

## The psychology of streaming: exploring music listeners' motivations to favour access over ownership

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### *Abstract*

*Digital streaming represents the most radical development in the way we experience music since the invention of automatic playback technologies two centuries ago. From zero ownership and on-demand access to a virtually limitless library of music via a disconnected financial transaction, streaming services challenge previous conceptions of how music is defined, experienced and consumed. This paper explores streaming from a psychological perspective, and highlights a range of factors that motivate users to favour access over ownership. From removal of responsibilities of ownership to enhanced discovery, nostalgia-fulfilment to augmented emotional engagement, adoption of access-based consumption is shown to be both driven by, and have multiple positive effects on listeners' psychological functioning. The paper concludes by examining some implications of the issues discussed for each of the three pillars of the streaming industry — listeners, content-creators and service providers — for enhancing the musical experience, growing revenues, and maximising overall potential for engagement with and through music.*

**Keywords:** Access-based music consumption, listener experience, emotional engagement, long-term success.

## 1 Introduction

Music is a ubiquitous human activity, present in daily life and important social contexts across all historical eras, and found in every known human culture, present and past (Wallin et al. 2001). Over the past 200 years, however, the ways in which we conceptualise, experience and engage with it on a daily basis have changed beyond all recognition in many parts of the world. With the introduction of recording and play-

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back technologies at the turn of the nineteenth century, music transitioned from a purely live, shared and participatory phenomenon to a predominantly recorded and increasingly detached experience. As a consequence, music has become something we principally experience as passive *listeners*. Indeed, music listening has become one of the most valued and prevalent of *all* our daily activities, with recent studies indicating that the average person spends around four hours each day, or an incredible thirteen and a half years over their lifetime, listening to music (Peoples 2016; Luck 2016a).

Throughout this period of change, physical playback formats have come and gone, and in recent years have been substantially supplanted by digital formats. In particular, the recent introduction of access-based streaming technologies, pioneered by the likes of Pandora and Spotify, has redefined key characteristics of the musical experience. From zero ownership and on-demand access to a virtually unlimited library of music via a disconnected financial transaction, typical streaming services challenge previous conceptions of how music is defined, experienced and consumed.<sup>2</sup>

The aims of this paper are threefold. First, to explore some of the psychological issues that drive adoption of access-based music streaming services. Second, to show how use of such services can help enhance psychological and emotional wellbeing. Third, to examine some of the implications of the issues discussed for the three pillars of the music streaming industry — listeners, content creators and service providers.

## 2 Freedom from responsibility

The recorded music industry has historically focused on ownership as the dominant consumption mode. A record (or other physical media) was released, and consumers bought a copy if they wished to listen to

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<sup>2</sup> These services certainly do not include all music ever recorded, but, given that Spotify's 30 million tracks would take 200 years to listen to assuming four hours listening per day, their libraries are indeed virtually unlimited compared to a traditional music collection.

it.<sup>3</sup> Ownership, however, is just one of multiple possible consumption modes, and with the arrival in 2004 of Pandora, followed in 2008 by Spotify, access-based streaming services became the new black. With Spotify (and hundreds of other similar on-demand streaming music services that have appeared since), for example, users can listen to a virtually unlimited library of music whenever the urge takes them. No massive collections to build, no time limitations, in fact no actual ownership of anything. As David Bowie had predicted at the turn of the millennium, music was on the cusp of becoming omnipresent, like running water or electricity (Pareles 2002).

As such, these services offer listeners incredible value. No longer limited to a (perhaps sizeable) collection of LPs, cassettes or CDs, one is liberated into a world of infinite choice, opening the door to a whole new way of experiencing music. Crucially, the so-called "burdens of ownership", i.e., the risks and responsibilities that accompany ownership of a good, are lifted, and music transitions from something we possess into something we access. And research suggests that a desire to be emancipated from ownership is a major motivating factor behind people's desire for access-based services (Moeller & Wittkowski 2010; Schaefers et al. 2016; Watkins et al. 2016). The risks and responsibilities of ownership include those related to storage, maintenance, and disposal of items at the end of their lifecycle, but they can also be considered within a tripartite framework comprised of financial-, performance- and social-based risks (DeVecchio 2005).

### **2.1 Financial risks**

Financial risks relate to uncertainty concerning the financial loss a decision to purchase may incur. Access-based music subscription fees are perceived as lower than those related to ownership since we are only paying to listen to a track when we need it, not for the privilege of owning something to do with as we please. The added disconnection of the financial transaction further blurs the relationship between payment

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<sup>3</sup> Radio offers an access-based service paid for in most cases by listeners' willingness to sit through ads.

and consumption. As such, access may be perceived as being less financially risky, even free, even for paying subscribers.

## **2.2 Performance risks**

Performance risks concern doubts about whether a purchased product will perform as expected (Bauer 1960). The major worry here is if something goes wrong, such as a CD refusing to play, or an LP becoming unlistenable because of excessing scratching. Any performance failures bring with them increased psychological costs related to responsibility for repair and maintenance, a time cost, and a high probability of additional purchase costs. Access-based streaming services carry none of these risks. Performance-based risks are borne solely by the service provider, and it's entirely their responsibility to solve any issues that may arise.

## **2.3 Social risks**

Social risks concern how others consider purchase decisions. The ways we choose to spend our money can signal our degree of long-term commitment to goods we consume, and, in the case of music, our long-term commitment to the artist or composer. Accessing instead of buying the same content sends a weaker message of commitment, which is in many ways optimal from the user's perspective. Unless you are a super-fan of a given genre, song, or performer, you may perceive it as more socially desirable not to commit too deeply when listening to a track if you do not wish to be labelled as having particular tastes in music.

Overall, the higher the perceived financial, performance and social risks associated with ownership, the more a consumer will likely avoid such risks by utilising an access-based service.

## **3 Enhanced discovery potential**

With a virtually unlimited library of music to choose from, the desire to discover new tracks, artists or genres is another primary motivator to

access rather than own music. But there's a problem. Actually, there are 30 million of them.

A typical music streaming service contains in the region of 30 million tracks.<sup>4</sup> If we assume an average track length of 3.5 minutes, it would take 200 years to listen to every track each of these services offer. To put it another way, given that we listen to music for around 4 hours per day, or thirteen-odd years across our lifetimes, it would take fifteen lifetimes to listen to an entire service provider's catalogue. In effect, access-based modes of consumption allow us to listen to a significantly larger collection of music, by orders of magnitude, than we could ever amass even across a single lifetime.

On the one hand, this represents a considerable benefit of access over ownership; but it also presents listeners with a "paradox of choice" (Schwartz 2004). How on earth do we decide what to listen to? This is a critical question for access-based services because, even when faced with limited options, listeners demonstrate a clear preference for listening to familiar music regardless of what their self-reported attitudes may suggest (Ward et al. 2014). When faced with a large number of options, people will often choose to simplify the process by engaging with the familiar, listening to a track they already know, or turning to an alternate activity that doesn't require such decision-making effort. One approach to reducing this psychological burden and helping guide listeners through the decision-making process is to group music into genres, moods, and other such high-level concepts. A far more elegant approach is targeted recommendation.

Based on user-generated data and both human- and algorithmic-curation, unique playlists comprised of tracks selected especially for each individual listener (can) provide a bespoke solution to the paradox of choice. Ever-evolving, predictive technologies can serve up endless selections of music tailored to our individual music preferences, mood and current activity, as well as a whole host of other factors. Thus, if you are willing to let an algorithm or even another person decide what you

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<sup>4</sup> Four of the most prominent music streaming services, Spotify, Apple, Deezer and Tidal offer 30 m, 30m, 40m and 25m tracks, respectively.

should listen to, and it seems many people are, the psychological energy (and even time) required to decide what to listen to is effectively eliminated.

The benefits of targeted playlists can also be seen in their continuing surge in popularity. As of May 2016, playlists accounted for almost one-third of total listening time. That's almost one and a half times greater than the time spent listening to albums (Savage 2016). And with singles accounting for less than 46 per cent of total listening time, down 6 per cent since last year, it seems at least possible, if not likely that playlists will become the dominant listening format in the age of access-based music consumption.

#### **4 Nostalgia-fulfilment**

One of the benefits of on-demand streaming is not simply the fact that we can listen to any track whenever we feel like it, but that in so doing we can psychologically revisit times long since past more easily than ever before. Extra-musical associations exemplified by the classic "*Darling, they're playing our tune*" phenomenon (Davies 1978), run deep within us. Significant life events, loved ones, times and places are each associated with their own individual soundtrack. Just hearing a particular piece of music can instantly transport us back to the associated situation. And the desire to revisit times long since past is a fundamental part of being human. We are hardwired to evoke nostalgia in ourselves.

For most people, nostalgia is an everyday sensation characterised by a bittersweet combination of happiness and loss. The word itself is a combination of two Greek words, *Nostos*, meaning to return to one's native land, and *Algos*, meaning pain or suffering. Literally, nostalgia means suffering caused by a longing to return home. According to a recent study, eighty per cent of people claim to experience nostalgia at least once per week, and, perhaps contrary to popular belief, it is an emotion we experience to a somewhat similar degree regardless of our age (Hepper et al. 2012).

Over the years, nostalgia has been considered everything from a medical disease to a brain affliction to a psychiatric disorder. These days, we tend to consider nostalgia as a pleasant, if bittersweet, rose-tinted experience of the 'good old days', a time when, at least in the way we recollect it, the world was a better, simpler, happier place free from responsibility. In fact, nostalgia is much more than that, and has been shown to serve at least four critical psychological functions (Zhou et al. 2012).

For example, evoking nostalgia increases feelings of positive affect, helping to alleviate negative feelings or mood. Nostalgia also enhances self-regard, bolstering our feelings of self-esteem, and helping us bring to mind more positive attributes about ourselves. In addition, nostalgia fosters feelings of existential meaning, increasing our perception of life itself as being more meaningful. Finally, and perhaps most importantly, nostalgia promotes feelings of social connectedness. This last aspect is significant because a desire to connect with others, to forge meaningful relationships, is one of the most fundamental of human desires. We are social beings, we crave connection with other people, and we devote much of our lives to achieving this goal. And we are apparently aware, albeit implicitly, that evoking nostalgia can help us do so.

When asked to list desirable and undesirable features of nostalgia, for example, people rank the capacity to strengthen social connectedness very highly. In one such study, nostalgia was evoked in volunteers by asking them to think of a nostalgic (as compared to an ordinary) event from their lives, write down four words that related to that experience, and then reflect upon the event and the feelings it evoked (Wildschut 2006). Subsequently, compared to a control group who followed the same procedure but for an ordinary event, those who felt more nostalgic revealed signs of increased social connectedness: They reported feeling more loved and protected, demonstrated less attachment anxiety and avoidance, and exhibited greater interpersonal competence. This same study was later repeated on Chinese volunteers with similar results, suggesting that the feelings of social connectedness that nostalgia induces are universal (Zhou et al. 2008).

Moreover, if we look at people's descriptions of nostalgic experiences, it becomes even clearer that nostalgia is a social emotion. When we wax nostalgic, we bring to mind interactions with people who are, or who have been, close to us, including friends, romantic partners, and family members. Nostalgia affords a symbolic reconnection with significant others, and these imagined interactions often take place in the context of important life events that, in many ways, come to define particular time periods of our lives, such as child-births, vacations, anniversaries, graduations, weddings and reunions.

Thus, music that evokes nostalgia is likely to have a range of powerful, positive effects on us. It will help lift us out of a bad mood and make us feel better about ourselves; it will enhance our perceived meaningfulness of life; and it will strengthen our interpersonal relationships and feelings of connectedness with others, reconnecting us with loved ones and epoch-defining events.

By providing access to virtually any track anytime, anyplace anywhere, on-demand streaming services are not just great music discovery tools, but exceptional nostalgia-inducing and life-enhancing devices. Whenever a song from the past comes to mind, the opportunity to revisit old times and significant others is but a few clicks, taps or swipes away. It works the other way around, too: Remembering a person or an event from long ago inspires us to travel back in time via the associated music. Music has always been a great time-travel medium. On-demand, access-based streaming technology simply gives us the perfect vehicle through which to deploy that medium to ultimate effect (Luck 2016b).

## **5 Emotional engagement**

Finally, it is worth considering why we engage with music in the first place. Research has shown that one of the main attractions of listening to music is its many and varied affect- or emotion-related qualities (Laiho 2004; Zillmann 2008). Music comforts us when we are sad (ter Bogt et al. 2016), bonds us together (Koelsch 2014), and helps us release tension (Juslin & Västfjäll 2009). We use music to modify and regulate our



moods and emotions (Knobloch & Zillmann 2002), utilising a range of strategies to do so (Saarikallio & Erkkilä 2006). We listen to music to accompany and enhance sports activity (Karageorghis & Priest 2012), to keep us company on long drives (Sloboda & O'Neill 2001), to create atmosphere when alone or when entertaining (Pink & Mackley 2013). And this deeply emotional connection with music is supported by a wealth of empirical evidence concerning the neurological, physiological and behavioural responses it can evoke.

Emotion and reward circuits of the brain are activated, for example, when we listen to pleasurable music (Blood & Zatorre 2001), evoking highly rewarding experiences neurologically comparable to those induced by food, sex and drugs (Salimpoor et al. 2001). Systematic relationships exist between pleasurable music and physiological indicators of emotional arousal such as heart rate, respiration rate and blood pressure (Lundqvist et al. 2009). And listeners frequently report intense emotional experiences in response to music, especially music they know well (Gabrielsson 2011). What's more, rhythmic, emotionally rewarding music activates motor-related regions of the brain, encouraging us to synchronise our body motion with it (Kornysheva 2010), further enhancing our level of affective engagement (Janata et al. 2012).

On-demand music streaming services allow us to access these profound, emotionally charged experiences more readily than ever before. In fact, it's not overstating the case to say that access-based music services afford virtually unlimited opportunities for emotional connection with and through music.

## **6 Summary**

The ways in which we conceptualise, experience and engage with music on a daily basis have changed beyond all recognition over the past two centuries. In fact, developments in digital streaming and mobile technologies now render access to recorded music as effortless and ubiquitous as David Bowie predicted at the turn of the millennium. This free-flowing nature of music brings with it many positive features, including

freedom from the responsibilities of ownership and enhanced and automated selection and discovery possibilities. In addition, the ease with which nostalgia can be evoked significantly elevates our level of psychological wellbeing, and the potential for emotional engagement with and through music is perhaps greater now than at any time in history.

## **7 Implications for the industry**

In light of these various motivations to access instead of own music, as well as the underlying psychological and emotional effects and benefits of doing so, what are some of the implications for the three pillars of the streaming industry; the listeners, content creators and service providers? Should listeners adopt access-based modes of consumption, and if so, why? How might songwriters, composers, artists and producers take advantage of the growing demand for access over ownership of music? And how could music streaming companies maximise their user experience and entice still more listeners away from ownership?

### **7.1 Listeners**

From casual listeners to superfans, access-based music streaming services appear to offer those who use them a whole host of psychological and emotional advantages. Whether you listen to music as an accompaniment to your daily routines or sports activities, to help you regulate your moods and emotions, or to create atmosphere when driving, studying or socialising, music streaming services offer unprecedented opportunities to connect with the soundtrack to your life. As such, and in light of the psychological benefits and motivations discussed above, listeners driven by a desire for emotionally engaging musical experiences free from the responsibilities of ownership, with the possibility to discover new music as well as access a virtual musical time machine would be well-advised to leave the ownership model behind and embrace access-based streaming.

There are undoubtedly less positive aspects to access-based models of music consumption, including a diminished multi-sensory experience

and a less tangible connection with artists and other content creators. Certainly, access-based streaming music services are not for everyone. But with our busy, globetrotting lifestyles, they surely make listening to music considerably more convenient, cheaper, less risky, and bring with them a whole host of psychological and emotional rewards for those willing to embrace them.

## **7.2 Content creators**

It used to be enough to sell a track once, the only competition being whatever other tracks were released around the same time. With streaming services, each track must be 'sold' repeatedly, all the while constantly competing with millions of other tracks. So how can a content creator go about winning this battle? The answer is to create music with longevity. And the way to do that is to write music that creates an experience listeners feel compelled to return to again and again.

A significant body of work in fields including musicology, neuroscience, physiology and psychology has examined relationships between various music-related phenomena and their effects on listeners. From lyrical features (Fiveash & Luck 2015; Ali & Peynircioglu 2006; Brattico 2011) to emotional characteristics, (Juslin & Sloboda 2001; Koelsch et al. 2006; Van Zijl et al. 2014) expectation-related features (Meyer 1956; Huron 2006; Sloboda 1991) to timing manipulations, (Friberg & Sundberg 1999; Moelants 2002; MacDougall & Moore 2005) this work has revealed a whole host of systematic relationships between particular musical characteristics and listeners' neurological, physiological and behavioural engagement. In combination, this work offers compelling evidence that there exist techniques to deliberately enhance the listening experience by manipulating one or more features or performance characteristics of a track. In so doing, content creators can deliberately engineer a track to create a more positive, more rewarding experience that listeners will want to repeat again and again.

Given the mechanics of streaming services, one would expect tracks that focus on creating such an experience to perform better in the long run compared to those that do not. Content creators willing to invest the

time to understand these principles, therefore, could expect to sustain greater long-term success and gain a considerable financial advantage over their peers.

### **7.3 Streaming music service providers**

In a similar vein, streaming service providers should focus on creating the most engaging experience possible to keep existing listeners listening for longer, as well as to convince those who currently prefer ownership to switch to access-based consumption. Given the enormous libraries of music typically offered by streaming services, efforts to enhance its benefits and diminish its weaknesses should be paramount. The most obvious way to maximise the former and minimise the latter is, of course, to simplify the process of selecting what to listen to (or even remove it altogether) by developing hyper-targeted recommendation and discovery tools to further reduce analysis paralysis and the so-called paradox of choice. There are some major initiatives moving forward with this, and a whole host of music tech companies have emerged in recent years hungry to take advantage of the mass of data generated by the digital revolution. From song features to play counts, social tags to user profiles, there's a phenomenal amount of data available for those who know where and how to look.

However, there is still a lot of work to be done. It is my view that streaming companies are missing a key piece of the puzzle by not focusing on how listeners perceive, understand or respond to music in a more tangible fashion. We do not just listen to music; we experience it on a range of levels. Quantifying that experience, and using it to refine music selection and discovery tools will add a further, valuable dimension to on-going work in this area.

## **8 Conclusion**

From a financial point of view, streaming has not (yet) paid great dividends to most content creators and owners. But then again, is the old model based around a record deal and physical sales any better, unless

one does actually make it? Data certainly suggests that large-scale adoption of streaming by the listening public, as well as alternate pay-out methods, could reap larger (and fairer) rewards for many more players in the game. In a sense, the price of admission into the streaming club might be conceptualised as a devaluation of some physical aspect of the music itself but an increase in the value we place upon the experience. Given the many psychological benefits streaming services offer, the increased potential for emotional connection, and research suggesting we'll be happier if we spend our hard-earned cash on experiences rather than material goods, it is my view that access-based streaming services' dominance over ownership-based consumption is all but guaranteed.

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