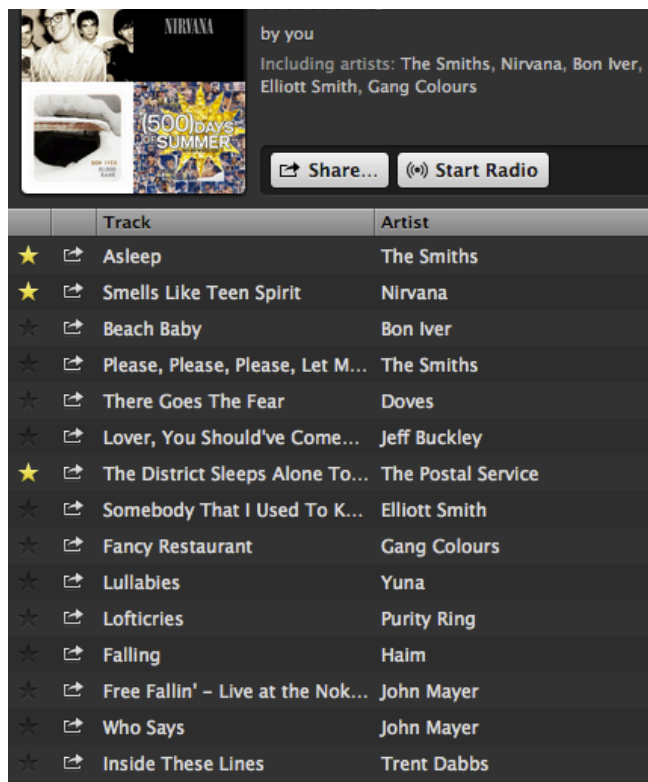
I helgen så jeg filmen "The Perks of being a Wallflower". Det er en av de fineste filmene jeg har sett. Som person blir jeg veldig inspirert, og denne filmen fikk meg til å forstå at jeg må bli flinkere til å lete etter mer unik og annerledes musikk. Det er det jeg har prøvd på i denne spillelisten. Har også prøvd å unngå listepop som jeg har blitt altfor vandt med.

22. april

Klokken 06:15
Spilleliste: "Eternal"
Spotify, mobil, online-modus, høyttaler funksjon
Hvor er jeg: På rommet
Hva gjør jeg: Sminker meg og kler på meg

1. Smells like teen spirit – Nirvana
2. The District Sleeps Alone Tonight - The Postal Service
3. Asleep – The Smiths
4. Smells like teen spirit – Nirvana
5. Beach Baby - Bon Iver
6. Please, Please, Please, Let me get what I want - The Smiths
7. The District Sleeps Alone Tonight - The Postal Service

Klokken 07:15
Spilleliste: "Eternal" og "Soundtrack of my life" (haha)
Spotify, mobil, online-modus, øreplugger
Hvor er jeg: Reiser til skolen – Går, tar tog, tar buss

Klokken 15:44

> **I dag**   22. apr. 15:44
>
> Vil høre på musikk!!! Finner ikkeørepluggene mine. Hører i stedet på alt på trikken:
>
> 1. Babyskrik
> 2. Jente som vil ha ballonger av faren

Klokken 17:50

Spilleliste: "Eternal"
Spotify, mobil, online-modus, øreplugger
Hvor er jeg: På vei til Zumba time på SATS
Hva gjør jeg: Går..

> **Notater**   Grått vær er dritt   **+**
>
> **I dag**   22. apr. 17:58
>
> Grått vær er dritt
> Ønsker sommer
> Filmliv

Hvor er jeg: Sitter på trikken
Humør: Utrolig sliten. Irriterer meg over og ha mistet ørepluggene mine.

> **Notater**   There goes the fear   **+**
>
> **I dag**   22. apr. 19:50
>
> There goes the fear
>
> - sitter på trikken
> - Chatter med en venn som har det litt vanskelig
>
> The district sleeps alone tonight
> - åh nydelig sang, spesielt melodien
> - sangen gjør meg rolig og fascinert

Notat: Vanskelig å notere mens jeg går, men jeg tenker i alle fall over hvor utrolig lei jeg er det grå været og hvor mye jeg ønsker sommer. Innbiller meg også at jeg er i en film der jeg går og hører på høy og bra musikk. (Fant ikke ørepluggene mine! Så fikk noen ekstra mamma hadde liggende)

> **I dag**   22. apr. 19:40
>
> Nirvana - Smells like teen spirit
>
> Ny favoritt. Er egentlig veldig glad i rocke musikk, men finner sjeldent gode rocke sanger. Med mindre dette er punk? Har egentlig ikke helt peiling på hva som skiller slike type sanger. Men har veldig lyst til å lære mer om det. Derfor jeg har bestemt meg for å gå vekk fra listepop for en veldig god stund. Er så utrooooolig mange unike og fine sanger ute i verden som er altfor godt gjemt! Og det er de jeg bestemte meg for noen
>
> dager siden å finne :) ble inspirert av filmen "The perks of being a wallflower" til å finne ny musikk. Nydelig film om livet! (Anbefaler den haha)

Figure 10 THAT blue sky makes me wanna listen to summer music, but I am stubborn and keep to the "new" music I decided to test a bit more.

The diary questions I asked in the diary study (translated from Norwegian)

1. What's the date and time?
2. Where are you now?
3. What are you listening to now?
4. What kind of service and device are you using?
5. Why did you start listening to music just now?
6. How did you find the music?
7. How would you describe your music listening now?

Figure 11 Photo of some of the handwritten diaries.

Artist names, track titles and time stamps were logged correctly by linking the informants' streaming accounts to the last.fm-feature 'scrobble'.

	K'naan – Wavin' Flag – Coca–Cola® Celebration Mix	8 Mar 8:57pm
	P!nk – F**kin' Perfect – Explicit Version	8 Mar 8:48pm
	Paolo Nutini – Last Request	8 Mar 6:49pm
	Gavin DeGraw – Jealous Guy – Acoustic Album Version	8 Mar 6:46pm
	Bruno Mars – It Will Rain	8 Mar 6:42pm
	James Morrison – I Won't Let You Go	8 Mar 6:38pm
	Aloe Blacc – I Need a Dollar	8 Mar 6:34pm

This is an example of an individual guide as those used in the interviews (translated from Norwegian). The guides were used as checklists, to keep the conversation structured and to make sure I touched upon all the important themes. Still I aimed for a floating conversation, and appropriate questions were therefore added when it appeared natural. The guide is rudimentary and questions are wide and semi-structured. The guides were my notes about probing and follow-up questions, as much as precise formulations. Questions were always articulated more precisely in the interviews than here.

The red headings mark the fixed themes in the interview, guided by the three core qualities of music streaming services I describe in the introduction (intangibility, abundance and social network features). I touch upon all the themes in each interview, but address them variously in terms of depth and order. The green headings mark themes I want to address from the diary sampling and online observation.

Interview guide for Erik (18) - Interview #6 at X High School, Thursday May 16, 12:00 AM.

Introduction:
In the interview I will follow this guide. The questions are based on your diary reports and we will also touch upon some general themes. The interview will last for maximum 1 hour, and the conversation will be audio taped.
- Ask the informant to make ready the laptop/phone they use for streaming.

Most listened to Shakira, Pink, Two door cinema club, Blondie, Adele, Rihanna, Lana del Ray

ABUNDANCE
You have listened a lot/quite a lot to music in the period, and written many interesting things about it (or something like this).
- Do you know that you can access about 18 million songs in WiMP?
- What are your thoughts about this?
- How do you take advantage of this enormous amount of music? Do you?
- How does this enormous selection of music affect your listening habits?
- Do you think that you listen more/as much/less than if you hadn't had access to a streaming service?
- Do you listen differently? What kind of attention do you give the music? Does it vary? Easy and superficial or in depth? talk around it

AMOUNT OF LISTENING, THE QUALITY OF THE LISTENING
Look at the number of varied tracks in last.fm - much, little, a lot of repetition/variation, look at the skipping log in the diary. 85 unique tracks
Talk about:
- Frequency - more often/more seldom
- Intensity - patience - concentration in listening (ephemeral, patient, background, foreground, 'disciplined', skipping, cueing)
- Are you listening to more genres?
- Single songs, albums (will get back to this later)?

TO CHOOSE - NAVIGATE
- How do you choose what kind of music you want to listen to? He refers to mood, routine, situation, random
- Does the large selection of music in the streaming service affect how you choose?

- Do you usually know *what* you would like to hear when you start the streaming service?
- If not – how do you do it in the streaming service when you want to listen to music?
- Does WiMP's interface influence this?
(look at interface together)
- Is this typical for how you orientate yourself in the streaming service?
- Has it happened that you experience to have too many options or difficulties with choosing/knowing what you want to listen to?
- What do you do then?

TO FIND NEW MUSIC
- How do you find new music (reported in the diary)
- Is this typical? Other ways? (radio, TV, newspapers, blogs, searches, SoMe, p2p, friends) - Diary: cabin with friends - In the car: country music?
Party music – from WiMP - his account?

- Are you interested in finding new music?
- Do you actively seek out new music? Or discover by accident?

INTANGIBILITY
With streaming you have the possibility to listen wherever you like, whenever you like, but it is not a physical format - or something you can hold in your hand.
- How do you relate to physical formats in music listening (like CD or vinyl)?
- Does the intangibility matter in any sense - the non-physical format of music streaming? How? Why? Good/bad?
- What is different by music delivered as a service from a physical product?
- Does the presentation of the music in the streaming services matter for what you choose? How? What does it look like? *Look at the screen together.*

Memory:
- Are you a person who remembers/uses efforts to remember titles, albums, artist / band names? Is this important to you? Why/why not?
- How is this with music in WiMP? (compare memory to other formats)
- Do you remember titles, albums, names of artists/bands? What do you pay attention to?
- Visuals? Other things?
- Do you find it easy to keep track of the music you want to in the streaming service?

Refer to the diary: Talk about how they listen:
- album - artists - single tracks - playlists
Do you use apps? Which and why? Other ways to orient in the service?

Playlists
- how are these made? Do you delete? Add along the way? Criteria, schemes, logics? Routines or whims? What are the whims affected by? How do you make a routine? Do you have playlists from others? Curated? From friends? From the service?

Erik's playlist (ref diart): It this one playlist? More?
What do they contain? ref - diary note April 14 at 7:00 PM
had to add a song on WiMP "Snow Patrol - chasing Cars"
Associated with the trip to the cabin and good memories - Make playlists.
How are playlists made?

Music awareness - searches
- Control vs. randomness in the choices
- Are you always conscious to what you listen to?
- Does it happen that you aren't conscious/don't know/don't care what you listen to? (radio, playlist,

shuffle, etc.)
- How do you experience searches in WiMP? Are there differences in searching on phone vs. a laptop? Simple? Complicated? Where do you search the most? In what situations? When during the day?

- What is the difference between going to WiMP to acquire music and going to a shop/iTunes to buy?

SOCIAL FEATURES IN MUSIC STREAMING
- In what situations do you talk to your friends about music?
- Do you listen to music together with others?
- Open profile in your streaming account?
- What are your thoughts about others seeing what you are listening to - if you have an open profile? Why/why not? Is this a conscious choice?

- Do you share music with others - recommend, say that something is good? How? Where? What do you emphasize when you are sharing?
- Are you aware of what other people are listening to? How? Someone special? Whose recommendations would you eventually listen to? What do you emphasize?
- Do you follow the recommendations provided by the streaming service? Or via SoMe/FB?

- Do you often use SoMe together with the streaming service? How? Does it happen that you speak about your own music experiences in social media? When? Why?
<mark>Facebook</mark> *Blondies and Brownies – music* - Except for that, not much music
Doesn't share much on FB in general - why?
- Are the music experiences you get from using WiMP personal? Not personal? Private? Compared to other music experiences?
- Taste - why is music and taste so personal/not personal?
Do you feel that your WiMP account is private/ your playlists/ your last.fm log?
- Are your concerned about what others listen to? Is it important to you what others mean about the music you listen to?

NOTIONS OF THE SELFHOOD AND RELATION TO MUSIC
- Do you feel the music you listen to is important for how you experience yourself? For what you think others think about you?
- You have the music with you in your daily life. You can search and listen at any time, in different situations - how does that matter to you?
- How are the days/situations when you don't have music available?
- Can you see yourself quitting from Spotify/WiMP? Why - why not?
- How does music relate to moods? Feelings? To you?

<mark>Things we have to talk about: Moods</mark>
Sad – Saturday - Echo by Jason Walker and Jar of Hearts. This was a way to escape the sadness
Walking around – music with a punch

OWNERSHIP
- Do you see the music you listen to as YOUR music?
- Is it important to you that the music is unique/your/not "everybody's" - e.g. seen in relation to common access, streaming?
- Do you feel ownership to the music, even if you in a way rent access to it - don't own it?
- Different with other formats?

EVERYDAY LIFE
- Music used on the run? Special situations? The purpose of the listening
Routine versus whims: same situations with the same music, or does it chance?

look at the diary, hint at main motivations/user patterns
On the way to school - homework - night - calm music

ABOUT THE STUDY
How do you feel about having contributed to this study?
Are you usually conscious about why you want to listen to this or that in daily life?
Have you listened to music more or less during this period?
JA: To what degree do you connect this with writing a diary/ that you have had to verbalize your music listening?
NO: Do you think participating has influenced you in how you use the streaming services? How?

Summing up in each interview (personalized)
You have listened to a lot/quite a lot of music in the study period - is this something you usually do?
Does it vary how much you listen to music?
For how long have you listen to this much music?
Do you feel that the music listening has changed in the study period?

ABOUT STREAMING IN GENERAL
- Why did you originally choose to use WiMP?
- Have you always used the same service? Others? Alternate?
Why WiMP: Functionality, social, music selection, technical solutions, appearance, offline solution, etc.
- What do friends/acquaintances use?
-Your main impression of the service?
- Paid subscription/ads)?
- Do you have any thoughts about the value for money / the price of music with streaming? What?
- Norwegian profile in WiMP (language, curation, offerings)?
- Does WiMP matter for how much music you listen to in everyday life?

- What is MOST special with streaming services?

MUSIC USE
Do you use any other sources for music than Spotify/WiMP?
Do you listen to radio? iTunes? CDs? Vinyl? Something else? Has it always been like this?
Do you attend concerts a lot? Festivals? Listen to music in other ways?

ABOUT YOU
Other hobbies, characteristics, interest? Something to add that is important to understand who you are?

SUMMARY
What would you point out as a plus with streaming services as the main medium to listening to music?
What do find as the best thing with using WiMP?
What is negative by having a streaming service a main source for everyday listening?
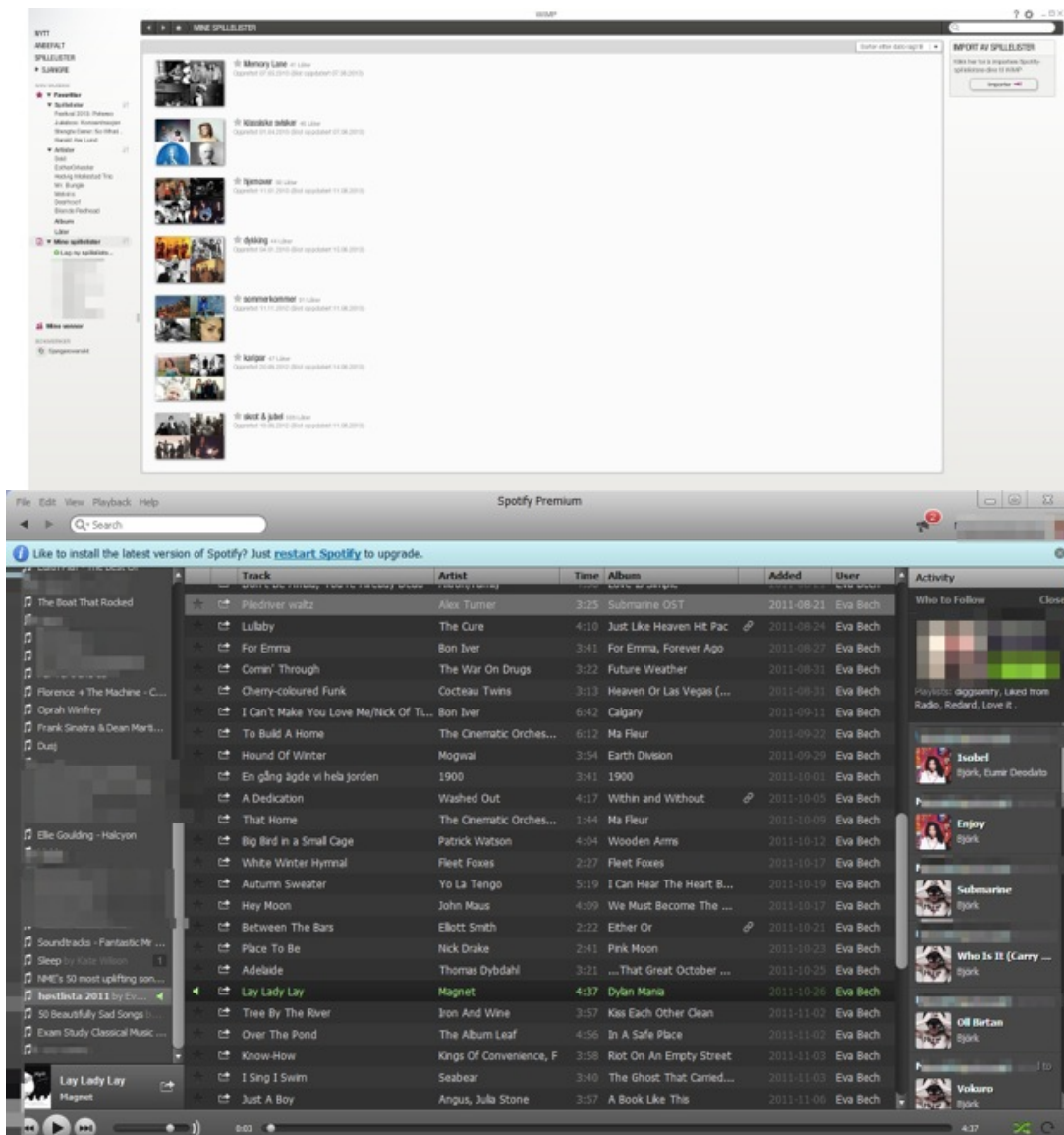
This appendix exemplifies the analytics copied from My Music Habits (http://www.mymusichabits.com), which I used as a help to get insights into the diversity and amount of the music listened to by the informants and scrobbled in Last.fm. May 8, 2013 (two months after the first sampling date) I counted the statistics for each informant from this site.

Retrieved from http://www.mymusichabits.com/visualize/ [add username at end of link]
User: Anne (35)
Counted: 8 May 2013

Hello [USERNAME]!

You've listened to 1560 tracks with Last.fm since February 28 2013.

Summary of Music Habits

The music listening trends are broken down into artist/album/track trends and can be viewed over a variety of time periods.

In total, 60% of the music you've listened to comes from artists outside of your top 25. Keep discovering the latest and greatest music!

[Username's] music habits

In terms of artists, you've listened to tracks from 323 unique artists in the last three months. This represents 100% of the unique artists you've listened to in the last six months, 100% of the unique artists you've listened to in the last twelve months, and 100% of the unique artists you've listened to overall.

In the last three months, you've listened to tracks from the top 10 artists of this period 355 times, tracks from the top 25 artists of this period 626 times, and tracks from the top 50 artists of this period 859 times.

In terms of albums, you've listened to tracks from 401 unique albums in the last three months. This represents 100% of the unique albums you've listened to in the last six months, 100% of the unique albums you've listened to in the last twelve months, and 100% of the unique albums you've listened to overall.

In terms of tracks, you've listened to 665 unique tracks in the last three months. This represents 100% of the unique tracks you've listened to in the last six months, 100% of the unique tracks you've listened to in the last twelve months, and 100% of the unique tracks you've listened to overall.

User: Nina (27)

1. 21. Mars, kl 00.10-0020
2. Hjemme i min leilighet på Grünerløkka, i min seng.
3. The Strokes: "One Way Trigger"
   Suuns: "Edie's Dream"

   Fra last.fm
   Suuns – Edie's Dream   21 Mar 12:17am
   The Strokes – One Way Trigger   21 Mar 12:09 am

4. WiMP, onlineversjone på min tlf, uten headset

5. Overalt, nårsomhelst: det spontane/umiddelbare

Jeg og min mann har akkurat lagt oss i senga vår og skal snart sove. Jeg forteller han at albummet til the Strokes ligger ute på WiMP nå og jeg får derfor lyst til å spille "One way trigger" for han. Deretter spiller jeg "Edies Dream" med Suuns som jeg fant tidligere på via det

User: Sofia (30)

Hjemme, liten time alene I leiligheten – ny musikk
Alt-J – Interlude III   **9 Mar 9:06am**
Alt-J – Fitzpleasure   **9 Mar 9:02am**
Alt-J – Ms   **9 Mar 8:58am**
Alt-J – Matilda   **9 Mar 8:54am**
Alt-J – Dissolve Me   **9 Mar 8:50am**

Fredag kveld: Hjemme med moren på besøk
Carla Bruni – Le plus beau du quartier   **8 Mar 7:23pm**
Carla Bruni – J'en connais   **8 Mar 7:20pm**
Carla Bruni – Le ciel dans une chambre   **8 Mar 7:16pm**
Carla Bruni – Le toi du moi   **8 Mar 7:12pm**
Carla Bruni – La noye   **8 Mar 7:08pm**
Carla Bruni – Tout le monde   **8 Mar 7:05pm**
Carla Bruni – Raphael   **8 Mar 7:03p**
Carla Bruni – Quelqu'un M'a Dit   **8 Mar 7:00pm**
Charlie Parker – Ornithology - Live - Storyville **8 Mar 6:55pm**
Charlie Parker – All The Things You Are   **8 Mar 6:52pm**
Herbie Hancock – Chameleon   **8 Mar 6:47pm**
Herbie Hancock – Cantaloupe Island   **8 Mar 6:42pm**

SJANGER
A: Sånn sjangere, du har jo relativt variert sjangertilfa...?

J: Ja, jeg spriker nok i alle retninger, nesten da.

A: Rock, blues, litt pop, litt world-aktig.

J: Sikkert egentlig ganske mye world-aktig nå, men det er klart at jeg har jo den gamle rocken fra 70-tallet, sånn Sabbath og Deep Purple og Zeppelin og... det er jo dritbra! Men så har jeg også rav (?) fra den gang---Fairport (Convention) og Steeleye Span og sånn. Også har jeg mye sånn balkanmusikk og arabisk og alt sånn etter hvert.

A: Så du er åpen for mange sjangere, hvorfor det?

MER MUSIKK - ANVENDELIGHET - HØRE/DROPPE
J: Nei, sjangerspriket kommer jo fra 70-tallet. Jeg har jo jobba med musikk hele tiden, så det...men jeg tror ikke det har blitt noe mindre sprik av Spotify, men ikke noe mer heller tror jeg egentlig. Eller kanskje litt, for det er litt lettere å høre på ettellerannet nytt som du kanskje har hørt om, men så dropper man det.

A: Nettopp, men det gjelder jo ikke bare sjanger, det gjelder nytt materiale generelt kanskje?

J: Jada!

FINNE NY MUSIKK - ORIENTERE SEG - FUNKSJONER
@dagboka
A: Du har jo skrevet sånn veldig fint og variert om hvordan du orienterer deg, finner fram til ny musikk. Sånn sett ser det ut som du bruker Spotify Ganske aktivt. Du bruker både sånne forslag fra Spotify, nyheter, sier du at du har brukt til å oppdage ny musikk, og at du bruker litt sånn related artists og du bruker last.fm.

J: jaja

A: Men du har jo også peiling på musikk, så det er mye du kjenner fra før, men at det på en måte hjelper deg på...(avbryter)

FUNKSJONER - MINNE - PEKERE
J: Ja, nå har den kommet, det hjelper meg å komme på ikke sant!
Også er det noen ganger man leser seg fram til noe også bare: Det hørtes kult ut!

[00:06:40.000]
@dagboka

The meeting guide I followed while briefing the informants in February-March 2013

Guide for the briefing of the participants
Expected duration of the brief: 30 minutes
Where can we meet? - Requires an Internet connection
Instruction: bring at least one streaming device!

Intro:
Talk about the project - who am I, what am I looking for?

Get to know each other, talk about them:
Age, affiliation, everyday life
Music streaming in the everyday?
Interests in music?
What else are they doing?

The use of social media:
Are they active on Facebook, Twitter?
Why/what do they use it for/why not?

Streaming:
Which services do they use – WiMP, Spotify freemium or premium, others?
How long?
On which devices? Which phone?
Check with info I have collected when recruiting.

Hand out the diary
- explain the questions
- go through the *instructions of how to conduct the study, follow letter,*

Ask about Facebook - can I add you on FB?
Ask about Last.FM - Get a Last.fm account - note the password

Talk about methods for data collection:
Is it possible to use a Twitter account or Facebook for reporting:
Do you have a smartphone? Do you have an FB MSN app installed?
Spreadsheet – I will send them a link
Email / SMS
Diary

Hand out and collect a signed letter of consent
Note necessary passwords
I need to know if the diary is written full -
Make an appointment to collect the diary midway through the study period
Make them aware of the interview appointment after four rounds - when is the best time for them?
Any time then know they are not available in the forthcoming period.

Questions?

Thank you, bye

This is the informant instruction of how to answer the diary questions. The letter was handed out in the briefing and e-mailed along with the first sampling alert.
To you who participate in the study

WHEN ARE YOU GOING TO WRITE IN THE DIARY?

Four test periods will last for two days each in March and April 2013. During these days I want you to write in the diary every time you start a new *listening session*. This means every time you start to stream music with at least one-hour break since last time you listened. If you take a break in the listening, but continue within an hour, this is considered the same listening session. If so, I will be interested in knowing about eventual changes in your listening within the same listening session.

You will not get to know in advance which days the testing period will be. That's why I will text or e-mail you just before a new test period starts.

WHAT TO WRITE?

On question 1, 2, 3 and 4, I want you to write a short answer every time you start a new listening session.

On question 5, 6 and 7 you can decide what and how much you want to write. Here I wish to learn to know about thoughts, experiences, adventures and episodes that are significant for:

- why you started listening to music (and to what)
- what happens during the listening
- why you did stop listening to music

Questions and examples

1. What's the date and time?
Write the time for when you start listening to music.
Example: 28/1 at 2:30 PM

2. Where are you now?
Write where you are or in which situation
Example: a place, on the tram/bus, in the car on the way to your cabin, at the fitness center, at home on my couch, in the shower

3. What are you listening to now?
Describe what you are listening to, as you would have described it to a friend (use everyday language and answer for example with):

- *the name of the band/artist or the song/album*
- *the name of the playlist*
- *What you call the music (music for training, for rest, partymusic, etc.)*
- *I don't know what I am listening to*

4. What kind of service and device are you using?

- *WiMP/Spotify on PC or phone*
- *headset or loudspeakers*
- *If you use a phone, do you use offline (have the songs saved in the app on your phone) or online mode (are connected to the Internet)?*
- *I am also interested if you some time use other sources for your listening, eg. CD, vinyl, iTunes, etc.*

5. Why did you start listening to music just now?

- *Did something motivate you to start listening to music?*
- *What made you decide to start listening?*
- *Is this what you listen to every day in this situation?*
- *Is there a special reason? Routine or incident?*
- *Anything else?*

6. How did you find the music?

- *Playlist (my own, someone else's)*
- *News recommendation / service playlist*
- *I searched for a song/artist/album*
- *Was recommended by a friend/acquaintance*
- *By accident*
- *Don't know how*
- *Used the radio function*
- *Used an app – which one?*
- *Anything else?*

7. How would you describe your music listening now?

- *What do you do beside listening?*
- *Is your attention on the music, on something else, or both / alternating?*
- *Are you alone or together with someone?*
- *Mood/feelings/affect?*

FOLLOW-UP CALL

When the diary period is over, I wish to schedule a time and place that suits you for a follow-up interview about your use of the streaming service, your music interest and your Internet use sometime between April and June.

Thank you!!!

This is the letter of consent in which the informants were asked to sign in the briefing. They also received a copy and I emailed them the letter. Here it is translated from Norwegian.

To you who plan to take part in the study
Oslo, February - March 2013

Research about your use of Spotify and WiMP – information and consent

In my research within the project Clouds & Concerts I conduct a study about users of music streaming services. I will investigate how users of Spotify and WiMP listen to music and their thoughts about their music listening habits when streaming services are the main source for everyday listening. The purpose of the study is to get a better understanding of how the last years' technological changes have influenced music listening and the audiences' relation to music.

You are one of 10-12 persons that I want to study. You get this request because you previously have answered *Yes* to consider participating, or you have contacted me by e-mail or via Facebook. You also use Spotify or WiMP several times a week and have done it a minimum of one year. This makes you eligible as a participant.

To take part means that I will overview your activity with your music streaming service for two days at a time, four times in March and April 2013. During these days I want you to write down experiences and practices related to your use of music streaming in a diary, send me this by email, on Facebook, Twitter, text or via a web form. We will also connect your music streaming service to an account in the services *Last.fm*. Here the music you listen to will be logged. If you accept it, I also wish to follow you on Facebook in the period of the study. Lastly we will schedule a time and place for a follow-up interview to discuss your use of music and your diary notes. This is a qualitative study inspired by ethnographical observation and interviews.

It is not important to be skilled or particularly interested in music. What counts is that du are interested in telling me about how you use your music streaming service. I am not interested in sensitive or very private information, what is important is to learn how you use music in your everyday life.

Participation is absolutely voluntarily and you can withdraw from the study at any time.

I will be the only person that access to the information you give away by taking part (name, phone number, email, as well as the answers that you give). If I would need help to process the results during the conduct, my supervisor Arnt Maasø or a research fellow in the project group Clouds & Concerts might help me. If so, they will be subjects to the same confidentiality agreement I am, and all information will be treated confidentially.

All results will be published with anonymized names of the participants. My PhD will be completed in April 2015. After this all information will be made anonymous. The information will not be used in any other context than for the purpose of this study.

As reward for your participation, you receive a gift card (www.presentkort.no)of NOK 500 after the follow-up interview is conducted.

The Privacy Issues Unit at the Norwegian Social Data Service (NSD) grants the project.

If you want to participate in the study, please sign the declaration of consent underneath.

DECLARATION OF CONSENT

I have received and read the written information above, and want to participate in the study.

Date…………….Signed ………………………………………. Telephone ……………………

You are always welcome to contact me if you have any questions about the study.

Phone: 911 74 716
Email: a.n.hagen@imv.uio.no
Facebook: Anja Nylund Hagen

Read more about Clouds & Concerts here: http://bit.ly/skyscene

Kind regards

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