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Back to the Future: Proposing a Heuristic for Predicting the Future of Recorded Music Use

The 28th February 2018 saw music streaming service Spotify file papers to list as a public company on the New York Stock Exchange (Ingham 2018). Just ten years after its launch as a Swedish based start-up, Spotify has grown to occupy a market leading position in most western markets for audio streaming. The attitudes and actions of CEO Daniel EK, and the other directors of the company, have attracted industry and academic plaudits and protests in equal measure. But who a decade earlier, other than possibly the owners and early investors, predicted Spotify's meteoric rise? Equally, whether Spotify succeeds in cementing its place as the music platform of choice in the next decade, and beyond, remains to be seen.

What this scenario illustrates is the fundamental and ongoing importance of prediction to the business processes and practices of the music industries. Given this book is concerned with music futures, this chapter tackles the general conservatism of music industry scholars when it comes to proposing predictions, by advocating taking a heuristic perspective of the music industries. To demonstrate this approach, the analysis seeks to address the limited recognition for the role the music consumer plays in the production process. The opening section of the chapter summarises the considerable contribution to music industry studies of the production of culture approach, but then seeks to highlight how the actions of consumers are often minimised within this theory. The remainder of the chapter uses examples of the parlour piano, phonograph and early radio to explore the importance of consumers' active participation in determining the success of mediums for music playback. The conclusion draws upon the numerous examples presented to establish a heuristic for the past, present and future of recorded music use. Essentially, that market dominant music playback technologies increasingly improve situational control, personalise choice, but continually reduce the demands of knowledge, skill, labour and time on the part of consumers.

The problems with producing predictions

In a 2017 paper entitled 'What the digitalisation of music tells us about capitalism, culture and the power of the information technology sector,' Hesmondhalgh and Meier chart the history of recording playback technologies. Their analysis of the impact of radio and record, cassette and CD players establishes the longstanding influence of the consumer electronics (CE) industry on music

consumption. However, in line with many of the scholars they reference on how the contemporary music industries are configured (Anderson, 2014; Burkart and McCourt, 2006; Leyshon, 2014; Marshall, 2015; Morris, 2015; Morris & Powers, 2015; Mulligan, 2015; Rogers, 2013; Wikström, 2009; Witt, 2015), their perspective is predominantly rooted in a production of culture approach that minimises the consumer's role in the process. As Hesmondhalgh and Meier state:

Even if many consumers appreciated these changes, and believed they represented progress in terms of accessibility and so forth, it would be misleading to believe that they 'chose' them; new technologies were pushed onto the market by powerful corporations 'outside' the music industries (though often tied to them via ownership of record companies) and, in effect, imposed on consumers via marketing and the strategic withdrawal of 'outdated' goods. These dynamics were all to remain present in the twenty-first century, but in an intensified form.

(2017:7)

Whilst informative and insightful, the production perspective generally seeks to, either implicitly or explicitly, 'better understand contexts in which cultural symbols are consciously created for sale.' (Peterson & Anand, 2004: 324) Meaning the frame of reference for assessments of the viability of products is generally the industrial processes that supply music to consumers, not the consumers themselves. In many ways the approach has proved effective and efficient because, as Wikström states, understanding 'consumer behaviour dynamics simply is too complex.' (2009: 151) However, this minimisation of the significance of consumer choice usually reduces the discussion of future consumption trends to broad predictions. As Hesmondhalgh and Meier conclude, 'The dominance of the IT sector, if it continues to lead to constant turnovers in prevailing forms of consumption, will only contribute further to endless cycles of change, obsolescence and replacement.' (2017: 12)

At the time of writing, the most up to date book length analysis of the music industry is Tschmuck's (2017) *The Economics of Music*. In contrast to Hesmondhalgh and Meier's (2017) approach, Tschmuck argues that the digitalisation of music was a symptom, not a cause, of the drop in record sales due to 'the conversion of an album market into a singles market.' (loc: 2282) The basis for Tschmuck's analysis is the idea that the products that most effectively meet consumer demands, irrespective of their technological design and status, are what drive market change. His argument implies significant questions about whether new technologies create new consumer demands or just

more effectively meet existing, or even unrealised, wants and needs. In his analysis, what is implicit, but not explicitly stated, is that products and business models that increase consumer sovereignty, a theme he has addressed in a previous research (2012: 242), seemingly have the best chance of delivering market success. Tschmuck's research seems consistent with Voigt, Buliga and Michl's analysis of what drives the current success of Spotify's business model. 'What worked in favour of Spotify was Ek's principle that a successful business adapts to its customers, and does not urge them to change their own behaviour. He once noted that "Spotify subscribers don't pay for content—they can get that for free through piracy—they pay for convenience".' (2017:145) Based upon this premise, Tschmuck's claim 'that the music-streaming business is the future of the recorded music industry,' (loc: 2313) is unsurprising. More importantly, in 2018, when all global market indicators point in streaming's direction, (IFPI, 2017, p.16) it is hardly predictive. Despite Tschmuck's greater emphasis on the significance of consumer behaviour, his analysis is equally as conservative when it comes to forecasting potential future developments.

In fact, there are very few contributions to music industry literature that are successful theorised attempts at prediction. The two notable exceptions are Attali's *Noise* ([1977] 1985) and Kusek and Leonhard's *The Future of Music* (2005). Both books propose and apply frameworks that have, since their respective publications, proved prescient. Yet, despite the continuous decade-long assessment and re-assessment of the record industries plight and potential future, most scholars only offer broad predictions, such as the 'impact of new media technologies is better understood as part of a continuum of change.' (Collins and Young 2014: 2) Evidently, most academics stop deliberately short of detailed prediction as to what technologies will drive the future direction of music. As Morris admits in his recent book *Selling Digital Music*, 'It is never a safe bet to finish a book on new media with predictions, so I'll refrain from doing so.' (2015: 192) Similarly, when discussing the emergence of digital distribution in 2006, Tschmuck concluded, 'How these paths will look is impossible to predict at this moment' (223).

From a production of culture perspective, the decision to frame consumers as largely passive acceptors of the market manipulation of corporations and concede consumer behaviour as too complex to fathom, underrepresents consumers as a key link in the value chain. Even Tschmuck frames music use as reception (2006: 210), a term that infers passivity in the consumer's engagement

with the market. Although academics generally leave the forecasting of consumer demand and behaviour to corporations and entrepreneurs, evidently, in the music industries, prediction remains a fundamental part of the production process. As Marshall McLuhan, another scholar famed for his prescience, observed, 'The owners of media always endeavour to give the public what it wants, because they sense that their power is in the medium and not in the message or programme.' (1964: 235) Sterne's definition of a medium, as "the social basis that allows a set of technologies to stand out as a unified thing with clearly defined functions," (2003: 182) suggests the power McLuhan refers to is somewhat dependent on the permission of the public. This notion is consistent with Tschmuck's (2006, 2012 & 2017) and Voigt, Buliga and Michl's (2017) assertion that digitised media companies adapt to existing consumer demands. Morris's observation about selling digital music that 'these economic models both foster and depend on various levels of audience labor,' (2015: 84) supports this view. Therefore, there is a clear premise that consumer engagement does play an active role in determining the prevailing forms of consumption (Hesmondhalgh and Meier 2017: 12). In turn, exploring the function and process of predicting consumer attitudes and behaviour could be instructive in further developing music industries studies. Therefore, to explore the nature of audience labour, the next section of the chapter will consider different approaches to research on music use by music users.

The hard work of music consumption

From the more personalised accounts of the symbolic significance of music listening (DeNora 2000; Clarke 2005; Herbert 2011), to more specific theories on its taxonomy and psychology (Adorno 1962; Huron 2002; Rösing 1984; Sloboda 1998 & 2015; Stockfelt, 1997), to broader considerations of the attention paid to music (Kassabian 2013), and recent explorations on the interaction between music users and technologies (Nowak 2016; Nowak and Whelan 2016), research on how music is used often focuses on the sociological, cultural, psychological and emotional impact of music on users, not the industrial or commercial significance of their use. However, recent examples of specific research on music use by the likes of Avdeeff (2011), Bartmanski and Woodward (2015), Bonnin and Jannach (2014), Bull (2005 & 2009), Hagen (2015), Kamalzadeh, Baur, and Möller (2016), Kibby (2009) and Yang and Teng (2015) cohere around themes of how different music playback technologies and playlist choices are exercised in the digital age. As Krause, North and Hewitt propose:

A general pattern was that experiences involving music that was chosen were more positive than were those involving music that was not chosen. For example, an MP3 player was associated with a very high degree of choice and also positive purposive consequences, whereas music heard in public was not associated with being liked or personally chosen and was negatively associated with actively engaged listening consequences. (2015: 166)

This observation highlights the value consumers place on having playback and playlist control over their music listening. As Voigt, Buliga and Michl (2017) illustrated, Spotify's success is predicated on the fact they adapted to these positive purposive consequences. In turn, personally chosen actively engaged listening, places digitised music firmly in 'the realm of the experience economy rather than simply being a service or a product for consumption.' (Pearce 2013, p.4) In addition, after the initial upfront cost of purchasing a smartphone or laptop as a playback device, through its free or paid subscribed access, music streaming also epitomises the post-object economy for recorded music (Anderson, 2014: 9). There is no requirement on twenty-first century music consumers to 'devote their time to producing the means to buy recordings of other people's time.' (Attali, 1985:101) Digital music consumers invest more in attention (Citton, [2014] 2017; Davenport and Beck, 2002; Kassabian, 2013; Lanham, 2006) than time or money in meeting their demands for recorded music experiences (Marshall 2014). In turn, the value of user attention is commodified as data by music streaming services to increase the value in their networks. (Anderson 2014; McGuigan and Manzerolle 2014; Tschmuck 2017) This rivalry for attention of music delivered across digital networks, which affords almost unlimited and ubiquitous access to recordings, has led Tschmuck to define music streaming as a (digital) common good (2017: loc1269). Clearly, music streaming traverses a number of economies, but regardless of the outputs measured consumers now 'purchase frequently, immediately and with a minimum effort.' (Holton 1958:53) Arguably, Holton's definition of a convenience good, with the most contentious element being 'purchase', best describes the consumer experience of music streaming. Daniel Ek's assertion that Spotify is selling convenience, not music, is consistent with this assessment.

When discussing the impact of music streaming on listening behaviour, Hagen observes a fundamental human-music-technology relationship and concludes, 'Music streaming contributes greatly to people's daily life management, as shaped by adaptations and user habits, and by the perceptual, conceptual and practical understanding of what the technology and the music are and do

for the user.' (2016: 243) Likewise, as Radbourne has observed of audiences, 'The creative process is completed by a shared journey to market and aesthetic value which engages the individual consumer in the artistic idea, prototype testing, the production and the consumption. The term 'consumer' may be more comfortably be 'participant' or 'partner'.' (2013: 157) What Hagen observes and Radbourne argues is that the process of consumption requires a level of knowledge, skill and labour on the part of the consumer to complete the production cycle. Likewise, although not intended with the cultural labour of consumers in mind, Bank's assertion that 'it is crucial to our further understanding that academics pay more attention to the mutable conditions of cultural labour,' (2010: 266) seems applicable in this context. Moreover, as Terranova observed very early in the development of the commercial internet, the provision of "free labour," or "playbour", as it is sometimes termed, 'is a fundamental moment in the creation of value in the digital economies.' (2000: 36)

Hagen's (2016) summary of user adaptations, habits, and understandings is consistent with the concept of affordance (Norman 1988: 9), which considers the 'interactions between culturally situated humans and the culturally determined objects that they encounter in their environments.' (Gjerdingen, 2009: 124) In *The Audible Past*, Jonathan Sterne demonstrates the historical significance of music consumers having to develop the skills to effectively consume. 'Technique connotes practice, virtuosity, and the possibility of failure and accident, as in a musician's technique with a musical instrument. It is a learned skill, a set of repeatable activities within a limited number of framed contexts.' (Sterne, 2003: 92) Throughout history then, playback devices can be seen to have afforded opportunities for modes of interaction to participant consumers. Therefore, considering the level of control a playback device affords over a situation, the choice it provides in terms of musical playlist and the range and level of playbour (skills developed and used toward instrumental ends) required to effectively produce that playlist, is one approach for assessing the significance of the part consumers play in the creation of demand for music playback.

The typical approach to this analysis would be either be through detailed historical accounts so effectively employed by the likes of Barnard (1989), Brackett (2016), Douglas (2004), Elborough (2008), Millard (1995) Morris (2015), Osborne (2013), Sterne (2003 & 2012), Taylor, Katz, & Grajeda (2012), Taylor (2016) and Tschmuck (2006, 2012 & 2017). Or by using the compiled era based analysis demonstrated by Hesmondhalgh and Meier (2017) Peterson and Berger ([1975] 1990) and

Peterson (1990). However, histories are not without their limitations. Toynbee critiques the production perspective approach for ‘backwardly’ valorising events. (2000:10) Likewise, Bradley views many historical accounts as ‘composite’ (1992: 9) and Keightley concurs with this notion of selectivity when he claims, historiographies often privilege ‘rupture over continuity.’ (2004: 376) Moreover, as Bunzl asserts in his reflections on historical practice, ‘foresight is not a condition required of a chronicler.’ (1997: 25) Furthermore, as Marwick argues, ‘Systems and numbers should not be sneezed at. The historian’s activities are closer to those of the scientist than those of the novelist or poet. However neat equations, still less general laws, do not figure in the historians work.’ (1998: 16)

These concerns provide a rationale and reason for the general reluctance of authors of historical accounts of the music industries to posit predictions. However, As Tschmuck has observed of the creativity and innovation of music companies: ‘We can say that companies’ future actions will correspond to the routines they applied in the past. Even under different circumstances, companies adapt their future behaviour as if it would develop according to old routines.’ (2006: 187) Therefore, by adopting and adapting Tschmuck’s observation, is it possible to identify longstanding routines to make approximations about the direction of travel for how music users will adapt to playback technologies in the future? To attempt to answer this question, instead of presenting an historical analysis, I will draw upon various composite histories of playback devices and backwardly valorise their development to unveil continuities in the old routines of participant consumption. Then, by viewing these selected histories through the prism of current concepts, the aim of this chapter is to facilitate some foresight through the application of a general law. Therefore, in uncovering a general law, what I am proposing is the development of a heuristic, as opposed to historic, approach. As Tschmuck has identified, ‘heuristics essentially are rules of thumb,’ (2006: 189) that act as ‘a simple procedure that helps find adequate, though often imperfect, answers to difficult questions.’ (Kahneman 2011: 97). The next section will explain the methodology behind this approach.

Presenting a heuristic instead of a history

In her summary of a comprehensive analysis of recorded music, Georgina Born highlights the process of the social-cultural needs of consumers preceding successful products when she observes: ‘Broader cultural, social and economic conditions must be in place in order for a particular technology to become established as a mass medium. The social and cultural precedes the technology; just as,

we might add, the aesthetic can precede the technology, prefiguring what is to come.' (2009: 291) Essentially, in Born's judgment, historically established consumption heuristics prefigure the adoption of playback technologies.

Research in psychology and behavioural economics recognises consumers rely on simple heuristics instead of elaborate calculations in many everyday decisions, such as purchasing situations (Hauser 2011). This rule of thumb 'is based on experience, intuition, common sense' (Pinheiro and McNeill 2014: 46) and 'ignores part of the information, with the goal of making decisions more quickly, frugally and/or more accurately than more complex methods.' (Gigerenzer and Gaissmaier 2011: 454) As del Campo et al. argue, 'a high amount of uncertainty present in the environment seems to increase reliance on heuristics,' (2016: 393) Heuristics then, are an adequate but imperfect tool of prediction in complex markets. The question is, do music users apply a common and consistent heuristic when adapting to new music playback technologies?

Three concepts underpin my approach; playback, playlists and playbour. For the purposes of this chapter, I will elaborate on Krause, North and Hewitt's 'devices to access music' (2015: 157) to include the associated formats or platforms that work with the device for the definition of *playback*. I will expand Bonnin and Jannach's definition of *playlist* (2014: 2), which they limited to recordings, to mean any ordered sequence of music. Whereas the definition of *playbour* combines Terranova's concept of 'free labour,' (2000: 36) that demonstrates Sterne's learned set of repeatable activities (2003: 92) within the context of the participant consumer completing a shared journey to market. (Radbourne, 2013: 157) In relation to the playbour definition, the term participant consumer is employed to illustrate the action required to use music to facilitate or enhance desired experiences.

Contained within these core concepts are more nuanced choices that participant consumers make when using music. However, as opposed to considering what consumers listen to, the focus here is the preconditions for how they listen. Why consumers act the way they do in complex markets was the focus of Christensen et al.'s 2016 book *Competing Against Luck*. They theorised, 'When we buy a product, we essentially "hire" it to make progress and get a job done. If it does the job well, we hire that same product again. If the product does a crummy job, we "fire" it and look around for something else.' (loc 87) Conversely, as Sterne explains about listening technologies, 'Each machine embodied a whole set of articulations; in turn, it was articulated to larger economic, technical, and

social functions and relations among many other possible and actual uses.' (2003: 183) Therefore, between these two ideas and interactions exist sets of criteria, those implied by the device and those applied in the assessment of the devices adaptability to do the job by the consumer, both of which are set against the required level of playbour. Effectively cycles of replacement and obsolesce (Hesmondhalgh and Meier 2017: 12) are the hiring and firing of playback technologies by participant consumers, as new products on the market articulate improvements to getting the listening job done.

Although the piano predates that consumer electronic technologies that grow to dominate the record industry, as Daub recounts, 'The standardisation and industrialisation of piano manufacturing in the first half of the nineteenth century made the instrument a 'sonic hearth' (2014: 37) of the middle class homes of Europe and America. Therefore, the participant consumption explored will predate the emergence of the record industry and begin with an analysis of what the parlour piano afforded as a playback device.

Creating the criteria for consumption

The piano's installation into the affluent home was a consequence of the integral part performances and concerts had come to play in the leisure pursuits of the aristocracy and the bourgeoisie. The auditorium had become "not only a musical but also a social and political space." (Müller, 2010: 836) As Daub asserts, more than any other instrument to date the piano "made it possible to transfer this public music to the private sphere." (2014: 26) In current conceptions of popular media culture this 'catering for ever smaller and specific audience groups' (Sandvoss, Young & Hobbs 2015: 57) would be defined as narrowcasting. As Botstein details, the cheap, sturdy, and standardized piano helped fuel the explosive growth in citizen participation (1992: 136-140) to satisfy the under-supply in demand for music. As Bailey observes, by the 1890s 'an increasing number of middle class children were learning music hall songs from their nurses and nannies, and music hall song sheets were to be seen on drawing room pianos.' (1986: 85) Botstein asserts that this 'newer piano-based standard of musical literacy made possible a profound democratization of musical culture.' (1992: 137) This convergence of culture (Jenkins 2008) between both middle class children and their working class nannies and music producers and users, through sheet music, enabled 'people to gain access to the musical canon, to experience and possess it.' (Daub 2014: 38) This access and control of the playlists performed in homes meant 'amateur pianists provided an important customer base for nineteenth-

century sheet music publishers.' (Miller 2008: 429) And in terms of social status 'It was worth a good deal to be able to show your neighbours that you could afford a piano and...a collection of printed music to go with it.' (Solie, 1994: 54) However, this democratisation of access did not only come with a substantial financial cost, but a considerable playbour cost.

Although portrayed as a domestic leisure pursuit, the privatisation and domestication of music use meant 'musical performance functioned as a form of labour', (Miller 2008: 432) with a great deal of compositions written for the relatively unskilled performer. (Solie, 1994: 54) Nevertheless, 'The attainment of music skill was far from effortless. It required dedication, discipline and physical exertion.' (Miller 2008: 428) The role of pianist fell to predominantly young female members of the family. As Miller observes, 'She was an early home entertainment system broadcasting both femininity and music.' (2008: 431) Solie's research employs diaries of nineteenth century women for accounts of feminine senses of duty associated to playing the piano. One account summarises entries by Fanny Lewald who had, 'two piano lessons a week and practised for an hour every day for twenty-five years, despite the fact that she had no talent whatsoever and hated every moment of it.' (1994: 54-55) Clearly, the work and skill required to use music in the home was considerable. For the more accomplished pianist there was opportunity (Miller 2008: 432), but for the majority with limited talent, both their capacity to reproduce repertoire and the fidelity in their reproduction of the sound limited the durability of the piano as a playback device.

The piano realised a domestic musical canon with the range and depth of the playlist dependent on the talent and commitment in the playbour of predominantly young women. In doing so, it also established the core criteria for why domestic playback devices are hired by music consumers to get a job done. Once beyond the obvious market access constraints of affordability, participant consumers essentially hired the piano based on criteria such as accessibility, reproducibility and popularity of the playlist, fidelity, personalisation, durability, sociability and the cultural capital (Bourdieu, 2010, p.14) conferred by the status of ownership. These are all user experience criteria that continue to be applied when consumers consider hiring a playback device today. In applying Jenkins observation that 'convergence occurs within the brains of individual consumers and through their social interactions with others,' (2008, p.4) then the piano converged the public and the private music space, enabling one to inform the other and vice versa. Essentially participant consumers bought the independence and convenience of control and choice over where, when and (to a

performer capability extent) what type of music they wanted to play and hear. However, the home entertainment of the late nineteenth and early twentieth centuries required affluence to afford the technology and time, talent and tuition to be able to use it. Therefore, the adaptation of the existing piano technology to one that required less skill investment from the participant consumer meant that by 1919 the player piano¹ outnumbered straight pianos in sales (Carson 1990: p.52). The shift in consumption from parlour to player piano was an early indication of the demand on producers to respond to participant consumer criteria in a shared journey to market. Then, as Scherer observes, the emergence of radio and the electronic phonograph in 1920s America caused the dramatic reduction in piano production rates, from a 340,000 units per year peak between 1910 and 1920 to just 80,000 units by 1930 (2006: 140). Yet these ‘turnovers in the prevailing forms of consumption’ (Hesmondhalgh and Meier 2017: 12) were all based on the opportunity for the participant consumer to better meet the fundamental user criteria established by the parlour piano.

As Millard points out, initially the phonograph between 1900 and 1920 ‘ushered in the age of mechanical entertainment.’ (1995: 65) From an account in an article from 1924 entitled *The Home Set to Music*, Pauline Partridge states: ‘Then along came the phonograph, or “talking machine,” crowding the halfhearted amateur from the parlour floor perhaps, but putting music, real music, good music, into the American home for the first time in history.’ (Partridge cited in Katz, 2012: 53) The power of this new playback medium was that it reconfigured playbour away from aptitudes that were relatively talent dependent, whilst affording the continuity of control over the playlist. As Taylor observes, ‘the phonograph (preceded by the player piano) introduced a new mode in the commodification of music: it became something that one purchased as sound.’ (2012: 3) Albeit initially within the limitations of storage and playback capacities, effectively the phonograph was a device that fit into the same user criteria for narrowcasting as the piano. Again as Partridge observes, ‘Indeed, the record takes the place of the printed music which perhaps nobody in the household could play.’ (Partridge cited in Katz 2012: 55). Partridge’s observation is apt in illustrating how the medium gains its power by adapting to the demands of the consumer to improve playlist choice and quality, whilst also reducing the level of participation in playback generation. As the numerous format histories already cited will attest, whilst the transition phases between recorded music playback technologies is a history of evolved changes

¹ Player Piano - a piano fitted with a pneumatic apparatus enabling it to be played automatically by means of a rotating perforated roll signalling the notes to be played. (Oxford dictionaries definition)

over time, what has remained largely consistent is the user criteria applied by participant consumers when hiring and firing devices. To produce competitive advantage and create customers (Drucker 1955: 29) playback device manufacturers had to continually meet, largely unchanged, demands for performance quality, playback fidelity and playlist capacity.

Highlighting the shared journey to market, the early phonograph demanded the participant consumer develop the skill of listening. As Sterne observes, 'Listening becomes a technical skill, a skill that can be developed and used toward instrumental ends.' (2003:93) The transferability of the listening skill from the phonograph to the radio, coupled with the opportunity to place the actual broadcast sounds of the concert hall in the parlour, may in some small way account for the fact that, 'The recording boom was diminished by a separate CE led boom that was to have a huge influence on the music industries: radio.' (Hesmondhalgh and Meier 2017: 5) By its very broadcasting design, radio also offered a different shared journey to market for the participant consumer as they entered 'a world of mass culture.' (Taylor 2012: 2) Unlike the one to few narrowcasting afforded by the piano or the phonograph, radio afforded a one to many shared mass media experience. It is for these reasons that consumers' participation in the development of radio is where the analysis of the development of music user playback criteria will conclude.

Decreasing the work required to be content with content

Scherer summarises the displacement of the piano by radio by stating, 'A new different way of consuming music in the home had appeared, changing radically the character of American family life and making music available every day to families that otherwise would have attended public concerts only rarely.' (2006 p.140) Although technology for wireless telegraphy had been in existence since the 1890s, in the USA, 'The rapidity with which the radio craze swept the country between 1920 and 1924 prompted analogies to tidal waves and highly contagious diseases.' (Douglas 2004: 52) Slotten quantifies radios rapid rise in America: 'At the beginning of 1921, 28 licensed stations were operating in the United States; by the end of the year, there were more than 550.' (2003: p.ix)

Despite the 1920s frenzy for radio as Taylor recognises, 'even after radio became popular, one still had to purchase components and assemble them into a set.' (2012: 241) In particular, young men gained a solid grasp of electronics through tinkering with their own sets. (Douglas 2004: 53) These early adopting (Rogers 1962: 19) radio hams, as they became known, not only demonstrated

the purpose and function of radio to the emerging mass market, but, in doing so, demonstrated the significance of participant consumption in the proliferation of broadcast radio. This level of consumption activity has led Douglas to argue that the exploratory listening the tinkering facilitated was important in helping redefine masculinity in the rapidly modernising 1920s. (2004: 66) However, more broadly, as Warren asserts, ‘without the successful cultivation of some measurable and proactive listenership, radio fails.’ (2005: 1) In turn, Sterne acknowledges,

The listening white woman thus supplanted the image of the Victorian woman expressing herself and entertaining the family at the piano. This change was as much a result of real participation of women in emerging networks of sociability—including the networks of sound reproduction—as it was a result of the “image” of mass culture and new media as somehow feminized. (2003: 228)

Ranging from technical contribution to socially and symbolically significant listening participation, the differently assumed roles (although not necessarily always gender defined) illustrate how the types of playbour afforded by the same playback device could operate and fluctuate on a continuum of participant consumption.

Russo claims, ‘Radio’s position as the premier domestic mass entertainment medium of the 1920s, 1930s, and 1940s occupies a central place in the historical understanding of its position as a cultural form and the role of listening in that process.’ (2010: 153) Likewise, Goodman (2016) argues for more historical prominence being given to group radio listening in the interwar period. The group listening broadcast was programmed to foster discussion amongst the coordinated group of listeners with the expressed intention ‘that serious, active listening needed to be deliberately fostered in conscious opposition to the distracted or passive listening of the radio age.’ (2016: 438) Whilst not as pro-active as the self-assembling radio hams, group listening practices certainly demonstrated the shared journey to market Radbourne (2013: 157) marks out. However, coordinated group listening events were short lived and by the ‘1930s and 1940s distracted listening shifted from being viewed as a threat to being seen as a complementary practice, and then finally to being understood as a normative model in its own right.’ (Russo, 2010, p.154)

The commercialisation and corporatisation of American radio, with advances in technology and formalisation of regulation (see Peterson 1990 & Slotten 2003), meant that by 1954, there were

two or more radios in 70 percent of American households. (Douglas 2004: 225) The opportunity to listen to different programmes concurrently within the same household meant that although distinctions in taste had first appeared in the 1920s, personalised listening became commonplace for Americans by the 1940s. (Russo 2010: 182) The exercising of station selection between demographics goes some way to contradicting the notion that listening was generally distracted. Participant consumption was also evident in other ways. As Frith (2003, p.96) suggests, it was only the success of the jukebox that enabled the record industry to survive the 1930s depression era. In turn, the jukebox played a pivotal role in the formatting of mass market radio. Allegedly, it was the observation in 1955 of, New Orleans commercial radio station owner, Todd Storz that consumers repeatedly play the same song on the jukebox, which inspired Top Forty radio programming. (Gelatt 1977, p.306) The concept and architecture of what was to become known as the playlist, a rotation system of new record releases that ensured 'the biggest current sellers were played at set intervals,' (Barnard 1989: 41) was the innovation of commercial radio, but it derived from the inspiration of participant consumption.

Evidently, the power of mediums for the public playback of recorded music, as we conceive of them now, are in some way attributable to the influence of the participant consumer. From the radio hams who built sets, to the early proactive listener, up to the users of jukeboxes that sustained the record industry and influenced the playlist format, participant consumers heuristically imposed their user criteria on the consumer electronic, record and radio industries to direct the owners of media toward what they wanted. Far from demonstrating complex behaviour dynamics, the basic demands of convenient control of the playback device and playlist choice were sufficient to produce progress in new technologies designed to better meet music user demands.

Radio's golden era charts a journey of consumer participation from one of engaged technical contribution to one of more socially and commercially significant participation. Whereas radio passivity is usually in reference to the mode of listening (Adorno 1962; Rösing 1984), what radio also afforded listeners was an increasing passivity in their interaction with the playback device. Negus's concise summary in *Popular Music in Theory* (1996: 74-85) accounts for how developments in radio technology from headphones, to speakers, to portable sets and eventual installation in cars, modified the focus of broadcasters from initially appealing to headphone wearing individuals, to group audiences and eventually individual mobile listeners. By the time the transistor and car radio were

commonplace in the mid-1960s (Douglas, 2004: 219-255) consumer levels of participation had been largely reduced to being able to turn on the device and tune the dial. In exchange for individuated access and the lessening demand of labour, knowledge and skill to engage with radio, consumers conceded control of the playlist to a rudimentary decision between competing radio stations' genre conventions and record promotions. (Rossman 2013: 100) However, by individualising, personalising and most significantly making music portable, radio significantly improved consumer's reasons to hire music playback as both a leisure, and significantly, as a supporting secondary activity. In doing so, radio also extended the user criteria applied by participant consumers. In addition to the user criteria established by the piano, radio added portability and constancy and consistency of the playlist. It is in heuristically summarizing this combination of user criteria that the chapter will conclude.

What the participant consumer really, really wants - proposing a heuristic of record music use

Between the narrowcast playback of the piano and its displacement by the broadcast playback of radio, the core user criteria for participant consumption in shared journeys to market were established. Obviously this is not necessarily an either or situation, with many households owning pianos, phonographs and radios concurrently and employing them in different contexts. However, radios continued resilience as a medium of playlist consumption, compared to the displacement of the piano by the phonograph and, in turn, the record, cassette, CD and MP3 player by the streaming platform, is sufficiently instructive to establish a rule of thumb that remains equally applicable to historic, current and future music playback technologies. Regardless of the fluctuations of the priority in which participant consumers order user criteria when selecting and using a playback device, essentially they are balancing the affordances of the device in a given situation against the level of playbour required to exert control over the playlist. Therefore, a heuristic for assessing the future cultural and commercial viability of playback technologies is:

Music playback devices that improve situational control and playlist choice whilst, at the same time, becoming less reliant on the skill, knowledge and ability (playbour) of the participant consumer, will displace, replace and surpass incumbent technologies in the mass market.

Essentially, as Daniel Ek has successfully demonstrated, selling music playback formats, services and technologies was, is and will continue to be about adapting to the convenience of the consumer.

If this were a historiography, then a much fuller analysis of the fluctuations in appropriations of playback devices would be necessary. For example, as the device that pioneered the mobile private consumption of music in a public space (DuGay et al. 1997), the Sony Walkman certainly afforded a reconsideration of the priority order of user criteria that privileged portability and privacy over playlist choice and fidelity. In an article in the *New York Times*, Tim Wu argues, 'With the Walkman we can see a subtle but fundamental shift in the ideology of convenience. If the first convenience revolution promised to make life and work easier for you, the second promised to make it easier to be you.'

(2018) O'Hara and Brown offer an apt description of both the practical and symbolic values of the appeal of the personal listening experience in the public domain. 'Not only does this change listening behaviour and circumstances, it also affords the social value of the portable device as a projection of a person's musical identity.' (2010, p.4) However, O'Hara and Brown are describing the iPod. This illustrates, as with the piano and the phonograph, that even though the playback devices and formats evolve, the user criteria consumers apply when hiring a listening experience remain consistent.

As O'Hara and Brown (*ibid*) recognise, what the iPod did typify was an increasing shift toward intangible MP3 formats that, once again, traded the criteria of storage capacity and playlist choice for sonic fidelity. As Shuker observes of the convenience of intangibility, for many, 'the dematerialization of music is a positive development, and their music is acquired primarily in digital form.' (Shuker, 2010: 69) Essentially, digitisation ended playlist choice as a user criterion, a situation that has triggered the battle for the convenience of curation between competing streaming platforms (Morris and Powers 2015). Likewise, in an interesting recent re-ordering of user criteria, the market resurgence of vinyl in the 2010s can be understood as a demonstration of resistance by those music users who are less than enamoured with the cult of convenience (Wu 2018). The desire to draw a distinction in the symbolic values perceived between types of consumer participation has led Bartmanski & Woodward to define vinyl as, a 'product that does not absolutely rule the market through economic dimensions, but reigns as a material condensation of quality, ritual, distinction, effort, and competence in music.' (2018: 176) Despite Bartmanski and Woodward's celebration of the cultural capital attributed to vinyl in the digital age, the fact that 'music-streaming services encompass aggregative features that invite participation and enable listeners to perform as content curators of their music consumption,' (Hagen 2015: 643) means, more effectively than with any previous playback medium, streaming reduces the demands of playbour, whilst expanding participant

consumer playback and playlist control. It is this level of convenience that ensures Tschmuck's (2017) 'prediction', that 'the music streaming business is the future of the recorded music industry,' (loc: 2313) certainly holds for now.

Conclusion

As with much of this analysis that has retrofitted current concepts over selected histories the conclusion offers one final example. Although referring to the malleability of music's form under digitisation, Morris's assertion that 'user experiences of music are highly dependent on and mediated by music's commodity form' (2015, p.193) is just as apt to describe music playback choice in the early twentieth century, or indeed any historical period of music selected for scrutiny. Conversely, what I have argued is the success of the commodity form through which music is mediated is equally as highly dependent on the user experience, or more definitively participant consumption. Through an analysis of the establishment of user criteria at the formation of markets for recorded music consumption, my aim here has been to tease out the rules of thumb participant consumers apply when engaged in the playbour required to use playback devices and control playlist choices. I have deliberately stepped back from a detailed assessment of the more recent analogue and digital music devices and formats. Apart from being far beyond the scope of a single book chapter, what I hope my use of the piano, phonograph and radio have illustrated is, by taking a long-view of playback devices, it is feasible to extrapolate how participant consumers apply consistent criteria to simplify complex market choices, irrespective of the constant turnovers in prevailing forms of consumption (Hesmondhalgh and Meier, 2017; 12). My proposal of a heuristic certainly demands greater scrutiny in its applicability to many of the excellent histories and analyses by the authors cited here, the many more referred to within the book and the multitude not referenced who have shaped thinking about the music industries. And whilst establishing the historical credibility of the heuristic may be something others or I myself may take on in the future, its true test is in addressing the problem with prediction. Therefore, unlike Morris (2015), it would be remiss of me to play it safe and renege on the opportunity for a prediction. Heuristically viewed, the emergence of home based voice activation devices that act as controllers and conduits for music playback are consistent with technologies that reduce playbour (the level of literacy and skill needed to type to search) and improve playback situation control. A preschooler who cannot yet use the typed search function on Spotify can voice command a device such as Amazon's Alexa to play nursery rhymes. By broadening the demographic, this device expands the

participation of consumers and in turn makes listening more convenient. Therefore, the heuristic predicts voice recognition devices, or similar technology converged within other mediums for playback, will become as ubiquitous in the home as radio did. It remains to be seen if the heuristic is correct.

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