

Critically Analyzing Platform Interfaces: How Music-Streaming Platforms Frame Musical Experience

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This article identifies and contributes to a small but growing body of research that critically analyzes the user interfaces of digital platforms and apps. By examining how the interfaces of music-streaming platforms (MSPs) frame musical experience, we test claims that such platforms encourage “functional” and “mood-based” uses of music linked to problematic forms of power and subjectivity. While such framings are indeed evident in MSP interfaces, so too are other, rather different constructions of engagement with music. We argue that one significant power of MSPs is to incorporate diverse forms of musical experience into pervasive hybrids. Our approach advances interface analysis and research on the platformization of culture by illustrating the benefits of *critical platform interface analysis* through *intra-domain platform interface analysis*, and by offering general and music-specific taxonomies of digital platform interfaces.

Keywords: user interfaces, digital platforms, music streaming, critical platform interface analysis, intra-domain comparison

User Interfaces and Platform Analysis

Digital platforms now represent a major component of contemporary cultural life (Primorac, Bilić, & Uzelac, 2022; Valtysson, 2022). As a result, the interfaces of digital platforms in the realm of culture, such as games, or video and music streaming services, currently play a major role in structuring cultural

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experiences. By interfaces, we simply mean the user interfaces of platforms and apps that are visible on the screens by which content is accessed, whether on smartphones, laptops, or monitors connected to gaming, TV, and other devices.²

The implications of user interfaces for cultural production and consumption should be of concern to anyone interested in contemporary media. They have certainly been an object of scrutiny for European policy makers dealing with audiovisual diversity and public service media, who have sought to address how interfaces shape the prominence and discoverability of services and content (European Union, 2018; Mazzoli, 2020; Ofcom, 2020). Relatedly, a small body of research in sociocultural digital media studies has paid attention to how such user interfaces structure and guide users in selecting and exploring content on cultural digital platforms such as Netflix, YouTube, and Twitch (e.g., Hesmondhalgh & Lotz, 2020; C. Johnson, 2020; McKelvey & Hunt, 2019). We call this growing body of research critical platform interface analysis (CPIA), to distinguish it from more functionally oriented research in fields such as human-computer interaction (HCI), user interface design (Stone, Jarrett, Woodroffe, & Minocha, 2005), and user experience studies (Sharp, Preece, & Rogers, 2019).³

We are dealing here with research on interfaces of cultural platforms (video games, music, etc.) rather than those of digital platforms in sectors that do not involve cultural production and consumption in the specific sense we mean it, based on the narrower definition of culture as artistic and intellectual activity, such as music, stories, and images, for entertainment and information. In other words, we are not using culture here in the very general sense of “a whole way of life”, whereby the term could be used to refer to *any* digital platform. In discussing critical research on interfaces specifically of cultural platforms, we might therefore add an extra “c” (for “cultural”) to CPIA to form the acronym CCPIA, but we stick to the shorter version in the discussion that follows. CPIA coexists with a growing body of research on the analysis of digital apps in general (e.g., Dieter et al. 2019; Goggin, 2021; Light, Burgess, & Duguay, 2018; Morris & Murray, 2018), some of which we discuss in the next section.

In what follows, we apply CPIA to a widely used set of cultural platforms and apps—music-streaming platforms (MSPs)—with particular attention to an issue raised in much recent research: How platformization might be transforming music itself. This is a potentially revealing case study of what we call “intra-domain” comparative analysis of platforms (and their interfaces) because of the remarkable extent of platformization in the very significant cultural domain of music. In just a few years, especially from 2015 onward, MSPs have become the core of a new musical system that marks a distinctive new phase in the history of music production and consumption. Users can access huge amounts of musical content from around the world, stretching back decades.

² Our concern here is with those interfaces that all users encounter, rather than with “back end” user interfaces designed for creators or industry intermediaries.

³ By functionally oriented, we mean research that emphasizes “usability,” “user satisfaction,” and so on over the social and cultural implications of interfaces (e.g., Barr, Noble, & Biddle, 2007, on video games; Knees, Schedl, & Goto, 2020, on music).

The next section briefly locates CPIA in the context of existing research on the concept of interfaces, differentiating it from philosophical approaches and the widely cited “walkthrough method.” We then explain the importance of MSP user interfaces for contemporary musical production and consumption, locating them in efforts by MSPs to achieve personalization, as part of broader struggles to meet the perceived challenges created by the abundance of audio content. This is followed by an assessment of the main existing work on user interfaces of MSPs, placing such research in the context of more general studies of MSPs and of cultural platforms in general. We show that a key claim made by critics of MSPs, including analysts of their user interfaces, is that MSPs are transforming musical experience by encouraging “functional” and “mood”-driven consumption and production at the expense of other forms of engagement. Our goal is to investigate the extent to which the user interfaces of the most popular contemporary MSPs can sustain such claims.

The main section of the article then presents our analysis of the mobile user interfaces of the seven most widely used MSPs in the United Kingdom at the time of our research according to the U.K. communication regulator (Ofcom, 2022): Amazon Music Unlimited, Apple Music, Deezer, SoundCloud, Spotify, TIDAL, and YouTube Music. We begin by analyzing the appearance and design of these MSPs’ user interfaces, offering a typology of their main elements: Text and background color, use of headings, geometric “tiles” accompanied by text and arranged into “carousels,” the extent of vertical and horizontal scrolling, the links afforded to other “pages,” the journeys offered on those other pages, such as “browse,” “search,” or similar, and the categories of playlists made available. Noting the striking homogeneity of design and content of user interfaces across the seven MSPs, we then proceed to analyze how they frame musical experience for users—and how this compares with longer-term histories of such framings before the rise of digital platforms.⁴ Our main claim is that MSP interfaces show considerable continuity with previous modes of engagement with music. This suggests that studies portraying platform interfaces as a key mechanism by which musical experience is being damaged via a greater emphasis on “function” and “mood” need to be questioned.

In using interface analysis to raise these issues, we hope that the article might contribute to debates in digital media studies concerning the platformization of culture (Poell, Nieborg, & Duffy, 2022). Hence, the final section draws out some implications and comments on the possible specificity of MSPs vis-à-vis platforms in other cultural domains. We argue that the dominance of certain categories across fundamentally similar MSPs encapsulates how MSPs operate as a new monolithic core at the heart of musical culture. Drawing an analogy with food and drink retailing, we argue that this dominance is best understood as a hybrid of long-standing modes of musical engagement, newly brought together under one dominant system, governed by distinctive modes of presentation, and in this way is akin to the role of supermarkets in the domains of food and drink.

CPIA in Context

⁴ Many of the leading MSPs feature other audio content besides music, some more prominently than others. For reasons of space, we confine ourselves to music here.

As well as being different from what we called functional analysis of digital interfaces above, CPIA also differs substantially from studies of the concept of interface that draw on continental philosophy and cultural theory, such as Galloway's (2012) reflections on the ontology of digital interfaces or Anable's (2018) explorations of the video-game screen as a material surface and "affective assemblage." What we call CPIA, by contrast, concentrates on the *interpretation* of user interfaces of culturally oriented platforms and apps (though Ash, 2015, is unusual in combining analysis of game interfaces with that mode of theorizing). Precursors of what we call CPIA include Chamberlain (2010) on digital television interfaces, Stanfill (2015) on how Web page interfaces reflect and reinforce social norms, and Jorgensen (2013) on the user interfaces of video games. Stanfill (2015) captures some key shared goals when writing about how a user interface "makes a normative claim about its purpose and appropriate use that both demonstrates an understanding of users and builds a set of possibilities into the object" (p. 1060). CPIA therefore has resonances with textual analysis in media and communication studies, where analysts seek to identify ways in which certain texts might encourage certain interpretations more than others (Fürsich, 2009; Hall, Evans, & Nixon, 2013). Neither textual analysis nor CPIA is primarily concerned with industrial and organizational factors that might lie behind textual or design choices, nor with how people actually use or interpret cultural content or platform interfaces. Consequently, we do not focus on those issues (though we analyze user practices elsewhere in our research). However, recalling the focus on potential meaning in critical textual analysis, platform (user) interface analysis can complement studies of industry, organization, use and interpretation through its attention to semiotic possibilities.

One semiotically oriented approach that includes the analysis of user interfaces, and is very widely cited, is "the app walkthrough method" (Light et al., 2018, p. 881). Originally developed in software engineering, design research, and functionally oriented analysis of HCI, the term was adapted by critical researchers Light and colleagues (2018) to delineate an approach that would "systematically and forensically step through the various stages of app registration and entry, everyday use and discontinuation of use" (p. 881). Similar to Light and colleagues' (2018) approach, CPIA might engage in "observation and documentation of [. . .] screens, features and flows of activity" to establish "a foundational corpus of data upon which can be built a more detailed analysis of an app's intended purpose, embedded cultural meanings and implied ideal users and uses" (Light et al., 2018, p. 881).⁵

But there is a key difference between our take on CPIA and Light and colleagues' (2018) now-classic article. While they illustrate their approach with examples from menstruation-tracking, dating, and game apps, Light and colleagues (2018) offer only occasional hints of what kinds of conclusions might be drawn about these apps and *their potential effects on the domain in which they intervene*. For example, the authors (Light et al., 2018) comment that a dating app for queer men uses red as a color connoting excitement, and gray to connote seriousness, but they do not elaborate on how these color choices might shape understandings of sexuality among such men. As already indicated, our analysis here is rather different: It highlights how platform interfaces potentially shape understandings of the domain in which they intervene, here using the example of music.

⁵ Strangely, CPIA and the walkthrough method for analyzing apps hardly seem to have been put into dialogue with each other.

MSPs and Their User Interfaces

MSPs have rapidly spread across the world since their first appearance in their current form, from around 2008, accelerating from 2015 onward. MSPs, though part of the information technology sector, are dependent for their most popular content on music supplied by rights-owning companies, the most powerful of which are the "majors" (Universal, Sony, and Warner, i.e., corporate copyright owners and their local affiliates) and also some significant "independent" rights owners operating in local markets (Kjus, 2022; Towse, 2020). Content is licensed by these rights owners to MSPs in negotiated contracts, renewed every few years. MSPs and the music industries are therefore two separate sectors operating as frenemies in a mutually dependent system. Vast amounts of musical content are also uploaded by other suppliers, including "DIY" (Do-It-Yourself) or "self-releasing" artists, often using digital intermediaries, though such material is much less consumed than that licensed by the majors and larger independents.

While there is still a great deal of music that is not included on MSPs, and this no doubt reflects geographical and racial inequalities, these developments mean that MSP users are offered relatively cheap access to an extraordinary abundance of music. For example, as of 2023, Spotify was making available more than 100 million recordings for a subscription of less than US\$10 per month. Importantly, however, hardly any of the content is *exclusively* licensed to individual MSPs, in contrast to video-streaming platforms. Significant rights owners license pretty much all their content to all sizable MSPs; this means that, at least in terms of what is actually played, each MSP shares broadly the same musical content. MSPs also charge similar subscription fees for their premium services (though some have a "free" advertising-supported tier and some do not).

In this system of unprecedented abundance and homogeneity of content, user interfaces have become vital mechanisms for shaping musical experience. While the new system undoubtedly makes it easier for musicians to make their music available to audiences, and to bypass rights-owning companies (Cooke, 2020), the sheer abundance of product that is uploaded (often via digital distributors) makes it even harder than under previous systems for audiences to be aware that a musical recording exists, let alone for them to know what it sounds like. Consequently, the problems of discoverability and prominence referred to earlier, the subject of important CPIA and policy work in the audiovisual domain, are particularly marked in platformed music.

Beyond the search functions they provide, there are two main ways in which MSPs seek to manage the abundance of content for users, and these represent the main forms taken in music by the *personalization* that is a major feature of consumer-facing digital platforms. First, content is mainly organized as "playlists," lists of recordings that can be played sequentially or randomly (Dhaenens & Burgess, 2019; Prey, 2020). Users can also create their own bespoke playlists on all major MSPs and in many cases can share them with other users. Second, the MSPs use a mix of automated and human methods to "recommend" certain tracks or playlists to individual users (Prey, 2020). Some recommendations are generated by algorithmically driven music recommender systems (Born, Morris, Diaz, & Anderson, 2021; Hesmondhalgh, Campos Valverde, Kaye, & Li, 2023; Seaver, 2022), some are compiled or "curated" by humans, and some are created by a mix of the two (Born et al., 2021). User interfaces are the means by

which MSPs display and organize playlists and recommendations, plus other features such as album artwork and information about artists. This potentially allows MSPs and their user interfaces to exert a powerful influence on social understandings of music as a communicative and cultural form.

Existing Analyses of MSP Interfaces

As noted earlier, very few researchers have sought to analyze MSP user interfaces. One recent exception (Maasø & Spilker, 2022) sought to name and categorize “hybrid gatekeeping mechanisms” apparent on such interfaces, including the placing and ranking of content in the interface, “elements designed to push users toward listening to new music rather than to their personal libraries and old favourites,” and the management of abundance through “interfaces, algorithms, and curation” (p. 307). Again, these issues echo the interests of the policy version of the CPIA literature in discoverability and prominence, referred to earlier.

Those issues matter, but our approach here—though not our conclusions—is closer to two rather different contributions.⁶ The first is an earlier, groundbreaking article by Morris and Powers (2015), published when music streaming was just emerging as a dominant form, which directly addressed how MSPs frame musical experience itself. Morris and Powers (2015) compared four then-prominent U.S. MSPs: Beats, Rdio, Songza, and Spotify.⁷ As well as comparing their integration with social media and curated playlists and the degree of control users had over song selection and musical experience, Morris and Powers (2015) also (though briefly) analyzed the user interfaces in terms of the degree to which those interfaces prioritized “moods” and “activities” (as was the case with Songza) versus interfaces (Spotify, Rdio, and Beats) that sought to imitate “a consumer’s collection,” echoing previous online formats such as iTunes. Examples follow, in our analysis below, of the kinds of moods and activities that MSPs currently bring to the forefront. Morris and Powers (2015) also discussed the degree to which MSPs sought to attract a full range of users, from those with a strong interest in music to casual listeners.

Related issues were taken up by a later, significant contribution: Eriksson, Fleischer, Johansson, Snickars, and Vonderau’s (2018) study of Spotify, which included a substantial analysis of Spotify’s user interface, including its development over time. Eriksson and colleagues’ (2018) analysis of Spotify via its user interfaces is (even) more damning of MSPs than Morris and Powers’ (2015) perspective. Eriksson and colleagues (2018) claim that Spotify user interfaces organize everyday life via “thematically selected playlists and messages for mornings, afternoons, evenings, and weekends” in a way that is “bound up with chrono-normative prescriptions of ‘the good life’ that instruct users to get out of bed, go to work (in an office), work out in the afternoon, and then socialize with friends, family, and lovers in the evening” (p. 121). Music, Eriksson and colleagues (2018) write, is presented as “a way of increasing productivity and performance in these time-bound activities” (p. 121) via playlist categories based on activities and mindsets

⁶ We also note Bessen’s (2020) valuable examination of the visual interface of Spotify, in terms of the degree to which it depends on and encourages “folksonomy” as opposed to “taxonomy,” with the former representing a more bottom-up approach to information categorization and classification, emphasizing user agency and providing potential richness of data, and the latter providing top-down simplicity for the end user. We suggest this approach would benefit from the intra-domain comparative approach outlined here.

⁷ Beats became the basis of Apple Music and Songza the basis of YouTube Music.

("Mood, Party, Chill, Workout, Focus, Dinner, Sleep, Travel, Romance, and Kids & Family") and via an insistence on "self-governance through mood control," including productivity enhancing labels such as "Focus" (pp. 121–122). Spotify, according to Eriksson and colleagues (2018), thus orients its users toward achieving "one specific state of mind and the moral values that come with it: happiness" (p. 124) via invocations to deal with negative experiences such as stress, breakups, and loss.

Such orientation is reinforced by visual elements of the interface, including square-shaped icons that Eriksson and colleagues (2018) usefully relate to the notion of "Instagramism." This is a term coined by Lev Manovich (2016) to refer to an aesthetic associated with a new "global digital youth class" emerging in the 2010s (Manovich, 2016, quoted by Eriksson et al., 2018, p. 125). The forms of visuality apparent on Spotify are also highly gendered, according to Eriksson and colleagues (2018), portraying music production as male, and music consumption, "especially for the sake of mood management" (p. 127), as female, articulated with gendered notions of entrepreneurial subjectivity that invite girls and women to embrace self-transformation, disavowing structural constraints. Meanwhile, citing Cheney-Lippold (2017) on "algorithmic selves," Eriksson and colleagues (2018) claim that automated mechanisms encouraging discovery of music create background algorithmic identities that fail to correspond to our "nondatatified self-identifications" (p. 128) and which serve as ways of defining and governing people.⁸

A key set of claims emerges from Morris and Powers' (2015) and Eriksson and colleagues' (2018) analysis of MSP user interfaces, centered on the idea of a move toward "a utilitarian approach to music, whereby music consumption is increasingly understood as situational and functional for certain activities (rather than, for instance, a matter of identity work or an aesthetic experience)" (Eriksson et al., 2018, p. 123).⁹ These claims resonate with many popular and academic critiques of MSPs, especially of Spotify, which see MSPs as bringing about negative transformations in music consumption. For Chodos (2019), for example, musical experience on Spotify is not about "attending to music but using music to evoke a desired feeling or achieve some other secondary effect" (p. 51). This purported move toward "function" (or "activity") is seen as not only diminishing musical experience but also as serving existing social systems "by forestalling exhaustion and boredom," as in Eriksson and colleagues' (2018) account. Commentators pursuing such arguments often draw metaphorically on earlier critiques of programmed music, claiming that MSPs offer a form of "neo-Muzak" (Anderson, 2015, p. 832; Pelly, 2018; Rekret, 2019; cf. Hesmondhalgh, 2021). Echoing Eriksson and colleagues (2019), one writer connects "the moods Spotify uses to organize playlists" to a purported change in capitalism, where moods such as "chill" and "lofi" are "vibes," pervasive devices that individuals are encouraged to use "to regulate psychological and affective states for optimal present and future productivity" (James, 2021; cf. Drott & Thompson, 2022).

There are, of course, many other critiques of the effects of MSPs on musical production, music consumption, and indeed music itself (Hesmondhalgh, 2021). Some echo the sense of loss or decline

⁸ An exploratory but intriguing piece by Simon (2020) argues that the design of music app interfaces promotes a notion of mastery and control as the basis of pleasurable musical experience.

⁹ The term "context" is sometimes used to describe this increasing focus on mood and activity, but, among computer engineers, the term refers to a wide range of data used in forming recommendations (Pagano et al., 2016; cf. Seaver, 2022, chapter 3).

expressed by the commentators quoted above. This includes critiques that claim a shift from a situation where the music industries were characterized by an understanding of “music as art” to one where music is understood instead as “content” or “data,” intended to attract subscriptions and traffic (Negus, 2019). Others assert that music is increasingly “tailored” to the needs of streaming services and that this leads to a situation where understanding music as data puts pressure on musicians and producers “to think and act like software developers, treating their music not just as songs that need to reach listeners, but as an intermingling of sonic content and coded metadata that needs to be prepared and readied for discovery” (Morris, 2020, p. 2)—an example of a process that Morris (2020) calls “optimization” (p. 2).

We assess these and other claims in other forthcoming outputs on both music production and consumption, but our focus here is specifically on claims of a platform-driven shift from the attentive experience of aesthetically oriented music toward functional and mood-management purposes and the degree to which the user interfaces examined by Morris and Powers (2015) and Eriksson and colleagues (2018) provide evidence for such a shift. In this respect, it is striking that these accomplished authors do not discuss this “other” form of music consumption, which we will call “aesthetically oriented musical experience,” in any detail, and in general neither do other critics making similar claims. By using the term “aesthetically oriented,” we refer to experiences in which qualities of beauty or excitement, often traditionally if problematically labeled as “aesthetic,” are at the forefront: For example, listening to a favorite track or artist and enjoying (and even reflecting on) the way it encapsulates an identity, a sensibility, a set of emotions, a way of being. In this respect, playing a mood-based playlist in the background is “less” aesthetic, in that, according to critics of MSPs, the main aim is for the music to assist in achieving a general mood rather than for attention to be paid to the aesthetic achievements of the track or artist.

Comparative Analysis of MSP User Interfaces

To address these issues, and also to go beyond the Spotify-centrism of much research and commentary on MSPs, we set up subscriptions for the seven most popular MSPs in the United Kingdom—Amazon Music Unlimited, Apple Music, Deezer, Spotify, TIDAL, and YouTube Music—and analyzed the user interfaces of each of them, concentrating our analysis on the mobile versions of their premium subscription services. Of course, the various user interfaces of each service change regularly, so it is only possible to provide a snapshot of a changing field. Moreover, as other analysts have pointed out, the mechanisms of personalization on MSPs greatly complicate interface analysis compared with, say, the less personalized interfaces of pre-platform digital television. We did not conduct a systematic analysis of how different patterns of use might lead to different interface results. Nevertheless, it is possible to discern from the comparison of major MSPs a set of categories that user interfaces depend on and to consider the degree to which those categories encourage certain kinds of musical experience. First, though, we provide a basic typology of key interface elements and argue that the MSPs manifest a striking degree of homogeneity—a finding that informs our later conclusions as we seek to somewhat reorient the critique of MSPs based on interfaces.

Key Features of MSP User Interfaces and Homogeneity of Design

We begin with a brief account of some key semiotic elements of MSP user interfaces, somewhat akin to the walkthrough method discussed earlier. These elements are summarized in Table 1.

Table 1. Key MSP Design Elements

<i>Element</i>	<i>Description</i>	<i>Figure</i>
Color	Light/dark themes, similar fonts	1 and 2
Shape	Geometric tiles and rounded icons	1 and 2
Text	Welcome message, headings, recommendations	1 and 2
Scrolling	Swiping down and across to access content	3 and 4
Links	Home, search, library	1 and 2
Search	Text entry search bar above tiles with content	5 and 6

The first feature of MSP interfaces that users might notice when they open an MSP app and arrive on the landing page is its color scheme, along with a mix of geometric shapes and text. Mobile phone interfaces of the seven leading MSPs’ premium versions in the United Kingdom are juxtaposed in Figures 1 and 2. Many readers might be struck, as we were, by their similarity. This extends not only to their dark and light themes but also the predominance of geometric tiles, containing a mix of text and images with similar font sizes and styles. There is some minor variation in how those tiles and icons are displayed, mostly a combination of square, rectangular, and circular tiles.

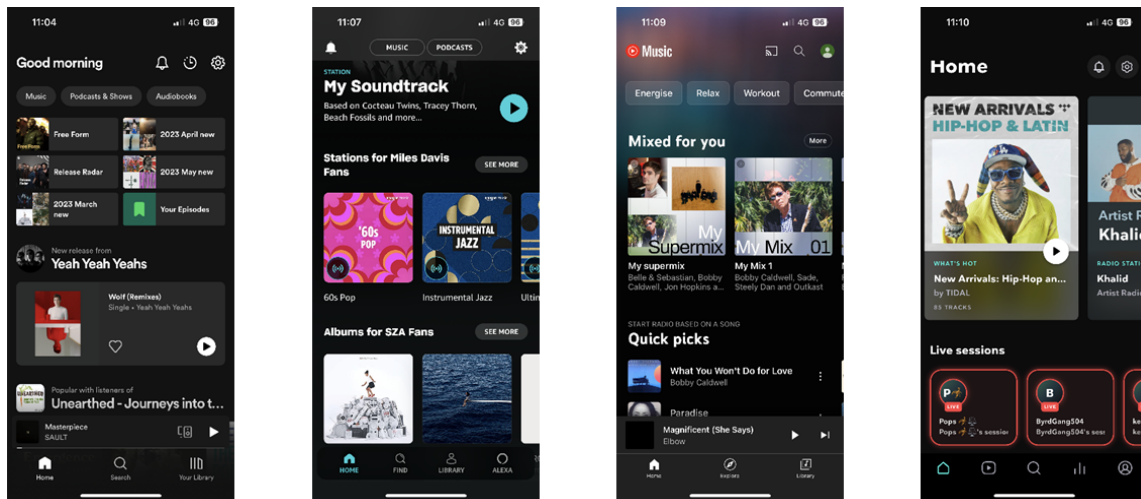


Figure 1 (a–d). From left to right: Mobile phone home page interfaces of (a) Spotify, (b) Amazon Music, (c) YouTube, and (d) TIDAL.

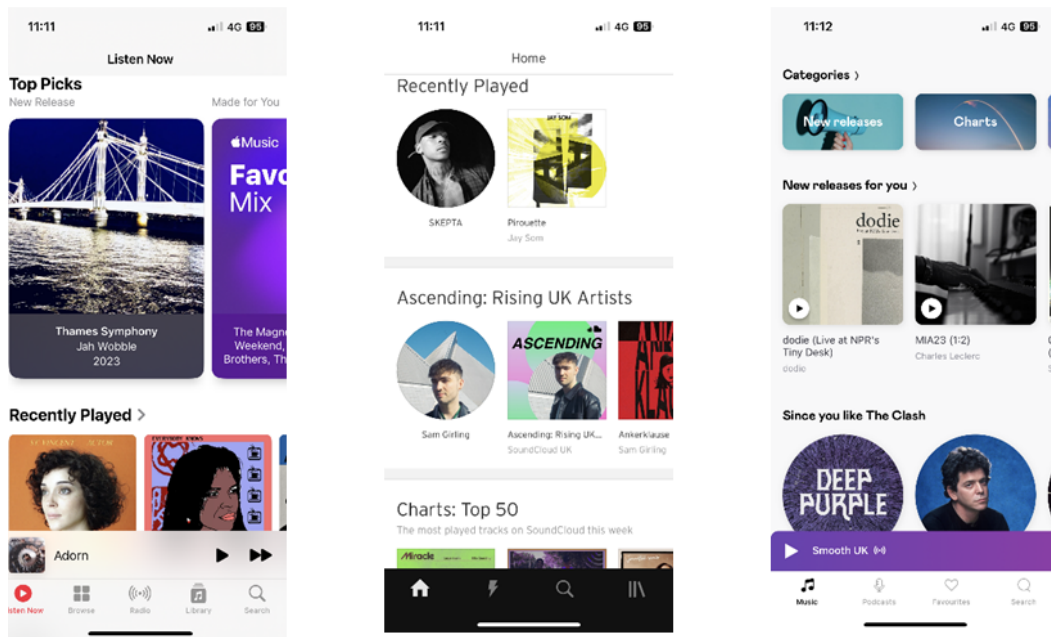


Figure 2 (a–c). From left to right: Mobile phone home page interfaces of (a) Apple, (b) SoundCloud, and (c) Deezer.

Users may (perhaps subconsciously) detect that the landing or home pages are organized around a series of headings. When any of the leading MSP apps are opened on mobile devices, there is space, before scrolling, for two or three such headings to be visible, acting as headings for carousels or horizontal strips. On the Spotify interface (Figure 1a) we can see “Good morning” (an example of the temporality management remarked on by Eriksson et al., 2018, p. 121). But note that this contains a recommendation for a new album, followed by a recommendation for a podcast; Amazon (Figure 1b) has “My Soundtrack” along with recommended “stations” and “albums.” The rest follow similar patterns (see Figures 1c, 1d, and 2a–2c). We already see here that while function and mood are present, they do not appear to be dominant, an issue we return to in the next subsection.

This homogeneity continues to be manifest as users then interact with the apps after their initial arrival on the mobile interface by “scrolling” (see Figures 3 and 4). By swiping upward, the user moves down a scroll of carousels, nearly all of which can then be extended by the user by swiping left to move right. Even the number of such carousels or horizontal strips is similar.¹⁰

¹⁰ At the time of writing, we counted 13 such strips for Apple, 16 for Spotify, 17 for TIDAL, 19 for Deezer, 20 for YouTube, 21 for SoundCloud Go, and 22 for Amazon.

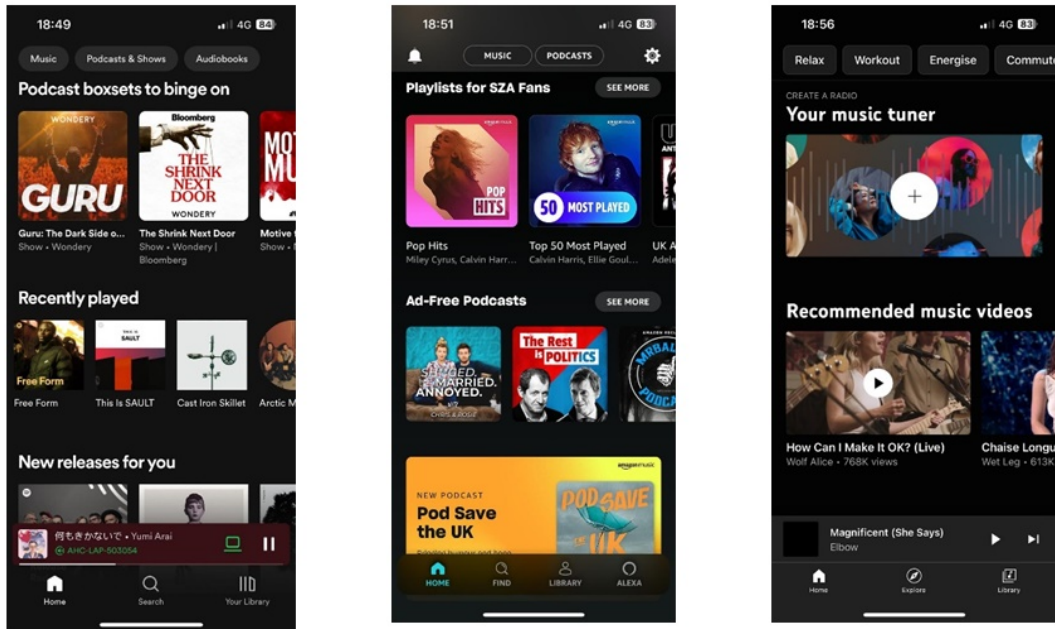


Figure 3 (a-c). From left to right: Mobile interfaces, after scrolling, of (a) Spotify, (b) Amazon Music, and (c) YouTube Music.

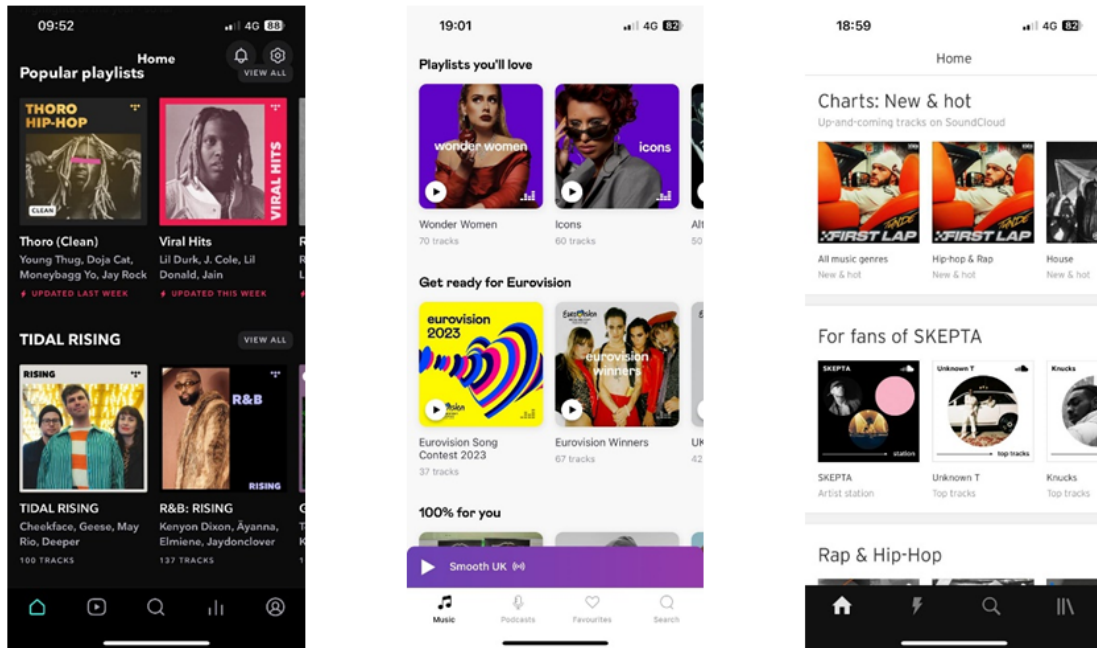


Figure 4 (a-c). From left to right: Mobile interfaces, after scrolling, of (a) TIDAL, (b) Apple Music, and (c) SoundCloud.

“Links” to other pages, offering particular “functions” (such as search and browse), are positioned at the bottom of the seven MSPs’ home pages, and here too there is a striking similarity. As Figures 1 and 2 display, there are two to four link icons with very similar titles and functions: Home, search (and/or browse), and library (which Deezer calls “favorites”). If users choose to leave home pages to explore the other functions available, such as search, there are also marked similarities in experience. Tapping “search” on Spotify (Figure 5a) produces an initially white box; on typing into it, a list of recent searches appears, and then an autofill function predicts search items. Beneath the white box is another recommended album, then “explore your genres” (marked with hashtags at the time of writing) and a “Browse all” list, using which users can scroll through some 70 categories presented as colored horizontal tiles, organized into two columns, a mix of genres and moods (see the next section).

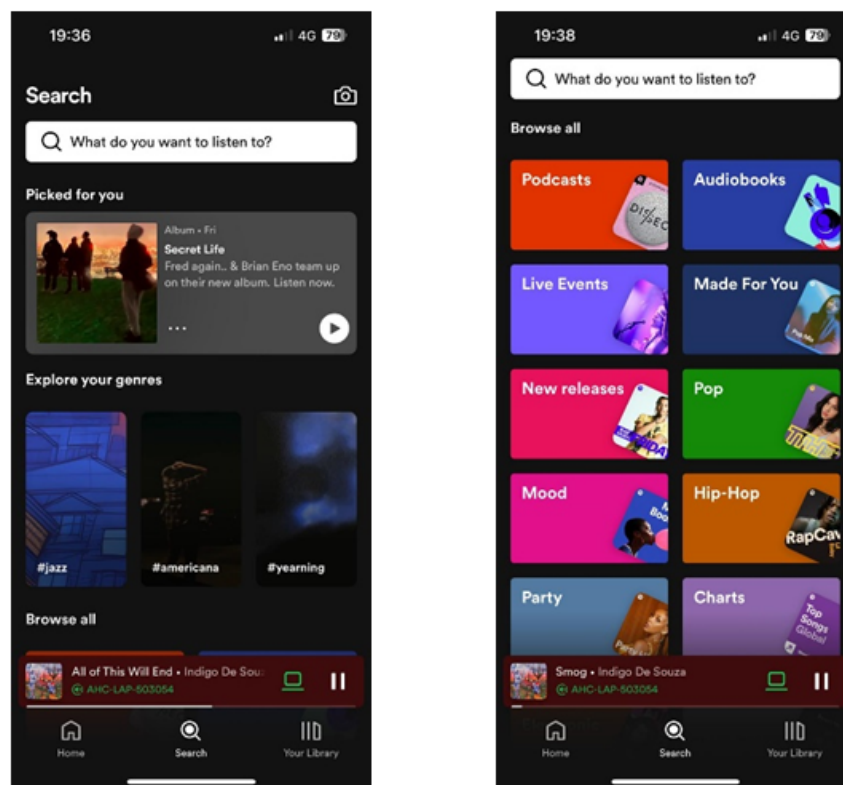


Figure 5 (a and b). From left to right: Spotify’s (a) mobile search page interface and (b) browse page.

On Apple Music, beneath a white search box, there are two columns of tiles, with a similar mix of topics (Figure 6a). The only difference is that most of the first 20 or so have images on the tiles, while the next 30 do not. Amazon similarly has tiles beneath its search box arranged into two columns (Figure 6b), in effect reproducing what is called “browse” on both Spotify and Apple Music (Figures 5b and 6a). Eriksson and colleagues (2018) rightly paid attention to this combination of genre and mood, but other key categories of musical experience are also apparent. Clicking “explore” on YouTube (Figure 6c), for example, leads (via

a somewhat different browsing page, with a search icon somewhat hidden in the top right) to a carousel of principal categories that includes “New releases” and “Charts” along with “Moods and genres.”

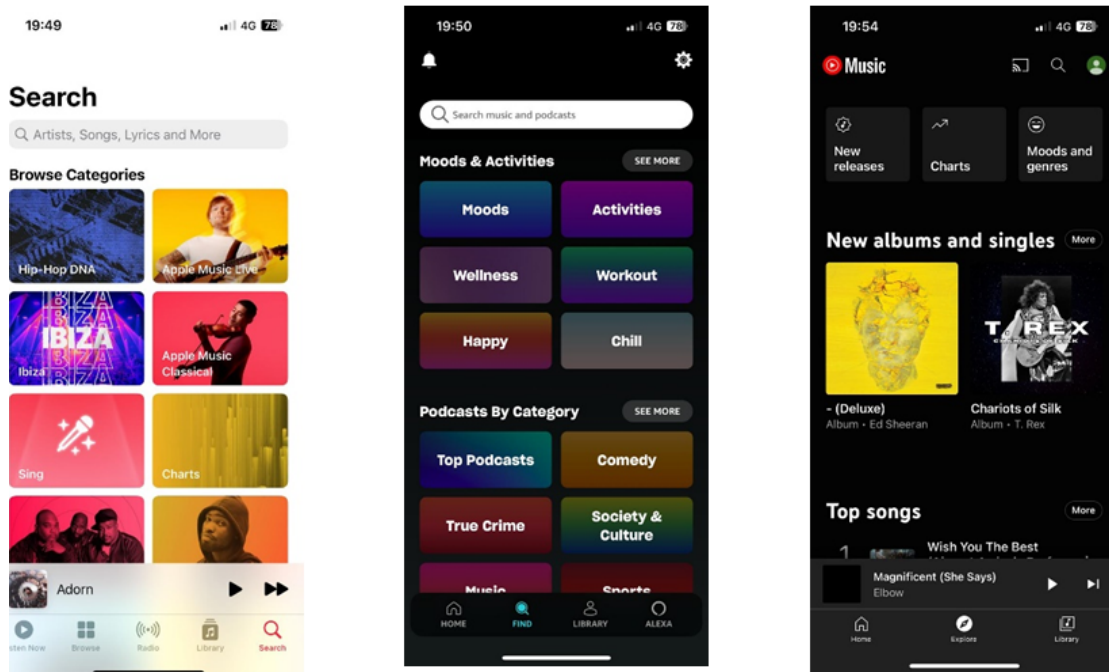


Figure 6 (a–c). From left to right: (a) Apple Music’s browse function, (b) Amazon Music’s “Find” function, and (c) YouTube Music’s Explore page.

Given the homogeneity of content explained earlier (i.e., on all MSPs, the musical content engaged with by nontrivial numbers of users is broadly the same), and that these MSPs charge roughly the same amount for subscriptions, it might be expected that user interfaces serve as a key means for MSPs to differentiate their offers. Yet our analysis of some key elements of MSP user interfaces suggests a remarkable degree of homogeneity.¹¹ This homogeneity is important not only in terms of competition dynamics but also because, as we now show, of the similarity in how user interfaces of MSPs frame the ways in which music might be used (and hence the meaning and value of music as a whole). But as we also show, this presentation does not appear to be quite what previous critical analysts of MSP user interfaces have claimed.

How MSPs Frame Musical Experience

The images reproduced and analyzed above begin to give an indication of how musical experience is presented on MSPs. We now elaborate on how MSP framing of musical experience shows continuity with

¹¹ Other means of differentiation that cannot be considered here due to space constraints include the incorporation of podcasts and in the wake of TikTok’s success, short video.

older industry shaping and presentation in the pre-platform world centered on the retail of physical artifacts and broadcast media (a summary is provided in Table 2).

Figures 1 and 2 provided an initial glimpse on home pages of three resiliently important ways of framing musical experience for audiences: Genre, artist/authorship, and format (album, EP, single). Genre, for example, is manifest in the references to pop, jazz, hip-hop, and Latin in Figures 1b and 1d. But genre is also more subtly in operation in features such as YouTube’s “mixed for you” mixes (Figure 1c), which are organized by genre (however eccentrically).

Table 2. How MSPs Frame Musical Experience

<i>Framing</i>	<i>Example</i>	<i>Figure</i>
Genre	Pop, jazz, hip-hop, genre-oriented personal mixes	1 and 2
Artists	Artist name, images, artist playlists	1 and 2
Formats	Album, EP, single	1 and 2
Moods	Calm, energize, feelin’ good	1c
Functions	Workout, focus, commute	6b
Eras	The hits: ‘60s, ‘80s Alternative, to be a tween in the 2000s	8 and 9
Popularity	Charts: New and Hot, Top Songs Global, Viral Hits	4c
New releases	New releases for you, best new releases, release radar	9

Further scrolling reveals that all major MSPs feature automatically generated playlists collating music from a particular genre or set of genres (played recently and/or regularly by the user, or in early use based on information about taste provided on registration) even if that genre is not explicitly named. On Spotify, this is “Daily Mix,” numbered from 1 to 6, on Amazon it is “Stations.” The Spotify home page highlights the user’s own recent interactions and the user’s own playlists; this includes one genre list, “Free Form,” which purports to go beyond genre (though from within a set of neighboring genres such as R&B, jazz, hip-hop). Artist images and names are strongly present on all seven interfaces, and albums feature in Figures 1b and 2a. Deezer’s artist recommendations are also clearly organized by genre—Deep Purple and Lou Reed are offered on the basis of the user’s professed liking of the Clash at registration, presumably because they are coded as ‘70s rock acts (Figure 2c).

Scrolling and clicking confirm that genres, artists, and albums—elements associated with the kind of musical experience that MSPs are purported to have sidelined—are all strongly present on MSPs (see Figure 7 for more genre). All the MSPs feature on their interfaces algorithmically generated playlists that summarize the work of an artist (some allow artists to make their own selection of their work on a separate playlist). On Spotify, these playlists are called “This Is [artist name]”; on Apple Music and TIDAL, these playlists are called “[Artist name] Essentials” (see Figure 8a); on YouTube, it is “Presenting [artist name]”; and on Amazon, it is “(Re)Discover [Artist name].” Deezer and SoundCloud simply offer the names of the artists for such playlists, with “Top tracks” describing the content.

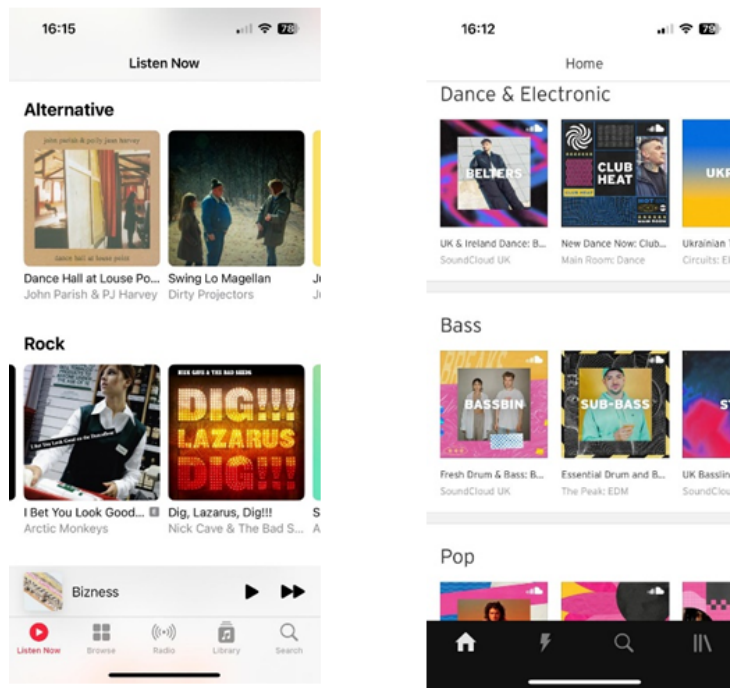


Figure 7 (a and b). From left to right: Genre on (a) Apple Music and (b) SoundCloud.

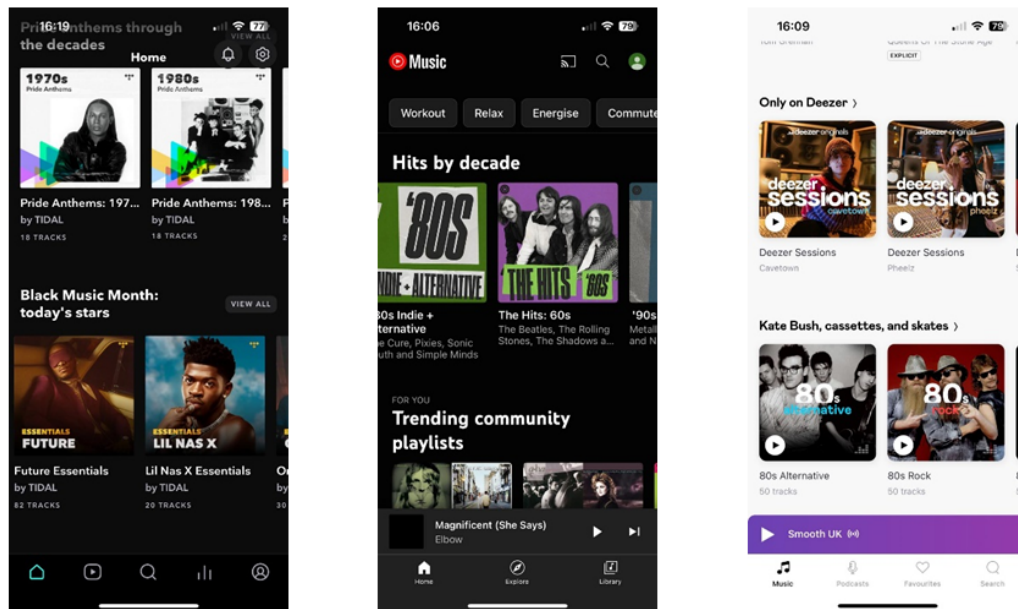


Figure 8 (a–c). From left to right: TIDAL "essentials" artist playlists, decades as presented by YouTube, and decades as presented by Deezer.

Genre and artist (or “authorship”) have for a long time been key ways in which music audiences have understood and interpreted musical experience (Brackett, 2016). This is the case across the cultural industries, where both star system and genre are understood as methods of formatting (Ryan, 1992), ways of dealing with the problem prevalent in cultural industries more than in other sectors, of users not knowing what a product is going to be like until they have consumed it. The decline of genre as a force seems to have been predicted for almost as long (see Muchitsch, 2023). Similarly, critics were advocating forms of cultural experience that downplayed the identity of creators at least as far back as Roland Barthes’ famous “Death of the Author” essay of 1967, and earlier (Burke, 2011). However, examining MSP user interfaces suggests that authorship and stardom are resilient in music, and they also seem to confirm the sense in recent critical work that genre persists—though in mutating and problematic ways (Drott, 2013; James, 2017; T. Johnson, 2020; Muchitsch, 2023). Meanwhile, although there has been much discussion of the decline of the album as a cultural form, they remain strongly present on MSP interfaces, even if the term has floated free of its original naming of a physical artifact; other terms with their origins in physical musical artefacts, such as “singles” and “EPs”, also feature. Albums and EPs are presented on MSPs as playlists, accompanied by artwork that might be reproduced on any compact disk (CD) and vinyl pressings but often exist on platforms only.

The resilient presence of genre, authorship, and format (album, EP, single) on MSP interfaces suggests that mood and function may not have displaced more aesthetically driven engagement with music in the way that some of the commentators discussed in the previous section seem to have feared. Nevertheless, it is certainly the case that mood and function are present on MSP interfaces. In Figure 1c, YouTube’s home page prominently features mood and function in the form of three categories at the top of the page, which provide links to music that will allow users to “relax” (mood), “energize” (combining mood and function), “workout” (function), and “commute” (function). But the rest of the home page features the names of artists and artist mixes based on genre. Of the seven mobile home pages featured in Figures 1 and 2, only YouTube emphasizes mood and function in this way. Mood and function appear in other aspects of interfaces—for example, the Amazon “find” function shown in Figure 6b. And Apple’s “Mix” playlists are less directly genre-based than those of other services discussed above, offering a mixture of mood and other factors. On one day, for example, Apple’s interface featured “Get Up! Mix” and “Chill Mix,” but these were alongside other more aesthetically oriented mixes corresponding to the categories we discuss below.

Analysis of MSP user interfaces suggests that mood and function do not come close to outweighing categories of musical experience based on what we call aesthetic engagement. Rather, the power of MSPs is that *they bring aesthetic and functional uses of music together in unprecedentedly explicit ways*. Those uses coexisted in previous modes of musical distribution and consumption: People were sometimes attentive to music radio; sometimes, it served as a background. The same might well be true of the playing of records, cassettes, and CDs in homes and cars. But MSPs’ platform power is distinctive in that it explicitly frames these different modes of engagement, offering a kind of meta-language for musical activity.

We now discuss three other prominent categories that also feature heavily on MSP interfaces (two of them indicated earlier) and which arguably signify more aesthetically oriented and long-standing ways in which musical experience was shaped in the pre-platform world: *Era*, *new releases*, and *popularity*.

Era. Knowledge of past eras of music, including when certain tracks, artists, and sounds were created, is part of the popular knowledge that music fans accumulate, enjoy, and sometimes display. There has long been a tendency for popular music discourse (whether produced by media or by audiences) to classify music according to decades. Era or period as a category shows a strong presence on MSP user interfaces (see Figures 8b and 8c). Some critics and fans would consider engagement with older periods of music problematic for its potential stifling of innovation and of music's capacity to speak to the times in which it is created. Already in the 1980s and 1990s, there was anxiety (and postmodernist exhilaration) that pop was "eating itself" (Beadle, 1993). Such anxieties have only intensified in the 2000s (Reynolds, 2011), and there has been a marked increase in the popularity of "catalog," that is, older music (Gioia, 2022). Nevertheless, the prominent classification of music by decade arguably permits and encourages popular interest in the musical past—though how the musical past is represented on MSPs does not yet seem to have been the subject of sustained research.

New releases. Alongside the prominent presentation of the musical past by era, user interfaces demonstrate that MSPs also strive to encourage engagement with new releases (though we recognize that some of these new releases are remixes or remasters of older recordings or song covers); see Figure 9. These are perhaps the equivalent of efforts in popular music history to capture and promote newness—for example, the insertion of new releases into radio playlists, with key tracks highlighted as "records of the week" and the like.

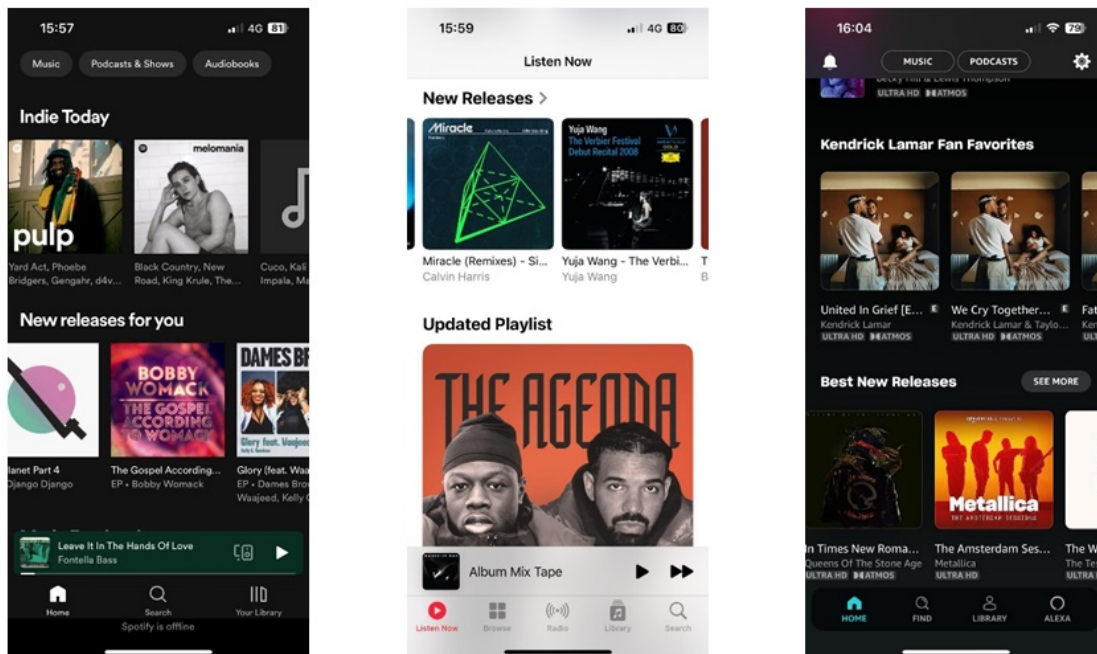


Figure 9 (a–c). From left to right: New releases on (a) Spotify, (b) Apple, and (c) TIDAL.

Popularity. This represents another way in which MSPs reproduce in altered form long-standing tropes in pop culture (see e.g., Figure 4c). Since the rise of "hit parades," especially from the 1950s onward (Parker,

1991), there has been a tendency for pop music institutions (such as radio stations) to use popularity charts as a measure of what audiences supposedly want. Such uses generated anxiety among many commentators and consumers that they simply amplified the popularity of already popular acts, excluding and marginalizing other sounds. Against this, there has been incessant demand for the new among many young popular music consumers, driven by retail and media promotion of “new releases” as the industry sought to respond to efforts by (often young) audiences to shape and display identity via changing musical fashion. Recent concerns about the effects of recommendation algorithms on music culture sometimes seem to reproduce such anxieties. As with albums, popularity charts have now come to take the form of playlists, represented by icons, but now fragmented into many different forms. And while music business media have long presented popularity charts by genre (including notoriously racialized categories such as *Billboard* magazine’s “race music”) this fragmentation seems to have intensified (see Figure 4c; SoundCloud and the other MSPs offer many more genre popularity charts besides the hip-hop and house charts on display).

Our analysis suggests that mood and function have, then, by no means displaced aesthetic engagement with music—at least not on the user interfaces of MSPs. Rather, as we have shown, mood and function coexist with platformized versions of long-standing forms of aesthetic engagement, as part of a recurring repertoire of possible experiences, which we have provisionally categorized into a taxonomy of eight (see Table 2). This *mélange* is particularly apparent on the “browse” pages of MSP interfaces, as Figures 5b, 6a, and 6b vividly illustrate. The dominance of this repertoire of possibilities is underpinned by the striking similarity of design and appearance across MSPs that we established in the previous subsection.

The Potential Contribution of User Interface Analysis to Platform Studies—and MSPs as Supermarkets

As platforms and apps proliferate in the contemporary platform economy, developing methods for analysis of their user interfaces will become an increasingly important task for media and Internet studies. Drawing on the emerging approach we call CPIA, we analyzed the appearance and design of MSP user interfaces and how they present and frame music for the millions of people who use MSPs.

MSPs are less dynamic and interactive than video game interfaces but probably more so than video. But the key role of such user interfaces in managing the vast abundance of audio material on MSPs gives them something of a distinctive role, the power of which analysts are only beginning to understand. We offered a sixfold typology of key elements of MSP interface design (color, shape, text, visual content, scrolling, and links) and an eightfold categorization of music-specific categories used on MSPs: Genres, artists, formats, moods, functions, eras/decades, popularity, and new releases (see Tables 1 and 2). We have not undertaken a quantitative content analysis of the relative prevalence of the different categories though that might be a valuable follow-up to our qualitative, interpretive work here. Nor have we undertaken an analysis of how users use them or how musicians interpret them. Such an analysis would also be valuable and, as noted at the beginning of this article, we are conducting separate research on musicians and users.¹²

¹² Future research may also draw on Brock’s (2018) critical techno-cultural discourse analysis, which seeks to bring together “artefact analysis” with user discourse.

Instead, we have sought to contribute to interface and app analysis by demonstrating, via interpretive, qualitative analysis, the potential benefits of *intra-domain comparison*—a close examination of a full range of user interfaces within the same domain. Doing so in the realm of music suggests the potential rewards of investigating how platforms within a certain domain frame the possibilities of that domain. In terms of debates about the platformization of music, our analysis suggests, against the claims of many critics of MSPs, that older ways of organizing aesthetic engagement with music still prevail—but with mood and function now incorporated into a new ideological *mélange*.

CPIA and intra-domain platform interface comparison may or may not reveal homogeneity, as our analysis here did (cf. Duguay & Gold-Apel, 2023). Furthermore, this homogeneity might not be apparent to many users: Few subscribe to more than one MSP even over time (e.g., there is little moving from service to service). The homogeneity of MSP user interfaces may also be concealed or disguised by the technologies of personalization embedded within them, resulting in users being unsure of whether other users might be seeing the same results. The fact that we were a team of four using different devices enabled us to establish that there were similar patterns for individual users.

However, even if analysis of MSPs cuts against one prominent line of critique, this by no means implies that critique as a whole should be abandoned. Our analysis suggests that users of different platforms are guided on their varying journeys through the platforms by a strikingly similar set of framings of musical experience, which have created pervasive hybrids of “aesthetic” and “functional” uses of music. It is worth restating that the musical content that most consumers access is pretty much the same across platforms, in contrast to video-streaming platforms such as Netflix and Disney Plus. If this is the case, it confirms that MSPs represent a remarkably homogenous core of contemporary musical culture.

An analogy might be drawn with the role of supermarkets and hypermarkets in the realm of food and drink and the way they hegemonically influence how food and drink might be consumed, underpinned by partnerships between themselves and dominant suppliers and by ideologies of abundance, convenience, and cheapness (see Hesmondhalgh, forthcoming). They are core in industrial and economic terms because it is extremely difficult to thrive as musicians or as recorded music businesses without using them, and very few options are as affordable for consumers. They are core in cultural terms because they now dominate the way in which music is understood and experienced as well as how it is paid for and sold. Analyzing digital platform user interfaces might cast light on similar dynamics of power in other cultural domains.

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