To my grandmother, Beyhan Alpertan

TOWARDS A SOCIETY OF CONTROL? TRANSFORMATIONS IN FUNCTIONAL
MUSIC AND BIOPOLITICAL MODULATION OF EVERYDAY EXPERIENCES

The Graduate School of Economics and Social Sciences
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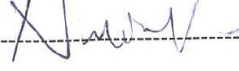İhsan Doğramacı Bilkent University

by

BARIŞ ALPERTAN

In Partial Fulfillment of the Requirements for the Degree of
DOCTOR OF PHILOSOPHY IN POLITICAL SCIENCE

THE DEPARTMENT OF
POLITICAL SCIENCE AND PUBLIC ADMINISTRATION
İHSAN DOĞRAMACI BİLKENT UNIVERSITY
ANKARA

October 202

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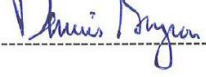

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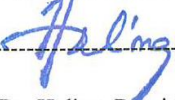

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ABSTRACT

TOWARDS A SOCIETY OF CONTROL? TRANSFORMATIONS IN FUNCTIONAL MUSIC AND BIOPOLITICAL MODULATION OF EVERYDAY EXPERIENCES

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The present study constitutes an attempt to flesh out and render visible some of the peculiarly concealed yet effective ways in which power and control are exercised in contemporary societies through a historical investigation of *functional music*. To that end, it identifies four specific historical stages – namely, *pre-industrial*, *industrial*, *post-industrial*, and *digital* – wherein different forms of functional music, each embodying a unique set of attributes and programming techniques, act as key agents and mediators in the organization of the social, political and economic structures of their respective periods. Taking this regulatory affordance of functional music as its theoretical framework, the study then proceeds to demonstrate the particular *characteristics, uses,* and *functions* of each type of functional music. One of the most significant contributions this research makes to the existing body of literature is to contextualize the recently popularized modes of online musical experience and user interactions with digital music streaming services as a continuation and part of the evolutionary trajectory of functional music as opposed to considering them as a separate social and cultural phenomenon like most studies in the field has thus far done. An analysis of these new techniques of digital production and consumption of functional music from a broader historical perspective suggests that the recent surge in uses of online media, in accordance with Deleuze's (1992) previous observations, is indicative of a

transition from disciplinary societies towards "societies of control", which entails that power and control move beyond the confines of enclosed spaces and begin to be exercised in less discernible yet more diffuse and mobile manners. However, such expansion in the scope and domain of technologies of control also brings with it, often in unforeseen ways, novel and experimental forms of resistance by users, who frequently utilize digital functional music as part of an on-going self-care project, whereby they innovatively use playlists to modulate their physical and mental well-being as well as sonically enriching and aestheticizing their everyday contexts and otherwise mundane routine activities.

ÖZET

KONTROL TOPLUMUNA DOĞRU MU GİDİYORUZ? İŞLEVSEL MÜZİKTEKİ
DEĞİŞİMLER VE GÜNDELİK DENEYİMLERİN BİOPOLİTİK MODÜLASYONU

Alpertan, Barış

Doktora, Siyaset Bilimi Bölümü

Tez Danışmanı: Doç. Dr. Nedim Karakayalı

Ekim 2020

Mevcut çalışma günümüz toplumlarında, iktidar ve kontrolün gizli fakat etkili
bir biçimde ifa edilme yollarına, *işlevsel müziğin* tarihsel incelemesi yardımıyla
açıklık getirme denemesidir. Bu amaç doğrultusunda, çalışma, *endüstri-öncesi,
endüstriyel, post-endüstriyel* ve *dijital* diye adlandırılabilecek, dört tarihsel evre
saptar – ki bu tarihsel evrelerde, her biri kendine has nitelikler ve programlama
teknikleri içeren işlevsel müzik biçimleri, parçası oldukları toplumların sosyal,
politik ve ekonomik örgütlenmelerinde, önemli aktörler ve aracılar olarak rol
üstlenmektedir. İşlevsel müziğin düzenleyici olanaklarını teorik çerçevesi
olarak belirleyen bu çalışma, daha sonra her bir işlevsel müzik türünün
nitelikleri, *kullanımları* ve *işlevlerini* ayrıntılı bir biçimde ortaya koyma yönünde
ilerler. Bu çalışmanın mevcut literatüre yapmış olduğu en büyük katkı, alanda
yapılmış pek çok çalışmanın aksine, son zamanlarda popülerlik kazanmış dijital
müzik ile etkileşim ve dinleme platformlarını da fonksiyonel müziğin
evrimleşmesinin bir parçası ve devamlılığı olarak tanımlıyor olmasıdır. İşlevsel
müziğin dijital olarak üretim ve tüketiminde etken olan bu yeni tekniklerin geniş
bir tarihsel perspektif doğrultusunda ele alımı bize göstermektedir ki, modern
toplumlarda, tıpkı Deleuze'ün (1992) de önceden gözlemlediği gibi, iktidar ve
kontrol ilişkileri kapalı alanların sınırlarını aşmakta ve daha zor farkedilebilen
ama daha yayınık ve seyyar bir nitelik kazanmakta, dolayısıyla da "disiplin
toplumlarından" "kontrol toplumlarına" doğru bir geçişe işaret etmektedirler.
Fakat, kontrol teknolojilerinin egemenlik alanının genişlemesi aynı zamanda,

dijital müzik servislerini günlük hayatlarında sıklıkla kullanan üyeler nezdinde, fiziksel ve zihinsel refahlarını düzenlemek ya da gündelik ve sıradan etkinliklerini müzik yolu ile zenginleştirmek gibi çok yaratıcı ve iktidar odakları tarafından önceden sezinlenemeyen yeni pratiklerin de ortaya çıkmasına sebep olmaktadır.

Anahtar Kelimeler: *Biyopolitika, İşlevsel Müzik, Muzak, Toplumsal Kontrol, Yeni Medya*

ACKNOWLEDGEMENTS

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INTRODUCTION

"Music was, and still is, a tremendously privileged site for the analysis and revelation of new forms in our society." – Jacques Attali (1985: 133)

In 1943, three years after his British counterparts first started experimenting with public broadcasting of functional music in wartime factories, industrial psychologist and future Muzak executive Dr. Harold Burris-Meyer published an article entitled *Music in Industry* wherein he outlined the potential benefits scientifically programmed music can have for the physical and emotional endurance of industrial taskforces and called for its widespread implementation across factories after his own study distinctly demonstrated the favorable impact such music can have on the productivity rates of laborers. According to Burris-Meyer, what first and foremost underscores functional music's positive influence on industrial efficiency is its extended capacity and efficacy for "*emotional control* […] by inducing physiological change" (1943: 262, *emphasis added*) amongst listeners, thereby affording music to act as a palliative and a refreshing stimulant for the ailing psyches of workers whose bodily vigor tend to habitually and gradually attenuate as the working day enfolds. The results of his study maintained that, provision of expertly curated background music during pre-designated hours when laborers become especially vulnerable to the deprecating effects of their tasks can successfully countermand the debilitating monotony of repetitive assembly-line work and, thus, transform a weary and overly fatigued workforce into a more productive and efficient one by replenishing their wills and energies to work harder and for longer durations.

Even though the kind of uses prescribed by Burris-Meyer are not as commonplace today as they once were (due predominantly to a global shift from manufacture- to service- and, lately, digital-based economies), "the utilization of the emotional effects of music for social control purposes"

(Karakayalı & Alpertan, *forthcoming*) still constitutes a highly relevant problematic as can be evinced from the recent popularization of online streaming platforms such as *Spotify* and *Pandora*, as well as the exponential surge in the number of mood playlists these services offer to their users. In fact, as a 2017 study commissioned by Spotify to the self-styled youth marketing research firm Ypulse has revealed[1], contemporary users of digital streaming services, especially those between the ages of 18 and 35 (or the so-called "millennials") frequently and routinely employ music as a background accompaniment while engaging in a mental work as a means to simultaneously elevate their moods and enhance their cognitive capabilities. More interestingly, however, the research also found out that, despite the differences in their production techniques and listening contexts, the emotional effects engendered by the streaming of digital functional music during concentration-demanding office works follow an almost identical pattern with the effects anticipated by Burris-Meyer decades ago in terms of music's industrial uses. The findings of Spotify's study indicate that, as is the case with factory workers, the "emotional journey"[2] of users throughout an ordinary workday begins with a "pressured/stressed" mood as individuals are customarily confronted with a mounting workload and impending deadlines as they take their place in front of their computers. Such negative dispositions, however, progressively transform into much brighter ones as the streaming episode commences and users begin to feel more "energized" and "focused" as a result of the restoring and invigorating qualities of mood playlists such as *Your Office Stereo, Peaceful Piano* or *Deep Focus*. Eventually, as another working day comes to a close, the users cannot help but feel "fine" and "accomplished" after having successfully performed the daily tasks required of them, thanks in large part to the emotional assistance, or, in the words of Lanza, the "emotional crutch" (2004: 91), provided by functional music's soothing and revitalizing tunes. Whether participating in the alienating assembly-line duties of factory or simply being "hunched over the computer and trying to focus"[3] on some challenging office

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[1] https://www.spotifyforbrands.com/en-US/insights/millennial-guide
[2] https://www.spotifyforbrands.com/en-US/insights/millennial-guide/working/
[3] ibid.

task, then, the ultimate implications and objectives of utilizing functional music for purposes of emotional control in both types of uses remain constant: that is, *harnessing music's uplifting and mood-altering potentialities to create a docile and productive workforce.*

Aims and Objectives of the Study

Informed by the above observations regarding music's ever-continuing role in the social and emotional governance of different subject populations, the present study seeks to flesh out and render visible some of the peculiarly concealed yet effective ways in which power and control are exercised in modern societies through a historical investigation of the uses and implementations of "functional music". More specifically, it explores and aims to answer the question *what does the current techniques in the production and consumption of functional music tell us about the nature of existing power relations in contemporary societies?* What, in other words, are the social and political consequences for the articulation and transferring of an older control technology, like the one envisioned by Burris-Meyer, to new media such as digital streaming applications like Spotify? The starting point of this study is that a thorough and meticulous analysis of the historical transformations in the uses and characteristics of functional music can help us better understand the new ways in which power penetrate and permeate the everyday lives of individuals today, while, at the same time, helping us identify the emerging areas of resistance, which, as our discussion will illustrate, are already in a state of maturation as can be observed from some of the musical self-cultivation practices that users daily engage online.

While functional music's often complex and intricate relationship with mechanisms of power and its deployment as an instrument of discipline in work contexts has intrigued and attracted a number of researchers from a vast array of academic fields over the decades (DeNora, 2000; Gioia, 2006; Greene, 1986; Groom, 1996; Haden-Guest, 1973; Herron, 1981; Hui, 2014; Husch, 1984; Jones, 2005; Jones & Korczynski, 2006; Jones & Schumacher, 1992; Korczynski, 2003,

2011; Korczynski, Pickering & Robertson, 2008; Lanza, 1991, 2004; MacLeod, 1979; Pickering, Robertson & Korczynski, 2007; Plourde, 2017; Radano, 1989), to the extent of my knowledge, this research constitutes the first scholarly attempt (with the possible exception of Anderson, 2015) in terms of contextualizing the recently popularized digital music streaming services and users' online musical experiences as a part and continuation of the evolutionary trajectory of functional music. As we shall see, situating the current musical practices of users enabled by new media (such as playlist-making or listening while on the move) into the broader historical perspective of functional music through conceptualizing them as a type of "post-Muzak", will allow us to go beyond the conventional analyses of digital streaming services from a music industry perspective (see, for instance, David, 2016; Jennings, 2007; Kaitajarvi-Tiekso, 2016; Kjus, 2016; Leijonhufvud, 2018; Marshall, 2015; Wikström, 2009) and, hence, will render it possible to fully grasp the political importance and implications they encapsulate for our daily existence.

Theoretical Framework of the Study

As our discussion of the aims and objectives of the research has indicated, the primary purpose of this study is to give a historical account of functional music, from its more primordial forms as work songs to its more advanced present-day digital incarnations. To that end, it identifies four specific historical stages – namely, *pre-industrial*, *industrial*, *post-industrial*, and *digital* – wherein different forms of functional music, each embodying a unique set of attributes and programming techniques, act as key agents and mediators in the organization of the social, political and economic structures of their respective periods. Taking this regulatory affordance of functional music as its theoretical framework, the study then proceeds to demonstrate the particular *characteristics* ("what sort of rules, considerations and regulations govern the production and programming of functional music"), *uses* ("to what ends functional music is being employed") and *functions* ("what does functional music do on the minds and bodies of subjects") of each type of functional music. Whereas the chapters of this dissertation have been designed in a manner that would allow the discussion of

each aspect in some detail, we can still delineate three inter-linked axioms and principles that guide the conduct of this research and assemble the seemingly disparate issues raised in each chapter into an overall, unifying thread.

i. The first principle relates to the notion of *functional music* itself and how it can serve as a fundamentally valuable analytical tool for analyzing the institutionalized power relations. The concept of functional music refers to a specific type of music that is designed and implemented as a *means* toward the accomplishment of a desired *end.* In other words, with functional music the primary emphasis is on the *uses* of music rather than its *form* or *content* as an aesthetic object in and of itself. Conceived this way, a piece of music should only be considered functional as long as it helps its listener achieve goals other than the derivation of aesthetic pleasure or enjoyment from a musical piece, such as aiding the performance of a task or activity, eliciting and regulating one's mood states, alleviation of fatigue and boredom or increasing and sustaining the focus and concentration of the listener, and etc. In this context, therefore, contrary to other forms of popular or "serious" music, the roles and meanings ascribed to functional music chiefly predicate upon the extent to which it becomes successful in bringing forth the pre-mediated goals and effects among the listeners. Such a conceptualization of functional music, in turn, provides new and exciting theoretical opportunities for future political science studies as it allows researchers to focus on the social and political *uses* and *functions* of music, instead of studying musical materials as separate and reified forms of aesthetic and artistic expression, as is generally the case with popular music and musicology fields.

ii. Second is the assumption that, the *ends* that functional music serves are inherently *political* in essence. That is, given its ancillary nature, functional music has historically played an often vital and integral part in the social, political and economic assemblage and organization of different modes of societies. In its pre-industrial configurations, for

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instance, functional music fulfilled an essential role in terms of regulating and managing the labor process by coordinating the somatic movements of work bands engaged in heavy and strenuous physical tasks in addition to forming of communal ties and identities between members of the workforce by providing an outlet for the venting of their shared grievances. In the mechanized contexts of emergent factories and industrial workshops, however, such grassroots manifestations of functional music and its organic ties with the manual labor process would severely be sundered as it would be transformed into an instrument of factory discipline that is implemented in a top-down fashion to achieve a steady level of worker efficiency and productivity. In the following chapters I will deal with these issues in considerable detail, but what these two different uses of functional music demonstrate and what I want to emphasize for now is the active role that functional music has as an actor and agent in terms of constituting and perpetuating historically different social and economic modes of governance.

iii. Finally, and closely related with our second axiom, is the conjecture that a careful investigation of the continuities and caesuras that occur within the historical evolution of functional music can offer relevant and crucial insights with regards to the ways in which power and control are exercised in contemporary societies. As our brief commentary about the transformation from pre-industrial to industrial societies implies, the organizational and regulatory roles that functional music assume – and, therefore, it's ultimate role in the overall power network – differ as the underlying social, political and economic structures of societies go through significant alterations. Hence, only through comparing and contrasting the particular functions, characteristics and uses of functional music in different historical periods and identifying the similarities and discrepancies between them that we can successfully unearth how power is manifested today in the daily digital listening practices of users. Although I have occasionally tried and drawn such comparisons in each chapter with the preceding historical stages

whenever the opportunity presented itself, I have reserved the main discussion about the differences between traditional forms of Muzak and current practices of online streaming, i.e. "post-Muzak", for the concluding remarks of the study.

Layout of the Thesis

In light of the theoretical guidelines outlined above, *Chapter 1* opens with a deliberation on the *pre-industrial* uses of functional music in traditional societies. It is explicated that this preliminary stage in the long-standing saga of functional music is primarily characterized by music's symbiotic relationship with the labor process as well as its overwhelming everyday ubiquity and the multifarious uses and purposes it affords for the performers. It is suggested that the relative autonomy enjoyed by agricultural laborers as well as the collective nature of their work has been conducive to and instrumental in the creation of a musical aesthetic that has significantly contributed to the smooth and successful completion of a task by entraining and synchronizing the bodily movements of workers and alleviating their boredom by diverting their attention away from the tediousness of the job. However, in addition to such practical effects, the chanting of work songs has also provided an outlet for the articulation and expression of the frustration and contempt felt by the workers, thus help the forging of a solid communal spirit and group identity amongst them. Such social functions fulfilled by pre-industrial functional music would gradually be weakened and disappear altogether as standardization and mechanization of workspaces has eventually led to a situation in which the spontaneous production of work songs by laborers have been replaced with the deafeningly monotone din emanating from heavy industrial machineries.

Following an epilogue detailing how the radical alterations in work contexts due to the effects of Industrial Revolution has precipitated the demise of pre-industrial work songs, *Chapter 2* focuses in some detail on the characteristics and uses of a new type and technique of musical programming – the *industrial* functional music. It argues that, rather than being an organic outcome of worker

ingenuity and musical prowess, industrial functional music is a product of the diligent work put together by programming experts well versed in industrial psychology, who used their curatorial and designing skills to create a musical broadcast that would counteract the mentally disruptive and alienating effects caused by repetitive mechanical work and boost up the efficiency and productivity of the workers, especially during the critical days of World War II. For functional music to elicit the desired physical and psychological outcomes in workers without impeding or violating the precarious factory discipline, these experts maintained, it should not be played haphazardly or spontaneously but, instead, must generate an unobtrusive aural backdrop through the scientific re-orchestration of only the most popular and familiar musical tunes of the period. As the success of industrial functional music purveyors like *Muzak* in the United States and *Music While You Work* in Great Britain attests, relaying background music as a form of tonic remedy has proved to be a win-win situation for factory managements, who made sure their workers remained content *and* industrious thanks to the morale-boosting qualities of functional music broadcasts.

While the second chapter exclusively deals with the industrial implementations of functional music, *Chapter 3* looks at its *post-industrial* uses in various commercial and service settings. It propounds the argument that, if the sonic reconfiguration of industrial spaces through the administration of scientifically designed functional music is an expression and further manifestation of the rationalization of production techniques in the manufacturing industry, then, the utilization of functional music in commercial enterprises (such as retail stores, restaurants and bars) and other servicescapes (like banks, hotels, hospitals) represent an entirely different objective – that of managing and regulating the practices of consumption. In other words, in the post-industrial period it is no longer the rapid and efficient production of material goods that defines the central aim of functional music but, rather, the encouragement and facilitation for the consumption of said goods, along with other intangible services, constitutes the primary goal. Accordingly, instead of fatigued factory workers, it is now the bodies and minds of customers and consumers that become the ultimate target for functional music. Such changes in the ends and

motivations in the utilization of functional music leads to new sonic configurations and adaptations, as functional music, once operating loyally in the background and below the level of listener consciousness, moves to the foreground in an effort to project a store's identity to a particular segment of the clientele or, otherwise, entice the lingering browsers into a retail or service space by creating an appropriate sales atmosphere.

Finally, bridging the previously raised issues and themes on the historical uses of functional music with present-day practices, *Chapter 4* provides an extensive account of how advances in mobile listening technologies compounded with the affordances and opportunities enabled by new media can foster a highly distinct experience of functional music in the digital age. As opposed to the top-down administration of expertly curated musical programming, as is the case with functional music's industrial and post-industrial utilizations, digital forms of functional music, or "post-Muzak", are a direct product of user-algorithm interactions, whereby algorithms as well as streaming platforms and recommendation engines powered by them assist individuals to navigate across perplexingly excessive amount of data to help them retrieve the information they seek for. Such increased capabilities and freedom of users to access any musical content whenever and wherever they please points towards a more user-centric and individualized experience of digital functional music, where users can simply listen to the musical pieces they want and not just the ones that are selected for them. In other words, rather than being the mere captives of public broadcasts of functional music that are force-fed to them and that which they can provide no input or have control over, users of digital streaming services can create and enjoy entirely personalized listening experiences by curating their own playlists based on their music tastes or variety of moods and activities they daily partake in and listen to them even while they are on the move. Having outlined the particular characteristics and affordances of digital functional music that set it apart from its predecessors, the chapter then concludes with a debate on the political implications such changes in the nature of functional music entail for everyday users of these streaming platforms. It is argued that, on the one hand, the new techniques of digital production and

consumption of functional music is indicative of a transition from disciplinary societies to societies of control, as anticipated by Deleuze (1992), in which power and control moves beyond the confines of enclosed spaces and begin to be exercised in less discernible yet more diffuse and mobile manners. However, on the other hand, such expansion in the scope and domain of technologies of control also brings with it, often in unforeseen ways, novel and experimental forms of resistance by users, who frequently utilize digital functional music as part of an on-going self-care project, whereby they innovatively use playlists to modulate their physical and mental well-being as well as sonically enriching and aestheticizing their everyday contexts and otherwise mundane routine activities.

Methodological Remarks, Limitations and Notes for Future Consideration

Even though the first three chapters of this dissertation rely overwhelmingly on previous literature, during the writing of this final chapter I have sometimes referred to real-life examples provided by users whenever I felt necessary to further substantiate the points I have raised. These first-hands accounts of users are obtained from two different data sources between November 2016 and May 2019 for an article I have co-authored with my advisor Nedim Karakayalı. The first of these sources is *online forums and websites*, where users freely and openly reflect and discuss about their experiences with digital forms of functional music. For this purpose, over 300 posts from 7 different websites have been surveyed, with popular forums like Reddit and Quora as well as Spotify's own community bulletin board providing the majority of the data. The principal reason why Reddit and Quora has been chosen as main data sources owes primarily to their popularity and the large number of subscribers they contain who frequently inquire and engage in insightful debates about the streaming habits of other users. Alongside these two sources, Spotify's own community forum has especially been helpful for the objectives of this study as it is predominantly here that users discuss their experiences specifically related

to the service and share and promote their personal mood- and activity-related playlists, often with an additional explanation with regards to *why* they have decided to create these playlists in the first place. Such narratives, publicly and intimately shared by users (Robinson, 2001: 708), provide a wealth of precious information in terms of how users actually utilize and incorporate these digital functional music playlists into their routine everyday activities as well as *the motivations* that underlie their online musical practices.

Supplementing these user comments, the second data source for this study has been compiled from *the descriptions* attached to the functional music playlists curated either by users themselves or Spotify's professional editorial staff. Despite being an optional feature, when utilized such brief texts serve as a type of "handbook", explaining and guiding other users *what* the playlist is about, the type of songs that it contains and tips regarding *how* listeners can make best use of it. In effect, then, these descriptions illustrate what types of *uses* and *ends* that a particular playlists can be utilized for. Since one of the primary aims of this research is to understand the transformations engendered in the uses of functional music as a result of its articulation to new media, such first-hand explanations given by users disclose valuable information with regards to *what ends functional music playlists are employed and utilized by their creators in their everyday lives* – i.e. whether digital functional music playlists enable and perpetuate the biopolitical modulation of users by a distant and invisible form of power or, rather, conceived and used as a type of self technology. To that end, during the time frame of the study, more than a thousand user- and editorially-created playlists have been surveyed and, since the main focus was on understanding their ultimate uses, playlists without a description are not included in the data. Such "incomplete" playlists with no discernible explanation on their uses constitute a major representativeness problem as only a very small number of user-created mood and activity playlists at Spotify include an additional description, thus making it difficult to extrapolate our findings. Furthermore, the "fluid" nature of digital streaming services also pose potentially important restrictions for researchers as playlists on these platforms are frequently altered or deleted by their users on whim, or, as is the case with

certain Spotify playlists, simply vanish for a particular period of time only to reappear months later. This constantly shifting interface of streaming services makes it very challenging for a complete analysis as there is simply no guarantee that a particular playlist used as an example in the research would be accessible the next day. Despite such shortcomings, however, the first-person user narratives provided through online forums and playlist descriptions still serve an important function in the context of this study as they give us a glimpse of the present-day uses of digital functional music and how power, control and resistance are manifested through its everyday implementations by users.

While there is no doubt that descriptions attached to user-generated playlists in online functional music platforms serve as an important data source by providing a window into the real-life user practices of digital functional music as a technology of the self, they can still be limited as they only offer a frozen snapshot, or a still frame, without disclosing further information with regards to how a particular user utilizes these playlists *over time*. That is, despite the fact that playlist descriptions give us a fundamental sense of *for what purposes* a user has created a particular playlist and *how* s/he uses it for purposes of self-formation and self-transformation, they do not tell us much about *to what effects* and *with what consequences* users actively and routinely implement and "perform" such playlists "so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection or immortality" (Foucault, 1988: 18) over a given period of time. Therefore, future studies should take into account the *temporal* aspect of the concept of the technology of self and examine closely the role of digital functional music playlists in terms of engendering "an interminable process of establishing and intensifying a relationship of self to self" over time, in a manner akin to "ancient practices of reading, writing, and dieting" (Just, 2019: 213). This can be achieved through case studies and in-depth interviews of users who, for instance, frequently and creatively use digital functional music playlists while "facing changes in life"[4] in order to "teach,

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[4]
https://open.spotify.com/playlist/4cG5olRb6oblPFyrZChZ7a?si=AvecLtNdQLuMmSBn5lP0mA

motivate, and inspire [themselves] to become a better person"[5] and to "improve in life"[6].

More empirical data on *to what effects* functional music is being used can also greatly benefit the scholars interested in the post-industrial implementations of functional music as part of the overall atmosphere and ambiance of service and retail settings. While discussing this issue in Chapter 3, I have extensively relied on the concepts of *atmospherics* by Kotler (1973) and *servicescapes* by Bitner (1992), both of which represent a more structural approach to the designing of physical and commercial spaces and assume *a priori* its effects on customer behavior. In other words, both approaches argue that consumers are ultimately conditioned by their physical surroundings and, therefore, suggest that changes in the environment would elicit particular, almost automatic, responses and reactions from individuals inhabiting that space. Such holistic views on the nature of consumption practices are further compounded by researchers working in the field of marketing, who, having completely disregarded individual customer experiences, conveniently preferred to take the amount of profits generated by a service or store establishment as their prime indicator for measuring the functional effectiveness of musical broadcasts. While the notions of atmospherics and servicescapes, along with the studies conducted by marketing scholars, are helpful in terms of documenting the growing implementations of functional music in domains of consumption rather than of production, a more thorough understanding of functional music's post-industrial uses could only be achieved by supplementing these studies with phenomenological data obtained from the field by interviewing customers/consumers about their individual experiences within the service establishment. The underlying point here is that, future studies should not proceed with pre-conceived notions about the emotional, physical or cognitive affects of atmospherics, but rather make a *critique* of the notion of atmospherics by taking into account the personal, first-hand experiences of individuals whose

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[5]
https://open.spotify.com/playlist/4Afh15D7ctTXUtRLzpzU35?si=3l2uNHKNSRuONxVznPT_Pg
[6]
https://open.spotify.com/playlist/0BvNwyaAhGgin4LtQVfo0c?si=Wpx9sAL4TqmoPLoxVzCs4A

behavior functional music ultimately aims to manipulate[7] (through, for example, asking questions about whether they have noticed the music being played, whether they have liked it or thought it has complemented the overall atmosphere store aimed to create, etc.).

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[7] A good example for this type of phenomenological study might be Dubé and Morin (2001), who surveyed the shoppers as they were leaving the store with a two-paged questionnaire to test whether background music had any impact upon customers' store evaluation and their attitudes towards the servicescape and sales personnel.

CHAPTER 1. PRE-INDUSTRIAL FUNCTIONAL MUSIC

1.1.　Introduction

When the Scottish explorer Mungo Park became the first outside visitor to penetrate the heart of African continent in the late 18th century, he was bewildered by the sheer use of musical accompaniment to every imaginable aspect of everyday life in tribal communities, which, at that time, was not as much prevalent in the Western world. The memoirs of his travels, which were collected in the book *Travels in the Interior Districts of Africa* (originally published in 1799), provide a very colorful account of music's use in a wide range of contexts – from regulating the movements of wrestlers in a physical competition to welcoming of strangers to village, from the purchasing and transportation of provisions, and to praising and extolling of individuals. As one goes through Park's riveting recollections, it becomes overwhelmingly clear that music and song were ubiquitous in these traditional societies and that they formed a constant sonic background to everyday life and activities of people.

In fact, the first stage in the evolution of functional music is primarily characterized by this *everyday* presence of music. In its pre-industrial form, that is, music's functionality primarily stemmed from its omnipresence and its accompaniment to each and every activity people engaged on a daily basis – from the most menial, domestic tasks to taxing and heavy physical labor. People sang to pace their working rhythms but also to alleviate the tediousness of their tasks or to express, personally or communally, dissatisfactions with the conditions surrounding their work. They believed music contained a fragment of *magic* in it, so they tried to harness it while performing a job to make it less strenuous. Every type of work or profession had their own body of songs that would suit the aims and somatic

movements of that work. In reality, then, work and leisure were not yet detached from each other as they would be in later stages of human economic development but formed the separate sides of the same coin. Thus, whenever individuals engaged in a productive effort, music was always there to add a quality of *playfulness*.

In the following discussion, I will try to give an elaborate account of the multiple uses and multiple functions of music in its pre-modern form. First, I will start my discussion with a conceptualization of functional music and describe what I mean by pre-modern (i.e. pre-industrial) functional music. Second, I will introduce three general characteristics of pre-modern functional music – *universality, everydayness* and *multifariousness* – and analyze each of these properties by giving examples from the real-life practices of people.

1.2. Conceptualizing Functional Music in Pre-Industrial Age: Work Songs vs. Labor Songs

In the more specific context of pre-industrial implementations of functional music, one particular way to operationalize the concept of functional music is to consider and analyze it under the more extensive and umbrella term of *work songs*, i.e. "songs that were sung by the people doing the work, as they did the work" (Korczynski, 2003: 317). Work songs are context-specific, that is, their creation and consumption are bound up organically with the work activity itself. In this sense they are different from other work-related musical genres like *labor songs.* As the below discussion on the uses of pre-industrial functional music will elaborate further, whereas work songs "represent a specialization of the song for *functional* purposes" (Porter, 1994: 50, *emphasis added*), labor songs, as a sub-category of *occupational songs*, refer to songs that are *about* work and the conditions at work and are often polemical in tone to capture the attention and elevate the consciousness of working-class people (Cohen, 1993: 332). It is imperative to underline this difference for the purposes of this study because, as stated

by Watson (1983: 11), the overlooking of differences between songs that are actually sung *during* the work and those merely *describe* the work, often led authors to reach misleading conclusions with regards to functional uses of music.

In an early study on the fundamental relationship between physical work and bodily rhythm, political economist Karl Bücher noted that "rhythm springs from the organic nature of man" (1924: 17) and that, as a result, the rich folklore of work songs, along with other artistic innovations like dance and poetry, is simply a natural outgrowth of human productivity processes. Underlying this argument is the idea that the context of labor provides the ideal space for the spontaneous creation of song and that the dance-like movements of everyday, mundane work activities invites the flourishing of musical poetry within its midst[8]. In effect, then, the physical effort demanded by the labor provides the "kinetic subtext" of these songs (Porter, 1994: 36). Aside from its corporeal origins, the repertoire of work music consists of songs that are produced *by* workers *for* workers – i.e. the performers are also the consumers of the musical output. Since the music is born out of work, the forms and aesthetics of songs are inherently dependent on the demands of work and shaped in accordance with the necessities of labor process. That is, work and music has a symbiotic relationship to each other: the *rhythm* of the work constitutes the *rhythm* of the song and vice versa. Finally, work music is performed *on site* and rarely, if ever, outside the work domain. Since the music is made for *accompanying* the labor, the scene and context of work is the scene of performance as well.

Labor songs, on the other hand, are not composed to aid and assist physical effort; hence the place of work is seldom the scene of composition and performance of labor songs. On the contrary, these type of songs belong "not to the place of work but to the place where those involved *discuss* their

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[8] In this context, Gioia (2006: 36) invites us to recall the etymological connection between *melody* and the Greek word *melos,* meaning *limb,* and the mythological figure of Orpheus, who was considered to be a legendary musician as well as the first to introduce Greeks to agriculture, thus, becoming the embodiment of the historical linkage between music and physical labor.

work" (Watson, 1983: 12) such as music halls, pubs or picket lines. Therefore, they are only *functional* in the more overtly political and ideological sense. For instance, as the subtitle of Industrial Workers of the World's (I.W.W.) little red songbook, first published in 1909, so succinctly puts, the music's sole purpose is "to fan the flames of discontent" – and not the alleviation of boredom, monotony and fatigue associated with labor or the coordination of a collective work effort. Since the cultural production is detached from the physical labor, the stylistic forms of labor songs have no real and organic connection with the rhythmic movements of work either. They are, therefore, aesthetically reified – music stems from *artistic* considerations not *earthly* necessities. Furthermore, even though the songs are made *for* workers, it does not necessarily follow that they are made *by* workers. Often these songs are composed and performed by professional singers who are artistically and intellectually competent in their own rights with previous musical training as opposed to more amateur *worker-performers.*

In short, with regards to questions of *why* it is performed, *where* it is performed and *by whom* it is performed, labor songs are a quite distinct type from functional work songs and, hence, will not be included in the remaining discussion. On the other hand, since the whole *raison d'etre* of work songs is to generate a pleasant musical accompaniment to a taxing physical activity and help their *worker-performers* achieve their goals, they constitute a perfect case for our discussion of pre-industrial functional music. Therefore, in the following pages I will follow the conceptual framework offered by Korczysnki et al. and will primarily focus on the *uses* of the song rather than their aesthetic content and consider pre-industrial functional music as "any song that were sung, independent of any background music, to accompany manual labor" (2008: 82).

1.3. The Characteristics of Pre-Industrial Functional Music

A review of the extensive body of literature available on the real-life practices of pre-industrial functional music reveal *three* preliminary sets of characteristics: the first of these is *universality;* the second, what we will term as, the *everydayness* of music in the pre-modern age and, finally, the third is the *multifariousness,* or *purposefulness* of functional music. By *universality,* we refer to the frequently stated fact that wherever there is a human collective engaged in even the most basic productive enterprise, we witness some sort of musical accompaniment regardless of time and place. For instance, we see, in more or less stylistically consistent forms, songs of work ranging from the Tsonga (Johnston, 1973) and Chiweshe people (Bessant, 1994) as well as eastern Libya (Sahal & Thomas, 2012) in Africa; to Japan (Bock, 1949), Korea (Man-Young, 1978) and China (Kuo-Huang, 1989); across Russia (Vernadsky, 1944), the Balkans (Colby, 1917; Vukanović, 1961) and the Baltic communities (Vissel, 2002); the Persian Gulf (Al-Taee, 2005) and, finally, to South Asia (Ramaswamy, 1993; Sena, 1954). Despite the geographical dispersion and discrepancies of time, over and over again, we see everywhere the same unshakable belief in the mutual constitution of work and music, that song is a natural extension of the bodily labor and, in return, it helps the alleviation of physical and mental strain caused by that labor.

By *everydayness*, on the other hand, we refer to the *embeddedness* of music in the everyday life of traditional societies. Notwithstanding the functional use of work songs, which we will elaborate in a more detailed fashion, in pre-modern societies, as Gioia states, there were also

> songs of courtship and love; of spirituality and worship; healing music; game songs; storytelling ballads which relate an important event, or capture the history or mythology of a people; military music; lullabies; school or team songs which create cohesion among a community; patriotic anthems which do the same for an entire nation; mnemonic melodies which assist in learning everything from the alphabet to the periodic table of elements; music for social dancing; or for exercise, or

stimulation or meditation; songs of greeting or thanks, or for boasting or praise; or ritual music for all passages of life from births to funerals. (2006: 7)

As can be derived from the many examples recounted by Gioia, the pervasiveness of a musical accompaniment, not just during work, but to virtually every facet and stage of everyday life proves how music is engraved in the very essence of existence, i.e. of the "being and doing" (ibid: 57), of these communities. In addition, the *flexible* and *interchangeable* use of work songs in other domains of everyday life further blurs the strict boundaries demarcating *functional* and *everyday* uses of music. For example, Karanika relates to us how in ancient Greece, vintage songs, such as those accompanying the harvesting and pressing of grapes, are also encountered in other occasions like weddings and how people sang the wedding songs and laments during times of vintage (2014: 125-126). Similarly, the inclusion of *street cries* of vendors and peddlers under a separate category of Cohen's taxation of work songs shows the line that separates the *functional* uses of music from its more mundane forms is not always a fixed one (1993: 335). Despite the differences in their uses, all of these examples demonstrate the fact that music was a constant fixture of the background of everyday life in traditional societies and, indeed, pre-industrial life was a *musical* life. Therefore, although music's functional aspects are more explicit in the domain of work, one should also have to consider this mundane and routine dimension of functional music's use in everyday contexts.

In conjunction with this everyday presence of functional music is its *multifariousness*, or, in other words, the assertion that music has been put to multiple *uses,* fulfilled various *purposes* and served various *functions* for the pre-industrial laborer. The wide and rich spectrum of occupational uses of pre-industrial functional music testifies to this point: in the early stages of human economic development music has been commonplace in the most popular and ordinary trades alike including farming, shepherding, harvesting, seafaring, transportation, construction, waulking, weaving, lace-making, shearing, lumbering, ranching, and etc. In each of these uses, music

has served different functions, often simultaneously, such as coordination, diversion, exhortation, supplication, consolation, personal expression, communication, and so on. Thus, the primary reason why we may consider pre-industrial life as a musical one is that music was not solely an entertainment object to be enjoyed during leisure (although it certainly served this purpose too), but had a *use-value* for its performer as well. As we shall see below, often times workers treated human voice as another *tool* at their disposal that will assist them in their effort. Just as their manual equipment helped them penetrate and shape the material world to their will, song and music also helped these laborers to transform the bodily, mental and social aspects surrounding their work. In the following, I will focus in some detail to each of these elements of pre-industrial functional music. Here, my aim will be to highlight the specific features of pre-industrial functional music that give this period its peculiar characteristics, which, to a certain extent, missing from its succeeding historical forms.

1.3.1. Universality: The Symbiotic Relationship Between Music and Work

Throughout history, wherever humans engaged in activities that called for a physical effort, they brought their songs along with them. It was in this epoch, before the steam engine and mechanization took over the work environment and determined the pace of the work, that music and work were to a great extent *mutually constituted* (Korczynski, 2003: 315). In other words, the way the work was organized and the natural somatic rhythms of the work constituted an ideal setting for the emergence of songs and this spontaneous musical creation, in return, alleviated the bodily strain of workers and helped them to execute their tasks in a much livelier fashion.

This was, almost without any exception, the *universal* imperative of human existence: every labor, no matter how exhaustive or monotonous, whether on the land, at home, or on the sea, had an accompanying sonic stimulus that corresponded to the physical movements of its laborers. In fact, according to

Karanika, music and everyday work were so intertwined in ancient Greece that women refused "to carry out [their] daily tasks without the accompanying song" (2014: 158). This corresponds to Johnston's observation that the Tsonga women in the Southern parts of Africa not only sang while they work but, in fact, "possessed a discrete body of songs for each task" (1973: 156). Therefore, among the Tsonga people we encounter songs designed specifically for even the most trivial workaday activities such as songs for hoeing (*tinsimu ta kurima*), for weeding (*tinsimu ta kuhlakula*), for reaping (*tinsimu ta kuthsovela*) and for pounding (*tinsimu ta kandza*) (ibid: 157). In essence, then, for the Tsonga, every stage of producing maize, from its very planting to it's harvesting, is performed to the accompaniment of a different, task-specific song.

But *why* did this symbiotic relationship between music and work manifest itself universally despite the differences in time and space? *How* did this interrelation become so globally commonplace that it became almost an inevitable norm of human condition? The answers, I argue, primarily lie in the ways the work was managed and organized in its pre-industrial form. An investigation of labor in its pre-modern condition provides us two unique characteristics: the first is the relative *autonomy* enjoyed by the workers engaged in manual labor and, the second is, the *collective* nature of the labor process itself. The former helped the emergence and development of work songs by providing the laborer a space to express himself musically without the threat of outside interference; whereas, with regards to the latter, the need for a sonic framework that can inform each worker and regulate the rhythms of a group of individuals made the use of song in collective settings of labor a vital necessity. And as we shall see, with the progressive erosion of these two idiosyncratic properties of pre-industrial labor, the interdependent relationship between song and work also gradually diminished and, finally, completely detached during the industrial age.

1.3.1.1. The Autonomy of Labor in the Pre-Industrial Age

A brief survey of the most common occupations before the industrial and electric revolutions of the 19th century highlight the fact that whenever individuals enjoyed even a limited degree of autonomy and freedom of choice, musical poetry at work prospered. A great majority of pre-industrial tasks were conducted by self-employed people, who were largely independent from the direct supervision of a hierarchical figure. Therefore, agricultural laborers, weavers, cloth makers, waulkers, sailors, shepherds, domestic workers, farmers, builders, ranchers, and etc. had their own unique repertoire of work songs. Since they owned their means of production, the workers in pre-industrial age had a considerable liberty to decide when to start and finish a certain job and at what pace they want to perform it without any accountability or fear of losing their employment. This appropriation of the work by the workforce, consequently, provided the unrestricted growth of music at work. As the son of one English weaver fondly reminisces, "there was no bell to ring them up at four or five o'clock [and] there was freedom to start and to stay away as they cared. [...] In the evenings, while still at work, at anniversary times of the Sunday schools, the young men and women would most heartily join in the hymn singing, while the musical rhythm of the shuttles would keep time" (Thompson, 1968: 321).

Similarly, Korczynski et al. (2008) inform us that, it was always those with a certain degree of autonomy who made the most out of the *playful* aspects of singing while hopping at the fields of Kent during the summer seasons in the early to mid-twentieth century England. According to the authors, the freedom of modulating their work rhythm and the absence of strictly defined rules on singing created "a sense of hopping as a 'working-holiday'" (2008: 87) where, unlike their industrial counterparts, workers could sing and "actively creat[e] an environment in which work and pleasure could co-exist" (ibid: 96). In addition to the organic bond between music and work,

then, it was this lack of guiding power with a disciplinary authority that contributed to the rich folklore of work songs[9]. As the authors specify,

> This positioning, by the pickers themselves, of hopping as a working holiday is very significant for the flourishing of work songs in the fields. The very concept of a *working holiday* implies a breaking down of the cultural dichotomies of work and leisure, which had worked against the development of music (associated with leisure) within industrial workplaces. When they entered the fields the pickers entered a "work-holiday place" rather than a "workplace". *Thus any cultural norms developed which militated against singing at work fell away in the Kent hop fields.* (ibid: 88, *emphases in original*).

But even when the work was strictly and hierarchically organized, the songs served a vital purpose for their singers. For those who were in forced servitude, or working in prison labor camps, singing meant a stake at authority, the carving out of a space for workers' to claim their own under highly controlled and regulated work conditions. Even when their bodies were in chains and movements restrained, their voice was still free enough to express the hopes and sorrows of its owner. And this ability to sing endowed the workers with a sense of autonomy. In the words of Bruce Jackson, "the song change[d] the nature of the work by putting the work into the worker's framework rather than the guards'. By incorporating the work with their song, by, in effect, co-opting something they are forced to do anyway, they make it *their* [sic.] in a way it otherwise is not" (1972: 30, *emphasis in original*).

The nature of work in its pre-industrial sense, then, laid a fertile ground for the blossoming of musical creativity and having the freedom of musical expression gave the workers a sense of control and influence even at the most extreme times of destitute. Singing, therefore, gave a literal and metaphorical *voice* for the laborer. We will later return to this issue in more

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[9] The only confrontations with authority figures occurred when the hoppers received their payments at the end of their work (Korczynski et al., 2008: 86). Since the amount of wages they were paid were given in accordance with the amount of berries they picked, there would be occassional disputes and conflicts between the laborers and overseers. But, aside from such minor altercations, there were no strict inspection and the workers were mostly left to their own during work hours.

detail while analyzing the uses and functions of pre-industrial music but, for now, it would be suffice to say that, for the traditional worker music *meant* autonomy, and freedom at work meant, most of all, the freedom to sing the joys and woes of labor without constraint. For instance, writing on the life of crews on the high seas, Hugill notes that "[…] improvising, they would bring out these tribulations [their grievances] in their solos, and … rarely did the afterguard victimize the shantyman or the crowd on account of it - it was an unwritten ruling of the sea that sailor could 'growl' only through the medium of his shanties" (Hugill, 1961: 32).

One particular manner in which we can demonstrate the importance of autonomous nature of pre-industrial labor is to show how this characteristic effected the aesthetic compositions of work songs themselves. Since work and music were mutually constituted, it was only natural that the rhythms of work mirrored themselves in the rhythms of songs. In other words, the rhythms of songs were always *in accordance* with the rhythms of work and never out of sync (Man-Young, 1978: 27). Hence, tasks that afforded indolence or demanded gentle body movements had songs with slower rhythms accompanying them and, in a similar vein, tasks that needed to be done quickly demanded songs with more rapid rhythmic pulses. For instance, as Franklin notes, in repetitive tasks "the rhythms are bound to an almost inflexible meter, becoming at length almost as monotonous as the work itself, because the demands of the labor prevent rhythmic development" (1979: 14). This is identical to Brown's observation that in prison camps, "slower songs came from gangs that were cutting cane or chopping weeds or hewing timber" (1953: 58). Similarly, the tempo of agricultural work songs in Korea are usually categorized in terms of the tempo of the labor (slow, moderate and fast) and farmers occasionally employ free rhythm when they are working alone in the fields (Man-Young, 1978: 27-28). In all of these examples, then, we see the rhythmic structure and aesthetic composition of songs always being structured by the amount of autonomy workers had in determining the pace and momentum of their own work.

1.3.1.2. The Collectivity of Labor in the Pre-Industrial Age

Except for a few, the occupations we have referenced thus far necessitate teamwork, group solidarity, collective action and concerted physical effort. It is at these kinds of communal undertakings that songs become an integral part of work activity, as they are essential for the setting of pace and rhythm of the entire group. In comparison, tasks that can be conducted individually do not often necessitate the use of song. That's why, for instance, even though they are generally considered as a separate category of folk songs, we do not see much cowboy "work songs" as we understand it, since the work is performed solitarily and also does not call for much rhythmic movement (Cadlo, 1947; Logsdon, 1995).

Yet, this does not mean that sonic accompaniment was absent in all individual work. On the contrary, activities that require a single person such as shepherding, milking, weaving, shearing, etc. had their own folklore of work songs that are sung *during* the work. Yet these songs serve completely different *functional* ends and purposes – primarily aimed towards diversion, recreation and passing of time in blissful reverie. On the other hand, songs performed within group settings pertain directly to the task at hand and aimed towards extracting the maximum contribution from its participants. The overarching aim is to integrate the individual within the collective effort and, as a result, to render the work easier and more efficient.

Let us consider waulking as a case in point. Waulking (or in its original Gaelic, *luadh*) was a very common domestic practice across Scotland whereby a group of women took the stiff tweed from the loom and softened it by means of thumping it with their hands. The process of waulking was tiresome and always accompanied by a song, which not only alleviated the tediousness of the task but also orchestrated the movements of the whole band. Pickering et al. describe the waulking activity and the role music has in it as follows:

> Whoever needed the cloth to be treated in this way invited ten to fifteen other women to her house, who then sat facing each other around a long bare table or board and pounded or rubbed the urine-soaked cloth to the rhythm supplied by the vocal accompaniment. They would pass their portion of cloth on to their right-hand neighbor on every third beat, so that the cloth always moved around in a clockwise circle as they sang the songs of waulking. (2007: 231)

As the tradition of waulking clearly shows, singing was a constant feature of participatory action, which was one of the most the common characteristics of labor before it was automatized by machinery. True, people continued to work together in groups at industrial workplaces and factories, but it was not *collective* work *per se* as they were atomized and compartmentalized vis-à-vis their fellow work partners, with each individual assigned to his or her own piece of machinery. Being a part of a group, on the other hand, invited the spontaneous emergence of song since the song not only helped to add a certain touch of playfulness but also contributed significantly to the fulfillment of the task at hand.

Just like the previous trait of autonomy, we can also see traces of the collective nature of pre-industrial labor on the composition and performance of work songs. The collective endeavors of working bands all over the world had brought about a specific type of performance with it – i.e. "the call-and-response" style of singing. In this mode of performance there is generally one song leader who improvises a solo and workers answering him in the chorus by singing a refrain. The improvisation aspect creates novelty for the laborer, thus helping the passage of time and relieving the monotony whereas joining-in the chorus by the whole ensemble coordinates the group action. Although considered as an essentially African aesthetic (Gioia, 2006: 23), adhering to its *universalistic* aspects, we see that same type of performance among Scottish waulkers[10] (Pickering et al., 2007: 231),

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[10] A typical waulking song that is commonly sung during the work was the following:

"*Refrain:* Waulk, o ho, the cloth of the lads (3)

From hand to hand, the cloth of the lads.
Let me waulk quickly, the cloth of the lads.

Korean rice farmers (Man-Young, 1978: 23) and Chinese porters (Kuo-Huang, 1989: 114). We can conclude, then, concerted action and collective labor was a major factor in the constitution of a novel aesthetic performance.

1.3.2. Everydayness: Pre-Industrial Functional Music as a Form of Ritual and "Sympathetic Magic"

1.3.2.1. Music and Everyday

As we have stated earlier, in many regards, the life before the advent of modernity was a *musical* life, where music was not yet completely abstracted and disassociated from its origins in the everyday. This would happen after men discovered a way to record, reproduce and disseminate sound in a materialized, commercialized form; thus, severing (or perhaps liberating) once and for all the innate bond between sound and its circumstantial production in a particular space-time (Adorno, 2002a). Yet before it was reified from daily human existence and subjugated into market principles, music loyally attended every facet of a person's life from the lullabies in cradle to lamentations at funerals. Vernadsky, for instance, provides us with a delicate account of the role of music in Tsarist Russia as early as the 16th century:

> In the days of Nicholas II, just as in the days of Ivan the Terrible, the whole life of a peasant family in Russia went along to the accompaniment of song. From birth, the child was hushed to sleep by a lullaby; later he sang as he played. When an adult, there were songs to accompany his work and others to celebrate his holiday festivities. There were songs for each season of the year. Every family event was marked by a song, and there was an especially elaborate cycle of songs for the wedding. At the

Let me waulk with joy, the cloth of the lads.
Sing with love, the cloth of the lads.
Put into a roll, the cloth of the lads." (Shaw, 1977: 207)

close of life, the ritual of burial included definite forms of "lamentations". (1944: 95)

Music was ever-present and each type of event had a distinct reservoir of work songs that laborers can pick and choose from to serve the occasion. Songs were used to heal, recuperate and rid diseases off human mind and body (Tame, 1984: 155); to celebrate a successful hunt, a union, or bountiful harvest; to show gratitude and offering tributes to deities; to incite courage and sustain morale during warfare but also to strike fear in the heart of enemies (Colby, 1917; Schafer, 1994: 50), to boast or ridicule[11], and so forth. For the Chiweshe children, for instance, singing while stamping maize or graining by mortar did not only turn a tedious chore into a playful game but was also a technique for them to learn and memorize the names of their neighbors and, essentially, being a part of the community life (Bessant, 1994: 48).

In addition to music's creative and multiple uses in the workaday activities of pre-modern individuals, music and everyday were so intertwined at this period that many words used to refer to musical objects had often extra-musical connotations relating to physical work. For instance, the Chinese term to denote work songs (*haozi*) literally translates to "crying" or "shouting", thus, indicating its origins in labor (Kuo-Huang, 1989: 113). Similarly, Tsonga people use the word *mufambisi,* which derives from the word *famba,* meaning *to go,* to refer to the song-leader, who is conducting and coordinating the work effort of the group by spurring them through her song (Johnston, 1973: 158). Whereas Terry (1915), perhaps a bit controversially, traces the etymological roots of the word *shanty* to early African tribes[12], one of the most interesting cases comes from the ethnomusicologist Charles Keil (1979) and his explorations on the musical

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[11] An interesting use of song for such purposes is Serbian *hegalice*, or "call songs", sang during bull-fights by shepherds. According to Vukanović (1961), there are actually three distinct types of songs for bull-fighting: ones that are sung before the fight, to incite the bulls; ones that are sung while the fight is taking place, to give courage to bulls, and, finally; ones that are sung after the fight is over, to brag and praise the winner and to insult the losing side (1961: 311-313).

[12] Terry explains that, in ancient African societies, when a person "quarrels with his neighbor, and the relations between them are too strained for them to live any longer together, then one arranges to have his shanty ["hut"] moved. They are moved on trolleys, which are pulled by men at the end of ropes stretching down the road; and as they pull, the shantyman sits on top of the roof astride and sings the solo part of some 'pull and haul' Shanty." (1915: 136)

terminology of Tiv language. According to this study, the verb *dugh*, for instance, "which in certain contexts denotes the composition of songs, may, in other contexts, convey a variety of meanings [like] catching fish, digging yams, deposing chiefs, coining proverbs, miscarrying, marrying outside the Tiv, [etc.]" (Waterman, 1982: 547). In every example, then, the recurring message is that any study of pre-industrial work songs would inevitably direct us back to the everyday life since, in pre-modern societies, music feeds everyday and everyday life becomes a stage for the musical performance.

1.3.2.2. Ritualistic Uses of Music

If functional music was engraved in the very essence and being of everyday life in traditional societies, as we have suggested, then, we must ask, *what* was the nature of this relationship between functional music and everyday life? *What*, in other words, symbolic meanings that music had for its *worker-performer?* Providing that music accompanied even the most mundane and inconspicuous activities of everyday life, surely, there has to be something *more* about music than being a mere form of entertainment and diversion. In the ensuing discussion I will argue that, for the individuals in traditional societies, functional music provided more than just a simple sonic accompaniment to wile away the drudgery of everyday tasks and incorporated *ritualistic* and *magical* qualities for its performer.

Here, I use the word *ritual* in two senses: (i) to refer to ceremonial and religious uses of music as in shamanistic rituals (Sena, 1954: 11), sacrificial ceremonies (Williams, 1898: 134), weddings and funerals, rites of passage and fertility, responsories (More, 1966: 123), religious festivals and so forth; and (ii) for the imagined power believed to be inherent in music that, when called forth during labor as incantation, "'does' the work" (Karanika, 2014: 158) on behalf of its performer. The first use is strictly reserved for the *sacred* and we still see performances of this type in our modern day societies. However, the second is

mostly encountered in the ordinary, everyday *profane*[13] work activities and is often categorized as a form of *sympathetic magic*[14], i.e. "the belief that depicting or enacting an event [...] will assist in bringing it about in real life" (Gioia, 2006: 16)[15]. An erstwhile common practice, this use of music has to a great extent vanished as machinery replaced manual agricultural labor and as the world of the ancients gradually disenchanted by the advancements in scientific rationalization.

Yet, *music as magic* fulfilled a very vital purpose in pre-industrial societies and in certain aspects was very *functional* in serving the aims of single individuals or of the whole community – especially in times of crisis. For instance, Bessant relates to us how during times of drought Chiweshe people of Zimbabwe used to turn their ancestors in the form of song to "find out why rain had not come, and to ask them to send it" (1994: 51). This closely resembles the rain-evoking methods of the Bunjil-willung (*rain men*) among Australian Aborigines, who, as accounted by anthropologist A. W. Howitt, " would fill the[ir] mouth with water and then squirt in the direction appropriate to the particular clan, and each one sang his especial rain-song [...] These rain-makers could also bring thunder, and it was said of them, as of the other medicine-men, that they obtained their songs in dreams" (1996: 397). The notable absence of rainmaking songs in already humid southern Chang Jiang area of China, as opposed to the cold and arid northern part of Huang He, which possesses plenty of such songs (Kuo-Huang, 1989: 108), underscores this ancient belief in the power of music *to make things happen.*

But it was not only times of distress when music's extra-worldly powers were summoned. In practice, the *magical* properties of music were always an established and constituent part of the everyday life of pre-industrial people

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[13] Although, often, the profane would also seep into the domain of the sacred. We see, for instance, field music (*dengaku*) as an established religious display during the Heian Period in Japan, performed occassionally at the imperial court (Bock, 1949: 204).

[14] A similar conceptualization was also used by Tame (1984), who used the term *sympathetic resonance* to refer to the ancient belief in the music's embodiment of "super-physical energ[ies] from beyond the world of everyday experience" (ibid: 24).

[15] For instance, in ancient China Emperor Fu Hsi, who was commonly believed to be the inventor of music, was called *fu-lai,* or *"to help to occur"* (Tame, 1984: 64)

and were commonly used *before* or *during* the implementation of certain occupational tasks. According to Gioia, in the most primitive hunting societies before the actual expedition takes place we can see an enactment of hunt in a representational manner under the guidance of a shaman and the accompaniment of music that would believed to ensure the success of the enterprise (2006: 16). Similarly, in agricultural contexts, song in the form of *musical prayer* is typically offered to gods in the hopes of having a plentiful and abundant harvest, as with the Tamil women who, by singing, seek the favor of Chandra - the nourisher of crops (Ramaswamy, 1993: 118-119) or with Korean rice farmers who before each spring season "pray to the Earth Spirit to render a good harvest [by] singing to the accompaniment of the farmer's band" (Man-Young, 1978: 21).

Songs, implemented as a type of sympathetic magic, secured the welfare and continuation of many ancient tribes. But, in a more individual and everyday level, they also assisted individuals while conducting their daily domestic tasks – like cooking, cleaning, milking, grinding, etc. Through synchronizing the corporeal aspects of the work with its acoustic features, thus, alleviating the labor in the process, the musical accompaniment acquired a "kind of ritual force familiar from the combination of action and formula presented as necessary in the magical spells" (Karanika, 2014: 151). Sometimes the magic was made explicit, like with milking songs where cattle owners sang to their animals not only to soothe them, but because they believed the singing would serve as a charm and, therefore, yield more produce[16] (Benet, 1996). But they were also

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[16] A perfect example for this particular use of song can be found in the lyrics of a milking song, sung in Britain and Ireland, which goes:

> Give your milk, cow, give your milk,
> While I sing my song to you;
> Let the milk-churn fill and spill
> With your milk, my dear old cow.
>
> *Refrain:* Blessings of God I'll put upon you,
> Father, Son and Holy Ghost,
> And also Blessed Mary,
> Give more milk, my cow.

purely *functional* in the most basic sense of the word – that is, they provided the much necessary incentive and stimulus to push towards the successful completion of a job. According to Karanika, this was primarily achieved through the *personification* of an object (like a mill, mortar, loom, etc.) and asking it, in the form of song, to do the task for its performer so it would not cause too much hassle and trouble. Thus, she concludes,

> there exists a genre of calls to objects in which a ritual is embedded within the song as the object (the addressee) is personified. The object is treated as though it can hear and obey injunctions. [...] Speech, then, functions as a spell and as such becomes the medium for the accomplishment of the act. (ibid: 148-149)

Once the object is personified, it was then appealed in the imperative[17], which "empowers the performer [and] giv[es] the illusion of control over the situation" (ibid: 163). A perfect example for this kind of *functional* sympathetic magic at work brought to us from the Mani region of southern Peloponnese, where women domestic laborers used to call on the fire to light while cooking:

> "Light, my little fire,
> so that I can grill my little chicken
> so that you eat, and I eat,
> so that the friend who is coming eats
> with the bread on his head
> and the pourer with the olive oil." (ibid: 158)

In conclusion, it would be fair to suggest that music and everyday life were not only intertwined to a great extent in pre-modern societies but sonic accompaniment to work was also heavily charged with symbolic (i.e. ritualistic) meaning. Music was an indispensable part of ceremonial activities but was also

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Yours is good milk, fine and healthy,
From the butter there'll be cream.
Do your best to give me plenty,
Then your barley share you'll gain. (Kennedy, 1975: 187)

[17] The formula of using "object + imperative + object" is one of the most common lyrical and aesthetic features of pre-industrial functional music and can be encountered in various songs (see, for instance, Bessant, 1994: 48; Bock, 1949: 204-205; Cohen, 1993: 337; Sahal & Thomas, 2012: 237) .

ritualistically prevalent in non-religious contexts as well, like that of home or work. Chanted as incantations and used as a type of *sympathetic magic,* it helped to dispense the tedium of labor but also *functionally* effective as, for its *worker-performer,* it possessed magical powers that would aid the fulfillment of a particular task. The so-called immaterial qualities believed to be inherent in music, thus, were summoned in the form of song to achieve very practical, earthly, and functional ends.

1.3.3. Multifariousness: Functions of Pre-Industrial Functional Music in Everyday Life

We have seen thus far that music stemmed from the autonomous and collective aspects of labor was universally present in every part of the world, conforming to same aesthetic principles, and that it retained ritualistic qualities, which bestowed music the ability to *do* things and, hence, assisted individuals in their most mundane undertakings. The first characteristic was related to the questions of *how* the symbiotic relationship between music and work come into being and *why* this holds to be universally correct. Following the inference that music was a constant fixture of everyday life in pre-modern societies, the second question, on the other hand, dealt with *what* kind of symbolic meanings music had encapsulated for its performers and listeners. Having surveyed these aspects of pre-modern music, we may finally turn our attention to the subject of functionality and ask to *which* particular ends did music actually serve? In other words, I am primarily concerned here with the extent to which pre-industrial work songs can be considered *functional*. And as we shall see as the discussion unfolds, for the pre-modern laborer the song was just like another *tool* that he or she could use to shape and transform the material contingencies of physical world.

It has been commonly suggested by scholars that work songs had two main functions: pacing and coordinating the muscular efforts of participants and distracting the minds of laborers from the tediousness of a task (Crawford, 2000: 410; Lloyd, 1967: 287). Music, then, can accentuate the physical aspects

of labor with its capacity to spur collective endeavor while *at the same time* it can divert the mind from the immediate work and, thus, help the passing of time. While being very encompassing, condensing the functions of work songs into these two variables (physical and psychological) does major injustice to the multiple and wide range of ways functional music was utilized in its pre-industrial configuration. To bridge this gap in our knowledge, Cohen, for instance, takes a more nuanced approach in his own taxonomy and provides five different aims that work songs can be functional for: *coordination, direction, supplication, solicitation* and *diversion* (1993: 334). *Coordination* and *direction* primarily refers to the physical organization and management of labor, whereas *supplication* and *solicitation* includes songs that are *asking* for something – whether *to get* a product (butter-churning, milking or shearing songs) or *to sell* a product (street cries). Although being more detailed, this categorization also overlooks several functions pre-industrial music had, especially those at the personal and societal levels.

Taking the historical accounts on the uses of pre-industrial music into our consideration, I will suggest five functions that pre-modern music had for its performer: (i) *physical/corporeal;* (ii) *psychological/mental;* (iii) *social/communal;* (iv) *personal;* and (v) *self-disciplinary*. I should note, however, that as with other categorizations, these types are not necessarily exclusive but often realized simultaneously. Below we will discuss each function in some detail.

1.3.3.1. Physical Functions of Pre-Industrial Functional Music

As I have argued earlier, and also noted by several other authors (Bock, 1949; Prichard, Korczynski & Elmes, 2007; Korczynski, 2003; Richards & Stubbs, 1979: 49), the physical coordination of work through the sonic properties of song is one of the most essential characteristics of pre-modern labor. The implementation of songs in physical context not only staves off the usual tediousness of the task but, in effect, through organizing and directing the work

effort, performs a very vital, and sometimes even a life-saving duty. In his work on African-American spirituals and work songs, Sterling Brown, for instance, tells us how songs were used in construction projects as a method of *safety precaution:*

> Another type of work song was chanted as a gang unloaded steel rails. Since these rails weighed over a ton apiece and were over ten yards long, any break in the rhythm of lifting them from the flat cars to the ground was a good way to get ruptured, maimed, or killed. So a chanter was employed to time the hoisting, lowering, and the getting away from it. (1953: 56-57)

Music was, thus, crucial to signify and inform the group when to engage in a certain action and when to respite from it. Therefore, many work songs accompanying bodily effort often contained grunts, exclamations or nonsense syllables to indicate the beginning or ending of a collective movement[18]. This does not only ensured the safe conduct of the work operation but also assured a much smoother performance by incorporating individual workers into a concrete unison. It is no wonder, then, we encounter these songs wherever a task's fulfillment depends on several people working in tandem: such as the seeding, sowing, or irrigating the fields (Ramaswamy, 1993: 113; Sena, 1954: 12), harvesting (Sahal & Thomas, 2012: 238-239); waulking (Pickering et al., 2007); chain-gangs (Franklin, 1979) and rowing (Brown, 1953).

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[18] A perfect example for this type of use is the *kusatori-uta,* or "grass-pulling songs" of Japanese people. In the following text from a song, the words ōyareyo and kora do not have literal translations but correspond to exclamations uttered to the rhythm of pulling or swinging the scythe (Bock, 1949: 208):

   "Ōyareyo!
    Supposed to pull grass (kora)
    In the rice fields,
    I don't want to go.(kora)
    Not going -
    Failure to do my duty.

    Ōyareyo!
    On the great river back (kora)
    Cutting reeds;
    The reeds I bend (kora)
    Cutting reeds, I weep,
    [And they] snarl together."

But perhaps the most impressive body of work songs relating to muscular coordination of its laborers were passed down to us by the time-honored tradition of shantying. Although the word *shanty* is generically used to refer to any type of song sung while working on deck, there are actually multiple forms of shantying based on different types of work activities: including, but not restricted to, halyard, short-haul, windlass, capstan, net-hauling, pumping, and etc. Each of these operations require a separate type of shanty and performance; for instance, whereas less arduous tasks would require short-drag shanties, tasks that are exhaustive and demand heavy engagement (such as heaving of the anchor) would call for special capstan or windlass songs (Gioia, 2006: 121). In each type, the stylistic production of songs imitated and adjusted to the physical requirements of the activity. As Harold Whates underlines,

> The purpose of a hauling shanty was to harness rhythm to the task of extracting just that last ounce from men habitually weary, overworked and underfed. That there were several varieties of hauling shanty indicates not only the diversity of tasks aboard ship but the astonishingly wide variations in the combined strength of a team of men. Rowing men know the mysterious "form" that will suddenly transform a good crew into *an unbeatable eight functioning as a perfect machine*, an effect that seems to be superimposed on training, style and all the specific factors. (1937: 262)

One reason why shanties represent a very specialized type of pre-modern functional music is that, for perhaps no other profession than seafaring, songs, along with the physical equipment of sailors, were utilized as another *tool* while administrating tasks on or below deck. According to Stan Hugill, "to the seamen of America, Britain, and northern Europe, a shanty was as much a part of the equipment as a sheath-knife and a pannikin" (1961: 1) and even, at times, part of the crew itself as the presence of a good shanty was like to have "an extra hand or rope or a capstan bar" (Lomax, 1960). As Richard Dana recollects his time on the high seas in his memoirs,

> A song is as necessary to sailors as the drum and fife to a soldier. They can't pull in time, or pull with a will, without it. Many a time, when a thing goes heavy, with one fellow yo-ho-ing, a lively song, like "Heave, to the girls!" "Nancy oh!" "Jack Cross-tree," etc., has put life and strength into every arm. We often found a great difference in the effect of the

different songs in driving in the hides. Two or three songs would be tried, one after the other; with no effect; - not an inch could be got upon the tackles – when a new song, struck up, seemed to hit the humor of the moment, and drove the tackles "two blocks" at once. (1840: 285)

1.3.3.2. Psychological Functions of Pre-Industrial Functional Music

In addition to orchestrating the somatic activities of workers, pre-industrial functional music also commonly served to overcome the unabated tediousness of largely repetitive but physically taxing labor. In such instances, "singing afforded people transport [and] the experience of the transcendence of the material conditions in which they were placed" (Korczynski, 2003: 319). This functional mode of pre-modern music, then, operated not on the bodily but mental faculties of the workers and helped them take their mind off the overbearing aspects of strenuous labor.

However, this second functional aspect did not exist separately but often worked in conjunction with physical functions of work songs, especially when they were used to lighten heavy labor. When more arduous tasks demanded a fitting sonic accompaniment, the alleviation of boredom and whiling away of time emerged as secondary *by-product* to more imminent, physical uses of song. For instance, when modern methods of separating wool from the sheep were not yet introduced, the shearers in Eastern Libya had to use old pairs of scissors, which made their work harder and longer than usual. So, these workers relied on songs in order "to break the tedium of the[ir] work" (Sahal & Thomas, 2012: 237-238).

The songs, therefore, helped the successful achievement of various tasks *as well as* diverting the attention and relieving drudgery. And sometimes they were used *after* the completion of a tough task, as a way to celebrate but also to ease the mind and mitigate the physical and mental toll it left on the workers. Across the Arabian Gulf, for example, after a rough and backbreaking day, pearl divers entertain themselves with their traditional work songs, *fjeri,* to distance

themselves from their toil but also to prepare for the next day's hardships (Al-Taee, 2005: 24). Similarly, the singing was at its most jubilant for Japanese fishermen when they procured a big catch and sang their *tairyō-bushi,* literally meaning "air for a big catch" (Bock, 1949: 215).

But the psychological effects of work songs were even more explicit when the job does not require too much physical and mental engagement. Shepherds, for instance, who by virtue of their occupation must work alone and spend most of their times idling, frequently rely on musical instruments or songs to break away from the boredom[19] (Vissel, 2002: 84). One can trace the earlier origins of pastoral work song in its poetic form to the opening lines of Theocritus's *Idyll I*, where the shepherd Thyrsis sings his song about Daphnis to the goatherd: "Sweet is the whispered music of yonder pinetree by springs, goatherd, and sweet too thy piping. […] Sweeter, shepherd, falls thy song than yonder stream that tumbles plashing from the rocks" (Gow, 1953: 3). Despite their hardships, a blissful solitude in nature always provided the shepherd with an incentive for artistic creation and conversing with the environment around him.

A similar concern with passing the time as cheerfully as possible can be observed among cloth makers, who often meet in groups while performing their task. When British folklorist Cecil Sharp was collecting rural songs at Somerset at the turn of the twentieth century, he noticed how the town was chiming and bustling with the voices of women singing in front of their sewing machines:

> The sewing of the shirts called for no great powers of concentration, so the women and girls used to meet in one another's cottages to sew, chat and sing, and you could walk down the village street and hear through the open windows snatches of song mingled with the hum of the machines. A singer with a good repertoire was a great asset at these gatherings, for time passed quickly and pleasantly as song followed song in unending succession. (Newall, 1993: 14).

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[19] Abdy Williams asserts that in ancient Greek societies, the shepherds used various musical instruments like the syrinx or bagpies (1898: 135), chiefly to entertain themselves but also as a method of alerting their animals when needed to.

1.3.3.3. Social Functions of Pre-Industrial Functional Music

Aside from disposing the negative physiological and psychological effects of strenuous and repetitive labor on individuals, music at work also fulfills important social and communal functions. By the term *social*, we refer to two discrete functions music can have for the community: (i) as a technique *to communicate* with other agents (whether human beings, animals or even plants) and, more importantly, (ii) as a means to criticize the unequal and oppressive aspects of labor. Even though these capacities of music were acknowledged widely in the literature, they were not treated specifically as a *functional* characteristic that allows individuals to attain certain goals.

Music is, first and foremost, an aural phenomenon and, thus, like every sound object primarily appeals to ear. Therefore, in instances where visual capacities are limited or impaired, or when the agents are out of sight, musical sounds can be used to communicate and inform. For the primitive hunting and gathering societies, in the thick density of a jungle where people lose visual contact, such songs can be vitally important in informing people on each other's location. Gioia asserts that the Mbuti people sing while gathering roots, mushrooms and other plants to keep them aware of each other's location and to scare predators away (2006: 20). This is identical to the use of *mongombi calls* by the Aka Pygmies, which "serve to scare the game out of hiding and into the nets of the waiting captors but [also] allowing the hunters to contact each other when out of visual sight and thus coordinate their efforts" (ibid: 22). In more recent times, the communicative functions of songs were put to use by plantation and prison workers, who, by employing what Frederick Douglass termed as "the double-talk" of spirituals (Brown, 1953: 48), sent each other messages without drawing the attention of their overseers. Similarly, Estonian shepherds in eastern Kodavere region used songs to communicate with each other and coordinate their actions (Vissel, 2002: 99).

Sometimes the receiver of the auditory information was not a fellow human being, but an animal. Yet, even then, the songs serve an equally crucial purpose:

to soothe the cattle in order to keep them calm and safe and to secure their, as well as, the performer's safety. For example, one major threat to otherwise idyllic life of cowboys is stampeding while herding as a result of the panic caused by a startled animal. The danger is twice as much during night herding, as the visibility both of the flock and the herder is greatly diminished. According to Cadlo, these are among the rare occasions when cowboys resort to singing while on job, so they can minimize the risk of trampling through calming their cattle by the power of song (1947: 335). As E. C. Abbott describes in his book *We Pointed Them North,* "the singing was supposed to soothe them [the cattle] and it did […] I know that if you wasn't singing any little sound in the night – it might be a horse shaking himself – could make them leave the country; but if you were singing they wouldn't notice it" (1955: 222). In other contexts, songs were employed to coax camels to nurse orphaned calves in Mongolia (Koenig, 2011: 70) or to cajole them to lead them into pasture or eat in Baltic regions (Vissel, 2002: 87).

In addition to conveying information or direction, the songs helped the expression of pent up feelings and grievances of workers. We have already argued that the relative autonomy of work and lack of direct supervision provided a space for laborers to freely articulate and voice their emotions, and most of their feelings contained their disdain towards their work or employers. Singing, then, gave an outlet for the venting of frustrations and offered some reprieve from the conditions of work. The opportunity to share their opinions bestowed workers with some form of agency and a claim for authority. Sometimes the denunciation of power-holders were subtle and implicit, but there were also songs with a very open critique and clear message such as the one from Tamil region:

> "Harvest, should be good
> Our lord's granaries should be full
> [He feels] if he were to pay in cash
> it would be too weighty
> If he were to pay in paddy
> they [the stalks] would be too long
> If he were to pay in grain
> its cooking would take time

So he gives us measures of cooked rice [as payment]
To such a lord belongs, this farm!" (Vanamamalai, 1964: 62-63)

The outright criticism directed at hierarchical figures through songs not only helped the expression of complaints but was also an indirect way to delineate the boundaries of a working community. That is, those who joined in the singing belonged to a single community and since the singing was done collectively by all workers, it helped them to *consciously* identify themselves as a separate and independent group. Forging of solidarities and collective identities, then, helped the shaping and strengthening of bonds between laborers that allowed them to form a cohesive unit where no men were left behind. As Bruce Jackson explains, these songs "kept a man from being singled out for whipping because he worked too slowly. The songs kept all together, so no one could be beaten to death for mere weakness" (cited in Gioia, 2006: 209). In their communal function, then, work songs helped the creation, sustainability and preservation of different singing communities.

1.3.3.4. Personal Functions of Pre-Industrial Functional Music

When used as a mode of expression, work songs not always contained social commentary but also helped the manifestation of the most personal, individual emotions as well. The scene of the work becomes a stage for the revealing of inner truths, hopes and dreams, yearnings, lovelorn feelings and even some local gossip as well as positive and negative commentaries on mutual acquaintances. According to Ruth Rubin, for instance, "many love songs and ballads [in Yiddish folklore] were created by women as they sewed the garments for the rich [as] these working girls poured out their heart in plaintive songs which described their hard, colorless [and] often celibate lives" (cited in Gioia, 2006: 82). Singing about an enamored one while attending to other tasks provides an opportunity for confessing secret emotions and a very common performance activity in virtually all parts of the world (for examples of songs, see Bock, 1949: 211; Vanamamalai, 1964: 400-401; Vissel, 1988: 45).

As these examples shows, such songs do not necessarily relate to working conditions and, unlike the previous function, certainly eschews from questioning the exploitative nature of labor. Still, putting into song the heartfelt desires and disillusionments provides consolation and solace for the performer, especially if he or she feels stuck in a situation with no future prospect or hope. As Frederick Douglass elucidates on the African-American work songs, "slaves sing most when they are most unhappy. The songs of the slave represent the sorrows of his heart; and he is relieved by them, only as an aching heart is relieved by its tears" (1845: 15).

Korean farmers used to sing the following song to console themselves and acquiescence with their life on the fields:

> "Fellow farmers, let us not think our farming is a hard life,
> For there is no other way except this for living,
> For it is the best way for living,
> And also we are destined to farm.
> Fellow farmers, let it be our pleasure." (Man-Young, 1978: 23)

In addition to their more communal functions, then, work songs also helped the expression of individual emotions otherwise remain hidden and secret. Work scenes offered a performance stage for the individuals, where they sing about their personal lives in a very open and frank manner. The disclosing of personal feelings in an artistic form, in return, relieved and comforted its utterer and, thus, distracted from the harsh realities confronting her.

1.3.3.5. Self-Disciplinary Functions of Pre-Industrial Functional Music

The final function of pre-industrial music relates to its capacities to keep the worker in focus and to execute a better job. This can be achieved through songs' psychological functions to incite courage, enhance concentration, maintain discipline and to keep the worker from falling into slumber as well as its more material benefits like helping the worker to keep count on what he or she is doing. We have already seen that one side-effect of shepherds' or cowboys' singing, aside from divertissement, was to keep them and their cattle alert to

avoid any disastrous consequences. But song's use to rouse spirits and sustain vigilance was prevalent in many other professions as well. One interesting example is brought to us in the context of plainsong performances in churches during the later middle ages:

> Bonaventura of Brescia teaches his Franciscan novices in 1497 that responsories at Matins are to be intoned in a lively fashion, to stir up any of the brethren who may still be dozing - Matins was sung at midnight! Antiphons, on the contrary, are to be sung with a soft, sweet voice. Introits are to be announced with the accents of a herald, to incite the congregation to worship. Tracts and graduals are slower, and a steady *tempo* is to be maintained throughout. Finally, offertories and communions are to be sung at a moderate pace. (More, 1966: 123)

Songs awaken the sleeping minds and bodies of workers and keep them on their job, especially when the work was repetitive and stretched throughout the whole night. In his study on British lacemakers, Porter tells us how songs performed in "short, catchy, unaccompanied rhymes known as 'tells'", helped the whole workforce – mainly consisted of little children – from going to sleep (1994: 42-43). In addition to fixing workers' attention on the task at hand, these "tells" contributed to a much more tangible aspect of the work process, that of production. As Porter expounds, the modulation of the bobbins that manufactured the laces were modulated to the tunes of these short and rhythmic ditties, hence, they "were used as counting rhymes in tallying the gold-headed pins used to fasten lace" (ibid: 44). It was, in effect, a memory aid that helped to keep track of the production:

> A pin was stuck in as each line was chanted, and after the whole had been gone through a fresh beginning was made with 'Eighteen long lines' etc., the number being reduced each time until 'No long lines' etc. was reached. As there are 35 lines in the 'tell, a total of 700 pins was accomplished by the time the whole series had been gone through." (Bedford cited in Porter, 1994: 45)

A similar use of singing as a counting system was also recently observed by Tuck (2006) as an established tradition amongst the rural textile weavers of India and Afghanistan. He suggests that the rhythmic and repetitive chants of songs serve as a cue for the remembrance and reproduction of woven patterns and states that "in the conversion from a new image on paper to a woven

pattern, weavers reduce images to numerical grids that are then remembered and communicated throughout the course of production in the form of a chant like song" (2006: 540). Aside from its uses in the fabrication of textiles and other clothing materials, we also see the utilization of this particular function of work songs among sailors[20] and agricultural laborers – a perfect example being the *etra padal* songs of Tamil women drawing water from a Persian wheel. According to Ramaswamy, these songs not only help women keep count of the number of buckets filled with water but, in conjunction with the previous function, "constitute an expression of their social philosophy, their frustrations and everyday concerns" (1993: 119), such as the following song:

> "If a become an old hag
> Where is the fragrance [in me]?
> For him there will be one without the home
> and one within
> Forty six, forty seven, forty eight [indicating the bucket count]"
(Vanamamalai, 1964: 417)

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[20] In her 1944 book *Steamboatin' Days: Folk Songs of the River Packet Era,* Mary Wheeler remarks that, "in order to make themselves understood, often through wind and rain, the measurements are sung in a sustained chant and each leadsman evolves his own tune and rhythm that he associates with the various depths" (cited in Gioia, 2006: 130). A similar use was also accounted by Mark Twain in his memorable travel book *Life on the Mississippi*, which depicts his life as a steamboat pilot.

CHAPTER 2. INDUSTRIAL FUNCTIONAL MUSIC

2.1. Introduction

As the 19th century was drawing to a close, different perspectives on the nature of changes and fortunes awaiting humankind in the upcoming years were also being widely prophesized in the literary accomplishments of the time. Some took a more lenient and benign approach towards the coming of age of industrial capitalism, whereas others were more reproachful and critical of the rampant injustices they believed to be at the root of this new economic reconfiguration. In lieu of bleak and morose social realities, therefore, these latter authors instead envisioned their own idealistic societies where music assumed new roles in the advancement and betterment of human condition in a highly rationalized and technologically developed world. Among those was American author and political activist Edward Bellamy, whose 1888 book *Looking Backward* vividly portrayed an egalitarian future society untainted by the malignity of competitive capitalism and, with a tinge of irony, also presaged the materialization of novel and modern ways of musical production and consumption. The following excerpts taken from his book, describing the first encounter of the protagonist Julian West with contemporary music after he was awakened from his 113-year hypnosis-induced slumber in the year 2000, perfectly capture the shape modern functional music would take in the not too-distant future:

> *"Please look at to-day's music," she said, handing me a card, "and tell me what you would prefer. It is now five o'clock, you will remember." The card bore the date "September 12, 2000," and contained the longest programme of music I had ever seen. It was as various as it was long, including a most extraordinary range of vocal and instrumental solos, duets, quartettes, and various orchestral combinations. [...] Then I observed that this prodigious programme was an all-day one, divided into twenty-four sections answering to the hours. There were but a few pieces of music in the "5 P.M." section, and I indicated an organ piece as my preference.* (1888: 70)

Already in the short-span of this paragraph we can observe some of the peculiar properties modern functional music would later adopt: *careful programming, variety, instrumental renditions, portioning of music into different time slots* – all these characteristics, as we shall see, would later be exploited by the proponents of functional music producers and publishers. Yet the more prescient part of the narrative concerns *how* this music was originated and conveyed to the listening public:

> *She made me sit down comfortably, and, crossing the room, so far as I could see, merely touched one or two screws, and at once the room was filled with the music of a grand organ anthem; filled, not flooded, for, by some means, the volume of melody had been perfectly graduated to the size of the apartment. [...] She said: "There is nothing in the least mysterious about the music, as you seem to imagine. It is not made by fairies or genii, but by good, honest, and exceedingly clever human hands. [...] There are a number of music rooms in the city, perfectly adapted acoustically to the different sorts of music. These halls are connected by telephone with all the houses of the city whose people care to pay the small fee, and there are none, you may be sure, who do not. The corps of musicians attached to each hall is so large that, although no individual performer, or group of performers, has more than a brief part, each day's programme lasts through the twenty-four hours. [...] The programmes are so coordinated that the pieces at any one time simultaneously proceeding in the different halls usually offer a choice, not only between instrumental and vocal, and between different sorts of instruments; but also between different motives from grave to gay, so that all tastes and moods can be suited.* (ibid: 70-71)

Walls emitting sounds that are not too loud to assault listener's frame of mind but moderate enough to subside and fill the entire space like an acoustic cocoon; music that was meticulously designed by "clever human hands" to cover every mood and taste and, finally, music that is transmitted via telephone lines and accessible around-the-clock in exchange for a marginal fee: this was what progenitors of modern functional music had in mind when they emerged on the scene at early 1920s[21]. Of course, being a socialist himself, what Bellamy merely envisaged was a pleasant aesthetic service that would only reach individuals

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[21] As Lanza's compelling account on the history of functional and easy-listening music in the United States relates, after being established in 1922 under the relatively inconspicuous name of Wired Radio Inc., Muzak's first-ever broadcasts to domestic households comprised three channel options featuring news and dance music for a meagre subscribtion fee of $1.50 a month (2004: 28)

when and *where* they want it - preferably in their own private domains. In his vision, switches controlling the flow of musical transmissions would safely be at the hands of their users, so that only they would be able to determine the conditions of their listening experience. Accordingly, the musical offerings would provide more than a simple background entertainment, thus demanding an unwavering attention and an active mode of listening from its audiences.

One can only assume that Bellamy would have never anticipated his utopian dream of providing everyone with music would in reality be morphed into a *disciplinary* technology, put into service of furthering capitalistic aims of maximized profits and creating a docile, obedient workforce in factories where workers had no autonomy or choice in determining the musical programs forced upon them. But how has this transformation occurred? How did it become possible that Bellamy's hopeful vision had perverted into an instrument of power and control? In this chapter, we will analyze how the collective, spontaneous and autonomous songs of the *worker-performers* in the pre-industrial era gave way to a new form of functional music which was *scientifically designed and programmed* and *relayed top-down* in order to *increase productivity and factory efficiency.* But before turning to these new functions and characteristics functional music, let us first examine how traditional types of functional music slowly disappeared and how a brand new form of functional music came into being in its wake.

2.2. The Demise of Pre-Industrial Functional Music: New Machinery, Steam Power and Industrial Discipline

Even at the time when Bellamy was first sharing with the reading public his anticipation of a society where every house was perpetually connected and awash with musical compositions, laborers toiling in open fields were still continuing to sing songs of hardship and perseverance in an effort to coordinate their physical movements and alleviate the tediousness of their tasks. One particularly popular song among African-American workers in the South during that period was "John Henry", the tragic tale of the semi-mythic figure who was

believed to worked himself to death as he was trying to beat a steam drill while driving steel in the Big Bend tunnel of West Virginia in the year 1870 (Johnson, 1929: 71-72). The song's historical significance not only stems from the fact that it was a very well-known and commonly sung tune, nor that it being one of the final vestiges of traditional work songs now at the verge of extinction. The real power of the story of John Henry lies with its realistic understanding of the changes brought forth by industrial revolution and its stark depiction of the tragic consequences it caused upon the agricultural laborers as seen and told from their own point of view. It was, in a way, workers' coming to grips with reality in a poetic form – the reality being that the days of manual labor, as well as the songs accompanying them, was numbered and physical labor was soon to be replaced by steam-powered machines:

> *John Henry started on the right-hand side,*
> *And the steam drill started on the left.*
> *He said, "Before I'd let that steam drill beat me down,*
> *I'd hammer my fool self to death,*
> *Oh, I'd hammer my fool self to death."*
>
> *[...]*
>
> *John Henry said to his captain,*
> *"A man, he ain't nothing but a man,*
> *Before I'd let that steam drill beat me down,*
> *I'd die with the hammer in my hand,*
> *Oh, I'd die with the hammer in my hand."*

If, then, *Looking Backward* portrayed technological advancement as a solution and a way of overcoming society's tribulations while simultaneously promoting the welfare of the whole, the ballad of *John Henry* depicted the impending mechanical revolution as a threat to traditional ways of being and living. It is in this context that John Henry's struggle against new machinery became the lyrical epitome of "protest against imminent technological unemployment" (Greenway, 1971: 107). But, more importantly, as Franklin argues, "what John Henry symbolizes is a historical certainty: both the passing of the age of hand labor, with its songs, into an age dominated by machinery, and the heroism of the workers who were forced to build, largely with hand tools and under the worst possible conditions, the very machinery that would make their labor

unwanted – the railroads, the mines, the mills, the roads, the factories, the engines" (1979: 19). Soon the roar of machinery and the din of workplaces would completely drown out and drive away the last remnants of collective, spontaneous and ingenious musical creations of *worker-performers* and the noise emanating from these same machines would completely dominate the soundscapes of labor. In the words of Brown, then, "the new-fangled machine killed John Henry [while] its numerous offspring have killed the work songs of his buddies [since] no hammer song could compete now with the staccato roaring drill even if the will to sing were there" (1953: 57-58).

Yet one should be wary of concluding that singing at work had simply and completely ceased and vanished as a result of industrialization. The disruption of the symbiotic relationship between autonomous physical labor and pre-industrial forms of aesthetic production (or, in other words, *the mutual constitution of music and work*) as a result of the advent of heavy machinery did not automatically meant the "killing" of work songs or their instantaneous replacement with a new musical form. On the contrary, performance of songs by laborers had continued in some factories and, in fact, was initially encouraged by paternalistic managements as a way to sustain physical and spiritual well-being of their workers (Robertson, Korczynski & Pickering, 2007: 215-217). For instance, from as early as May 1905, the in-house magazine of the Rowntree company informed their readers about the introduction of half an hour of singing in one of their chocolate factories whereby women workers could sing religious hymns to the accompaniment of a violin *while* they were on the task of covering chocolates: "morning visitors to the Works have occasionally been somewhat astonished to meet a violin in the cream-room corridor about 11 o'clock, looking very frivolous and out of place at that prosaic and work-a-day hour" (cited in ibid: 211).

However, as one can infer from the above statement, this was not the spontaneous or arbitrary bursting into a song by the workers as it was the case with the pre-industrial laborer. Instead, what we have here is a *systematically implemented and regulated* musical activity, carried out under the auspices of a

watchful management[22]. Consequently, in rare instances where workers went outside their allocated time slots for singing, they were usually punished for their musical transgressions: in Manchester, for example, spinners would be fined one shilling if they ever caught singing or whistling in front of their machines (Korczynski, 2003: 321) and Cadbury company would impose a halfpenny fines in cases of "*unnecessary* shouting or singing" (Robertson et al., 2007: 215, *emphasis added*). Hence, even in contexts where singing was not frowned upon, it was only allowed to the extent that it suited the wishes and regulations of the management or the individual employer. As we shall see later on in more detail, the attitudes of managements towards music on the shop floor would change as scientific studies heralding and celebrating wonders music could do for the industrial production became more prevalent in the late 1930s. But, as things stood at the turn of the century, pre-industrial modes of functional music were either completely withering away or being forced to adapt to new roles in industrial contexts.

We can specify two major factors contributing to the demise of pre-industrial functional music: the first we have already alluded as one of the main themes of the epic of John Henry, that is, *the rupture of the organic relationship between music and physical work*; while the second is *the emergence of new forms and approaches to discipline in the workspace.* It is suggested here that both these historical developments had an immense effect upon the breakdown of one of the most important tenets of pre-industrial functional music – *the autonomy of labor.* As we have argued in the previous chapter, the relative autonomy of workers in deciding when to begin and cease their job in addition to determining their own pace without any outside intervention had a considerable impact upon the flourishing of work songs. However, as new technologies and industrial tools for the faster, cheaper and more efficient manufacturing of goods and raw materials became more widespread, the

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[22] Another Quaker businessman of the time, Edward Cadbury, would similarly explain the benefits of singing as a form of physical exercise thusly: "The break for physical training also lessens the monotony, and occasionally, at a sign from the forewoman, the girls in some departments sing together, still continuing work; the idea being to exercise the lungs and brighten the working hours" (1912: 20-21).

autonomy previously enjoyed by workers gradually diminished and started shifting into the hands of those who owned these new techniques of production. As a result, the duration and rhythms of labor now not only became more contingent upon the speed dictated by machinery, but, also, its organization and management were determined by the rules laid down by the owners of these modern instruments, i.e. employers. In the following discussion I will briefly turn my attention to these two historically crucial developments to show that the replacement of manual labor with automated machines and the relegation of workers to the bottom of workplace hierarchy did not only facilitate the due disappearance of work songs but were equally responsible for the birth of a new, modern type of functional music produced exclusively for industrial settings and audiences.

2.2.1. Getting Out of Sync: The Changing Rhythms of Labor

As we have seen in the previous chapter, pre-industrial functional music was born out of physical toil - the dance-like motions of work, which can be suggested to carry an inherent wisp of poetry[23], provided an appropriate ground for the emergence of songs. In return, these songs added a quality of playfulness that alleviated the tediousness of a task as well as helped the coordination and orchestration of bodily efforts. But what happens when the movements of the labor is no longer informed and designated by the physical necessities demanded by the task at hand? Would there be any wisdom in keeping on singing even if it no longer serves a critical purpose for the accomplishment of the job? These were the type of questions that would shape and determine the trajectory functional music would take as the world was moving toward the industrial age.

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[23] Karanika (2014: 138), for instance, relates to us how the richness of the movements in daily life gave rise to "occupational" dances performed on stage as entertainment in ancient Greece. These dances comprised of the "aesthetic" rendition and reinterpretation of ordinary somatic movements of daily work, such as cooking, cleaning, mortar pounding, sowing, etc. for the amusement of audiences.

It has been widely asserted that the invention of steam engine was a major contributor to the gradual disappearance of work songs and, particularly, the shanties sang by sailors and mariners (Terry, 1915; Whates, 1937). Unlike their more advanced successors, the operation of traditional sailing ships and schooners relied primarily upon the manpower and physical capabilities of their crews. In order to keep their vessel afloat, the seamen on deck had to perform multiple physically-demanding tasks such as hoisting or hauling the sails, heaving the anchor, pumping waters, and so on. As we have discussed in the previous chapter, each of these tasks required a proper musical accompaniment corresponding to the movements of the work and the amount of effort it demanded – as with the halyard, capstan or windlass shanties. In addition, we have also seen that these songs fulfilled an important function: they acted as an acoustic incentive to extract the optimum strength from each worker; they collaborated the efforts of the whole crew and, in effect, served as another *tool* for the successful execution of the tasks.

When the *Age of Sail* had come to an end with the advent of screw propellers and steamships, "the age of shantying" on the open seas had also petered out eventually. For some observers the death of shanties was to an extent a welcomed one. Since the whole purpose for the existence of shanties was to accompany manual labor, their end, in a sense, also signified the end of heavy physical toil (Whates, 1937: 261). Simply put, when there were no more sails to be hauled, there remained no purposeful role for a hauling shanty, thus irrevocably shattering the natural and organic link between physical work and musical creation. Music could, and as we shall see later in our discussion still *would*, fulfill other functions such as diversion, communication or personal expression; yet its primary pre-industrial function, of maintaining physical coordination, was rendered superfluous as technological means became advanced enough to replace collective human effort.

Yet in addition to losing their whole *raison d'être*, shanties and other work songs were also facing a much straightforward and practical problem: *noise.* For centuries, the aural ecology of workers was chiefly constituted by the natural

sounds of their environment and the artificial songs created by them. Human voice was to a large extent unrivalled in generating a pleasant sonic backdrop to manual labor. This was altered by the Industrial Revolution as industrial *noise*, the unwelcomed by-product of technological progress, generated by steam engines and blast furnaces had become the most sonically dominant element - the "Sacred Noise" (Schafer, 1994: 76) - by suppressing all other sounds dared challenging it[24] (see also: Korczynski et al., 2008: 83; Watson, 1983: 11). Writing in *Harper's Magazine,* for example, journalist William Alden could already surmise the somber fate awaiting shanties now that the number of steamers crowding the oceans and rivers were multiplying:

> The present race of marine brakemen who form the crews of steam vessels can not sing. There is but one solitary song that is ever heard on board a steam-ship and that one belongs to the least artistic class of sailor songs. The "shanty-man" – the chorister of the old packet ship – has left no successors. In the place of a rousing "pulling song", we now hear the rattle of the steam-winch; and the modern windlass worked by steam, or the modern steam-pump, gives us the clatter of cog-wheels and the hiss of steam in place of the wild choruses of other days. *Singing and steam are irreconcilable.* The hoarse steam-whistle is the nearest approach to music that can exist in the hot, greasy atmosphere of the steam-engine. (1882: 281, *emphasis added*).

The rhythms of work were rapidly changing and, along with them, the soundscapes of labor. Just as the steamships killed the work songs of the sea, so did industrialization and mechanization nearly brought the songs of agricultural workers to an abrupt end (Gioia, 2006: 104). It was not merely that the human voice was not powerful enough to compete with and rise above the noise of the industrial machines. Equally important was the fact that, with its harsh mechanical exterior and repetitive, alienating features, factory work was not necessarily inviting for the burgeoning of anything that possessed humanly qualities, such as singing[25]. The assembly-line work was completely antithetical

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[24] It was around this period, 1886 to be exact, that first scientific inquiries into the effects of sustained exposure to high-frequency loud noises (such as factory din) upon hearing capabilities of industrial workers were conducted by Thomas Barr of Glasgow Hospital and the impediments caused by this affliction entered the medical lexicon under the term "boilermakers deafness". It was only almost half a century later, in 1928, that *decibels* were used as scientific measurement of sound levels.

[25] Correspondingly, the musical production by laborers would now take place *outside* the factory walls. Ensembles and choral bands constituted by workers would conglomerate and

to the "dance-like movements" of pre-industrial labor and, therefore, was not in the least suitable for artistic creativity. As Simone Weil, a former factory worker, remarked in her diary, the somatic movements of factory work did not possess the same aesthetic quality and appeal that pre-industrial labor did: "In factory terminology one does not describe the succession of movements with the word 'rhythm' but one speaks of 'cadence', and rightly so, since this succession is the opposite of rhythm. Any series of movements that is attuned to the beautiful [...] contains momentary pauses, instantaneous as lightning, which form the secret of rhythm and give the observer, even in motions of great speed, an impression of leisureliness" (Korczynski, 2011: 91). Factory work was devoid of the rhythmic gentleness and beauty - in essence, "the poetry" – commonly ascribed to traditional manual labor and, as such, did not organically stimulate workers to spontaneously generate musical accompaniments to their labor. As Mumford argued, in the mechanical and dehumanizing context of the industrial workshop it was "the number of revolutions per minute, rather than the (human) rhythm of song or chant or tattoo" (1934: 201) that orchestrated the labor. Hence, in the end, it was not their songs that workers enjoyed as an acoustic accompaniment for most of their working time but the rhythmic and monotonous clanking of the machines.

2.2.2. Industrial Discipline and Management of Labor

Yet it was not this inherently antagonistic nature of industrial work that single-handedly prevented the perpetuation of pre-industrial modes of functional music. As stated earlier, singing as a form of sonic accompaniment to labor has survived in some industrial contexts either as a result of an active encouragement by paternalistic managements or by workers' own volitions[26].

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perform at music halls or local parades during their leisure times as a social activity. According to Hui, managements often encouraged and funded these employee bands as they were an effective way of raising the public profile of the company (2014: 366).

[26] As an *Industrial Welfare* article argues, "to a question regarding the attitude of management towards singing by employees to music, 174 of 217 firms replied that they had no objections and some even encouraged it, but 36 opposed it. It is probable that the majority found it difficult, if not impossible, to stop it" (cited in Korczynski, Pickering, Robertson & Jones, 2005: 214-215). In more extreme cases, like the Vultee Aircraft Plant in San Diego, "live music"

For instance, Dorothy Scarborough observed in early 1920's that singing as a form of recreation has survived in several Virginian tobacco factories despite the rivalry generated by machinery noise: "There is a good deal of singing in tobacco factories in the South to-day, but less than formerly, since machinery has been substituted to do what once was done by hand. In the old days, the workers sang in chorus at their task; and now that the roar of wheels would drown out their voices, in some factories the machinery is stopped for brief periods during the day and the toilers rest themselves by singing" (1925: 206). Similarly, convinced that industrial efficiency at his factories was suffering because his workers were not singing at their benches, French entrepreneur and financier Jaques Vernes decided to re-introduce music in 1913 as part of his grander national project "to revive music in mills, workshops, and on all governmental works in the Republic":

> I have decided to introduce music in all of the industries with which I am connected. I tried it in the Pyrenees, where we built many roads and bridges. The result was simply amazing. I took a special squad of workmen, and on days they sang they did better work, were in a better humor, and were far less fatigued than on days they did not sing. And I noticed that from the singing workmen there came fewer complaints. (cited in Vescelius, 1918: 396)

Even at the times of Second World War, when broadcasting of programmed music into factories via radios or phonographs became a very common practice, singing *while* working was still pretty much alive among female factory workers (Korczynski, Pickering & Robertson, 2013; see also: Glossop, 1961: 70-71) albeit in a less participatory and lively manner as this ethnographic study by Mass Observation attests:

> Now and then sporadic bursts of singing start in some part of the room or other and continue for a few minutes. It is usually a purely local affair, confined to the occupants of few square yards of bench – nothing approaching community singing through the room ever develops. […] Another possibly significant point is the fact that singing at work never

provided by "two military bands, one of fifty-seven pieces from the day shift, and another of thirty-five from the swing shift" (Keen, 1943: 541) were used as laborers constructed bomber fleets.

spreads all through the room but remains confined to the corner where it started. Sometimes, indeed, different parts of the room will be singing different songs at the same time. (cited in Korczynski, Pickering, Robertson & Jones, 2005: 202)

What this above anecdote tells first and foremost is that the changing rhythms of labor and the alienating nature of factory work as a result of advanced industrialization cannot individually account for the disappearance of pre-industrial functional music. Yet, as our discussion of the emergence of modern types of functional music will further elaborate, we should also bear in mind the special circumstances brought forth by the Second World War, which led employers and managements to grudgingly turn a blind eye on worker behaviors they previously held in contempt or labeled as undisciplined. However, this was not necessarily the case in the years leading to the outbreak of war. For instance, just several years before the Mass Observation report, a scientific inquiry by S. Wyatt and J. N. Langdon on the causes of fatigue and boredom in repetitive types of work, which was frequently credited as *the* study that paved the way for the birth of industrial functional music (Antrim, 1943; Haden-Guest, 1973; Jones & Schumacher, 1992), was still lamenting about the stern attitude some employers had against singing in their factories: "The objections to talking do not apply to singing. Unfortunately the majority of employers regard singing as a form of frivolity, which would desecrate the atmosphere of serious work. They overlook the fact that singing is not only a wholesome means of escape from boredom, but is also a stimulant to cheerful feelings and increased activity" (1938: 31). For the pre-industrial worker singing was a natural and an essential part of his or her labor, whereas for the industrial employer it was completely inappropriate and anomalous with the novel conditions of work.

Therefore, in addition to accommodating new work rhythms determined by the pace of machinery, workers, who traditionally accustomed to having their own *autonomy,* now also forced to adjust to an alien *work discipline* being imposed upon them. In the highly rationalized and scientifically organized Fordist workspace, where everything was "*taylored*" (Lanza, 1991: 44) towards procuring greater efficiency and productivity, singing was merely a form of

idling and, therefore, had no place within the labor process. In the preliminary decades of industrial capitalism, many employers saw singing as inimical to factory discipline and productivity and, hence, proceeded to impose serious bans that would curtail workers' engagement with music. Although it was not just the potential harm singing could cause upon the output levels that worried the employers. As we have seen in the previous chapter, singing can be a powerful instrument in building and enabling communities amongst workers and the literal human *voice* can easily translate to voicing of discontent and grievances. This was one of the primary reasons why employers found singing incongruent with factory discipline: their overarching aim was to prevent the formation of solidarities on the work floor that could potentially pose a challenge to existing hierarchies and power structures. As Korczynski concludes in his ethnographic study of singing cultures in a blind manufacturing company, there is an almost inherent tension between workers' desire to sing and management's attempts to maintain the factory status quo: "Management was seeking to change this culture [of singing], for they saw in it the basis for workers' informal collectivism that had fought against management on a number of issues. A production manager told me in an interview that 'there's too much sticking together out there on the floor. We're looking to change that culture'" (2011: 104).

In conclusion, technological changes and innovations in industrial machinery at the turn of the 19th century had significant implications for the social and economic reorganization of society. One such transformation included the disenfranchisement and dislocation of many agricultural laborers that used to a certain degree of autonomy within their manual work to migrate to large cities in order to find work at recently opened factories. For employers this process required the active and controlled socialization of workers, who were still clinging to and retaining pre-industrial habits, into the new, standardized work culture. As Husch states, "traditional skilled work was performed at a leisurely pace or in spurts of great intensity at the discretion of the individual worker. In modern industry however, work must be performed above all with a regular intensity. Traditionally the skilled worker was trained to work accurately on

individual designs: in modern industry the worker adapts his sense of accuracy to the requirements of standardization" (1984: 7). Industrial capitalism, therefore, necessitated a complete break from pre-industrial modes of organization and production; and, the autonomy of workers, along with their musical creations, was among the first victims to fell to scientific and rational re-organization of work activity. Acts of singing without the prompt of administration or not guided by them were deemed detrimental to factory efficiency and, thusly, prohibited. And even in exceptional cases where singing was allowed, their performers still had to compete with the rapid rhythms and loud noises of heavy machinery:

> There are few industries which, since the very beginnings of industrialization, have permitted the performance of song. "Permitted" in the twin sense of the word, in that it was partly not possible for technical reasons (noise), and partly because it was forbidden as a convenient disciplinary measure. The bloody-minded ban on songs in many factories was a conscious ideological attempt, first to establish authority and dominance on the part of the mill-owners and, second, to kill old pre-industrial habits and work rhythms which would interfere with the strictly regulated and highly co-ordinated pace of factory production. (Watson, 1983: 12).

With the onset of industrial standardization, then, a new context of labor began to emerge that was inconducive "both for the continuation of older work songs and for the generation of new ones" (Pickering et al., 2007: 240). Yet, as Gioia (2006: 96) remarks, the workers were adamant in not giving up their musical traditions and only acquiesced to do so when a viable substitute offered in its stead. This substitution would take the form of *modern* (i.e. *industrial*) *functional music* or, as it is widely called, *Muzak*:

> As production processes became increasingly mechanized - and inevitably noisier - many laborers tried nonetheless to hold onto the singing traditions that had played an important role in less industrialized settings. The ways they did this were many, and the immediate results not always the same, but the inevitable long-term solution in almost every instance was that the workers were forced either to sing outside the factory walls or to change the music inside from active singing to passive listening (ibid: 108).

At long last, a type of functional music that was not contradicting or hampering,

but actually supporting the aims of industrial capitalism has came into being. But what do we mean by *industrial functional music*? What exactly does this new musical form entail? Why did managements and employers, who once strictly opposed any type of musical activity inside their factory walls, were now welcoming this new musical type? What were the main features of such music and how was it adjusted to new settings of labor? It is to these questions I now turn to.

2.2. Characteristics of Industrial Functional Music

In many respects, the emerging form of functional music was an aesthetic *simulacrum* of the changes taking place in the nature of work. Just as the industrial labor practices were becoming more rationalized and scientifically standardized in order to eliminate any chance happenings that could decrease factory efficiency (Gantt, 1919), so did its musical accompaniment had to be rationally and scientifically re-arranged in order to meet the demands of industrial production. In a sense, as Husch emphasizes, this new type of functional music was "*the* musical symbol of science and technology" (1984: 145, *emphasis added*). In other words, the conditions that perpetrated the emergence of new labor contexts were also the primary causes behind its musical accompaniment.

This new functional music was not, then, unlike its predecessor, an organic part of labor that seamlessly flowed from the rhythms and necessities of the task at hand but, instead, an *artificial, standardized* and mechanical form of music meant for equally artificial, standardized and mechanical contexts. Whereas the pre-industrial functional music was spontaneously created (i) *by* workers *for* workers and acquired its aesthetic properties from the bodily movements of physical labor; (ii) believed to possess magical qualities that helped the execution of a particular task and; (iii) finally, had multiple functions that permeated everyday life; industrial functional music is primarily characterized by *(i) the top-down implementation of a scientifically programmed music in order*

to ii) sustain the morale and well-being of the factory workers doing standardized, repetitive mechanical work and, iii) increase the productivity and efficiency of the factory workforce by relieving fatigue and boredom. In the following analysis, I will first address the properties that give industrial functional music its distinctive quality (i.e. being *programmed music* and *exercised top-down*) before turning my attention to the uses and functions it has in industrial contexts (i.e. *bolstering the morale* and *enhancing productivity*).

2.2.1. Industrial Functional Music as Programmed Music

In the late 1930's when industrial psychologists took a newfound interest in rediscovering "why the Volga Boatmen's song and the early tribal chants lightened the burden and monotony of labor centuries ago" (Antrim, 1939: 4-5), and searched for scientifically valid methods for harnessing that power for the sake of industrial efficiency; one of the first things they realized was that it was not just the introduction of *any* musical input but their careful *programming* and *sequencing* that made an actual difference in terms of efficiency and productivity (Haden-Guest, 1973: 20; Styhre, 2013: 34). For music to become functionally effective, then, it should not be played haphazardly[27], but had to be specifically and scientifically programmed by experts, who were capable of determining *what* kind of music would elicit *which* type of responses in their listeners (Baade, 2012: 70). This, in return, meant an elaborate control of every stage of the musical production process "from the creation or composition of the music through its instrumental arrangement, its performance, its interpretation, its preservation, its reproduction, and distribution and finally

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[27] Before the outbreak of the war, and especially by the early 1920's, playing of albums supplied by workers on phonographs during work breaks was a very common practice in many factories (Hui, 2014: 368). An article published in a 1941 issue of *Industrial Welfare* journal, for instance, relates how gramophone music was utilized by employers in order to break the monotony and sustain productivity in the early days of industry as follows:

> Sir Robert Davis, Managing Director of Siebe, Gorman and Co. Ltd., claims to be one of the first employers to have music in his works. His employees used to have to march up and down at four miles an hour for two hours at a time testing breathing apparatus. In order to break the monotony he introduced a gramophone and played such stirring marches as 'Soldiers of the King'. That was thirty years ago. The effect on the men was so marked that the works have had music ever since. (cited in Jones & Korczynski, 2006: 148)

the manner and circumstances of its presentation to achieve the desired psychological effect upon the ultimate listener" (Cardinell & Burris-Meyer, 1947: 549). This requisite for the complete control over musical production would later reach its apex with the Muzak company as one of their promotional pamphlets boasted: "the special quality of MUZAK music – from its original selection, arrangement and performance through every process of bringing the music into the factory – is fully protected by MUZAK's complete, expert control of production from start to finish" (cited in Hui, 2014: 364). Music at the workplace, then, was no longer the product of worker ingenuity but an object that, like the rest of the labor process, can be supervised, controlled and scientifically measured and quantified in order to eliminate any chance happenings that would occur at the expense of efficiency and productivity.

In its most simplistic sense, what musical programming entailed was "the appropriate selection of when to play what type of music" (ibid: 371, see also: Benson, 1945: 19) with an underlying intention "to evoke a desired response from an individual engaged in a particular task at a particular place" (*Challenge Magazine,* 1953: 26). In its more practical implementations, this *programming* of music had to comply with *three* strictly-defined rules: i) it had to be *re-orchestrated and re-arranged* according to *scientific* considerations; ii) it had to operate *unobtrusively* in the *background* and beneath the level of perceptual consciousness and, finally, iii) it had to include only the most *familiar* and *popular* tunes of the period. It has been widely conceded that a piece of programmed music could only exert its full functional capacity to the extent that it complied with all these three principles (see, for instance, Radano, 1989). Therefore, in order to thoroughly comprehend the first characteristic of industrial functional music, a closer look into each of these tenets is warranted.

2.1.1.1. Scientific Orchestration and Arrangement of Functional Music

In June 1940, just three weeks after the Allied troops had suffered a hugely demoralizing military setback at Dunkirk, the BBC inaugurated a series of radio programs called *Music While You Work* to drive up the production rates in

wartime factories, shipyards and arsenals. This was a defining moment in the cultural history of the BBC: for nearly two decades since their inception, the corporation had vigorously pursued a cultural policy based upon elevating the levels of taste and aesthetic appreciation of common people through their broadcasts of light classical music as well as we encouraging attentive modes of listening. In his memoirs, written three years after he founded the BBC, John Reith summarized the important role radio and broadcasting had for the cultural education and upliftment of general public thusly: "I think it will be admitted by all that to have exploited so great a scientific invention for the purpose and pursuit of entertainment alone would have been a prostitution of its powers and an insult to the character and intelligence of the people" (1924: 17). This ethical and normative approach towards the alleged benefits radio could have for general audiences was epitomized by the BBC in the image of a tired businessman, who tunes into and listens the broadcasts in the privacy of his home with his full attention in order to relax after a tiring day at work (Baade, 2006: 356). Therefore, the introduction of a program that was made purely for the needs of a special public audience (i.e. factory workers) for communal and inattentive consumption was antithetical to every aesthetic and moral principle upheld by the BBC at the time. Yet when the war was in its critical stages and there were pressing demands from the front lines for more equipment and ammunition, what the workers needed was not aesthetically appealing, serious music but *functional* music that would help them forget the alienating nature of their labor and help the pass the time more quickly. *Music While You Work* successfully compensated for this shortcoming by becoming the main provider of *scientifically orchestrated* music to industrial audiences in the hopes for boosting their productivity efforts.

Since *Music While You Work* constituted a *sui generis* example[28] for the BBC broadcasting policy, it, in many respects, required experiential learning where those responsible for the production of the program had to find the right course by sheer trial and error. However, eventually its programmers would excel in

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[28] The only musical programme that came close to and capable of guiding *Music While You Work* was "The Forces Programme", which also targeted a special segment of the audience (soldiers) and encouraged non-attentive, background modes of listening.

the craft of producing functional music for factory spaces and create an archetype of industrial functional music for others to emulate. Just nine days prior to the airing of the first episode, for instance, a brief memo sent out by the administration laid down some ground rules about the functional nature of the program and the type of music to be played. This notice decreed that the musicians had to play only *non-vocal*[29] and *rhythmical* music in a *constant tone level* so that their songs would not be drowned out by the factory workshop noises. It also forbade the use of any announcements between songs as they would only disrupt the flow of the program and distract the attention of the workers (cited in Jones & Korczynski, 2006: 149). These directives were later supplemented by another, more elaborate memo dictated by the co-producer of the program, Neil Hutchison, three weeks later the show went into air. In it, Hutchison summarized some of the essential musical guidelines to be followed, such as:

> 2. From the point of view of the general listener we are asking for *a bad piece of program building*. There must be *as little variation of tempo as possible*, the ideal being to maintain the same beat through the whole program.
>
> 3. Artistic value must <u>not</u> be considered. The aim is to produce something which is *rhythmically monotonous and repetitive*; a "sustaining" background of bris, cheerful but unobtrusive music. Slow sentimental numbers and selections are ruled out.
>
> 4. Subtlety of any kind is out of place. *Quiet pieces should be avoided*. A more or less steady volume of moderately loud to loud power should be used throughout, and items selected accordingly.
>
> 6. Vocal items should *be well-known*. They should be used sparing and care should be taken to see that they carry the same beat as the rest of the program. (Hutchison cited in Jones & Korczynski, 2006: 149, *emphases added*)

Thus, in the efforts of *Music While You Work's* producers to create industrially viable music, we witness the first emergence of "a systematic tabulation of music according to its uses"[30] (London, 1936) *in and for workplace settings.* As

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[29] Only pieces with *familiar* vocals were exempted from this general rule.

[30] Here Kurt London specifically refers to the role of film music in generating and sustaining a particular mood for a specific scene. The parallels between modern functional music and

we have argued in the previous chapter, music had always possessed a *use-value* for its worker-performer as it was a natural and integral part of the pre-industrial labor process. However, the *scientific and systematic designing of music for utilitarian purposes* is a purely modern phenomenon. Through the implementation of scientific knowledge and principles during the musical design process, the aim was to produce "*custom-made functional music*" (Lanza, 2004: 40) that would create an atmosphere "of unrelieved brightness and cheeriness" (Wright citd in Baade, 2006: 354). It was understood that not just *any* kind of music but the ones processed and re-arranged in compliance with scientifically determined rules could bring about the intended result. In order to be functionally effective, then, the music had to be *reproduced* from scratch without any aesthetic pretensions or concerns for the musical tastes and preferences of its audience. As Burris-Meyer suggested, "the transcription carries something composed for the concert hall, the stage, or the night club [and] at best, it is only adapted to industrial use by re-orchestration and arrangement" (1943: 264).

In the remainder of this discussion I will look closely at some of the commonly resorted techniques governing the re-orchestration of programmed functional music. As the below list will demonstrate, it was not music as a synthetic whole (Adorno, 2002a: 290) *per se* but, instead, the *manipulation and modulation of individual elements* that make a musical product that concerned the

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background music in movies are interesting because both scientifically categorize music according to its uses and functions (see, for instance: Carpenter, 2014; Frith, 1984). Former film composer Max Winkler explains how serious pieces of classical music would intentionally performed out of tune in order to emphasize or control the mood of a scene (therefore the audience) as follows:

> The immortal chorales of J. S. Bach became an 'Adagio Lamentose for sad scenes'. Extracts from great symphonies and operas were hacked down to emerge again as 'Sinister Misterioso' by Beethoven, or 'Weird Moderato' by Tchaikovsky. Wagner's and Mendelssohn's wedding marches were used for marriages, fights between husbands and wives, and divorce scenes: we just had them played out of tune, a treatment known in the profession as 'souring up the aisle'. If they were to be used for happy endings we jazzed them up mercilessly. [...] Any piece using a trombone prominently would infallibly be dedicated to the homecoming of a drunk: no other instrument could hiccup with such virtuosity (1951: 237-238).

programmers of functional music. It was believed that through altering any one of these musical variables, the producers could also change the physiological or psychological *stimulus* of a song and, therefore, its *effect* upon the audience. The key parameters involved in programming were *rhythm and tempo, melody, vocals, variety, volume or tone level, duration* and *intervals of silence.*

2.1.1.1.1. Rhythm and Tempo

Given the fact that rhythm "is one of the [most] fundamental building blocks of music, and perhaps the simplest aspect for humans to identify with" (Prockup, Ehmann, Gouyon, Schmidt & Kim, 2015), it is only natural that it was one of the first musical elements that came under the scrutiny of program builders. Since rhythm refers to the movement of sound in time, it was generally believed to have an impact on the way bodies move in a physical space. As we have argued in the first chapter, musical rhythms *physiologically entraining* workers' bodies and setting a sonic template for the somatic rhythms of manual labor was the underlying characteristic of pre-industrial music's physical function. This belief in the inherently physical powers of music was also shared by many modern industrial psychologists interested in measuring the effects of music on factory productivity. In their pioneering study, for instance, Wyatt and Langdon found a direct correlation between the rhythmic intensities of different musical genres and variations in the levels of output:

> There are indications that the observed differences of outputs were connected with the different rhythms which characterized the five types of music. Thus in the case of the dance tunes the rhythms (arranged in descending order of speed) are one-steps, fox-trots, and waltzes, and the corresponding outputs show a similar decreasing tendency. In the case of the light music the rhythm was usually slower, less marked, and more variable than in the dance tunes, and this may be one of the reasons for the lower output observed when light music was played. (1938: 41)

However, this view would later be challenged by several other researchers, who rightly pointed out the fact that the new rhythms of industrial labor complicated the drawing of such straightforward conclusions between musical tempo and pace of working (Beckett & Fairley, 1944: 15). In his own experimental study,

Humes, for instance found no statistically significant relationship between a "slow" musical program (63-80 beats per minute) and a "fast" one (104-152 beats per minute) on the amount of scrappages made during the manufacturing of radio-tubes (1941: 583). Similarly, the composer and conductor Wynford Reynolds, who became the overall director of *Music While You Work* in May 1941, argued that selecting rhythms that are slightly in advance of the standard working speed of the operators in an effort to increase their working rates is completely "unsound [since] in all factories the processes are many and varied, and the working speeds of the operators vary accordingly; also, experiments have shown that the rate of working of the naturally slow operator cannot be stepped up to that of the naturally fast operator" (1942: 6). Indeed, experts in industrial psychology warned employers who are willing to relay music in their shop floor against the potential dangers of playing fast-paced music to boost up their production. An article published in the *Industrial Welfare* journal flatly argued that, instead of raising the output rates, such measures would, in fact, become counter-productive and that the workers would see-through the malicious intents lying behind it: "The opinion has been expressed in print that the rhythm of music should as nearly as possible be the rhythm of the work being done. It is difficult to agree with this [...] one must be careful not to make the speed of the music too quick. It is possible to induce a feeling of resentment amongst the workers if they feel that fast music is played excessively and that they are being 'pepped up'" (cited in Korczynski et al., 2005: 217-218).

Therefore, programmers of industrial functional music were instead advised to avoid any extremities of tempo or strongly accentuated pulsations[31] in favor of rhythms whose dynamic range "lies between mezzo-piano and forte" (Reynolds cited in Jones & Korczynski, 2006: 157). In short, during the programming of industrial functional music, careful planning went into re-orchestrating rhythm and tempo and designing a program that struck the right balance between being "rhythmically monotonous and repetitive" (Hutchison cited in Jones &

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[31] During their research, Wyatt and Langdon found out that songs with strong rhythmic accents can fray the nerves of and irritate workers more easily as they tend to clash with the movements involved in assembly line workers (1938: 42).

Korczysnki, 2006: 149) while at the same time "creating a spirit of cheerfulness and gaiety" (Reynolds, 1942: 6) in the workplace.

2.1.1.1.2. Melody

If musical rhythm chiefly corresponds to the bodily aspects and physical movements, then melody's initial appeal is understood to be in the domain of the cognitive and emotional. According to Murrock, "in addition to their inherent sense of rhythm, humans also seek expression of emotional disposition" while listening to a musical composition and it is melody's duty to fulfill this function by non-verbally communicating and "express[ing] a mood, a thought, an idea, or an emotion" (2005: 142) to listeners. In this sense, melody's primary effect can be said to be upon the *psychological* rather than the physiological. Therefore, if rhythmical re-orchestration is believed to have an impact upon the ways workers move in a physical space, then, any change in the melodic structure of a song can be expected to influence the emotional states of laborers and the ways they *feel* while doing their tasks. It follows that, along with the rhythmic texture, expert care and attention should be given to the melodic progression of a song so that it will not distract the workers and inhibit their productivities.

According to Wynford Reynolds, melody is among the most important aspects of scientific programming (Antrim, 1943: 285) since a song with a clear-cut and prominent melody offers a more agreeable and aesthetically pleasant background sonic template for workers in a factory environment filled with loud and irritable machine noises. As Doron Antrim argues,

> Noise, *per se,* consists of irregular pulsations; it is without form and is irritating, fraying the nerves and contributing to fatigue. Music, on the other hand, consists of regular tonal pulsations – a single tone is more agreeable to the ear than noise -, and these are so disposed as to produce a melodic line and rhythmic sequence. Consequently the ear tends to follow a pleasing melody and to forget disagreeable noise. (ibid: 276)

Therefore, by instilling a humanizing element, a melodiously euphonic musical piece constitutes the perfect antidote for the overtly cacophonic and alienating factory space. Aware of the powerful affects and implications a strong melody can have upon the moods of workers, just few weeks into their show, *Music While You Work* producers sent out several instructions imploring band leaders and members to put strong emphasis on the melody (Baade, 2012: 76-77) and, if possible, to subjugate other musical aspects - such as instrumentation, improvisation, rhythm, and etc. – to the prevailing melody of a composition (Freymann, 1941: 397). Himself implementing these scientific regulations in his own programs to the letter, Reynolds proposed that musical "numbers that have no melody or that are so orchestrated or played that the melody is lost are unsuitable" for factory broadcasting because what workers most expect is "to hear the 'tune'" (1942: 5-6). When a tune is re-orchestrated in a manner that made it melodically more appealing, then the workers' minds could be safely diverted away from the repetitive task before them without being any detriment to their productive capabilities.

2.1.1.1.3. Vocals

While there is, more or less, a strong consensus with regards to the use of rhythm and melody in musical programming, the use of vocals in industrial functional music arrangements has always been a matter of contention and disagreement (see, for instance, Antrim, 1943: 284). Although being in minority, some industrial psychologists believed that, as long as they were selected among songs familiar to the general public, the use of vocals had no visibly adverse impact upon factory efficiency. For example, in his study on the worker attitudes towards music broadcasts in industrial plants, Kerr found out that "manual workers apparently interpret records with vocals as cures for boredom rather than as distractions from work: they want vocals and there is no evidence that vocals impair productive efficiency in typical factory operations" (1943: 249).

Despite Kerr's findings, however, the general tendency in music programming was veering towards the restriction, if not outright abolition, of vocal music[32]. In fact, not only vocals but any kind of acts involving human speech – such as commercials or song announcements – scraped by producers as they thought to be intrusive and "a distraction to the detriment of output" (Reynolds, 1942: 6). Many employers were in the opinion that the vocal parts would call too much attention to them and cause workers to quit doing their job and instead listen to the broadcasted materials. Attention-grabbing songs were a genuine concern both for managements and the programmers responsible for creating proper functional music for industrial production. For instance, the song *Deep in the Heart of Texas* was banned in 1942 from any future *Music While You Work* programming, as it tended to stop "all work in the United States and in England because, naturally enough, the employees feel obliged to drop all work to join in the hand-clapping in the chorus. (Burris-Meyer, 1943: 263-264). In his accounts of everyday life during the Second World War, Norman Longmate also remembered how "many girls stopped work to write down to words" (1971: 422; see also: Farnsworth, 1971: 218) whenever *Music While You Work* episodes contained music with vocals. It was clear, then, when vocals were present, the workers tended to consider the musical offerings as a form of diversion and *entertainment* rather than a *functional* and disciplinary technology for enhanced productivity.

However, in addition to its distractive effects, there was another, in a sense more *political,* reason why both programmers and managers were obstinately against the use of any vocals in their broadcasts and that was the pre-industrial bond between the singing voice and the literal *voice* of workers as a mean to express their woes or criticize the social circumstances surrounding their labor. One of the most fundamental uses of industrial functional music, as we shall later on in more detail, was to provide workers a humanizing and domesticating element that would counteract, or at least moderate, the harsher aspects of industrial labor. In this context, music was expected to act as a "sonic blanket"

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[32] While initially permitting the use of only familiar vocals, the Music While You Work programme was restricting vocal numbers to only three per programme in May 1941 (Nicholas, 1996: 135).

(Plourde, 2017: 28) and protect the vulnerable workforce against the alienating nature of repetitive, mechanical work. Yet, there were still some functional music specialists who believed humanizing qualities of vocal music would, in the long run, act against the interests of employers and managements. Among them was Muzak programmer Jane Jarvis, who worried that, aside from attracting unnecessary public notice, songs with words have also the dangerous potential to make listeners socially more aware. She remarked that, "the minute you use words, you call up contemplative thinking and people begin to have opinions" (Radano, 1989: 450) and, from a managerial point of view, a worker with opinions constitutes a much bigger threat to efficiency than a worker who is distracted. In the end, since the fundamental use of functional music in the industrial workspace was to create obedient and docile bodies, the use of vocal pieces was highly discouraged as they would only create workers capable of "contemplative thinking" and, ultimately, frustrates the managements' efforts to achieve higher efficiency and productivity rates in their factories.

2.1.1.1.4. Variety

The day-to-day life in factories was often characterized as a tedious and dreary one, where time seemed to move in a much slower pace as workers relentlessly performed the tasks they have been assigned to in a soul-crushingly mechanical and repetitive fashion. As the following real-life account on the life in a Renault car plant in Paris informs us, the everyday life in factories was not entirely a musical one, but one of debilitating routine and repetition:

> The first impression […] is one of a slow but continuous movement by all the cars. The operations themselves seem to be carried out with a kind of resigned monotony, but without the speed I expected. It's like a long, gray-green, gliding movement, and after a time it gives off a feeling of somnolence, interrupted by sounds, bumps, flashes of light, all repeated one after the other, but with regularity. The formless music of the line, the gliding movement of the unclad gray steel bodies, the routine movements: I can feel myself gradually enveloped and anesthetized. Time stands still. (Linhart, 1981: 13-14)

In the context of the Second World War, when bombing of British cities by

German air forces was a common fixture of everyday life, we can only assume that this "anesthetizing" atmosphere of factory space must have been perceived as even more daunting for the workers, who, after a sleepless night of air-raids, were now entrusted to carry out their duties for an entire day. In such grave circumstances, industrial functional music were put to the task of adding a little joy and cheerfulness to the lives of laborers, who constantly had to deal with feelings of exhaustion and resignation. In a sense, the *variety* that has been lacking in the performance of assembly-line tasks in particular and everyday lives of workers in general were to be compensated by the broadcasting of colorful musical selections. The general belief was that, the more variety musical programming consisted of, the better and happier the workers would feel. This was the conclusion reached by Wyatt and Langdon in their study, which stated that "on the whole the workers expressed a preference for a varied programme of dance music, and it is highly probable that a similar taste exists in most industrial workers" (1938: 42). Following these early findings, producers and conductors of *Music While You Work* broadcasts were duly advised to include as much variety as possible (Freymann, 1941; Reynolds, 1942; see also: Baade, 2012: 75) in their broadcasts. A historical account related by a former munitions worker, Margaret Kippin, seemed to suggest that musical variety in factory programming worked in practice by adding a glimmer of fun and lightening the burden of those employed in repetitive jobs: "That was really boring [and] you had boxes and boxes of nuts and you set your micrometer onto the circle thing and you just put the nuts through [...] [but] we had *Music While You Work* to listen to, and you needed that to keep you going, especially on the night shift" (Schweitzer, Hilton & Moss, 1985: 62). Diversity in musical offerings, therefore, was fully cherished as a way of combating the tediousness of factory work during wartime conditions.

The opposite of variety was *repetition* and had to be avoided at all costs as repetitive music would only emphasize the already highly repetitive nature of labor (Husch, 1984: 73-74; Korczynski et al., 2005: 211; Korczynski, 2011: 99). As Reynolds himself complained, "the over-repetition of the 'plug' tune of the moment" (cited in Baade, 2012: 76) was a serious problem plaguing musical

programming, causing irritation and complaints amongst workforce audiences. The problem of repeating same tunes constituted a puzzling dilemma for the programmers since generating a sense of *familiarity* among audiences was also an important element in having a functionally effective music programming. And since familiarizing audiences would be impossible without constantly repeating them (see, for instance, Radano, 1989: 455), the programmers often found themselves in a bind while designing their broadcasts. This inherently paradoxical nature of industrial functional music was perhaps one reason why, despite the best intentions of its producers, repetition was still a huge problem even during the fourth year of *Music While You Work*:

> In a London factory engaged in important war work a small syndicate of workers are offering odds against any of their fellow workers naming a tune that will be played in any particular half-hour of "Music While You Work". As bankers usually find in the long run, the "book-makers" generally win but when a tune such as "Johnny Got a Zero" or "This Is the Army" comes on they strike a bad patch. (cited in Korczynski et al., 2005: 211)

In order to produce a functionally effective industrial music programming, then, it was vital to find the right balance between the proper amount of musical variety and repetition: too much of either one had the potential of hurting factory efficiency. Having a very diverse set of programming could help adding more musical color to the grayness of the workspace but, on the other hand, the introduction of new and unfamiliar musical stimulus always carried the potential for attracting the attention of workers and distracting their workflow. In a similar vein, repetition was almost always unavoidable because workers preferred the tunes that they know. Yet too much repetition could accentuate the repetitive and monotonous nature of everyday labor and induce boredom and restlessness - the very things programmers set out to avoid. Thus, as a 1956 Muzak pamphlet concurred, the amount of variety to be used in the programs was always counter-balanced by modulating other musical elements such as rhythm, tempo, or melody:

> [Muzak wants to] maintain an exceptional amount of variety, of a change of pace, to offset the danger that the music itself become an added factor in the bringing of monotony. Rather than rely on tempo alone and thus

run the risk of a boring and monotonous form of programming, we use other aspects of music to achieve the same or similar results. In other words, we use the ever-changing spectrum of music to develop an increasing mood of brightness essential to functional programming. (cited in Husch, 1984: 85)

2.1.1.1.5. Constant Tone Level

I have argued earlier that one of the principal factors contributing to the demise of singing at the industrial workplace was the *noise* generated by high-powered machines. As Joel Dinerstein has argued, "in the great factory roar, the human voice, as speaking voice, as inner voice, as singing voice was overruled by the machine" and, by drowning and driving human voice away, the industrial soundscapes entirely became "the machine's home turf" (2003: 47). But this assertion is only partially true, as there was now a new sonic warfare being waged on the industrial floor between the heavy machinery and modern forms of broadcasted functional music. What is more is that, unlike the human voice, which could easily be smothered by the din of a factory, these new technologies were not so vulnerable against machine noise. In fact, so long as they were programmed in a stable volume (Reynolds, 1942: 6), functional music programs could easily rise above the clamor of the workshop floor and become audible across the entire working space. This was the point made by Doron Antrim, who had the opportunity to experience first-hand how the modern functional music sounded in factory environments: "I have stood in the Morey machine-tool plant on Long Island when a twenty-ton crane was creating a terrific din and heard distinctly an orchestra playing 'Estrallita'. I have had a similar experience amid the clatter of a thousand sewing machines. Actually the noise seems to decrease and the music to stand out" (1943: 276). It would be safe to suggest that the advances in machinery that once killed or completely drove off the pre-industrial modes of artistic creation were now bringing forth a new type of functional music as loudspeakers and other broadcasting technologies became more commonplace in industrial settings.

As suggested, the programming of industrial functional music heavily relied upon scientific principles and the recording sessions of programs was no exception to this rule. Studio engineers took great pains to ensure that their broadcasts would resound smoothly throughout the whole factory and at times, even "*physically* alter[ed] the arrangement of musicians in the studio" (Jones, 2005: 733, *emphasis in original*) in order to obtain a more stirring and powerful sound from each instrument. According to Joe Coco, who worked as an engineer for Muzak company over forty years, the overarching aim was to create a sound object that "never meant to be played loudly, just subdued like wind playing between the trees" (cited in Lanza, 2004: 43). In this sense, industrial functional music's real power did not naturally stem from being sonically more intense or louder vis-à-vis the factory noise but from its ability to exist *in conjunction with* such noises. In other words, the music's primary role was not to drown all irritating noises[33] but to provide a more appealing sonic background, smoothly flowing through the scraping and creaking of the machines. This was one of the main arguments put forth by Hui, who stated that modern functional music was not designed as an aural substitute for factory noise but, on the contrary, the two were considered to be acoustically "complimentary" to each other:

> I would argue that the development of industrial music systems in the US simply did not see their products in sonic competition with machine noise. Rather, the two could be complimentary. In the promotional pamphlet *Muzak: Music at Work,* for example, the Muzak Corporation described the millions of dollars and years of experimental research towards the development of vertical-cut transcription records that produced music "between the noise frequencies". Muzak claimed that because it's product's frequency band ranged from 50 to 11.000 Hz., the music "literally 'cut through' factory noise", making it clearly audible without being louder. (2014: 370)

This capability of modern functional music, enabling it to sonically "cut-through" other sounds, was one of the main reasons how and why Antrim was able to discern which song was playing amidst a deafening noise. Equally impressed were the authors of Challenge Magazine, who praised the acoustic achievements of workspace music by pointing out the fact that this music "can

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[33] Although, in some cases, it definitely served for this purpose as well. In a Mass Observation study, for example, one female interviewee in a clothing factory pointed out the fact that despite "the plant make[s] a lot of noise, [...] the wireless drowns it" (Korczynski et al., 2005: 210).

be heard, even at the low volume of a whisper, through the din of a factory or the chatter of a cocktail lounge" (1953: 28). It is argued that by transmitting delightful melodies the music could draw more attention to itself, and, in the process, could *mask* or block out unwanted noises as well (Haake, 2006; Oldham, Cummings, Mischel, Schmidtke & Zhou, 1995: 549). Yet it would take considerable time for this particular property of functional music to become more practical and convenient for their subscribers; especially as crowded open-plan offices became one of the leading subscribers to broadcasted music services (see, for instance, Plourde, 2017: 23). For the time being, however, the factories were the main recipients of broadcasted functional music and, therefore, their volume levels had to be programmed by taking into account the level of existing noises in industrial spaces.

2.1.1.1.6. Times and Durations of Broadcasting

Apart from determining *what* type of music to play, the programmers and producers of functional music also had to grapple with the question *when* and for *how long* to play their musical selections (Antrim, 1943: 284). The underlying assumption was that the manipulation of individual elements of music would not produce the desired effects unless the musical programs were also carefully rationed out across an entire working day. However, similar to the debates over the using of vocal pieces in programming, there was not an overwhelming unanimity with regards to the time limits of broadcasts[34]. Despite the lack of any consensus, it was nevertheless commonly agreed that it would be "better to give too little than too much" (Gatewood, 1921: 358; Reynolds, 1942: 7) lest the musical stimuli induce an overdose among the listeners. Continuous playing of music by the management in the hopes of keeping productivity at a peak was, therefore, explicitly dissuaded by psychologists, who feared that such a practice would only lead to oversaturation

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[34] On the question of how much music should be broadcasted during the working hours, Smith (1947), for instance said 12%, wheras Benson (1945) thought it should be 33% and the Muzak Corporation's own study find out 42% to be the ideal ratio. Muzak's senior programme controller Don O'Neill, on the other hand, estimated that "the maximum you should play in any working area is about half the time the employee is there" (Haden-Guest, 1973: 19-20).

and the gradual diminishing of music's stimulating value (Antrim, 1943: 284; Fox, 1971: 72; Husch, 1984: 37). An article titled "The Disease of Not Listening" published in the *Radio Times* magazine, for instance, cautioned its readers that, despite being an admirable tonic, "music while you work – at home or factory, with or without quotation marks – […] like most tonics can be taken to excess" (cited in Baade, 2012: 78) and, hence, should be "consumed" responsibly. To avoid any undesirable consequences, and like in all matters of musical programming, earlier findings by Wyatt & Langdon were acknowledged as the essential guideline in determining broadcast durations. Thus, their conclusion that "the total duration [of music] should be not less than one hour or more than two hours in each spell of work" (Wyatt & Langdon, 1938: 70-71) was generally accepted and recommended by other experts of the field as well (Antrim, 1943: 283; Burris-Meyer, 1943: 263; Reynolds, 1942: 7). *Music While You Work'*s own producers were adamant in not stretching beyond these scientifically determined time boundaries, so they limited each broadcast to half an hour only.

Another matter of great contention and disagreement among the curators as well as subscribers of industrial functional music was the times of broadcasting. It is generally understood that music was an effective antidote and combatant against fatigue and boredom and, thereby, it was deemed commonsensical to play it at times when workers' mental and physical strength start to decline. Overcoming the fatigue periods of 11 a.m. in the morning and 4 p.m. in the evening (Antrim, 1943: 284) became especially important for keeping the factory efficiency steady because, it was observed that, the hours prior to lunch breaks and end of the shifts were especially susceptible to drops in the energy levels of workers and, therefore, their productivity rates. Hence, the argument went, if music were to be specifically played during these hours, then the dips in factory efficiency could be avoided and a more or less consistent output rate could be maintained. This was among the most essential conclusions reached by Wyatt and Langdon when they broadcasted phonograph music at different times of a working day to measure individual impacts of each music session upon the factory output. They found out that the highest level of output (with an

average increase of 6.0 per cent compared to no-music control period) was reached when music was introduced from 10 to 11.15 in the morning and 4 to 5 in the afternoon (1938: 33). Moreover, they also realized that the favorable effects of music did not remain confined to this particular period, but "trickled down" to the rest of the working day with an average increase of 4.3 per cent in output *after* the broadcast was over (ibid: 34-35). The functional effectiveness of musical "tonic", administered at the right moments with proper doses, then, had the power of lasting throughout the entire workday[35].

Music While You Work's own broadcasting hours strictly adhered to the scientific guidelines designated by industrial psychologists. The programs commenced at 10.30 in the mornings and 3 in the afternoons – precisely at times when the workforce believed to lose their psychological and physiological tenacity. On 2 August 1942, at a time when the war was reaching a critical stage and the production efforts at munitions and armament factories intensified to an unprecedented scale, the producers of the show introduced a third night-shift edition to be broadcasted between 10.30 and 11 p.m. (Nicholas, 1996: 135). We can only assume in hindsight how much the addition of this new program was warmly welcomed by the nighttime workers who had to fend off against the urge to sleep while at the same time operate under the threat of air bombings. Besides helping workers to cope with these challenges, Reynolds claimed that the night-shift broadcasts had the additional psychological benefit "both here and abroad" of "emphasis[ing] the fact that our factories are working day and night" (cited in ibid: 135), thus keeping the morale high among home audiences and soldiers stationed abroad.

While the radio broadcasts by *Music While You Work* specifically targeted the moments when the workforce suffered the most from extreme fatigue and boredom, the employers still had free rein to fill up the remaining working

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[35] This was also one of the arguments used when BBC and Admiralty officials were debating whether to relay *Music While You Work* programs in their shipyards and arsenals. An excerpt from a meeting that took place on 19 October 1942 sums up the decision that has been reached with regards to scheduling: "Music should generally be limited to two half-hour programs a day, each about the middle of the shift, and such programs would provide a stimulus whose effects would be felt throughout the working hours" (cited in Jones & Korczynski, 2006: 159).

hours with the supplementary phonograph relays of their own. While most companies still designated the hours of music broadcasting with regards to their productivity rates[36], and there was at least some agreement over how long the total duration of broadcasts should be, there was not still any overall consensus about which time frames constituted the best option for musical transmissions among the employers. For instance, even as late as 1945, an article in *Industrial Welfare* was informing readers that,

> The times of day at which programs are broadcast vary enormously. Some 196 [of 217 respondents] factories relay the ordinary 10.30 a.m. and 3 p.m. *Music While You Work* programs and of this number 160 firms supplement the BBC programs either with gramophone records or additional BBC broadcasts. There is no particularly popular time for these additional programs: the day is fairly evenly covered with a slight preponderance in favor of 12-1 p.m., and 4.30 to 6 p.m., and another smaller increase in the number broadcasting between 8 a.m. and 9 a.m. and 4 p.m. and 4.30 p.m. (cited in Jones & Korczynski, 2006: 152)

In short, in addition to correct re-orchestration of individual musical elements, the programmers had to work within strict time restrictions. Managements also had to be wary of *when* and *how much* music they were giving to their workforce if they wanted to take most out of the functional capacity of musical programming.

2.1.1.1.7. Intervals of Silence

In February 1948, avant-garde musician John Cage was invited to give a speech on the subject of creative arts in contemporary society at the National Inter-Collegiate Arts Conference held at New York. Towards the closing of his lecture, which bore the title *A Composer's Confessions,* the thirty-six-year old composer shared with the attendance his desire to create a musical piece entirely consisting of *silence*:

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[36] One example is an article published by the *Industrial Welfare* journal, which reported that a company operating at Leeds called Wilson & Sons were playing music from 11.30 to 12.30 in the mornings and 4.30 to 5.30 in the afternoons "as these are the hours when, normally, production is at its lowest" (cited in Jones & Korczynski, 2006: 155).

> I have, for instance, several new desires (two may seem absurd but I am
> serious about them): first to compose a piece of uninterrupted silence
> and sell it to Muzak Co. It will be 3 or 4 and a half minutes long – those
> being the standard lengths of "canned" music – and its title will be *Silent
> Prayer.* It will open with a single idea which I will attempt to make as
> seductive as the color and shape and fragrance of a flower. The ending
> will approach imperceptibility[37].

It is correct that *Silent Prayer* has never become materialized, but as Cage
himself stated, the idea and vision underlying this project would later inspire
him to create his much celebrated work *4' 33''* four years later (see, for instance,
Kahn, 1997: 562-563). What is more interesting was the fact that, unbeknownst
to Cage, during that time using of *silence* was already a pretty established
practice within Muzak programming. Just like individual functional music
programs had to be rationed out throughout the day in order to retain their
functional efficacy to combat fatigue and boredom, so did every program had to
contain few segments of *silence* to avoid over-stimulation of their audiences
(MacLeod, 1979: 20). For industrial laborers this was not a major threat as
functional music broadcasts were relatively well balanced and equally
dispersed throughout the day. However, outside the industrial contexts, there
were still laborers – such as cashiers, waiters, retail shop employees, etc. – that
were permanently exposed to over-stimulating functional music and, therefore,
becoming more vulnerable to its adverse effects (Vanel, 2008: 101). As Husch
argues, Muzak executives believed that using silence in their programming
would provide a much-needed breathing space for people in these professions
as well as others who constantly had to listen to their broadcasts:

> Of even greater importance was the programming department's
> discovery of the value of silence. [...] The programmers observed that
> many of the subscribers turned the music off. It turned out that the
> waiters, the cashiers, the permanent working staff were responsible for
> the complaints, not the diners. Instead, then, the programming
> department introduced a silent interval of one-and-a-half to two minutes
> at the end of each quarter hour. This brief break provided a period of
> relief for those who had to hear the music over long periods of time.
> (1984: 72)

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[37] https://www.nws.edu/johncage/acomposersconfession.html

In a way, then, modern functional music was not only about the production of scientifically stimulating programs with fixed timetables but equally important was the manufacturing and using of *silence* as a way to enhance the functional capacity of its programs. Silence was such an essential ingredient of musical programming that the former Muzak director Umberto V. Muscio, for instance, once told in an interview about a sales manager that used to work for the company "who took the line that we should say we are selling the *silence* as much as the Muzak" (Haden-Guest, 1973: 13-14, *emphasis in original*). But, as the following discussion will demonstrate, the benefits of having silence would become more conspicuous in one of the most ingenious and innovative products the Muzak company had ever come up with: *the Stimulus Progression*. Stimulus Progression can be considered as the apex of what scientific know-how in musical programming could achieve and, therefore, a fitting closure to our discussion of the first characteristic.

2.1.1.1.8. The Stimulus Progression and Fatigue Curves

In 1943, industrial psychologist Harold Burris-Meyer, who would later go on to work at Muzak Company in an official capacity, conducted an experimental research in order to estimate the effects music can have upon factory output. During this research he found out that, in normal working conditions (i.e. in the absence of musical stimuli) there occurred a very sharp decline in the productivity rates of workers starting precisely at 2:15 in the afternoon and reaching its nadir around 2:30 (1943: 264). Already aware of the severity of the problems caused by the "2:15 dip", the company management had installed a music distribution system six months prior the study took place and had been relaying their programs ever since. By introducing musical accompaniment, the management had made a marginal headway in stepping up the declining productivity rates but was still seeking for ways to improve their overall efficiency. Subscribing to the view that a carefully designed musical programming based upon statistical analysis had a better chance of enhancing industrial productivity than a haphazardly produced, standard one; Burris-Meyer set out to build an elaborately scientific test program that would

completely eradicate the afternoon fatigue dip. The results of his experiment conclusively demonstrated that his test program had been more successful with regards to boosting up productivity than the standard musical offerings by reducing the 2:15 dip approximately by 20 percent as well as increasing the total day's production by 6.8 percent (ibid). Having obtained such favorable results, Burris-Meyer concluded that "while [any] music is better than no music, programming will not be satisfactory until it is undertaken on the basis of a careful analysis of the results it gets" and that it is *only* through a careful study of the shapes and amplitudes of different fatigue curves of workers that researchers can produce the perfect "remedy" for combatting them (ibid). Just three years after the initial findings of this research, the "remedy" would emerge in the form of a new programming technique called *Stimulus Progression,* which would quickly became the basic template for all functional music programming in industrial and other working settings.

The idea behind the Stimulus Progression was based upon a very simple observation: employees working in factories or offices were bound to get more and more tired as the day progressed and stimulating music programmed and played in a planned sequence had the potential to "give workers a psychological lift at those moments of the day when they were most like to become fatigued" and, thus, create "a dynamic sense of forward movement in the listener and [foster] the illusion that time was passing" (Jones & Schumacher, 1992: 160). *Right* kind of music, arranged in *right* order and played at the *right* places during the *right* moments, then, could effectively dissipate the fatigue and boredom encountered by laborers. But this discovery still left out some crucial questions, such as, how, in the first place, one can determine what constitutes a "right" musical piece and sequencing; or, could the same broadcasting material be used both for factories where workers are generally engaged in repetitive mechanical labor and office spaces consisting of "brain workers" in need of focusing and concentration? In order to find viable solutions to such pressing concerns, functional music programmers had to heavily rely upon and often corroborate their conclusions with statistical data and other scientific discourses.

Ascertaining and establishing a uniform, invariant workforce *fatigue curve* was a case in point for such scientific diligence. Since each office and industrial complex would receive the same type of programming, Muzak executives had to make sure that their stimulating music would benefit the majority of employees, not just a select few. To this end, they have undertaken various field studies and produced elaborate charts showing the trajectory an average laborer's energy level presumed to follow throughout an entire workday. This fatigue curve was assumed to be a universal *a priori* and representative of the whole workforce with only minor, inconsequential deviations from the established norm. One interesting finding that came out of this research was the realization that the fatigue curves of office and industrial workers almost completely mirrored each other. Validating Burris-Meyer's early findings, Muzak's own published studies also showed that both office and industrial workers suffered from a double slump during their day, one in mid-morning and one in late afternoon (*fig. 1*). Hence, in terms of deciding the hours of broadcasting there was no ambiguity: since laborers in both lines of work displayed similar exhaustion patterns - albeit the factory workers with more severe drops in energy -, they both would receive broadcasted functional music precisely the same time. This was also what industrial psychologist Richard Cardinell, who, along with Harold Burris-Meyer, was among the originators of the *Stimulus Progression* and who also, like him, went on to work for Muzak Company later in his career, forsought for his programming technique. In an early study fleshing out the foundations of his design, Cardinell remarked that: "since Muzak serves a number of subscribers with the same program, a fatigue curve used as a basis for program pattern must be a composite one. We have such a curve for Industry and for Office Operations. The low points on the curves indicate the times at which the employees' residual energy is lowest. These are the points where musical stimulus should be applied" (1946: 12).

FATIGUE CURVES
PROGRAM STIMULUS
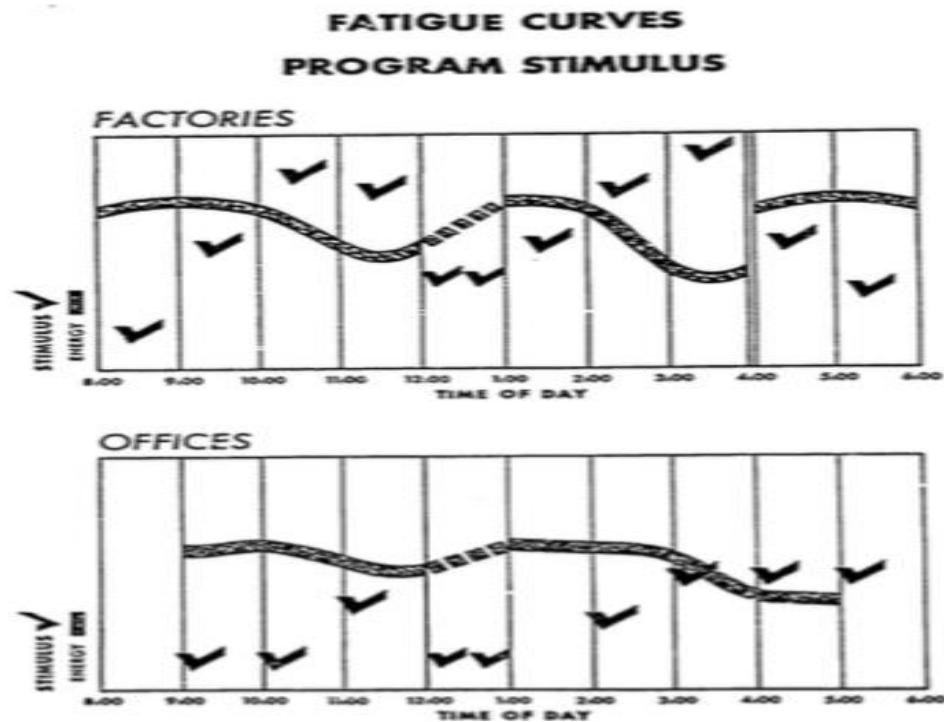
Figure 1. Fatigue Curves of Program Stimulus

Source: Husch, 1984: 75

However, the similarities between these two groups of workers would not extend beyond their shared predispositions for getting tired during the same periods of the day. For starters, it was a generally accepted fact that the nature of industrial and office work was entirely diametrical. Whereas industrial workers predominantly assigned in repetitive tasks that required little or no mental engagement, office or white-collar workers were expected to be more vigilant as their task demanded high levels of focus and attention to detail. Given such essential discrepancies between these professions, from the get-go, functional music programmers called for two separate types of musical programming that would be in congruent with different necessities and demands of each type of work. Although many leading researchers in the field, including the initial study by Wyatt and Langdon, were in the opinion that functional music can only be helpful as long as the job in question is repetitive and monotonous and, by the same token, disturb and hamper tasks that require "intense concentration and creative thought" (1938: 71)[38], by 1945, Muzak was

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[38] A similar conviction was shared by Reynolds, who stated that "the normal routine of an office cannot be conducted successfully against a background of music" (1942: 8). Kirkpatrick (1943)

already refining their broadcasting schedule by dividing their programming into three specific categories – Green, Purple and Gold – for heavy industry, light industry and offices respectively (Haden-Guest, 1973: 13). According to Muzak's own literature, each program was curated "to perform a specific functional task with special considerations to the music preferences of its particular audience" (cited in Hui, 2014: 382). In practice, this basically translated to cautious tailoring of musical programming to the work rhythms and necessities required by different labor conditions. As Don O'Neill disclosed in an interview, the Heavy Industry Program, for instance, demanded something "stronger" and "more compulsive" since noise of the machines would otherwise just obliterate more mellow noises (cited in Haden-Guest, 1973: 26). The Office (Purple) Program, on the other hand, was created in order to "relieve mental and visual fatigue and nervous tension" common to creative tasks (Hui, 2014: 382), hence the rhythms and melodies used in this programming "tend[ed] to be a little *sweeter*" (Haden-Guest, 1973: 26). Thus, despite the resemblances in fatigue curves and shared broadcasting schedules, the content of music that factories and offices received varied due to the nature and conditions of their work and environment. Therefore, while the industrial places received their share of 15 minutes of music, the offices remained silent and vice versa. As MacLeod explains,

> The same music is not […] heard by both offices and industries. The Muzak people divide every hour into fifteen-minute segments in planning their programs. The first and third quarter-hours carry the office program; the second and fourth carry the industrial program. The basic difference between the two programs is that the industrial segment tends to be both louder and more rhythmic, simply because of the higher noise level found in industrial settings. A timer is attached to the Muzak receiver which deletes the industrial music in the office situation and *vice versa.* Thus, both the offices and industries receive a continuous sequence of: music - 15 minutes; silence - 15 minutes; music - 15 minutes; silence - 15 minutes. (1979: 19)

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also reported that music played during tasks that demand mental concentration is detrimental to the work activity. However, both McGehee and Gardner (1959) and Smith (1961) found no significant relationship between background music and a complex activity requiring mental alertness. This was in line with Gatewood's (1921) earlier findings that architecture students working alongside phonograph music did not find the music distracting, but actually beneficial for their work.

Having established the *right* moments and *right* settings for their broadcasts, the programmers still had one final question to deal with: how to determine the right stimulus and sequence for their programming? After all, if music is expected to act as a mental tonic or, in the words of Haden-Guest to provide "sonic splints and bandages for the ailing psyche" (1973: 19), it had to successfully counteract and neutralize the ebbs in human energy and, as stated earlier, randomly ordered musical programming was simply inadequate in producing the desired effects in fatigue prevention. Therefore, Muzak producers discerned that the only way to combat the descending fatigue slope of workers is to generate an *ascending stimulus curve* that moved from slightly less bright and stimulating musical pieces to more cheerful and energetic ones. If gradually stimulating music was applied during periods of exhaustion and debilitation, the idea went, it may act as a counterpoise that stabilized workers' energy and mood swings and, simultaneously, worked to prevent possible drops in production rates:

> Functional work music programming differed from the popular concept of background music in the sense that while the latter was merely a form of quiet entertainment, Muzak was concerned with the alleviation and reduction of fatigue and boredom without neglecting, to any great extent, the entertainment value inherent in music. To achieve this, functional work music had to be designed such that a period of increasing musical stimulus was matched against the "normal" daily work trends of industrial fatigue and slow down, and second the stimulus had to offset the monotony of some work operations through the use of instrumental coloring, change of pace and other tonal qualities. (Husch, 1984: 73-74)

Therefore, the only thing the functional music programmers had to do was to come up with a technique that would quantify and classify musical arrangements according to their arousing capabilities. Hence, the producers came up with the concept of *stimulus value* or *stimulus code*, which estimated and measured the "stimulus potential" (Haden-Guest, 1973: 26) of each song based upon four different criteria – *tempo, rhythm, instrumentation* and *orchestra size.* To come up with an overall mood grade, each of these elements were assigned a numerical value ranging from "Gloomy – minus three" to "Ecstatic – plus eight" (Lanza, 1991: 44) - the lesser scores corresponding to low

stimulus impact and vice versa. The combined mean of each variable amounted to a total stimulus value, or widely known as "Stimulus Quotient" (MacLeod, 1979: 20), which was then used to plan the sequencing order of songs. The *ascending curve* was created by putting the arrangements with lower scores at the beginning of the program to be followed by more stimulating tunes, thus, enabling "a constant progression of musical brightness" (Cardinell, 1946: 12) throughout the entire 15-minute segment.

However, it is important to note at this point that the vertically ascending stimulus curve is not simply achieved by playing one relatively more stimulating song after another but through maintaining an average rise in the mood values of each aforementioned musical variable (see: Cardinell, 1946; Husch, 1984). The tempo, for instance, does not just accelerates as the songs alternate but, actually, *fluctuates* throughout the 15-minute broadcast (see *fig. 2*). Each program starts with a moderate tempo rate, which then declines and spikes as the music continues, but eventually there is always an average rise of tempo in the end.
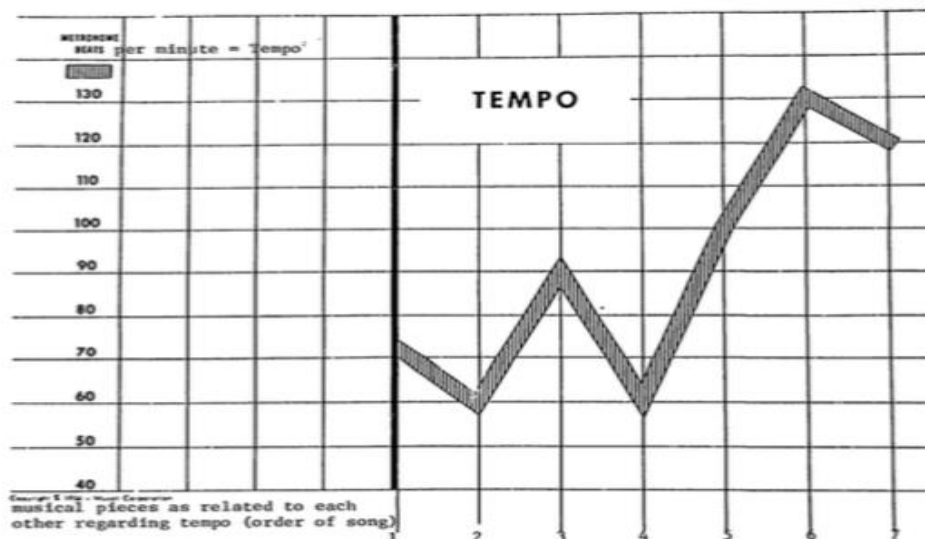
Figure 2. Example of a Muzak Tempo Progression for a 15-Minute Section

Source: Husch, 1984: 79

The same goes for the remaining elements as well: by sustaining an average rise in rhythm, timbre and tonal qualities in their musical offerings, the producers also obtained an average rise in overall stimulus in their program, a technique widely known as "internal mood progression" (see *fig. 3*). Through gradually increasing the overall musical stimulus and momentum, programmers simultaneously provided "the worker/listener with a feeling of moving forward" (Husch, 1984: 83), thus, giving them the illusion that time is passing much swifter than they actually experience it. Music gets brighter as the worker gets more tired and the overall effect is one of psychological and physiological lift that would carry on to the rest of the working day.

Figure 3. Example of a Muzak Mood Progression for Tempo, Rhythm, Instrumentation and Orchestra for a 15-Minute Section

Source: Husch, 1984: 82

Stimulus Progression is an exceptionally modern solution brought to problems caused by modern labor conditions. In addition to borrowing the techniques used by other industrial functional music programs, such as *Music While You Work*, the programmers of *Stimulus Progression* improve the prevailing methods in programming by applying scientific methods to every step of the process, including the sequencing of musical offerings. As Don O'Neill perfectly sums up, the philosophy behind *Stimulus Progression* is more about the sequencing than the musical content: "We are not so much interested in what music we use. It is

with the *sequence* that you achieve results" (cited in Haden-Guest, 1973: 20), he says. In addition to scientific re-orchestration and re-arrangement, a perfect programming has to address the question of sequencing and that's what Muzak programmers innovatively offer with *Stimulus Progression* that has been lacking in *Music While You Work* broadcasts. However, there is more to industrial functional music than just programming and it is these other fundamental characteristics I will discuss in the remainder of this section.

2.1.1.2. Industrial Functional Music as Unobtrusive Background Accompaniment

Pre-industrial functional music was in the *foreground,* not only by the virtue of being the sole, unrivaled acoustic phenomenon in a soundscape not yet tainted by the noise of machinery, but by being an integral part of the work process itself. As I have discussed in the previous chapter, work songs served as another tool at the hands of their wielder, a necessary instrument for the completion of a certain task. They had a major motor effect in terms of maintaining a steady work rhythm; therefore, the rhythms and beats of the music always had to be consonant with the motions of physical labor. The words can be improvised but considerable attention needed to be given to keeping a consistent beat throughout so as not to upset the rhythmic flow of the work. The fracturing of the organic link between musical rhythms and work rhythms, however, *ipso facto* necessitated a new role for music in the changing workspaces and relegated it further into the *background*.

But it was not only the changing work rhythms that caused this sonic demotion, it was also the shifting perspectives on *functionality* that contributed to the birth of a new form of workplace music. Music in the foreground may have assisted the pre-industrial worker-performer but it would not be sustainable in the noisy and alienating context of factories as they would have too much entertaining value and, therefore, be distractive for workers, who were expected by the management to give precedence to filling their production quotas. Therefore, to be completely functional, music had to remain as

anonymous and inconspicuous as possible – just like "a shadow" as Radano would put it (1989: 457). This new role necessitated a further ban on certain music types and instruments that were deemed too distractive for industrial audiences. A month after *Music While You Work*'s debut in British airwaves, for example, the composer and producer Denis Wright sent a memo to all conductors and musicians imploring them to keep away from intrusive musical materials:

<u>PLEASE</u>   <u>NO</u>   SLOW FOXTROTS
                        TANGOS
                        WALTZES
                        DREAMY NUMBERS of any sort
                        VOCALS of the sob-stuff order
                        COMPLICATED CROSS-RHYTHM in hot jazz
numbers
                        SELECTIONS with frequently changing style and
speed. (Jones & Korczynski, 2006: 149; Nicholas, 1996: 134)

We have seen earlier how certain songs like "Deep in the Heart of Texas" were blacklisted and completely scratched off the air[39] as they compelled the workers to drop all their equipment and join in the singing, proving once-and-for-all that if and when music shifted into the foreground it became too intrusive and, hence, lost its entire functional efficacy. This was a lesson Muzak executives learned the hard way when they inaugurated a special broadcasting program for transportation services called "Travel Muzak" by 1948. The idea was to relay soothing background music to planes, passenger ships and trains to curb the anxiety some individuals might have while travelling but, when songs were not properly vetted for programming, it backfired in an amusingly catastrophic manner:

> "We've had […] problems with a couple of songs," reminisces O'Neill. "On one of our planes there was a passenger who happened to remember the *second* line of a song. Either her husband was staying, or he was going on another plane, and the second line was, 'We shall never meet again.'" O'Neill and Wokoun chuckle at the memory. Muzak hath power! "So she had *hysterics.* They had to bring the plane back to let her off. We caught it

[39] Deep in the Heart of Texas was by no means the only song considered to be injurious to workplace discipline and efficiency. A total of thirty-seven songs would be banned throughout the directorship of Wynford Reynolds simply because their distractive tendencies as they all emphasized rhythm over melody (Baade, 2012: 76)

in the neck for that one". (Haden-Guest, 1973: 30-31, *emphases in original*)[40]

In order to remain inconspicuous and not become too distractive, then, the music, as Muzak's Jane Jarvis says, "must be played at a level that is perceptible but not intrusive, never above the noise level of the room. If calls come in indicating people like the music, we know that we failed, that the music has interfered with work production" (Peyser, 1978: 252). In other words, the main purpose of the music should be "to provide atmosphere, not entertainment" (*Challenge* Magazine, 1953: 55). This emphasis on *atmospherics* is worthy of further scrutiny as it marks an important turn in the evolution of functional music. In fact, when describing the benefits of their services, modern functional music programmers often compared their product by making offhand references to another environment regulation system: *air-conditioning*. The presumption went that if air-conditioners are used to modulate the room temperature in order to make it more habitable for its residents; pleasant music, faintly operating in the background, could similarly transform a space and make it sonically more alluring as well. Both air-conditioners and background music provide individuals the resources to cope with their surroundings, to smoothen the harsher contours of their environment and enhance their own experiences. And people certainly don't have to pay any attention to either; once they are activated they will obediently continue performing their duties in the background. As Muscio once said in an interview without feigning any artistic pomposity about their product: "We are not trying to get [intellectual or emotional involvement], anymore than you do with air-conditioning or the color of an office" (Woodley, 1971: 6). This comparison gets all the more interesting as we learn that Muscio himself was involved with an air-conditioning firm before his tenure at Muzak Company. When this coincidence was pointed out to him by Haden-Guest, he understandingly comments that "there *is* some sort of correlation. [...] I mean, both Muzak and air-conditioning are part of the *Environment*" (1973: 15, *emphases in original*). It should, therefore, come as no surprise that the in-house magazine of Muzak

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[40] Following this incident, any song with the potential to evoke any unpleasant and even fatalistic thoughts were removed from in-flight programming including "Stormy Weather", "I've Got a Feeling I'm Falling" and "I Don't Stand a Ghost of a Chance" (Lanza, 2004: 209).

Company was fittingly called *Environs* (ibid). Similarly, when asked about whether broadcasted music in public spaces is a form of totalitarianism, Donald O'Neill would resent the implication and simply counter with another question: "Is it Big Brotherism to install air-conditioning?" (ibid: 36). The answer, as we shall see later, depends on who actually has *control* over it.

However, designing a light background musical accompaniment that would not be too intrusive or distractive for targeted audiences is only one half of the entire story as the recipients of functional music had also to be conditioned in a way to perceive music as a background accompaniment and not a foreground entertainment. Fortunately for the future of modern functional music programming, the social and cultural transformations taking place in the interim years between two great wars, unleashed by wireless transmission technologies, precipitated the emergence of a new audience more amicable to the idea of using music as a background rather than a serious art form demanding unwavering attention. It would soon become transparent that audiences who are accustomed to distracted and passive modes of listening constituted the ideal type of audience for this new form of functional music.

2.1.1.2.1. Passive Listening and Peripheral Hearing

As stated, long before its initial introduction in work contexts, music and the manner in which people listen to it has already been going through a deep alteration. The aesthetic appreciation of music and attentive modes of listening by aurally immersed silent audiences that emerged in the aftermath of French Revolution (Johnson, 1996; Blackstone, 2011: 16) had already started giving way, under the aegis of technological innovation in music transmission systems, to "retrogressive" and "atomic" types of listening, where "instead of grasping the whole" of a musical composition, listeners, like infants, were now "dwell[ing] upon [individual] melodies, just as if the symphony were structurally the same as a ballad" (Adorno, 1945: 198). According to Adorno, the manipulative and exploitative nature of radio, apparent in its insistence of playing the same standardized, commodified tunes one after another, had engendered a society

whose reactions to what they hear on air is equally standardized and preconditioned. The structural standardization of musical products molds and shapes a new consciousness and listening habits among the masses that venerate distracted, inattentive consumption of music instead of conscious and concentrated immersion. As Adorno explains, in this new musical condition, "if the standardized products, hopelessly like one another except for conspicuous bits such as hit lines, do not permit concentrated listening without becoming unbearable to the listeners, the latter are in any case no longer capable of concentrated listening" (2002a: 305).

This new passivity of listeners is, then, a direct result of the new character of music and the ways it has been brought to general public. Individuals are no longer capable of attentive listening because "the composition hears for the listener"; it has already been "pre-digested" in its production in a way that completely precludes the introduction of anything novel and exciting (Adorno, 2002d: 442-445). The "plugging" of only the most popular and recognizable tunes by radio executives further enhances this process as crowds become more immune to aesthetic creativity, only expecting to hear songs that they would recognize. When music and the way it is broadcasted is standardized to the extent that it no longer requires any active involvement from its listener, it gets pushed further and further into the background where it becomes just another objective event among others, as an unnoticed accompaniment to daily travails of people (Adorno, 2002e).

This was also the conclusion reached by the BBC executives, who, after modeling their broadcasting policy for a decade based upon the image of tired white-collar workers listening attentively at home (Scannell & Cardiff, 1991: 374), finally realized the virtues distracted, communal listening can offer for audiences tuning in to their programming from army barracks and munitions factories. However, it would take years to overcome the deep-seated resentment and prejudice against the background uses of music harbored by the BBC administrators, who, by the early 1930s, were still holding tightly to the official view that their musical offerings should be listened to with full

concentration. *The BBC Yearbook of 1930,* for instance, was quite clear about how to make better use of their musical offerings when instructing listeners to "listen as carefully at home as you do in a theatre or concert hall. You can't get the best out of a programme if your mind is wandering, or if you are playing bridge or reading. Give it your full attention. Try turning out the lights so that your eye is not caught by familiar objects in the room. Your imagination will be twice as vivid" (cited in Baade, 2012: 21).

The shift in the listening habits of audiences was a major incentive behind BBC's January 1940 decision to introduce a separate programming directly targeting the soldiers in the front, who needed a light type of entertainment to withdraw themselves from the hardships of battle, even momentarily. The "Forces Programme" (FP) was the first time BBC acknowledged the existence of "a new audience with specific listening needs" (Baade, 2012: 48) and designed their programming accordingly by eschewing "serious" music that would require concentrated listening in favor of light entertainment and background ("tap") listening. The relative success and popularity of the Forces Program among troops and home audiences made it much easier for the BBC to introduce a similar type of programming for industrial workers five months later. The idea was essentially the same: whether they fight on the beaches, in the landing grounds and fields; or work amidst machines and noise, people who are making the ultimate sacrifice for their motherland deserved a musical incentive that would raise their spirits, uplift their morale and made better warriors and workers out of them. And, that music had to be put in the background so it would not interfere or impede with the fulfillment of more vitally crucial goals.

The background, or as Freymann put it, "infiltration" (1941: 397) purposes of functional music was endorsed and cherished by *Music While You Work* director Wynford Reynold himself, who once suggested that their programs "should be an incentive without becoming a distraction" (1942: 5). Many of the programming guidelines we have discussed above – such as omission of attention-grabbing vocals, smoothing of rhythmic dissonances, adjusting the tone level, etc. - served this purpose of making functional music a "sonic

wallpaper" (North, Hargreaves & Hargreaves, 2004: 72; Radano, 1989: 452), an ornamental piece and yet another constituent of the factory décor and environment. The overarching aim was to transform functional music into "a subconscious environmental factor" (MacLeod, 1979: 23) and "to envelop [workers] in a cocoon of sound" (Plourde, 2017: 28), not to infringe and encroach upon workplace activities. Therefore, the functional effectiveness of broadcasted music relied upon and took full advantage of the "regressive" listening habits of modern audiences that are now more accustomed to passive and distracted modes of listening than ever before. The same sentiment was later expressed by Muzak's Don O'Neill, who summarized the purpose of their service thusly:

> Perhaps I should have mentioned and stressed earlier that with all background music as well as work programs, it must be remembered that few, if anyone, goes into an office, a plant, restaurant or store, to hear or listen to MUZAK or other music. Since primary attention is focused on working, dining or shopping, it follows that the music must avoid anything that distracts, interrupts or interferes with the main purpose for being where you are. As a consequence, any music by its arrangement or by its very nature that requires close attention to be understood, or concentrated effort to be appreciated, has no place in this business. (1968: 4)

Characterizing their service as a form of "sonic air-conditioning" (Plourde, 2017) that demands no cognitive response from listeners is an imaginative idea. However, unlike the *Stimulus Progression,* the programmers of modern functional music could not take entire credit for the idea since shifting music "from *figure* to *ground* in order to encourage peripheral hearing" (Lanza, 1991: 43, *emphases in original*) was already an established compositional technique by the time broadcasting services first emerged in the scene. One quite curious case is French composer Satie's excursion into, what he termed, *Musique d'ameublement,* or "Furniture Music". The idea behind this project, as sketched by Satie himself, eerily presages some of the techniques that would be exploited by functional music programmers in the upcoming years:

> You know, there's a need to create furniture music, that is to say, music that would be a part of the surrounding noises and that would take them into account. I see it as melodious, as masking the clatter of knives and

forks without drowning it completely, without imposing itself. It would fill up the awkward silences that occasionally descend on guests. It would spare them the usual banalities. Moreover, it would neutralize the street noises that indiscreetly force themselves into the picture. (cited in Gillmor, 1988: 232)[41]

It would soon become clear that the *need* Satie was referring to would not only arise in fancy dinner parties but in factories and office spaces as well and where Satie failed[42], modern functional music programmers would succeed. One reason that led to such a frustrating outcome for Satie could be the fact that at the time of *Furniture Music's* public debut in 1920, the broadcasting technology was still in its infancy (both BBC and Muzak will be established two years later) and audiences were still clinging to the habit of treating every musical offering with the utmost respect and seriousness they believed the music deserved. Peripheral hearing and distracted listening were considered blasphemous; no composer with even a shred of respect would want to intentionally debase himself by playing instrumental music only for the sake of a sonic décor[43] and, similarly, no individual would claim to love music and then disregard it as a background accompaniment. But, as Adorno would rightly point out in his many disgruntled essays on the subject, this condition would soon change as every household was adorned with a radio hearth and factories on both shores of the Atlantic were wired for musical reception. True, broadcasting music entirely for the background was not among the objectives of early radio executives, but it

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[41] This initial dream of Satie would be later kept alive in many mood music albums intended only for background listening, including *Show Tunes* album series. The liner notes of the fourth record in the series reek of the manifesto laid out by Satie: "Early in the evening, when the hostess is struggling to get the party off the ground, the music will fill those emberassing lulls" (Lanza, 2004: 70).

[42] The close friend and long-time collaborator of Satie, Darius Milhaud, who was present at the premiere of *Furniture Music* remembers the events of the night as follows:

> A program note warned the audience that it was not to pay any more attention to the ritornelles that would be played during the intervals than to the candelabra, the seats, or the balcony. Contrary to our expectations however, as soon as the music started up, the audience began to stream back to their seats. It was no use for Satie to shout: "Go on talking! Walk about! Don't listen!" They listened without speaking. (1953: 100)

[43] As Erik Satie's biographer Rollo H. Myers points out, this was exactly what the composer was trying to do. He remarked that "the music, which consisted of fragments of popular refrains from *Mignon* and the *Danse Macabre* and isolated phrases repeated over and over again, like the pattern of a wallpaper, was meant strictly to be nothing more than a background and was not intended to attract attention in any way" (1968: 60)

would eventually become clear that the public required music that they could just leave in the background as they go on about their daily chores. Even as early as 1943, Patrick "Spike" Hughes, former jazz musician and BBC broadcaster, was declaring that "the roll-back-the-carpet and dance era of broadcasting ended long before the war. [...] The purpose [now] is to provide a reasonably pleasing background to housework, reading or conversation" (cited in Baade, 2006: 358) What better way to give masses a reasonably pleasing background with a type of music that, as in the old Muzak adage, is "to be heard, but not listened to" (*Challenge Magazine,* 1953: 25; see also, Haden-Guest, 1973: 13; Lanza, 2004: 155)? In a way, then, if we return to Milhaud's account, "the future was to prove that Satie was right" and modern functional music would, in a weird twist of fate, materialize the vision of Satie:

> Nowadays children and housewives fill their homes with unheeded music, reading and working to the sound of the radio. And in all public places, larger stores, and restaurants the customers are drenched in an unending flood of music. In America cafeterias are equipped with a sufficient number of machines for each client to be able, for the modest sum of five cents, to furnish his own solitude with music or supply a background for his conversation with his guest. Is this not "*musique d'ameublement*," heard, but not listened to? (Milhaud, 1953: 101)

But aside from responding to a public demand and providing a non-distractive musical stimulus to workspaces, there was a third, even more "sinister" and political reason, for devising a background role for modern functional music. Even though modern audiences are less judgmental and more conditioned to using music in the background, the idea implying music that requires no conscious engagement from the listener - or, even more accurately, the "hearer" (MacLeod, 1979: 23) – still invokes scorn and mistrust among modern audiences, just like it did with Satie's several decades ago. Music in the background, i.e. music that requires no rapt attention but, in fact, demands passive and distracted modes of listening, insinuate avenues for potential *manipulation* (Herron, 1981: 124) since it operates at the level of the sub-conscious. Not only that individuals were expected to heed no attention to music but disregard it completely and act as if music is not even there while they are working, conversing or concentrating. Music programmers did

everything at their disposal to make their offerings as bland as possible, so they would just blend in the background even though some studies, like the one conducted by McGehee and Gardner, showed that workers were actually "strongly aware" of broadcasts and at times even "hummed the tunes or sang the words of the music" (1959: 415)[44]. The producers of modern functional music did not aspire to operate incognito, where music would stimulate the subconscious of workers without their knowing and incite them to work better and more efficient. As Donald O'Neill elaborates, the idea was to create a *pleasant background* "so that at the relatively few moments that attention is diverted to the music, it is understandable and easy to follow. The listener can then return to his main interest without a sense of frustration or irritation" (1968: 4). However, what the workers would not be aware of was the intricacies of programming, minute changes in the tempo and rhythm of songs, the "internal progression" of the mood stimulus, which did have the power to manipulate workers psychologically and physiologically by lifting their spirits and alleviating their feelings of fatigue and boredom. This insidious nature will become clearer as we explore the disciplinary implications of functional background music as well as its postmodern incarnations, but before finalizing this part of the debate, let us consider one final characteristic of modern functional music.

2.1.1.3. Consensus Music

Modern functional music is a *massifying* technology, meaning a single piece of programming is not simply received in isolation but heard by an entire group of workers at the same time. Given its *collective* and *participatory* nature, the musical selections are expected to have a wider cultural appeal in order to satisfy large numbers of people instead of dwelling upon and catering to individual musical tastes and preferences each worker might possess. To that

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[44] This was also the conclusion reached by DeNora, who, during her ethnographic study in a retail scene, observed "brief body encounters with music", where shoppers, albeit being momentarily, "could be seen to 'fall in' with the music's style and rhythm and where music was visibly profiling consumers' comportment, where it had an impact on the mundane choreography of in-store movement"; such as "snapping the fingers or nodding the head, waving the hands [and] slowing movement", etc. (2000: 144).

end, programming specialists took popular music charts as their primary reference point and only selected songs that were at the heart of the contemporary mainstream culture (Radano, 1989: 454-455). These charts acted as *cultural barometers,* showing which songs gained traction with mass audiences and were a hit among broadcasters and consumers alike. Songs that struck higher chart positions became more likely candidates for functional re-orchestration, as these were the songs commonly preferred by and most familiar to the general public. This reliance upon the most popular and conspicuous tunes of the period by its programmers led many observers to label modern functional music as a type of "consensus music" (Radano, 1989; Jones & Schumacher, 1992; Jones, 2005), that, through disregarding individual variations in taste, only pandered to the least common musical denominator believed to be shared by all working-class people.

In addition to having a better chance of conforming to majority tastes, selecting and re-arranging songs widely favored by mass audiences also helped the *domestication* of crowded public spaces, including work contexts, that might have come across as alienating and overbearing to some. Given the sense of familiarity they attained in the listening public as a result of their constant and ubiquitous playing in radio and other mass media, certain songs, when played in a communal setting, have the power of evoking personal and intimate memories, which then can be subconsciously transferred to the surrounding environment (Rosen, 1984: 42), endowing it with feelings of domesticity and security. According to Radano, the familiar nature of modern functional music programming sonically resembles the low-fidelity radios and phonographs people listen to in their homes and, therefore, one of the main reasons why "many listeners respond positively to the Muzak sound, which [...] tends to reduce feelings of anxiety and self-consciousness in the public place" (1989: 454). In the grueling conditions of factory or office work, a familiar song can bring forth pleasant past experiences in the subconscious minds of the listeners and, even if momentarily, help them forget their present troubles and feel better and more secure. By completely relying on the "shared musical culture of radio hits", according to Greene, modern functional music helps positioning "a world

of the entirely known over alienated space" (1986: 288), thus making that space more secure and welcoming. The consensus songs of modern functional music, then, eventually "attain a level of familiarity that by association signifies the home. [...] One may speculate that the consensus repertory becomes an abstraction of the bourgeois conception of domestic life where [individuals] seek to construct a world of intimacy, privacy, and well-being" (Radano, 1989: 455). In this context, as industrial psychologist James Keenan elaborates in a speech given to Muzak's newly assembled Scientific Board of Advisers called "The Eco-Logic of Muzak", along with the number of listeners, modern functional music also *massifies* the common meanings shared by them: "Muzak helps human communities because it is a non-verbal symbolism for the common stuff of everyday living in the global village. [...] Muzak promotes the sharing of meaning because it massifies symbolism in which not few, but all, can participate" (cited in Lanza, 2004: 150).

What modern functional music achieved, in effect, was an *amalgamation of different tastes* in order to attain an ultimate musical form that transcended personal preferences and create something to which "not few but *all* can participate". This was the point highlighted by Muzak designer Christopher Case when asked about his role within the company: "When musicians are left to themselves to make art for the sake of art, not considering public taste, demographics or psychology, they will put together something that won't please everyone. My task is to amalgamate tastes. Imagine trying to please 80 or 90 different viewpoints of the way things should be" (Lanza, 2004: 149). Of course, judging by the criticism functional music in public places gets, there will always be, what Muzak calls, an "irreducible minority" (Haden-Guest, 1973: 16) not pleased with the offerings put forth by functional music specialists[45]. But this simple fact could not deter programmers from their quest since what they ultimately wanted to achieve was not to please every single person subjected to their broadcasting but to create an all-encompassing musical form in which

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[45] Muscio further elaborates the company's position by, once again, alluding to a common reference point: "But in an office some people might not like the air-conditioning. Or the color of the walls. The *good* thing about a democracy is that the minorities get their say, but a minority cannot *run* a majority. You know Orwell's *1984? Everybody is equal but some are more equal than others*" (cited in Haden-Guest, 1973: 16).

everyone can find something familiar or even personal for themselves. As Cardinell and Burris-Meyer stated, "it is axiomatic that you cannot please everyone at the same time with any given musical selection. Therefore, programs for *functional* purposes must be arranged on a basis of proportional representation of musical tastes, since the listeners have no individual choices as to material presented" (Cardinell & Burris-Meyer, 1947: 548). Rod Baum, another Muzak executive, relates a tale about the importance of specifically-designed "consensus music" in environments where clashing opinions about musical preferences are frequent:

> In an office for a garment factory outside of Atlanta, the workers got tired of the Muzak and used a radio for their background music. If they turned on rock, 25 percent of the people in the workplace didn't like it. So they got a committee together and took a vote. They played the classical station, and only 10 percent of the people ended up liking it. So they tried a country station, and 60 percent didn't like it. They had another meeting. They decided on one day for each format: country one day, classical the next, disco for maybe half a day. But the 10 percent who liked whatever was playing got tired of people glaring at them. Finally the office manager called us and asked if they could have the Muzak back. It proved what I was doing was working. Muzak proved the least of all possible evils. (cited in Lanza, 2004: 163-164)

Thus, by only allowing the most well-known songs in their musical repertoire, modern functional music programmers tried to create a sort of "consensus music", through which everyone could find something personal and dear about their life. In addition, by bringing tunes from home to work spaces, the popular offerings of functional music served "as a 'bridge' between home and factory life for workers" (cited in Uhrbrock, 1961: 15), consolidating the private and public lives of millions. But, aside from engendering a sense of personal security and ending workplace disputes, what other benefits could re-orchestration of only the most popular and familiar songs have for the programming and broadcasting of modern functional music? To answer this question, we need to understand the value familiar music had for the functional effectiveness of workplace music.

2.1.1.3.1. Familiarity and Popularity

As was the case with the rise of retrogressive and passive modes of listening, modern functional music's reliance on the most familiar and popular songs of a particular period was also a part of a more general trend in the production and consumption of popular music. As Adorno observed as early as 1941, constant repetition of standardized products of popular music on radios was creating a situation in which the *recognition* of featured songs was becoming an end in itself for the listeners, as opposed to the culturally normative condition of grasping "the concrete and unique musical tonality" that lies beneath and gives all good, serious music its aesthetic meaning (2002d: 452-453). As he suggested in a later essay, the modern men live in a society of commodities that prioritizes profit over human wants and needs and in which "there exists a general trend toward a heavy concentration of capital […] in favor of monopolized mass production of standardized goods" (1945: 196). Cultural domain is not immune to such sweeping transformations in the economic relations of a society, hence, music, once deemed ethereal and sublime, becomes just another mass produced, standardized good on a capitalist market that measures aesthetic success not based upon the objective, aesthetic quality of a composition but the number of sales and plays it received. The standardization and commodification of music leads to an intellectual stagnation and retardation: when all the products released into circulation by the culture industry become hauntingly similar to one another, it leaves no room for the individual listener to cognitively and intellectually engage with the musical offerings he or she encounters on the radio. The listening habits of audiences are, therefore, ultimately molded by the culture industry they are bound up with as both "are kneaded by the same mode of [capitalist] production" (Adorno, 1976: 29). Thus, a new mode of listening, what Adorno labeled as "commodity listening", had emerged:

> Music has become a means instead of an end, a fetish. That is to say, music has ceased to be a human force and is consumed like other consumers' goods. This produces "commodity listening", a listening whose ideal it is to dispense as far as possible with any effort on the part of the recipient - even if such an effort on the part of the recipient is the

necessary condition of grasping the sense of the music. It is the ideal of Aunt Jemima's ready-mix for pancakes extended to the field of music. […] The listener suspends all intellectual activity when dealing with music and its content with consuming and evaluating its gustatory qualities - just as if the music which tasted best were also the best music possible. (1945: 196-197)

When all musical options confronting audiences shamelessly look identical as if they sprang from the same mechanical contraption, the detection of seemingly inconspicuous nuances between similar songs becomes the most paramount goal for audiences. It is as if, after being perpetually and mercilessly subjected to an endless succession of songs that resemble each other, the simple act of recognizing the name or a melody of a certain song is more than capable of bringing joy and a sense of achievement to an ordinary listener. According to Adorno, this experience of recognition takes place in six subsequent stages, starting with *vague remembrance* of a particular song – the feeling of "I must have heard this somewhere before" - followed by *actual identification* – i.e. the "that's it" experience – and *subsumption by label* – "that's the hit song Night and Day by Cole Porter!" The correct identification of a song is not just a simple mnemonic achievement by the listener but also have important social implications as, by recalling a popular tune known to millions of other people, the identifier gains a feeling of "safety in numbers" and a sense of belonging as he is now a part of "the crowd of all those who have heard the song before and […] supposed to have made its reputation" (Adorno, 2002d: 455). Recognition of a song is, therefore, never an atomized or individualistic experience. Through recognizing a song broadcasted in a program, the individual listener becomes part of a collective experience. In the words of Adorno,

> The moment of identification of some socially established highlight often has a dual meaning: one not only identifies *it* innocently as being this or that, subsuming it under this or that category, but by the very act of identifying it, one also tends unwittingly to identify *oneself* with the objective social agencies or with the power of those individuals who made this particular event fit into this pre-existing category and thus "established" it. The very fact that an individual is capable of identifying an object as this or that allows him to take vicarious part in the institution which made the event what it is and to identify himself with this very institution. (ibid, *emphases in original*)

In a sense, then, by recognizing a song and thus becoming a part of a grander scheme, the individual is *massified.* The two elements of *familiarity* and *popularity* are especially significant as these are the prerequisites that make the act of recognition possible in the first place[46]. It should come as no surprise at this point that a massifying technology such as modern functional music solely uses songs that are well known in their programming (Jones & Schumacher, 1992: 161). Along with its non-distractive qualities, using the most familiar and popular songs had an additional benefit of bringing disparate, individual laborers together and carving out a unified, *collective workforce* out of them. Korczynski et al.*,* for instance, relates how a shared knowledge of popular music materials became a common reference point and a socialization route for women workers, who had no previous knowledge of factory life prior to the Second World War (2005: 206-207). The broadcasting of familiar music was, therefore, a crucial and necessary part of maintaining workplace productivity and efficiency.

As with all the other essential aspects of functional music programming, the importance of using familiar music was first pointed out by Wyatt and Langdon, who found out that familiar types of dance music "were the most popular and effective stimulants to production and pleasure in work" (1938: 71). Similarly, they also determined that one-steps had a much favorable effect on overall output than military marches as they were "more familiar and presumably had happier associations" (ibid: 42), even though both types of music fared the least popular as they made workers feel lively and restless. During the most intense days of World War II, the advantages of familiar music on listener morale became more apparent. Robert Silvey, who formed the BBC Listener Research Department in 1936 to assess and gauge the efficacy of their programming on radio listeners, stated that, during the war "the value of the familiar is going to be at a premium [since] every time a news bulletin is switched on, the listener opens the door to something new and potentially unpleasant" (cited in Baade, 2006: 356). The real value of playing familiar music was, then, in easing the

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[46] This was also the point underlined by Adorno, who suggested that "the recognition-constructs do not apply to any tune but only to 'successful' tunes" (2002d: 457).

listener's mind and restoring a sense of normalcy after being exposed to dire news coming from the front by reminding him that, despite the looming threat of war, it was business as usual and nothing essential has changed. Familiar music shielded listener's mind from the atrocities of war and gave them a sense of stability in a world that seemed to go off the rails. Maintaining morale through familiar music was also important for war workers as it was for home listeners, as they worked more willingly and vigorously when their morale was replenished. Keeping this point in mind and implementing these initial findings to his own programming directives, Wynford Reynolds asked *Music While You Work*'s in-house musicians to only play the most popular tunes since "workers want tunes that they know, and the most popular and successful program is one that enables them to 'join in' by singing or humming" (1942: 5). By the same token, uses of unfamiliar items were entirely dissuaded as they would either disturb or compel workers to listen more attentively, hence causing a slackening in output (ibid). A similar conclusion was reached few years later across the Atlantic by Richard Cardinell and Harold Burris-Meyer, who advised the programmers to include music with a "high acceptance factor", i.e. familiarity, since low acceptance factors would only breed distraction among the workforce[47] (1947: 548). Familiar music was essential for morale maintenance but, perhaps more importantly, it was also good for industrial productivity.

2.2.2. Industrial Functional Music as a Top-Down Musical Exercise

If the first characteristic of modern functional music mainly pertains to the ways it is *produced*, the second characteristic is about the manner in which it is received and *consumed*. As we have seen, the relative autonomy pre-industrial laborers enjoyed in terms of determining the duration and pace of their work

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[47] At this time both Cardinell and Burris-Meyer had started to work for Muzak Company and their findings on the state of music in industry would define the content of later Muzak programming. For instance, while describing the role of their company, Muscio would use the term "contemporary" instead of familiar or popular and argue that "although Muzak is heard rather than listened to, I still maintain it has to be done in Contemporary Style, because – although you may not be conscious of it – it will still affect you. So we make the music as much contemporary idiom as we possibly can" (cited in Haden-Guest, 1973: 22)

was a major factor in the emergence of work songs. However, this autonomy gradually withered when, as a direct result of Industrial Revolution, self-employed agricultural laborers, craftsmen and artisans, who supplied the bulk of work songs repertoire, were disenfranchised and, eventually, forced to migrate to urban centers in search of a stable income and decent living conditions. These pauperized masses had to sell their labor in exchange of a stable salary, thus becoming wage-earners under the direct management of an employer. Soon, as the employers began to take direct control of their workforce, they also commenced to become more authoritative in issues concerning the use of music in the workplace - as is evident from the initial bans on singing. Depriving workers from their artistic creativity led to an "aesthetic vacuum" in the workplace, which then subsequently filled with a new form of functional music designed and produced by actors not directly involved in the labor process. A whole plethora of agents came into prominence who were responsible for the production of this new functional music, including but not limited to programmers, conductors, industrial psychologists, composers, musicians, radio executives, publishers, and so on.

As my discussion on the programming of modern functional music demonstrated, each of these actors played an integral part in the creation and dissemination of functional music in industrial spaces and offices, whereas workers' musical tastes and preferences were to a great extent neglected or didn't factor in the programming process. As such, workers, who once were the *active* creators of musical content during work, were reduced to *passive* listeners and consumers of the content provided *for* them, not *by* them. Instead of a spontaneous and collective production of music at the grass-roots level, what we have here, then, is a form of functional music that was meticulously programmed by specialists and relayed *top-down* to workers. In other words, the hierarchical organization of work in capitalist production systems engendered an identical "cultural hierarchy", where workers had little or no control over the music that was given to them. In a way, then, modern functional music served, justified and re-asserted the exploitative economic relations with an overseeing and guiding management at the top of the hierarchical chain and

a docile, obeying workforce at the bottom. Therefore, in order to fully comprehend how modern functional music operated in the organization and conduct of labor, it is necessary to cast an investigative glance at the actors involved in its production (i.e. the specialists) and consumption (i.e. workers).

2.2.2.1. Actors in Producing and Consuming Industrial Functional Music

Even though in both the United States and the United Kingdom the production and dissemination of functional music to workspaces followed the same top-down trajectory, the actors involved in its emergence were quite different in each case. As Jones and Korczynski explains, in Britain the functional music embodied by the radio program *Music While You Work* came into existence as a result of the combined efforts of a "'human relations school' coalition of institutions and individuals" (2006: 145) including the Industrial Health Research Board, the National Institute of Industrial Psychology, the Industrial Welfare Society, Ministry of Production and the BBC[48] (see also: Baade, 2012: 5). Whereas in the United States, more true to the nation's libertarian and entrepreneurial spirit, it was not the initiation taken by governmental agencies but the vision of a single individual, General Owen Squier, that led to the establishment of the Muzak Company in 1922[49].

However, aside from such minor variations in their origins, both functional music services relied on the expertise of the same set of specialists while designating the content of their programming. More than anything, or anyone, it was the studies conducted *in situ* by industrial psychologists that would shape the course of functional music in both countries. By *scientifically* demonstrating

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[48] In fact, a preliminary report submitted by program directors three days before *Music While You Work* went into air conceded all musical authority to above-mentioned parties by specifying that "in every case the fact has been emphasized that the first few weeks are experimental, and that it lies with them to put us right if we are developing on the wrong lines" (cited in Jones & Korczynski, 2006: 156)

[49] The only exception could be the U.S. military and War Production Board, who both conducted separate scientific experiments on the effects of music in military-related activities, such as vigilance of radar operators (Husch, 1984: 62; Wokoun, 1963).

that music can successfully alleviate fatigue, dispel boredom, reduce absenteeism and prevent workplace accidents, these studies almost single-handedly convinced employers and managements, who were highly reluctant about having music in their workplaces few years ago, to introduce background musical accompaniments to their laborers. In England, as we have seen several times, it was the report by Wyatt and Langdon, which was commissioned by the Industrial Health Research Board, that acted as a key impetus behind the creation of a music designed specifically for workspaces as well as BBC's eventual acquiescence to broadcast *Music While You Work* (Jones & Korczynski, 2006: 158; Styhre, 2013: 30). In the meantime another duo of industrial psychologists across the Atlantic, Raymond Cardinell and Harold Burris-Meyer, both from the Stevens Institute of Technology, were conducting similar experiments and, without possibly being informed by the findings of Wyatt and Langdon, reaching the same conclusions. The results of the empirical studies undertaken by Cardinell and Burris-Meyer, validating the beneficial effects of music on factory productivity, would have a huge impact upon Muzak's industrial programming and later lend both of them jobs at the Corporation's research department (Lanza, 2004: 43-43; Vanel, 2008: 98)[50]. It was these early efforts by industrial psychologists couched in scientific discourses and backed up by quantitative data, then, that were instrumental in rationalizing and justifying having music in the workplace. The numbers provided by researchers detailing music's positive effect on factory efficiency and worker turnover were too tempting for employers and other concerned parties to turn a blind eye – especially during the wartime when demand for increased productivity was at peak.

Once the industrial psychologists conclusively proved the worth of having music at work, the responsibility lied with musicians and engineers to follow the scientific guidelines laid out to them and produce the sound that would generate the utmost functional effectiveness in a noisy work environment.

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[50] The success of the early research department led Muzak to assemble a Scientific Board of Advisors in 1966 composed of established industrial psychologists and medical professionals, who oversaw the "task of [further] rationalizing the corporation's programming methods" (Jones & Schumacher, 1992: 159).

Hence, the *worker-performers* of pre-industrial era were replaced by in-house studio musicians and professional composers, who were paid to create music exclusively for factory spaces. In fact, as both Burris-Meyer (1943) and Freymann (1941) highlighted, the imperative to create work-specific music opened up new and exciting avenues for aspiring composers to explore, and even gave them the chance to elevate cultural tastes of laborers by "eliminat[ing] some of the low quality music which is offered to the workers" (Freymann, 1941: 397). Burris-Meyer summarized the important task awaiting functional music composers thusly:

> Leisure music is not in the idiom of the industrial worker, and yet the industrial audience will, at the present rate, soon be the largest audience for the musician. [...] When the composer starts to think of his work as first and foremost performed in the factory, before people who work while they listen; when he proceeds, as some composers are already doing, by treating auditory emotional stimuli according to a musical pattern; when he sets for himself the task of making the worker sing, then we may well have a musical idiom which is something new on the fact of the earth; and what industry can do for music may be as important when the record of this civilization is written as anything music can do for industry. (1943: 264)

Depriving workers of their artistic creativity and subjecting musical production at work to rigorously scientific and highly specialized methods not only warranted a more active and committed involvement of outside actors, like industrial psychologists and composers, but also resulted in the sprouting of companies specifically dedicated to creating music for workspaces. Given its relative monopoly and popularity, Muzak may become the most well-known provider of (and, consequently, the most associated name with) environmental music but, historically, there had been other companies who, with varying degrees of accomplishment, tried to imitate the early success of Muzak Company. One example was *Muzicord*, which was established in 1932 and prided itself in producing ready-prepared, "suitable" music for industrial spaces titled "Sound Recordings for Industry"[51] (Robertson et al., 2007: 223). Another

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[51] Unlike broadcasted music, the musical materials by Muzicord Inc. were published as gramophone records, which may also account for its relative unpopularity amongst

competitor on the market was *Tape-Athon Music Inc.[52].,* which crafted background music for work and leisurely activities with self-explanatory titles such as "Rhythmic Selections" and "Listen and Dance" (Smith, 1961: 159). Regardless of the names of the companies or whether the music was broadcasted or played on a gramophone, the actors involved in the production of custom-made functional music remained essentially the same. With programmed music surely asserted itself as the only uncontested sonic hegemon in industrial soundscapes, workers' control over musical production has been completely eradicated. In their stead, managements and members of the executive staff acquired the power to have the last word over the provision of music. In fact, employers were advised to create new managerial positions for "responsible people" with the sole task of overseeing the broadcasting of programs:

> It is advisable for managements to appoint a responsible person as Program Supervisor, whose duties should include the choosing of records and arranging of programs. The supervisor would be in a position to deal with suggestions and criticisms and would form a liaison between management and employees. [...] The factory's Program Supervisor should be responsible for reporting any alternations or faults that affect the proper balance and diffusion of sound, and these reports should be passed to the Installation Company's Sound Engineer so that he may make the necessary repairs, modifications or additions. (Reynolds, 1942: 5-8; see also: Baade, 2012: 70)

Although the above excerpt from Reynolds' report delegates most of the authority to program supervisors and, even to some extent, to sound engineers designing tannoy systems; it nevertheless can be deduced that workers had still retained some of their negotiation power over the broadcasts via their "suggestions and criticisms". As we shall see in the remainder of this discussion, although the workers had no *direct* control over the musical offerings by functional music services, they could still exert *indirect* influence over the design of the programming. Since the music was primarily made for boosting the effectiveness of workers, the directors and programmers had to closely

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management since gramophone records "allowed the works councils greater control over the choice of music" (Robertson et al., 2007: 223).

[52] Tape-Athon Company would go on to enjoy relative success as the official soundtrack provider for Kmart chain stores in the 1980s and 1990s.

monitor how their broadcasts were perceived by workers and, if deemed necessary, modify their broadcasts to increase their functional capacity. This provided workers with a chance to share their personal opinions and make their voices heard, if not through singing, by answering surveys and questionnaires.

2.2.2.1.1. Listener Research and Audience Surveys

When it came to assessing the quality of their broadcasting in real-life contexts, the producers of modern functional music did not just assume *a priori* that their programs were successfully accomplishing their intended purposes. On the contrary, just as with the processes involved in the production of their programs, scientific methods and empirical data were utilized in order to test the effectiveness of music in assisting workplace efficiency. With audience research surveys the idea was to gather firsthand information both from the managing staff and workers on the overall quality of broadcasts and, then, use these results to modulate programming variables to better respond to the needs of the workforce. Hence, a *feedback loop* was achieved: valuable statistical data on issues pertaining to broadcasts were collected and then "fed into adjustments [such as] how musicians were told to play [or] how the studio was configured and the choice of music" (Jones & Korczynski, 2006: 153) However, as Hui explains, while these "new protocols for engaging worker feedback about the use of industrial music […] appeared to be a genuine interest in worker musical preferences", the underlying objective was to use them "in the service of improving the 'functional effectiveness' of the workplace" (2014: 366; see also: McGehee & Gardner, 1959: 406). In other words, the real reason behind displaying (or, perhaps, feigning) an interest in workers' listening experiences and their musical preferences was not to satisfy their tastes, but rather to boost factory productivity and efficiency through increasing the functional capacity of musical programming. As one Muzak report so succinctly put it, "customers don't buy Muzak to entertain their employees" (Haden-Guest, 1973: 20-21).

In the case of *Music While You Work* there were two main types of audience research: the first was the frequent factory visits by the executive cadre, which gave them a chance to listen their broadcasts in their intended environments as well as observing the reactions of their audiences as they simultaneously listened and worked (Baade, 2012; Jones, 2005; Jones & Korczynski, 2006). According to Jones, this direct engagement of the BBC staff with the factory space and workers allowed them "to give each factory visited 'personal' feedback on how to optimize their use of music" in addition to getting information that would normally be "unobtainable through questionnaires" (2005: 735). Second, there were surveys and questionnaires regularly sent out to factories, asking managers and workers to evaluate each Wednesday afternoon broadcast. Despite being a commonplace practice at BBC since 3 December 1939, the value of surveys for enhancing programming quality was only recognized by *Music While You Work* staff after an experimental week was initiated on 6 July 1941, when factory audiences were asked to contrast and objectify fourteen programs featuring dance bands, theater organs, light orchestras, brass and military bands based on criteria of audibility, rhythm, enjoyment and effect on output as well as their conditions of listening environment – i.e. the extent to which the work was repetitive or the noise levels of the factory, and etc. (Baade, 2012: 69; Jones, 2005: 734-735; Nicholas, 1996: 135; Reynolds, 1942: 3)[53]. Although these surveys had been instrumental in guiding the course of programming during the trying days of World War II, especially when the morale was at its lowest and audiences needed more "color" and entertainment, Reynolds was adamant in keeping his finger on the pulse of his audience even after the war had come to an end[54].

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[53] The results of this week-long study, which were published few months later, indicated that at least 57.4% of the 52.000 workers who took the survey (three quarter of them being women and working in women-only shops) were engaged in "wholly or mainly repetitive" tasks while no single respondent claimed to listen the program exclusively on work-breaks. This further solidified the view that *Music While You Work*'s broadcasts were mainly for workers listening in while performing monotonous or repetitive tasks (Baade, 2012: 69).

[54] It was reported that, by June 1946, more than 422 companies had taken part in filling out the questionnaires sent by *Music While You Work* producers (Baade, 2012: 78), generating a data pool that would indelibly shape the way the programs were produced.

Surveying of industrial workspaces was also a very common research technique employed by Muzak executives, who, like their British counterparts, would use this method to regularly monitor workers' opinions about their programming. However, in addition to questions related to functional effectiveness, Muzak researchers would also keep close track of and take into account the shifting workplace demographics, workers' music tastes and, even, geographical trends (Hui, 2014: 378) in order to make sure their products were up to date. Demographic data, such as information with regards to gender, age and education level of workers, were believed to be indicative of musical preferences of a certain group (as in "older workers like marching music" or "younger workers prefer dancing tunes") and, therefore, informed the aesthetic decisions producers had to make while designing their programs for factory spaces. According to Hui,

> The [Muzak] company found that class, age, and educational level were also determinative of musical preferences and often a specific group would dominate certain industries. In reports this data was used to track demographic changes and trends of musical taste. [...] Demographic shifts of workers, changing tastes, and the delicate touch of determining popular music that wasn't so old as to be annoying but not so new as to be a distraction, required constant and vigilant monitoring of its employees – both their motor and mood reactions. [In effect] their demographic data as well as their subjective judgments were integrated into the Muzak programming algorithm. (ibid: 379)

Having queried survey respondents about their personal information, a typical Muzak questionnaire would then follow up with some yes or no questions and statements that would help researchers comprehend whether their music programming helps the work process or impedes it:

1. Do you like music while you work?
2. Do you think music helps you in your work?
3. Muzak makes the time go faster.
4. Muzak makes my work more enjoyable.
5. Muzak interferes with my work.
6. Muzak tends to break the monotony of my work.
7. Muzak gives me a "lift".
8. Muzak helps to relieve fatigue.
9. Muzak seems to make my fellow employees more pleasant and cheerful.
10. Muzak keeps me from getting nervous and cross.

11. Muzak makes me nervous.
12. Muzak makes me look forward more to coming to work.
13. I wish the music would be stopped immediately. (ibid: 375)

In short, audience surveys and questionnaires were effective tools at the hands of programmers as well as employers who subscribed to their service to check whether their musical offerings were serving their intended purposes. By incorporating the feedback of their target audience (i.e. workers) into their design process, the producers made sure their broadcasts were always up to the task in terms of aiding the workplace productivity and efficiency. It was primarily the functional capacity and listening conditions – such as audibility – that surveyors were interested in[55], therefore the aesthetic preferences and musical tastes of workers, although asked during the questionnaires, at best played a secondary role and didn't have much influence on the content of broadcasts. For instance, as the following figures demonstrate, while semi-classical music was not typically appealing to audiences, it nevertheless was among the most frequent types of music featured in functional music broadcasts as it deemed to be more favorable for industrial efficiency:
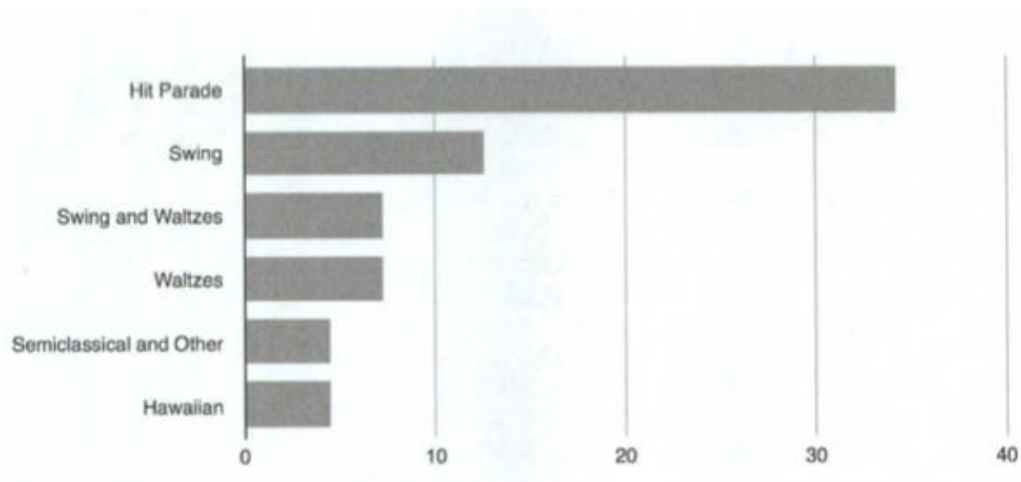
Figure 4. Types of Music Preferred by Laborers in Factories and Offices

Source: Hui, 2014: 374

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[55] This may explain Hui's observation that it was generally the opinions expressed by the foremen, managers and executives that were prioritized over that of workers' in the survey reports (2014: 373)
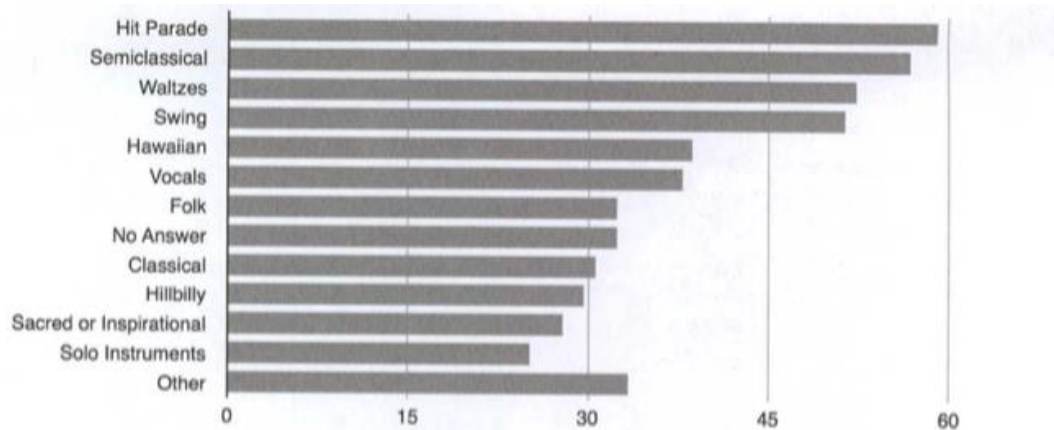
Figure 5. Types of Music Actually Played in Factories and Offices

Source: Hui, 2014: 373

Although in general the workers only had a minor, indirect role in controlling the workplace music, this should not mean that they just *passively* consumed whatever was given to them. As we will see, workers often enjoyed the broadcasts of functional music and at times even *actively used* them in creative ways to survive the debilitating effects of factory work (Korczynski et al., 2005: 209).

2.2.1.2.2. Worker Preferences and Responses

Even though the worker musical preferences were not always reflected in factory broadcasts, they nevertheless enjoyed having a musical accompaniment while they were doing a repetitive and monotonous work. Subscribing to the view that having *any* kind of music would be much preferable to having none, the workers were appreciative of the cheering effects of music as the following account by a former women factory worker seems to attest:

> In the shell shop, you couldn't hear anything because it was next to what we called the stamp shop, where the big hammers went boom, boom, boom all the time. You certainly couldn't hear music while you worked. Well I couldn't. I'm a little bit deaf now. I'm sure it's from that. I was actually lonely when I was in the works. I felt isolated. (Nicholson, 1995: 204)

For workers who had music, on the other hand, the work seemed to past more amicably, depicted in the image of "happy women wielding spanners while singing along to 'Music While You Work'" (Waller & Vaughan-Rees, 1987: 63). The presence of music was always a source of morale and a glimmer of joy in a mechanized workspace that dreadfully lacked it. Given its humanizing qualities, the majority of employers were in the view that music was an important factor in improving the attitudes of workers towards their superiors and their job (McGehee & Gardner, 1959: 414). In fact, as Kerr found out in his study on workplace preferences, music has the capacity to act as a powerful incentive and "attraction" for workers as they would be more likely to elect departments where music is being played rather than departments with no music (1943: 439). This overwhelmingly positive disposition of workers to broadcast music was one reason why in 1948 the Cadbury board scratched a planned poll to assess workers' opinions with regards to the provision of *Music While You Work*, on the grounds that it would only confirm "the likely result" (Robertson et al., 2007: 222).

But for many workers, music was much more than a simple source of entertainment or "an acoustic light source" (Adorno, 2002e: 508) in the grey and darkened factory environment. As several studies pointed out, although music was employed to conceal and disguise some of the negative aspects of Fordist production systems, the workers were usually *aware* of the conditions surrounding their work and "heard and used" the music to counteract the adverse impacts of repetitive, monotonous and mechanical work (Korczynski, 2011: 104)[56]. As Korczynski et al. argues, it was exactly this monotonous nature of work that made workers to be more appreciative of broadcast music as it provided a resource for "keep going" and surviving "the awful conditions" they had to endure (2005: 209). Whether it was actively used or passively consumed,

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[56] Although it should be noted that here Korczynski's study mainly consists of the use of radio broadcast music, not modern functional music programs as we presented so far. By offering multiple channels and a more varied portfolio of musical selections as well as affording individual listening practices, the small transistor radios mentioned in his study had already been noticed as a source of conflict and "problems of order for management" as they represented "a shift in control over music output [from the management] to the shopfloor" (Morgan, 1975: 212-213)

functional music was a highly effective way of keeping a workforce content: on the one hand, the existence of programmed music diminished the physiologically and psychologically deprecating effects of repetitive work and, on the other, the mentally and bodily invigorated workforce displayed improved morale and attitudes towards their job, operated more efficiently and productively and, thus, yielded better profits for employers. It is to this double-function of modern functional music we now turn to.

2.3. Functions and Uses of Industrial Functional Music

Earlier, I have stressed two main purposes that broadcast music in the workspace primarily served to. The first of these functions is to counteract the de-humanizing and alienating effects repetitive mechanical work had on laborers and, thus, to improve the overall welfare and attitudes of workers towards their task. Since the overarching aim in this first function is to create a happy and content workforce through the cheering qualities of music, it can be suggested that this use is mainly *paternalistic.* In other words, it was believed that by permitting music to be broadcasted on the work floor, the managers were primarily looking out for the best interests and general well-being of their workers. In this sense, music was expected to act as a "mental stimulant" (Reynolds, 1942: 1) or a sonic "balm" (Radano, 1989: 450) that would raise the sagging spirits of workers who were mentally exhausted from incessant labor or from the air raids the night before.

However, it is imperative that these morale-boosting functions of modern functional music should never be insulated from its secondary, more *disciplinary* uses. Even though the allowing of musical transmissions by managements seemed to be a genuine and well-intended interest in workers' welfare, this was always considered in conjunction with music's favorable impact upon output and factory efficiency (Antrim, 1943; Freymann, 1941; Kaplan & Nettle, 1948; Jones & Korczynski, 2006; Robertson et al., 2007; Husch, 1984; Reynolds, 1942). That is, functional music was considered as a valuable tool for the industry only to the extent that it increased the productivity, not

worker happiness. The latter was at best a secondary or a *means* towards the ultimate aim of "disciplining workers' bodies into docile instruments" to attain higher levels of production (Baade, 2012: 78). In an apparent win-win situation for employers, through relieving workers of their boredom and fatigue, the musical tonic not only made them happier, but also *better* and more efficient in accomplishing whatever task they were assigned with[57]. In the end, by appeasing worker demands over having music at work, managements and functional music producers created a well-oiled sonic machine that *simultaneously* helped workers to adjust their work environment *and* extract the optimum efficiency from each one. In the following pages, we will have a closer look to both uses of modern functional music (i.e. *paternalistic* and *disciplinary*) and investigate the techniques implemented in each use.

2.3.1. Paternalistic Uses of Industrial Functional Music

Despite the fact that the intense bombing of British cities throughout the Blitz was now tapering off and citizens were now recuperating from its devastating effects, by 1943 the sporadic aerial bombardment of British Isles by the Luftwaffe forces was still a common occurrence in the everyday life of many citizens. While conducting one of his regular factory visits after another such night of ceaseless bombing, *Music While You Work* director Wynford Reynolds witnessed first-hand the transformative effects music can have upon a disheartened and worn out workforce:

> I observed the tired, drawn faces, the wearied droop of shoulders, the glances at empty seats and felt that the very air was filled with the nervous tension of the past night. Suddenly the loud-speakers came to life – a voice was heard "calling all workers"[58] – and then followed the rousing strains of a march *familiar* to millions of people in this war and

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[57] As Wokoun so succinctly put, "obviously it's good if your workers are happier. They work harder" (Haden-Guest, 1973: 36).

[58] Here Reynolds is referring to the program's signature opening tune "Calling All Workers" by Eric Coates. After 4 years, the name of the song was changed to "Calling All Forces and Workers", thus, according to Reynolds, solidifying the "link between the fighters on both fronts – the soldier and the factory worker – [and] strengthening the bond of unity between our forces on land and sea" (cited in Baade, 2012: 81).

the last – "Colonel Bogey". Like a trumpet call to action, the martial melody echoed through the shop, and then I witnessed a transformation scene – tired faces breaking into smiles, the squaring of bent shoulders, chins uplifted, and suddenly voices, singing voices, that from a murmur swelled into a roar as with heads raised in defiance those factory workers shouted: "AND THE SAME TO YOU!" (cited in Baade, 2012: 60, *emphasis added*)

As soon as the first musical broadcast of the day commenced, the gloomy mood across the factory floor had given way to a more joyful and brisk one. Music became "a therapeutic agent" (*Challenge Magazine,* 1953: 27), soothing the strained nerves from the previous night and mentally preparing the workers for the long working day ahead. Music's mood-boosting values were recognized as a powerful remedy especially during periods of excessive discomfort and distress, such as "after air raids or at the beginning of the day's work when employees are depressed by bad news or weather conditions; or [...] when played towards the close of a particularly tiring day" (1942: 7). A dose of musical tonic, prescribed by "Doctor Music" as Reynolds would call it (Baade, 2012: 73), was considered the perfect antidote for the physically and mentally vulnerable workforce[59]. This was one of the reasons why Richard Cardinell recommended plant managers to start each day with military marches followed by a fox trot or polka, in order "to wipe the gloom off the faces of the incoming employees and perhaps to instill a little esprit de corps into the whole group" (cited in Lanza, 2004: 44-45). With their resolutions and determinations renewed, it was assumed that the workers would now buckle down and work twice as hard than they would have in a no-music condition.

What's more is that, these *lifting* effects of music would not be just limited to the duration of a single broadcast, but will continue throughout the entirety of the working day, providing a much needed "emotional crutch" (Lanza, 2004: 91) for workers to lean on when needed. In fact, as Wyatt and Langdon found out, simply knowing that at some point during the day music will be played – what

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[59] A more recent study by Haake (2006) on music listening practices in office-based settings affirm the mood-related functions of having a musical accompaniment while working. The results of her survey showed that statements like music "improves your mood", "helps you relax", "makes you happier", and "makes you less bored" scored the highest ratings among the respondents (2006: 4).

they called the "anticipatory effects of music" (1938: 39) – was adequate enough to cheer most workers up. For the great majority of workers, in the dull environment of repetitive work, music was a blessing and, accordingly, something to be looked forward to. Music meant an escape and "reprieve from the grey sameness of a working day" (Pollert, 1981: 132) and, therefore, waited enthusiastically. In the words of one industrial laborer, workers "look[ed] forward to the next half-hour of music as soon as the previous one is finished" (Wyatt & Langdon, 1938: 39).

This eager anticipation of music, in return, made the working hours seem to go by much faster (Antrim, 1943: 279; Burris-Meyer, 1943: 263; Wyatt & Langdon, 1938: 39-40) and even became a factor in reducing absenteeism and labor turnover in many factories (Fox, 1971: 70; McDaniel, 1945; Roberts, 1959; Oldham et al., 1995). Employers realized that workers would be more willing to show up to work if they knew music would be present, since they knew working to a musical accompaniment will mitigate some of the dreariness and boredom out of their work activity. Music helped workers to forget their problems ["Please may we have more music? In this cold weather music helps us to forget the cold, and so we can do more work" (a factory worker in Reynolds, 1942: 1)], let go off their worries ["If on a bad job the music most certainly helps you to forget it and stops you from grumbling" (a factory worker in Wyatt & Langdon, 1938: 39)] and, eventually, to better concentrate on their tasks. In a similar vein, the total absence of music was scorned and detested by the workers. Silence was resented as it only augmented and made explicit the alienating aspects of industrial work: "When the music's not on you think, hang on, what's going on, and all you hear is the machines" (cited in Korczynski, 2011: 94). Overall, through "attenuat[ing] the more grossly intolerable effects of the mechanized, assembly-line labor process [and] softening the edges of the more brutal aspects of Taylorism" (Jones & Schumacher, 1992: 159), music provided a much appreciated diversion for the workers from the monotonous conditions characterizing their work. As one munitions worker from town of Langley Mill testifies: "They were awful working conditions but that's only one part of the story. We had some smashing times. Don't imagine it was all doom and gloom

because it wasn't. We had some fun. […] Music was a godsend to us all" (Edgar, 1999: 67).

But music was not "godsend" so much as that it was "allowed" by paternalistic managements to forge a better working environment. Music provided a humanizing element to vastly de-humanized conditions surrounding factory work during wartime, helping workers to cope and "survive" the suffocating monotony of everyday life. In the words of Burris-Meyer if and "when you separate work and song, you make work out of work" (1943: 262) and even the most basic types of repetitive work amidst the noises and fumes of machines can cause "human problems" (Wyatt & Langdon, 1938: iii), ranging from the onset of boredom to more severe conditions of anomie. By designing functional music specifically for factory spaces and audiences, as well as permitting the broadcasting of this type of music, producers and employers were convinced that they were *protecting* workers from the evil effects of industrialization, modernity[60] and even noise pollution (Haden-Guest, 1973: 10). Sometimes this protective paternalistic stance would take a condescending tone, as if the provision of music was a *favor* and a gift for the workforce by the selfless managements (Landay & Harms, 2019: 374). While describing the important role *Music While You Work* had during the war in a May 1946 report, Reynolds would suggest that there was "little doubt that *Music While You Work*, when properly applied, is one of the greatest *boons* that has ever been *conferred* on industrial workers" (Nicholas, 1996: 137-138, *emphases added*). It was clear that the reintroduction of music to workspaces was seen as a great achievement on the part of producers in furthering worker interests and welfare.

But provision of music was not under any circumstances a one-way act of charity in which the programmers and managements did not expect anything in

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[60] During the 1970's, for instance, the in-house magazine of Muzak Company, *Environs,* touted their product as "a system of security for the '70's" with the following explanation: "A recent brazen bombing attack on New York City's Police Headquarters proved with stark finality that the 'reddest-hot button' in the '70's is SECURITY. Previous bombing attacks on the office headquarters of some of our giant corporations already had produced a substantial degree of sudden urban anxiety" (Haden-Guest, 1973: 52). It was implied that broadcasting of familiar and relaxing music through public announcements systems would provide the perfect cure for the feelings of anxiety, just like it did three decades ago with the British workers after the air-raids.

return. On the contrary, as Morgan's (1975) study demonstrates, broadcasting of music (including *Music While You* Work) could frequently become a source of contention and negotiation between the employers and the executive staff. As he argues, since they consider it as a "boon", managements can often enforce strict limitations over the transmission of music and can even use it as a bargaining chip to resolve more pressing labor disputes (1975: 215-216). In any case, both parties acknowledged the existence of a tacit agreement, which dictated that in exchange of music, the employers would expect a better work ethic and performance from their laborers. In other words, the managements were only prepared to look after the welfare of their workforce as long as they could see an improvement in the production and efficiency rates of their factories. Functional music was a relatively easy and cost-free way to maintain worker morale on the shop floor and even though it helped generating a sense of "being more cared for by their employees" (Muzak Corporation cited in Jones & Schumacher, 1992: 162) among workers, the latter's happiness was merely considered as an intermediary to attain normatively less lofty goals[61]. In other words, more than anything, modern functional music was a technique of control to increase productivity and efficiency through creating a more docile and obedient workforce:

> Our interest is in emotional control. We are interested in exerting it directly by emotional stimulus, and by inducing physiological change as the basis for emotion. In industry the ends to be achieved by emotional control obviously are: To suit the man to his task; to give the work the status of a calling; to make it for the man, not what he lives by, not that which produces the pay envelope, but a major element in living. If that can be done, even if only in part, the work improves and the employee likes it. If you have control of the stimulus, if you can define it in terms of intensity, spectrum and cyclic quality and then measure the rate and quality of production, lateness, early departure, absences, accidents, and any discoverable indices of employee morale, without the worker's knowledge that he is a subject, you have a valuable technique for the study of emotional control and can, incidentally, find out what music in

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[61] This can be evinced from Reynolds's recommendations to industry, which states that "while managements will always take into account the wishes and welfare of their employees, no request should be granted that may be detrimental to the primary consideration – production" (1942: 5). Following these initial instructions, Admiralty members would declare that the primary reason for installing musical equipment in their shipyards is not "the contentment of the workpeople but increase in the workpeople's output" (Jones & Korczynski, 2006: 159)

industry is good for, and how good it is. (Burris-Meyer, 1943: 262)

2.3.2. Disciplinary Uses of Industrial Functional Music

In *Discipline and Punish,* Foucault defines disciplinary technologies as those "methods, which made possible the meticulous control of the operations of the body, which assured the constant subjection of its forces and imposed upon them a relation of docility-utility" (1977: 137). In this context, any technique or mechanism of power that creates subjected and "docile" bodies through increasing their utility while at the same time rendering them more obedient can be conceived as *disciplinary* power (1977: 138; see also: Dreyfus and Rabinow, 1982; Rabinow, 1984). In the course of the modern age, factories, where even the seemingly most miniscule and tiniest details of labor activity were scientifically managed and geared towards extracting the utmost efficiency, would become one of the key sites (along with other enclosed modern institutions like prisons, schools, hospitals and military barracks) in which disciplinary forms of power were elaborated and deployed (Jones & Schumacher, 1992: 158). In this new *dispositif,* the object of *control* of the economies and movements of individual bodies would become an integral component of this neatly designed assemblage of power (Foucault, 1977: 137)[62]. Therefore, I argue that, *through alleviating bodily fatigue and mental boredom and, thereby, creating an efficient and productive workforce,* modern functional music has become an essential tool of disciplinary control in industrial workspaces. In other words, by utilizing functional music's energizing and cheering qualities, the owners of the means of production aspired to create docile yet utilitarian bodies with the overarching goal of generating more profits for themselves. In the remainder of this discussion, we are going to have a closer look at the ways in which modern functional music served as a disciplinary tool in boosting the efficiency of workers.

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[62] However, as we have suggested in the previous section, in its industrial manifestations this *control* of the economy and efficiency of worker bodies did not necessarily conceived as an overly malicious technique of domination and exploitation so much as a "necessary" managerial practice, or "modality" (Foucault, 1977: 137), "for the creation of an environment within which people would be happy and 'adjusted'" (Husch, 1984: 14).

2.3.2.1. Industrial Functional Music as an Instrument of Productivity and Efficiency

We have mentioned in the previous chapter how the ancients believed they could ease their work activities and increase the abundance of their produce through the power of *sympathetic magic*. The pre-industrial lore dictated that, when uttered during the performance of a task, music could rid workers off the bodily and mental tension incurred by the exertion of physical effort and, as a result, "magically" help them achieve their goals in a much smoother and efficient fashion. This belief in the productive capabilities of music would also be maintained by the producers of industrial functional music, who were beginning to realize "that there was more than mere romance in the old-time work songs and music" (Burris-Meyer, 1943: 262). However, it was now the duty of *science* to unravel this mysterious, inexplicable sway that music holds over the minds and limbs of laborers and explain once-and-for-all *how* music actually helped the work activity. In its modern incarnation, then, functional music had to be *demystified* and purified from all its professed magical qualities. The argument continued that if music's psychological and physiological benefits, as well as its role in increasing factory production, could be *scientifically* proven[63]; then it could be used in the service of furthering industrial interests too:

> Muzak was promoted as anything but witchcraft, but of course Muzak is the enchanter, the beguiler, indeed the siren, separating the body from emotions, not directly (as by ingested drugs), but indirectly, by subtle insinuation and habituation. [...] It disguises stress, controls and directs human activity to generate the maximum productivity and the minimum discontent. It replaces managerial responsibility with Muzak statistics, calms the workers as they are led to the abattoir. (Groom, 1996: 7-8)

The first scientific support in favor of functional music's advantageous impressions upon industrial productivity came, once again, by the means of the

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[63] As Uhrbrock reveals, even scientifically dubious studies were frequently used by Muzak Company to advertise their product (1961: 21-23). It was not the scientific legitimacy of these studies that concerned the producers. *Science* was merely used as a mean to justify the ends and to sell more services to prospected subscribers.

study conducted by Wyatt and Langdon in the late 1930s[64]. As a result of their six-month experiment, during which different types of gramophone music was intermittently introduced at varying periods and durations to industrial laborers, the researchers discerned an overall rise in output rates ranging from 6.2 to 11.3 per cent (1938: 36) during the musical intervals. In other words, what the findings of this study proved first and foremost was the fact that, from the viewpoint of productivity alone, *any* type of music can, and will, benefit the entire workforce and their efficiency will improve collectively as a result. But, perhaps more importantly, the experiment by Wyatt and Langdon demonstrated that, in addition to lifting the collective efforts of workers *as a whole*, the introduction of functional music had *individual* benefits as well, improving the output levels of the least productive workers who customarily worked slowly and bored more rapidly. The individual results of their study showed that it was among these types of workers that music had triggered the greatest amounts of increase in output, as the case of worker K indicates:

> The most noticeable features of the results obtained from worker K under the usual conditions of work are a very slow start, a relatively low and decreasing output in the middle part of the spell, and a pronounced final spurt. [...] This operative seemed most reluctant to begin work, and the disinclination continued until the end of work was near. In other words she was intensely bored by the usual conditions of work, and the introduction of music provided a welcome and effective means of escape which was reflected in a more buoyant and cheerful attitude and a greatly increased rate of working. The music gave her "something to look forward to" and she was "not always thinking about what she had to do". (ibid: 37-38)

In this case, broadcasted music transformed this particular worker into a *better*, much productive one. In a sense, idle bodies that were productively inept and redundant were recuperated and brought back into the manufacturing process.

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[64] Although Wyatt and Langdon's study remains as "the first systematic evaluation of the effect of music on the performance of a repetitive task" (Husch, 1984: 53), the disciplinary potentials music can have upon on speeding up the movements of a dawdling workforce were being noticed much earlier. For instance, an article published in the *Illustrated World* magazine, dating back to 1916, reported how ragtime music coerced workers to *voluntarily* speed up their work rate as follows: "[Music] has solved better than any shop foreman or superintendent the problem of promoting voluntary 'speeding up' among employees. The girls simply can't loaf "in time" with ragtime [...] and the days hitherto humdrum and filled with the dry drudgery and routine that makes sullen subordinates, now speed happily on their syncopated way" (cited in Uhrbrock, 1961: 13).

By providing a source of distraction from the dullness of the labor operation, the music disciplined the body and mind of the worker and made her a useful and contributive member of the industrial capitalist organization. As this individual example and the overall findings of the study demonstrated, by relieving fatigue and lessening boredom during the performance of a repetitive task, functional music had become a chief contributing factor in stimulating production (Antrim, 1943: 280). In other words, through targeting and operating on individual bodies, functional music was utilized to create an obedient and efficient workforce.

Excited by the potentialities music can unlock in the service of industry, by 1943 Burris-Meyer was already lauding the physiological outcomes that correct musical incentive can elicit: "By auditory stimuli, we can control metabolism. We can increase or decrease muscular energy. We can increase respiration. We can increase or decrease pulse rate. [...] We can change the threshold of sensory perception, and this is very important in precision work. We can reduce, delay, or increase fatigue. By the control of these phenomena, it is possible to establish a physiological basis for the generation of emotion" (Burris-Meyer, 1943: 262). And he was by no means alone in this mission. Around the same period, the investigation of the relationship between music and important bodily rhythms (and their implications for the industry) had become an established scientific endeavor. In these studies, a wide array of physical reactions to musical stimuli had come under scrutiny, including music's effects on heart rate (Coleman, 1920; Ellis & Brighouse, 1952; Johnson & Trawick, 1938; Lovell & Morgan, 1942; Misbach, 1934), blood pressure (Vincent, Cameron, & Armes, 1914; Vincent & Thompson, 1929) respiration rate (Miles & Tilly, 1935; Ries, 1969), stomach activity (Smith & Laird, 1930; Wilson, 1957), emotional stress (Dreher, 1947; Weschler, 1925), muscular tension and energy (Diserens, 1926; Sears, 1957, 1960) and, motor responses (Brickman, 1950; Patterson, 1959; Van de Wall, 1936). Such alterations in the physiological as well as mental perceptions of laborers were believed to be key factors in efficiency and productivity related issues such as increases in output (Burris-Meyer, 1943; Cardinell, 1943; Fox & Embrey, 1972; Freymann, 1941; Konz, 1962; Smith, 1947; Plourde, 2017; Wyatt

& Langdon, 1938), work performance (Haake, 2006) product quality (Humes, 1941), vigilance, concentration and alertness (Fontaine & Schwalm, 1979; Fox, 1971; Plourde, 2017; Wokoun, 1963) organizational satisfaction (Kerr, 1943; Oldham et al., 1995) as well as significant reduction in errors and scrappages (Kerr, 1945; Roberts, 1959), lateness and absenteeism (Haden-Guest, 1973; Roberts, 1959), fatigue, monotony and boredom (Beckett & Fairley, 1944; Benson, 1945; Hui, 2014; McGehee & Gardner, 1959; MacLeod, 1979; Reynolds, 1942; Wyatt & Langdon, 1938) and, accidents on the job (Lanza, 2004: 43; MacLeod, 1979: 26). In short, every facet of worker subjectivity, from their bodily states to emotional selves, were transfigured and engineered through the scientific implementation of functional music in a way that would make them less troublesome and more efficient social subjects.

Before bringing this part of the discussion to an end, it is essential to mention one of the key agents in the disciplinary uses of modern functional music: *the loudspeaker*. The production and dissemination of pre-industrial functional music relied extensively upon the strength of human voice, hence the confines within which it could be heard were severely constricted. Industrial spaces, on the other hand, were wired in a manner to ensure the "even distribution and diffusion of sound" (Reynolds, 1942: 8) that would cover the entire working area. As Antrim explains, sound technicians would make sure to install their loudspeaker equipment after they investigated the level of noise in a workshop floor, so as to make sure musical programs would cut through the factory roar and heard by every single worker (1943: 276). Through commanding a much larger and wider acoustic space than a human voice, and also by masking and smothering other prevailing sounds in the environment, it may be suggested that by its very nature the loudspeaker is *imperialistic* (Schafer, 1994: 77). In this case, the access to loudspeakers by the management not only provided them the opportunity to dominate the soundscapes of the factory, but, through that, also to dominate the workers as well. If factory noise was a major factor in silencing human voice, with the loudspeakers, the right to have a voice and to speak would entirely become the prerogative of the employers.

What is interesting is that the broadcasting of music was not the primary reason behind the installation of factory Tannoy systems in the first place. Rather, it was the outbreak of the war that spurred the use of loudspeakers as they were the most viable and effective means for crowd control during air raids (Robertson et al., 2007: 221). A central sound amplification and transmission system was deemed necessary during times of panic to *control* workers and reinstate order by issuing warnings and commands. Installing factory sound systems would become mandatory in Britain by the early 1940s and, in the words of Burris-Meyer, as soon as the infrastructure was there, the music would follow instantly:

> Factory sound installations are now mandatory in England. This is primarily to avoid loss of time in the case of air raids by not calling the employees out until the last moment, but so far as I can discover, more factories appear to use the systems for music than do not. Numerous radio stations here and in England carry musical programs planned for broadcast to factories. Once the sound system is in, music comes in with it. (1943: 264)

As a result of these mandatory precautions, as well as the increase in the number of scientific studies proving the beneficial impacts of music on production, broadcasting of functional music has become a very widespread practice during the war. According to Nicholas, whereas the number of factories that had loudspeaker equipment were a mere 400 at the outbreak of the war, by the third anniversary of *Music While You Work* in June 1943, that number would jump to a staggering 7000 - which roughly meant that now about 4 million workers daily were hearing the products of functional music as they were working (1996: 137). In other words, a technology that was previously used for transmitting the orders and wishes of the management in a top-down fashion was now being utilized for disciplining the bodies of workers through the broadcasting of functional music. Instead of the voice of a foreman or an employer dictating to work hard, the disciplining of worker bodies would instead be administered by the subtle and insinuating melodies of functional music.

CHAPTER 3. POST-INDUSTRIAL FUNCTIONAL MUSIC

3.1. Introduction

In his iconic 1979 movie, *Dawn of the Dead,* renowned director George A. Romero tackles the issues of unbridled consumerism and hedonistic consumption that were holding sway over social and cultural landscape of the time. The movie takes place in contemporary United States, where four survivors take refuge in a shopping mall, the epitome of American consumerism, in an effort to save their lives from herds of virus-infected zombies who brought the nation into a verge of apocalyptic downfall. The shopping center becomes a home for the living; it nourishes them with food and shelters them from outside harm. However, it is also infested by swad of zombies, who slowly and clumsily roam around the shopping floor, toppling over themselves on escalators or bumping into store showcases while Muzak softly and pleasantly plays in the background. Upon encountering them for the first time, one of the survivors ask what is it that they are doing there and why they are here in the first place, to which her friend casually replies: "Some kind of instinct. Memory, of what they used to do. This was an important place in their lives". Background music keeps on gently playing in the shopping mall as lifeless forms of beings wander around aimlessly by the storefronts, as they most likely did in their previous lives.

The message that the movie wants to convey is clear: "mall shoppers are zombies […], drawn to the mall and mindlessly and uncritically 'consuming'" (Carpenter, 2014: 1241; see, also, Bailey, 2013; Harper, 2002; Loudermilk, 2003). What zombies primarily sustain on and consume is not the mall products, as the survivors do, but human flesh; yet, despite all the morphological differences they have, both the zombies and humans have the same "inherent" proclivity in their constitution: *more consumption*. In movie's

imagery, shopping mall becomes a contested terrain in which humans and zombies consume in order to survive. That's why, throughout the entire movie and while they are not fighting with the zombies, we see the main characters constantly browsing the mall, trying on different goods and clothes, ransacking the groceries and, in general, rifling through different stores as aimlessly as their "zombie-selves". That is also the reason why, upon being asked what the hell these creatures are, one of the protagonists of the movie simply comments, "they are us". Meanwhile, the environmental music broadcasted through the public announcement system of the mall becomes a diegetic source, an aural backdrop for and emphasizing the heedless and pointless consumption that is taking place inside.

The use of Muzak in *Dawn of the Dead* constitutes a great segue for our discussion of the third stage in the evolution of functional music, i.e. "post-industrial functional music", as it highlights its most prominent characteristic: the use of functional music in spaces of consumption. Thus, following the preceding investigation of functional music's applications in industrial spaces, in this part of the research I will primarily focus on the commercial utilizations of functional music in retail environments and "servicescapes" (Bitner, 1992). The following chapter will be structured thusly: first I will have a closer look at the specific characteristics of post-industrial functional music and try to situate its emergence in a historical context. Second, I will explore the ways post-industrial functional music is being used in service and retail contexts, with a special emphasis on its role in creating "atmospherics" (Kotler, 1973). Finally, before concluding the chapter, I will delineate the mechanisms through which post-industrial functional music operates on customers and consumers in order to see what functions does post-industrial functional music actually has. The overarching aim of this chapter is to piece together different studies from fields of organizational behavior and marketing studies in an effort to demonstrate how characterizations and applications of functional music have changed in its post-industrial condition as opposed to the preceding stages of its evolution.

3.2. Characteristics of Post-Industrial Functional Music

3.2.1. From Management of Production to Managing Consumption

If the sonic reconfiguration of industrial spaces through the administration of scientific norms and means with the aim of boosting workplace efficiency is a manifestation of the further *rationalization of production* techniques and practices, then, the third stage in the evolution of functional music, commonly referred in the literature as *post-modern* or *post-industrial functional music* (Jones & Schumacher, 1992; Korczynski, 2003)*,* represents an entirely dichotomous yet, in certain aspects, complementary objective: the concentrated effort towards the increased *rationalization* and *regulation of consumption*. The ultimate role of functional broadcasted music in its post-modern condition, in another sense, is not to act as an aural incentive for the faster and ample *production* of tangible goods in the most efficient manner conceivable, but the *consumption* of said products in a manner that would be financially beneficial and lucrative for the seller (MacLeod, 1979: 27). Subsequently, it is not the bodies of individual *workers* that constitute *the* primary concern for the broadcasting of background music but rather that of *customers*, with the intent of influencing their consumption behaviors, purchasing intentions and their evaluations of the service encounter. As Korczynski explains, "Fordist industrialization involves work which is predominantly machine-paced, and in which management dominates the structuring of aural space. In front-line service work, the dyadic relationship between management and workforce is complicated by the presence of the customer within the labor process. Such work can be thought as involving customer-pacing, and an aural space in which the customer is prioritized" (2003: 328). Therefore, in post-industrial functional music, the overarching purpose is not to engender a productive and efficient workforce but to accommodate shoppers in an inviting and relaxing cocoon of sound that would, hopefully, transform them into more willing and more eager customers willing to spend more of their time and money in a store or service establishment (MacLeod, 1979: 22).

This emergent role of *customer* as a central figure within the post-industrial configuration of sonic environment can be seen as a direct result of the broader, more structural shifts taking place in the post-war period which signaled a transition from Fordist modes of capital accumulation towards "post-Fordist regimes of production and consumption" (Jones & Schumacher, 1992: 164). According to Stuart Hall, "though the debate still rages as to whether 'post-Fordism' exists" or not, there exists several discernable, idiosyncratic characteristics that separates this epoch from the preceding era of Fordist mass production, including:

> [...] a shift to the new "information technologies"; more flexible, decentralized forms of labor process and work organization; decline of the old manufacturing base and the growth of the "sunrise", computer-based industries; the hiving-off or contracting-out of functions and services; a greater emphasis on choice and product differentiation on marketing, packaging and design, on the "targeting" of consumers by lifestyle, taste and culture rather than by the Registrar General's categories of social class; a decline in the proportion of the skilled, male, manual working class, the rise of the service and white-collar classes and the "feminization" of the workforce; an economy dominated by the multinationals, with their new international division of labor and their greater autonomy from nation-state control; the "globalization" of the new financial markets, linked by the communications revolution, and new forms of the spatial organization of social processes. (1988: 24)

Such radical alterations within the domain and organization of super-structural economic activity in a global scale can, on the one hand, be indicative of a spur towards the further rationalization, or "McDonaldization" (Ritzer, 1983), of the general society. In other words, in post-industrial economic regimes, the concern for generating and maximizing efficiency can no longer be restricted to or seen as the prerogative of Taylorized assembly-line work operations. Instead, the loci of efficiency today primarily lie outside the mechanized industrial workspace as "farms, groves, ranches, slaughter houses, warehouses, transportation systems, and retailers", as well as grocery stores and modern shopping centers, "are all oriented toward increasing efficiency" (1983: 101). Taken the growing service sector that predominantly relies upon advertising techniques in order to appeal to the tastes and lifestyles of consumers into consideration, then, one can suggest that in contemporary society efficiency can

no longer be solely measured with increased *productivity,* but rather applies to a wide range of sectors and subjects including the *efficient* marketing and consumption of certain tangible (i.e. the material products themselves) as well as intangible (i.e. the service encounter, the brand image, or the atmosphere of the store) goods. Having already proved its efficacy in terms of boosting employee productivity and efficiency in factory spaces, then, functional music as an inconspicuous ambient stimulus would soon emerge as the most viable candidate for the effective management of the highly rationalized service and consumption environments.

Even though the inherent potential of functional music with regards to creating and sustaining service "atmospherics" (Kotler, 1973) conducive to proper consumption techniques as well as influencing the in-store behaviors of staff employees and customers (see, for instance, Bitner, 1992) had been acknowledged by environmental psychologists in fairly recent times, the piping of commercially viable background music was already an established practice by Muzak Corporation since the very beginning. In fact, if we take a close look at the history of environmental music and that specifically of Muzak Company, we see that, prior to its introduction in industrial workspaces, music designed explicitly for background and functional purposes appeared initially on places dedicated primarily to leisure (such as bars, restaurants, hotels, etc.) and consumption (grocery and department stores, retails, shopping malls, etc.). For instance, in the late 1930s the Muzak Company established several different networks of musical programming that would meet the varying demands depending on the context. The "Purple Network" supplied restaurants with background music complementing the daily eating patterns of diners and, often commencing with "cheery sunrise melodies and caffeinated rhythms" during the breakfast hours (Lanza, 2004: 42), stayed on air from 10 to 3.30 in the morning. The "Red Network", intended chiefly for moderate-size bars and grills, provided news reports, weather and sports updates in addition to signals and announcements indicating time. While the "Blue Network" was reserved specifically for department and retail stores, the "Green Network" adhered to company's original business model and only serviced the private residences of

subscribers (Groom, 1996: 7, Lanza, 2004: 42). It was estimated by March 1939 that Muzak's restaurateur clientele was made up of at least 360 businesses playing background music running up to 17.5 hours per day, with an expected addition of a thousand new accounts in the upcoming years (Lanza, 2004: 40-42).

Part of the reason underlying Muzak's decision to venture into public places was the competition waged by wireless radio, which, through offering more quality programming without any fees, instantly monopolized the private residential market, thus letting no other option for their rival to concentrate upon selling background music to commercial spaces (Owen, 2006: 68). But this forced marketing maneuver may indeed be a blessing in disguise since expanding into public sphere would shape the ideology of Muzak company in the decades to come: that is, attaining a total "Programmed Environment" and making it more "Efficient, Prosperous [and] Productive" (Haden-Guest, 1973: 11). In that context, piped in background music was not simply one *part* of the environment according to its critics, it was *the* environment:

> Just spend a day listing the places where you run into MUZAK, or one of its epigones, and you'll find out soon enough what its perpetrators mean about creating a whole environment and how far they've come toward achieving that goal. The stuff is everywhere: airports, shopping centers, restaurants, offices, planes, factories, rest rooms, hospitals, elevators and now even on the telephone. MUZAK is not simply *an* environment – one alternative among a lot of others – it is *the* environment toward which all the others appear to be tending: *e pluribus unum.* […] Factories, offices, shopping malls: they've all become parts of The Environment – all the places, that is, where the value-demolishing errands of high technology capitalism are being run, either in the production of commodities, the transaction of deals involving commodities, or in the consuming of those commodities. (Herron, 1981: 117-125)

This overbearing presence of programmed music in the daily lives of individuals resembles the *everydayness* aspect of pre-industrial functional music. But, whereas the notion of *everydayness* in its pre-industrial context implies active agents who spontaneously create and use music as an accompaniment to their routine activities and chores, the same cannot be suggested for the consumers

of post-industrial functional music, who merely enter and exit spaces that contain broadcasts of programmed music. Therefore, instead of everydayness, a more apt description for the prevalence of custom-made functional music in public spaces might be "*everywhereness"*, i.e. the idea that functional music can be used to fill up *every* available space so as to program or engineer a more pleasant and amiable atmosphere: "Muzak will attend your birth in (for instance) the Mercy Hospital, Carolina; and in (for instance) the Nelson Funeral Home, Arkansas, or a crematorium in Birmingham, England Muzak will lament your passing. Up on the hem of Outer Space, it was not *Also Spracht Zarahustra* but Muzak that was piped up to Neil Armstrong and Buzz Aldrin as they prepared to annexe [sic.] the moon." (Haden-Guest, 1973: 12). Furthermore, for all the instances where Muzak is present, a case for *efficiency,* i.e. "finding the best or optimum means to any given end" (Ritzer, 1983: 101), can be made. For example, at a funeral home, soft and solemn background music can endow the occasion with the emotional gravity that it deserves, help soothing the mourners, provide cues for proper conduct and behavior that would not vitiate against or debase the seriousness of the gathering, and, therefore, assist the smooth execution of the service. At an operation room, Muzak broadcasted from built-in speakers can reduce the tension of the surgeon, thus adding a quality of calmness and composure to the movements of the hand (see, for instance, Allen & Blascovich, 1994). But Muzak's more substantial contributions to creating and maintaining efficiency outside industrial workshops was perhaps most evident in the groves, ranches and slaughterhouses that Ritzer was referring to:

> "We're in a slaughterhouse", [Bill] Wokoun says, with zeal. "Apparently they were having problems. The animals' blood would *clot.* They say blood flows more freely now." He explains. "The Muzak relaxes them. And we're in this *cemetery* in California ...". [...] "And we have farmers that say Muzak makes hens lay more eggs and cows give more milk. Some people say that if you play Muzak to corn it will yield better. There is a franchisee in Florida who is playing Muzak to a grove of mango plants ...". (Haden-Guest, 1973: 37)

As the above hearsay anecdote by Wokoun hints, along with the claims for increased *efficiency* and rationalization, functional music's ability to *relax* and soothe the minds of "hearers" has consistently been used by its proponents to

justify background music's omnipresence in public domains – after all, was not it relaxation that caused animals to become more productive and efficient for their owners in the first place? Therefore, in the face of all the criticism and outright hate they have received, the programmers of functional music not only insisted their product was necessary but beneficial and *desirable* for the general public[65]. The therapeutic component that environmental music offered was perceived as a boon and a much-*needed* remedy that would counteract and ameliorate the negative aspects of imposing and bustling urban existence. That's why, as Lanza explains, with the intense proliferation of "restaurants, elevators, malls, supermarkets, office complexes, airports, lobbies, hotels and theme parks […], the background or environmental music *needed* to fill these spaces [gradually became] an increasing staple in our social diet" (1991: 42, *emphasis added*). A pleasant sonic accompaniment in the form of programmed background music was automatically deemed aesthetically more appealing and superior to its alternatives, either extremely noisy urban soundscape or "cold silence" as one Muzak pamphlet puts it (Haden-Guest, 1973: 31) and, therefore, relentlessly put to use as a public calmative. Whether it was animals being led to their slaughter or people ferried from one place to another, Muzak was there to make sure they stay calm and act orderly. Hence, despite all the protests the use of background music in public spaces were getting[66], the providers of functional music were adamant in their conviction that, even when they are not admitting or professing it, deep-down modern individuals knew they needed their service in order to cope with the negative aspects of everyday life in urban metropolises – just like their industrial counterparts needed a cheery background stimulus to deal with the alienating aspects of their work contexts:

> The question is, why? Why isn't music enough? Why do we need a

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[65] So much so that the Managing Director of Muzak Company in Britain, L. S. "Bill" Michael, would respond to functional music's detractors by telling over-zealously that: "Most of the people who disapprove of Muzak have intellectual pretensions. They say I don't want to be got at. I don't want to be got at. I don't want people manipulating my subconscious … 'Yes, we say, We *are* manipulating your subconscious. *But we are doing it for your own good!"* (cited in Haden-Guest, 1973: 45)

[66] Among them the most prominent and vocal being "Pipedown", an organization and campaign in existence since 1992 that dedicated itself to eradicate background music from all public places (https://pipedown.org.uk/about-pipedown/).

scientifically fortified art form? [...] Why else would corporate America go to the trouble of developing and marketing a high-technology soporific that no one is even supposed to notice? Because they had to, that's why. We have been given MUZAK because we *need* something more than music - something to produce a feeling of forward movement, to mitigate stress, fill empty spaces, to bring about beneficial physiological effects, and so forth. [...] Music can do these things after a fashion; that's what makes it such a powerful medium to begin with. But music is art, and art is pretty undependable; its doings are, for the most part, visible or audible and subject therefore to consumer choice and control. Clearly, something more than music was called for. (Herron, 1981: 125, *emphasis in original*)

This use of functional music as a relaxant can also account for its overwhelming presence within and during, what Greene calls, situations and moments of "collective tedium" (Greene, 1986: 285). Among these most frequent anxiety and restlessness-inducing daily circumstances where functional music is commonly heard are waiting lines in banks and restaurants, hospital waiting and operation rooms, elevators and while being on-hold during a telephone call[67]. It is widely presumed that use of functional music can eliminate the drudgery and stress commonly associated with sustained periods of waiting and, therefore, can transform an obligatory and cumbersome activity into a much tolerable, even a desirable, one. Let us take the case of elevators as an instance: these transportation devices were among the first places where functional music was pumped into – hence the derogatory label "elevator music". Although they are now being taken for granted as an everyday convenience today, one can only imagine the amount of awe and terror it stirred up amongst the urban dwellers of the day, who, still being stuck in a Victorian mindset, had never witnessed such a contraption before[68] (Lanza, 2004: 39).

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[67] As Owen states, "Muzak has a large and profitable 'on-hold' business, which creates music-and-voice programming for commercial telephone systems" (2006: 71). Creation of programming falls under the responsibility of the voice department, which also designs voice spots for in-store promotional announcements and drive-through ordering systems for fast food restaurants.

[68] Colson Whitehead's account describing the encounter of the protagonist, Cora (Bessie), with an elevator in his award winning book *The Underground Railroad* can serve as an accurate reimagination of the period:

At twelve stories, it [the Griffin Building] was one of the tallest buildings in the nation, certainly it towered over any structure in the south. The pride of the town. [...] The elevator, the only one for hundreds of miles, conveyed them to the eight floor. Maisie

When the first passenger lifts started to appear in the burgeoning metropolitan landscape at the second half of the 19th century[69], they featured an operator, who not only made sure that elevator reached its destination in a safe and leisurely manner, but, through their mere presence, radiated a source of comfort and security for the passengers. However, as automated elevators began to replace manually-operated ones by the early 1950s, "the flesh-and-blood attendant was [also] eventually superseded by soft, comforting, angelic music luring and lulling the squeamish on board" and "[gave] people at least some illusion of continuity amid the disorder" (Lanza, 2004: 39). Just as the search for increased efficiency made the technical skills of an operator redundant, the "emotional vacuum" created in their wake was instantly filled by the soft and relaxing tunes of functional music. After all, Muzak, as one of company's promotional pamphlets claimed, was "the sound that says: 'Everything is going to be all right" (cited in Husch, 1984: vi). In certain contexts, then, the use of background music has a rich potential to enhance and cultivate our daily, quotidian existence (Gioia, 2006: 256); making life more bearable through counteracting the stress and anxiety commonly associated with certain situations.

But not every post-modern implementation of functional music was as well-intentioned and benevolent as its uses in elevators or hospital waiting rooms. The underlying reason why people hear music playing in the background in other occasions, such as during queues in restaurants, banks or telephone lines, is not primarily due to providing customers a sense of security and comfort, but, through creating a pleasant atmosphere, keep them waiting longer and not letting them get frustrated enough so they can terminate their service request. The ultimate motivation here is, then, *profit*: music makes the waiting period more bearable and customers who are content with waiting are more likely to

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and Raymond were not impressed with the machine, having visited many times, but Bessie never failed to be both delighted and frightened by its magic, bracing herself with the brass rail in case of disaster. (2016: 102-103)

[69] The eight-story long Equity Building in downtown Manhattan, New York would be the first office building to feature these "ascending rooms" or "upstairs omnibuses", as they were commonly called then. (Prisco, 2019)

remain for the entirety of the service transaction and, eventually, bring in more money than customers who are leaving early. *Relaxation* is, at best, an intervening variable in such context – a pretext that helps store or service owners to rake in more profits. I will explore this aspect of post-industrial functional music as I discuss its uses later on in this chapter.

In summation, the post-modern implementations of functional music can primarily be characterized by its increasing use in *the management of consumption*, rather that of production. However, the central argument proposed here is that, this turn in the function of background music should be integrated into the broader narrative of changing perceptions of *efficiency* in the post-war economic realignment. In the post-Fordist, or post-industrial, context of economic development, the concept of *efficiency* is no longer construed by references to increased industrial *productivity*, but had taken new and more extensive meanings that can be applied to the rest of the society. Taking the assembly-line production techniques as a template, the new places and avenues for consumption that were increasingly becoming available – beginning with the opening of the first-ever shopping mall, Southdale Center, in 1956 – began to organize themselves in equally efficient ways in order to aid and expand their businesses (Ritzer, 1983: 101). Thus, if factories and other mechanical workshops constituted the prime examples for industrial rationality and efficiency in a modern sense, then, in this new era consumption spaces such as *supermarkets, grocery stores, retail shops* and *shopping malls* would become the centers for efficient organization and rationalization. And just like it had helped boosting up worker productivity, functional music in its post-modern incarnation would become an essential means toward the attainment of organizational goals and ends as defined by the owners of these commercial spaces. But with changes in objectives, would come a change in the style and content of musical production as well, and this is what I will turn to next.

3.2.2. From Background Wallpaper to Foreground "Audio Architecture"

As the number of consumption sites increased drastically in the post-war period, causing a corresponding rise in the number of commercial establishments subscribed to functional music services[70], Muzak that was once banished and "pushed to the edge of existence" (Adorno, 2002e: 506) started, in a literal sense, to come more and more to the forefront of public attention. Christened as "Foreground Music" by its programmers, this new musical service had several idiosyncratic attributes that distinguished it from its modern background counterpart: *First*, instead of instrumental renditions of popular tunes played by an in-house ensemble, foreground music products comprised of *original songs and artists* (Gioia, 2006: 254; Yalch & Spangenberg, 1990: 57). In other words, all the particular aspects that gave modern functional music its unique authenticity (such as re-orchestration, omission of vocal parts, Stimulus Progression, etc.) are absent in foreground music. As Jonathan Sterne observes, this stylistic shift in the way environmental music is broadcasted, which up until then was understood as a mere form of sonic wallpaper operating at the level of the subconscious, would problematize the very nature of functional music itself as the introduction of original recordings created a situation where all recorded music heard in public spaces became at least potentially "Muzak" (1997: 24). A similar point was taken by Lanza, who contended that "with the service and leisure industries becoming indistinguishable, any original artist recording could be put to Muzak purposes. *All* music has taken on a background role, or even more likely, music has usurped the foreground of everyday life while people have grown content to fade ever more into the background of an all-encompassing mediascape" (2004: 218, *emphasis in original*). As we shall see in the following chapter, this ambiguity over *what* constitutes Muzak[71] would later

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[70] As Jones and Schumacher note, by the year of 1984, the total number of "restaurants, supermarkets, shopping malls, and offices had superseded factories as the primary recipients of Muzak's services" (1992: 163).

[71] This discernible shift in the stylistic content of public musical programming was also emphasized in a British website called "How to Complain About Muzak", which remarked that: "In recent years the quality of piped music has changed, from relatively soft sounds to hard, thumping, aggressive, and louder sounds on any and all ocassions" (cited in Lanza, 2004: 225).

become a fundamental issue in the digital era of streaming services, as more and more original songs and artists will be utilized by users as background accompaniments to particular activities and mood states.

The realization that *all music can be put to use for functional purposes* started with the founding of a small Seattle-based company called Yesco in 1968, which became a huge competitor against Muzak by solely designing and providing foreground music for commercial and leisure environments (Owen, 2006: 69). Soon this newfound enthusiasm over foregrounding would take over the bourgeoning functional music market as new corporations focused on selling original artist programming emerged on the scene, such as *3M, DMX, Point-of-Purchase Radio Inc.*, *Cam Industries* and *Audio Environments Inc.* Still basking in their past glories, Muzak executives were slow to adapt at changing market dynamics at first; stubbornly clinging to traditional conceptualizations of background music. This mindset dominated company's imagination until 1984 – the year when they finally yielded to mounting pressure and introduced their own original-artist program called "TONES", which was, ironically, produced for them by Yesco (ibid)[72]. Witnessing how Yesco changed the future projection of functional music industry, Muzak's then owner Marshall Field V, a prominent department store heir and media mogul, purchased Yesco on September 1986 and merged it with Muzak[73]. Now under the musical directorship of former Yesco president Mark Torrance, the company introduced their own foreground music service, *Foreground Music 1*, a year later (Jones & Schumacher, 1992: 163), hence almost completely eradicating "the syrupy orchestral 'elevator music' that most people associate with the company" (Owen, 2006: 66)[74]. This severing of ties with past stylistic considerations was resolutely confirmed by a

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[72] This delay in adjustment in company's attitude is all the more interesting considering that, way back in 1966, that is two years before Yesco paved the way for foregrounding, one Muzak executive signaled the end of traditional background music by proclaiming "the age of Mantovani and strings is behind us" (Lanza, 2004: 239). This statement essentially heralded the fact that string-based orchestral arrangements of functional music are beginning to give way to a new form of functional music.

[73] https://www.chicagotribune.com/news/ct-xpm-1986-09-23-8603110321-story.html

[74] Owen continues by stating that "Muzak sells about a hundred prepackaged programs and several hundred customized ones, and only one – 'Environmental' – truly fits the stereotype. It consists of 'contemporary versions of popular songs,' and it is no longer terribly popular anywhere, except in Japan" (2006: 66).

Muzak representative of the time, who gleefully asserted that "there are still a couple of companies out there doing that old-style 1.001 strings, ruin-your-favorite-song kind of thing, but we dropped all that in '87" (Lanza, 2004: 239). This new course of foregrounding strategy would mean, at least in theory, an end to company's longstanding understanding of background music *as something to be heard but not listened to* as admitted by Muzak Marketing Manager Leslie Ritter: "We have changed the motto that environmental music is meant to be heard but not listened to. We feel that, by its very nature, it is music and should be as listenable as possible" (Lanza, 1991: 50). However, it is important to emphasize that, this shift in emphasis in musical programming did not automatically signify the end of traditional forms of background music. As Sterne's (1997) compelling study on the uses of functional music in a shopping environment clearly demonstrated, background music still survived in the halls of supermarkets and malls, often in tension with the foreground music blasting from inside the stores.

Second, as environmental music abandoned its dwelling place in the background and gradually crept into the foreground, thus blurring the once strict boundaries between what Muzak is and is not; the techniques of programming functional music is also transformed from scientific re-orchestration to, what is commonly termed as, *audio architecture* or *audio branding* (Gioia, 2006: 254; Lanza, 2004: 219; Owen, 2006: 70). As stated earlier, with post-industrial foreground music, the aim is no longer to create an unobtrusive, pleasant form of musical accompaniment but rather imbue a particular space (commonly the ones where consumption takes place) with a symbolic meaning and, *through creating an atmosphere, give that space a certain characteristic and identity* (DeNora, 2000: 143)*.* Therefore, instead of factories and office complexes, foreground music is being predominantly used in retail and service industry, where functional music pumped in stores "to create appropriate sales environments […] that can attract the desired clientele or market segment" (Jones & Schumacher, 1992: 163) sharing the same life-style. What functional music does, then, is to provide sonic surrogates that managements can utilize to emphasize particular store identities, such as "'smooth jazz' for bars seeking a

'hip' image, classic rock for baby boomer mall shoppers, or the robotic throb of current dance music for chic boutiques" (Lanza, 2004: 219). The type of music played in a particular service environment, it is believed, would provide outsiders shorthand clues about *what* the store is about, *which* type of service they are offering as well as *who* they are appealing to – all depending upon the initial organizational goals set by the management.

Since there is a myriad of potential identities for service establishments to associate themselves with, each musical programming has to be custom tailored in order to *fit* the intended store atmosphere. As Dave Keller, the creative director for Muzak Company's music department, elaborates: "Audio architecture involves looking at a client's brand and then matching music to the attributes of that brand. In its simplest form, you use *keywords* to define a personality for the brand. You might say that it's bright, or energetic, or fun, or classic, or something like that. And then you find music with a subtext that reinforces that personality" (cited in Owen, 2006: 70). Thus, instead of a single musical broadcast, as it was the case with modern functional music, we see the emergence of "personalized programming" (Reda, 1998; Sweeney & Wyber, 2002: 65), i.e. music that is custom-tailored to suit the desires of a specific client. For instance, two foreground music companies, 3M and Ditchburn Organization, are widely known for their "specialty music" that they design and sell to restaurants and retail stores, which include tapes on even the most niche musical categories including Chinese, films and shows, Bavarian, cocktail, Hawaiian and Polynesian, Latin, funeral, marching, pinky think and Christmas (MacLeod, 1979: 22). Always keeping a close tab on what her competitors are up to, Muzak company would soon launch its own version of specialized formats, including one called Hot FM, a selection of adult contemporary music artists, which they deemed "ideal for lively restaurants, retain [sic.] stores, manufacturing and assembly facilities – any place that energetic adults are living life to the fullest" (Lanza, 2004: 220).

Muzak's decision to select a name for their foreground service that highly resembles a radio station label should be considered more than a mere

coincidence. As Sterne observes, foreground music operates in a fashion similar to that of terrestrial radio and since both feature original songs and artists it is almost impossible to distinguish one from the other even with an educated ear (1997: 32). Let us take *POP Music* series by Point-of-Purchase Radio, Inc. as an instance. This company has been on the business of marketing pre-fabricated foreground music to specific consumer environments since November of 1985 and particularly specializes on creating "cassette tapes of 'radio programs' complete with deejays and advertisements" (Yelanjian, 1991: 95). Analyzing one such tape containing easy-listening tracks, Yelanjian explains that these tapes often "organized in the following fashion: first a song, then an announcement that this is "People's Radio" ([since] the tape is from People's drugstore), and a public service tip followed by the beep tone (where the advertisement would be). Some of the announcements refer directly to the store: "People's radio – lower prices don't mean lower quality. Of it says People's on the outside, it means quality on the inside" (ibid: 96).

The variations from modern modes of functional music programming are evident: not only the songs are being broadcasted in their original formats with vocals intact but public announcements, once strictly forbidden as anything containing human voice considered to be too distractive, are now allowed in order to advertise the store and products and inform people about possible offers and discounts. But, more importantly, since, other than a handful of employees, the audience is considered as a transient one (patrons at a bar or restaurant, browsers in a retail store, shoppers at a grocery market, etc.), the music is no longer programmed in accordance with the "fatigue curves" of mass bodies or gradually increasing "stimulus values". On the contrary, the overarching goal with audio architecture is to produce music that would remain at a consistent value and, thus, maintain a musical flow over a day that would not vary in intensity (Sterne, 1997: 32). In postmodern functional music, in other words, individuals are assumed to "walk in-and-out" of musical broadcasts, only briefly encountering music for short periods of time, as opposed to, say, factory workers who had to stay in a fixed location for majority of a day. Therefore, a program carefully designed by taking the principles of

Stimulus Progression into account would have no real value in service environments as "the audience" is presumed to be constantly on the move[75]. In cruder terms, whereas the musical intensity progressively changes while the audience remains constant in modern functional music, then, in post-industrial functional music, musical mood remains more or less stable while the audience continuously changes.

Such changes in the nature of target audiences demanded a new programming technique that was not based on the teachings of industrial psychology or circadian rhythms of factory workers. Hence, in the stead of a programming intending to boost worker efficiency through heightened mood and increased stimulus, arose a new sequencing format that gave precedence to transitioning between songs and the overall feel or *flow* of a program called *Quantum Modulation* (QM)*.* As Anderson explains,

> In contrast to the classic Stimulus Progression Curve," programs designed according to "a Quantum Modulation sequencing logic offer playlists of foreground music featuring seamless transitions between tracks in terms of tempo, volume, and dynamics. [In addition,] unlike the Stimulus Progression Curve's ascending circuits for daylong mood maintenance through background music, QM programs foreground music to stimulate store browsers over a short period. (2015: 823).

Thus, whereas the gradual increasing of musical brightness results in an ascending line of "internal mood progression" in Stimulus Progression broadcasts (see *fig.* 3), Quantum Modulation programming offers very limited variations in terms of tempo and rhythm and, therefore, presents "an undifferentiated horizontal line for affect management" (ibid). Since the

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[75] Some authors, however, disagree with this point. Jonathan Sterne, for instance, argues that programming sequences arranged in accordance with stimulus progression would still be justifiable in the context of shopping centers where people spend most of their days. He suggests that stimulating music played through mall speakers can "pick up visitor movement during the middle of the morning and afternoon, and [...] slow people down after lunch and at the end of the day" (1997: 30). Similarly, Greene shares the opinion that to dramatically counteract average consumer's gradual loss of energy, the Muzak programmers has to "write a composition that covers not a mere three minutes but the length of an entire shopping day" (1986: 286). As our discussion on foreground music and the role of audio architects will further illuminate, this assertion that post-modern functional programmers "write" compositions is simply a misconstruction.

overarching aim in audio architecture, or in what we may tentatively refer as *audiotechtonics*[76], to create an atmosphere, or, more generally, to endow a physical location with a fixed identity, the overall mood of programming never wavers but simply adheres to a musical continuity, or a *flow*. As Jonathan Sterne elaborates,

> If background music strives toward anonymity and gradual changes in mood, foreground music strives for an absolutely consistent identity and unchanging mood. Quantum modulation produces continuity and maintains flow in the overall soundtrack through assigning each song a composite numerical value based upon a variety of criteria: rhythm, tempo, title, artist, era, genre, instrumentation, and popularity. A flow of music is established through song compatibility and cross-fading so that all transitions from song to song are seamless. (1997: 32)

In short, while Stimulus Progression assign songs values to create a sequencing that will build from the least to most stimulating, with Quantum Modulation the programming is more compact and homogenous – the sequencing is based upon *stylistic similarities* between songs, not differences. It eventually becomes harder to differentiate "what is Muzak or not" because the broadcasts do not seem to follow an apparent logic as they once used to do. Yet the real question does not concern the discernible absence of logic in post-industrial musical programming. Just because the foreground music people encounter daily is exactly identical to the hits they listen on the radio should not imply that there is no hidden order guiding their programming. One could suggest that as music came more into the foreground and commanded more of our attention, the logical order governing their programming shifted more into the background and concealed itself in the booming, thumping noise of music. But even though it escapes even the most educated of ears, there still persists a certain logic guiding the way post-industrial functional music is being programmed as Dana McKelvey, one of Muzak's twenty-two audio architects, admits:

> "There are so many songs out there that if I listened to just one I'd never know whether it was Muzak or not, [...] but I could tell if I listened to *the flow* of a few. They key is *consistency*. How did those songs connect?

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[76] This is a concept that I am offering here since, to my present knowledge, it has not been used in the literature before. What I want to emphasize with this term is the *active* creation of a material space rather than just referring to the act of musical programming itself.

What story did they tell? Why is this song after that song, and why is that one after that one? When we make a program, we pay a lot of attention to the way songs *segue.* It's not like songs on the radio, or songs on a CD. Take Armani Exchange. Shoppers there are looking for clothes that are hip and chic and cool. They're twenty-give to thirty-five years old, and they want something to wear to a party or a club, and as they shop they want to feel like they're already there. So you make the store sound like the coolest bar in town. You think about that when you pick the songs, and you pay special attention to *the sequencing*, and then you cross-fade and beat-match and *never break the momentum*, because you want the program to sound like a D.J.'s mix. [...] Most people walk into a store and hear music, but they never think that somebody actually put thought into what they're hearing. [...] They don't realize that the song was put there for *a purpose*, and that there's a reason why they're doing what they're doing. But there is". (cited in Owen, 2006: 66-68)

In short, the defining characteristics of post-industrial functional music can be summarized as *the changing understandings of efficiency* and *the changing principles of musical programming.* As we shall see in the following discussion, these two characteristics had a huge impact upon the ways in which foreground music is used as well as the manners in which it functions in service and consumption environments. And I will start with a closer investigation of the former.

3.3. The Uses of Post-Industrial Functional Music

In the following discussion I suggest *three* main uses of post-industrial functional music, of which the first two corresponds to the characteristics outlined above. The first of these is *the use of post-industrial functional music as store atmospherics.* I have already broached this subject while examining music's newfound role in the foreground in some detail, so my attention here will mainly focus on the concept of *atmospherics* and the importance of maintaining a *musical fit* in a service or store environment. The second use of post-industrial functional music is a direct implication of the changing understandings of efficiency in the post-war period and the increasing utilization of broadcast music in public and consumer spaces – that is *the use of music for boosting of consumption rather than production.* Here I will put forth the argument that managers do not create and sustain store atmospherics as an

end in itself and the manipulation of in-store environment through broadcasted music is a powerful instrument for turning browsers into buyers and, therefore, for procuring and raking in more profits for the owners.

Finally, with regards to the third use, I will take a closer look into a peculiarly under-analyzed aspect of post-industrial functional music – i.e. its effects on store employees[77]. Since post-industrial functional music is designed primarily for customers, its physiological and psychological impact upon store employees is at best considered as a *side effect*[78]. However, since these are the individuals who are exposed to foreground music for much longer periods than average customers, their bodily and mental welfare should also be of importance taken into account by programmers while designing their broadcasts. Therefore, before concluding this chapter, I will analyze *the disciplinary uses of post-industrial functional music for employee efficiency* and investigate whether there are some continuities or parallels between industrial and post-industrial understandings of employee discipline.

3.3.1. The Use of Functional Music in Retail Atmospherics and Servicescapes

In the preceding discussion I have tried to establish that functional music's overgrowing application within consumption spaces, particularly in store atmospherics and servicescapes, is one of the most defining characteristics of its post-modern condition. But what do we actually mean when we use the terms *atmospherics* and *servicescapes*? What, for instance, is the difference between *atmosphere* and *atmospherics* or between a service space and a *servicescape*?

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[77] Despite being designated as a potential avenue of investigation for future research in Milliman's pioneering (1982) study, functional music's potential impact upon store and retail employees is surprisingly absent in studies of organizational behavior and store atmospherics. While studies focusing on the cognitive, emotional and behavioral impacts of music in retail environments mostly took *customers* as their reference, studies on employee reactions (e.g., Becker, 1981; Davis, 1984; Steele, 1986; Sundstrom & Altman, 1989; Wineman, 1986) failed to take the sonic component of the environment into their account.

[78] Smith and Curnow, for instance, maintain that, unlike their industrial counterparts, "retail management has accepted music not so much for the benefit of employees as for 'encouraging' purchases" (1966: 255).

And how does music, as one environmental variable, fit in their overall configuration? The following section presents an attempt in answering these questions, starting with an investigation of the key concepts.

The term *servicescape* refers to "the environment in which the service is assembled and in which the seller and customer interact, combined with tangible commodities that facilitate performance or communication of the service" (Booms & Bitner, 1982: 36)[79]. In other words, a servicescape is comprised of the *totality* of environmental elements[80] that can be manipulated by a service establishment in order to influence customer behaviors and perceptions, as well as to create and reinforce a strong store image or identity (Booms & Bitner, 1982: 35; Bitner, 1992). This total environmental control over a given physical space is especially a significant "marketing tool" for service businesses such as restaurants, hotels, hospitals, offices, retail stores or banks since (a) they do not simply offer tangible commodities – such as *food* in a restaurant, *room* in a hotel or *dress* in a store – but provide or "sell" intangible "products" as well – such as the *ambience* of a restaurant, *quality* in a hotel, or *packaging* of a dress – and; (b) these are the contexts where the production and consumption of a particular service takes place simultaneously and in the presence of the customer (Booms & Bitner, 1982: 35-36; Kotler, 1973: 52). As such, customers do not only experience and evaluate the product they are buying but the *total environment* or "the total service within the firm's physical facility" (Bitner, 1992: 57) as well. As Kotler points out,

> One of the most important recent advances in business thinking is the
> recognition that people, in their purchase decision-making, respond to

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[79] According to Bitner, servicescapes can either be "lean" or "elaborate" depending on their size, number of physical elements they contain and the level and degree of social interaction they require between customers and employees. (Bitner, 1992: 58-59). Lean servicescapes are usually very basic configurations, providing service from one, simple structure (like ATMs, ticket offices or post office kiosks). Elaborate environments, on the other hand, are more complex structures with many different floors, rooms and functions – like hospitals, banks, schools or hotels.

[80] Bitner identifies three environmental dimensions of the servicescapes: *ambient conditions,* i.e. background characteristics of a physical space, which can also include functional music; *spatial layout and functionality,* or "the ways in which machinery, equipment and furnishings are arranged" in ways that would facilitate performance and accomplishment of goals (1992: 66), and *signs, symbols and artifacts*, which refer to "explicit or implicit signals that communicate about the place to its users" (ibid), such as exit directions or no smoking signs, and so on.

more than simply the tangible product or service being offered. The *tangible* product – a pair of shoes, a refrigerator, a haircut, or a meal – is only a small part of the total consumption package. Buyers respond to the *total* product. It includes the services, warranties, packaging, advertising, financing, pleasantries, images, and other features that accompany the product. (1973: 48)

Through a careful and meticulous design of its environmental dimensions, a servicescape, then, can create favorable first impressions for potential customers by communicating information or cues about the firm's image and purpose (Booms & Bitner, 1982: 36; Bitner, 1992: 57). This careful and conscious designing of store spaces to create certain emotional effects in buyers so as to enhance their purchase probabilities is called *atmospherics* (Kotler, 1973: 50, 64). Thus, if the concept of *servicescapes* refers to the material environment in which service encounters take place, *atmospherics* implies the *designing* (or *manipulating*) of that environment in a manner that would be profitable for the service provider. Therefore, "instead of leaving space to evolve naturally [over time] according to individual temperaments" (1973: 50) and whims of owners, *atmospherics* dictates a deliberative design of store's spatial and sensorial environment in accordance with the organizational goals set by the management. So, for instance, if a company wishes to appeal to a select group of high-end patrons, it may do so by promoting an image of affluence and importance by featuring exclusively expensive furniture, such as mahogany desks, comfortable leather chairs, silk draperies etc. (see, for instance, Booms & Bitner, 1982). Such aesthetics of luxury and grandeur would not only indicate an upscale atmosphere, but also instill in its visitors a *feeling* of affluence and importance as well[81]. In fact, as Kotler argues, as the competition between vendors selling similar tangible products (such as shoes) increases, the *atmosphere* of a store will become more and more the distinguishing and decisive factor as "people will become as concerned with how the store or office 'feels' as they will be with the goods that are offered" (1973: 61; see, also,

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[81] Here Kotler, who first coined the term *atmospherics*, makes a distinction between the "intended" and "perceived" atmosphere of a space (1973: 51). As its name suggests, *intended atmosphere* signifies the original intention sought by the manager when first designing the store's physical space. This, of course, is different from *perceived atmosphere,* which is entirely contingent upon the cognitive and emotional perceptions of the space by an individual.

Wilson, 2003). That is, as merchandises sold in retail and outlet markets became more standardized each passing day, customers will look and take into consideration "store identities" before making a final purchase decision (*Marketing News,* 1991, 1996; Reda, 1998; Sweeney & Wyber, 2002)[82].

This shift in marketing paradigm is best reflected in the following statement by Francis C. Rooney, whose Melville Corporation became an industry pioneer in the retail of footwear: "People no longer buy shoes to keep their feet warm and dry. They buy them because of the way the shoes make them *feel* – masculine, feminine, rugged, different, sophisticated, young, glamorous, 'in'. Buying shoes has become *an emotional experience*. Our business now is selling *excitement* rather than shoes" (cited in Kotler, 1973: 55, *emphases added*). It would take several years for Muzak to grasp the importance of this intangible, emotional component of consumption practices that Rooney was speaking of, until one day a former engineer for the company, Alvin Collis

> "[…] walked into a store and understood: this is just like a movie. The company has built a set, and they've hired actors and given them costumes and taught them their lines, and every day they open their doors and say, 'Let's put on a show.' It was retail theater. And I realized then that Muzak's business wasn't really about selling music. It was about selling emotion – about finding the soundtrack that would make this store or that restaurant *feel* like something, rather than being just an intellectual proposition. […] If you ask a client, 'What kind of music do you like?', the answer doesn't get you anywhere, because musical taste is very subjective and very personal. You want the client to be thinking, '*Is this the right emotion for my brand?*'" (Collis cited in Owen, 2006: 69: 70, *emphases added*)

Putting these principles into practice, for example, a Brass Boot shoe store fashioned after the atmospheric style of a Victorian English club invites its

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[82] Although functional music's role in atmospherics is more explicit in its commercial applications, it is by no means restricted to such areas only. For instance, in their study of hospital atmospherics, Tansik and Routhieaux (1999) found that functional music can have important psychological benefits for service organizations that have an implicit stress component and, more particularly, act as a stress-reduction tool during moments of high stress (in this case, waiting for patients undergoing surgery or being treated in an intensive care unit). They conclude by stating that overall improvements in atmospherics are desirable "not because they lead to improved customer satisfaction, but because they may help make customers more comfortable when visiting an organization" (1999: 77).

customers to "relax in leather-covered seats beneath tinkling chandeliers [while] goblets of red wine and piped-in sitar music stimulate the buying hormones", all with the intent of giving "the buyer the feeling of being rich, important, special ... and that he deserves the very best in shoes" (ibid). The underlying idea is that individuals who associate with this particular *feeling* (or *mood*) would be more likely to associate and identify themselves with the servicescape and, hence, make more on-the-spot, impulsive purchase decisions (DeNora, 2000: 138; Piron, Holman & Solomon, 1990; Rook, 1987). Owen explains,

> A business's background music is like an aural pheromone. It attracts some customers and repels others, and it gives pedestrians walking past the front door an immediate clue about whether they belong inside. A chain like J. C. Penney, whose huge customer base includes all ages and income levels, needs a program that will make everyone feel welcome, so its soundtrack contains familiar and relatively unassertive popular songs like "Kind and Generous," by Natalie Merchant. The Hard Rock Hotel in Orlando, which appeals to a more narrowly focused audience, plays "Girls, Girls, Girls," by Mötley Crüe, and cranks up the volume. (2006: 70)

This observation is in line with the findings of DeNora, who, after a detailed ethnographic study of several retail environments in England, noted that

> At the most basic, musical materials serve as "welcome mats" and "keep out" notices, depending upon how they are received. [...] At the locally based independent shops, music's role as a way of specifying store identity – and hence target consumers – is more overt. [...] For example, Janice, owner and manager of Persuasion, told us, "Music is essential to the shop image. It creates an environment. When you have come from the hustle ... it marks a distinct space." She described the commercial music that plays in most shops as boring, counterposing her own music as, "more alternative, like my shop." (2000: 136)

Functional music, as the above examples demonstrate, is an essential and integral component of creating retail atmospherics[83]. Since the term *atmosphere*

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[83] It is important to note here that functional music is but one environmental variable among others (see, for instance, Baker, 1987). And since the atmosphere of a particular place is essentially a sensorial experience (Kotler, 1973: 50), retail and service establishments make full use of other environmental dimensions other than auditory ones – such as *visual, olfactory* and *tactile* – to create a specific atmosphere. For instance, in addition to their customized musical programming, Yesco offers clients another service called "video foreground systems", which provide an incessant stream of visual stimuli that would complement the aural design of the

is used to define experiences that are "felt but not always seen" (Milliman, 1986: 286), aestheticization of consumption spaces through the implementation of programmed music systems becomes an indispensable marketing instrument for retailers and other service industries. As an ambient condition of the store environment, functional music can provide atmospheric cues and imbue material spaces with symbolic meanings they otherwise might lack. It does not arbitrarily fill up an empty space but rather aesthetically invest that social space with new cultural meanings and identities, and, as a result, like architecture, "becomes part of the consistency of that space" (Sterne, 1997: 23). This actively symbolic creation, or *territorialization* (1997: 31), of the consumption space, in turn, helps managements to associate their product with a certain *feeling* and identity to reinforce the holistic quality of their servicescape (Morin, Dubé & Chebat, 2007), to acoustically demarcate and distinguish their service from competitors with similar products and, in more general sense, "to define the relations of the self, to goods and to others in ways that enhance commercial interests" (Jones & Schumacher, 1992: 165).

However, as was the case with modern functional music, not just any kind of randomly selected music would do to the trick. On the contrary, only the most carefully selected and customized functional music programs could eventually prove successful in creating pleasant and relaxed atmospheres in which to shop (Brand, 1963; Smith & Curnow, 1966). In other words, if managers wish to make full use of functional music's potential benefits for their businesses, they need to make sure that the music *fits* to the overall consumption atmosphere (Chebat, Gélinas-Chebat & Vaillant, 2001) and, thus, is not perceived as being "out of place".

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store (Yelanjian, 1991: 95; see, also, Sterne, 1997: 39). Scents and assorted perfumes can also be utilized to create pleasant sales environments and facilitate consumption in different servicescapes (see, for instance, Mattila & Wirtz, 2001). The crucial point is that, in order for managements to create and sustain positive sales environments, all these different sensorial dimensions of the atmosphere should be in congruity, i.e. "fitting", instead of working against each other.

3.3.1.1. The Importance of Musical Fit and Congruity in Creating Store Atmospherics

Since functional music gives servicescapes a certain mood, feeling and identity, it is extremely significant that this symbolic meaning overlaps and coincides with the organizational goals set by the management. That is, the aural environment of the store, i.e. its *soundscape*, should be able to communicate information about the store's image and purpose to consumers who are most likely to have no prior knowledge about the store and, yet, commonly looking for cues with regards to firm's capabilities and qualities before engaging in a purchasing activity (Berry & Clark, 1986; Bitner, 1992; Shostack, 1977). If the customers discern any discrepancies between the message the store aims to convey and its musical selections, they may choose to avoid it altogether and look for another store with a more consistent atmosphere. In other words, if there exists any incongruity between the image an establishment projects through its musical selections and the one "perceived" (Kotler, 1973: 51) by customers, the latter might infer a lack of authenticity as if the store is pretending something they are not (Chebat et al., 2001: 121-122; Jones & Davis, 1965, Wilson, 2003). To give a servicescape or a consumption space an overall consistency, then, music has to match and "fit" the overall image and other atmospheric variables of the store (Grayston, 1974: 38; Milliman, 1982: 91). Therefore, before settling on a soundtrack for their store, managers have to ask themselves two essential questions: "who is the target audience?" and "what is the target audience seeking from the buying experience?" (Kotler, 1973: 61). Depending on the answers these questions get, the audio architects can then handcraft a customized foreground music programming that would suit the management's expectations. As Bruce McKagan, Muzak's vice-president for music and voice departments, explains, despite all the superficial resemblances people found between foreground music and satellite radio, the latter "don't do what we do. At Muzak, we take a brand and find music that is specific to what it's trying to accomplish in the marketplace. That's different from simply grabbing a channel and playing it" (cited in Owen, 2006: 70).

In addition to its ability to give stores a particular aesthetic identity that help them appeal certain market segments, post-industrial functional music played in retail and consumption spaces (and that which is in accord with the rest of the environment) can, more importantly, act as a sonic template upon which appropriate customer agencies and behaviors can become contextualized. In other words, when functional music fits its environment, it can provide a framing device and "an aesthetic contrast structure" (DeNora, 2000: 141), capable of informing and influencing the way customers conduct themselves as well as their purchasing intentions. Let us take the case of the Victoria's Secret store, renowned for selling luxurious women lingerie and underwear, located in the Mall of America, Bloomington. As recounted by Sterne, this franchise only plays music specifically arranged for them, which includes original renditions of classical music symphonies by European conductors, such as Mozart's Piano Concerto in E Flat, Beethoven's Romance No. 1 in G, or Schubert's Symphony No. 5 in B Flat (1997: 36). According to Sterne, this musical programming is crafted with the sole purpose of playing "to an American bourgeois identity by suggesting a refined, European, aristocratic taste. As a form of music that is generally associated with refined taste and prestige, it functions to legitimate the store as a respectable place to shop" (ibid). In this instance, then, the music aligns itself with the product (both from Europe) and the target audience (Americans with a refined, European, aristocratic taste). Functional music, congruent with the product, the environment and the expectations of consumers not only articulates and emits an atmosphere of utmost prestige but, *through* such an atmosphere increases the likelihood of people, who want to be associated with the feelings of refinement and "Europeanness", purchasing their product. Functional music, in this context, creates a sonic link between the customer and the goods on display, providing a cognitive and emotional cue that suggests only through buying this product can they *feel* distinguished and refined. This was similar to the conclusion reached by Areni and Kim, who, after playing Classical and Top-40 music in a wine cellar, stated that

> Music must fit the persuasion context in order to produce the desired outcome. If consumers associate wine consumption with prestige and sophistication, then Top-Forty music may provide an *incompatible* cue,

communicating [...] a more common, less refined environment. [...] Given the unfamiliar setting of the wine cellar, consumers, consciously or unconsciously, sought external cues as to appropriate behavior. The classical music may have communicated a sophisticated, upper class, atmosphere, suggesting that only expensive merchandise should be considered. Customers may even have felt pressure to conform to the setting implied by the music by purchasing expensive wine. [Therefore] any retailer wishing to convey a high prestige, high price image should consider classical background music. [...] It is possible that shoppers, being somewhat unfamiliar with wine cellars and wines in general, used the classical music as a cue and inferred that the cellar contained mostly high priced merchandise. (1993: 338)

The message for aspiring retailers is clear: if they wish to influence customer behavior and purchasing intentions, then *the functional music must fit with the overall environment of the space.* Functional music appropriate or in congruent with the image of the store and the mood, feelings and behaviors of their customers found to be an important factor in product selection (Alpert & Alpert, 1990), customer behavior (Gardner, 1985; Park & Young, 1986; Yalch & Spangenberg, 1990) purchase intentions (Alpert & Alpert, 1990; Park & Young, 1986), product recall (Chebat et al. 2001; MacInnis & Park, 1991), attitudes toward employees, the store and the product (Chebat et al., 2001; MacInnis & Park, 1991; Kellaris, Cox & Cox, 1993; Wilson, 2003), employee sales pitch and customer persuasion (Chebat et al., 2001; MacInnis & Park, 1991; Simpkins & Smith, 1974), increased consumption (Lammers, 2003; Radocy & Boyle, 1997; Wilson, 2003), increased pleasure and arousal (North, Hargreaves & McKendrick, 1999a; Mattila & Wirtz, 2001), attitudes towards the waiting process (Oakes, 2003) and, finally, the amount of time spend in store (Radocy & Boyle, 1997; Wilson, 2003). I will get into more detail with the results of these studies during my discussion of the functions of post-industrial functional music but, for now, it is suffice to say that *musical fit* can make all the difference between a successful enterprise and a failed one. To prove this point, before concluding this discussion of retail atmospherics, let me mention the possible effects of *negative* uses and instances of *incongruent* functional music – that is, functional music used not to attract, but to repel certain unwanted crowds. In this particular instance, it is not the musical fit but musical "unfit" has become a mean towards the fulfillment of organizational goals and purposes:

The *Los Angeles Times* earned nationwide chuckles in 1992 when it
reported that the Southland Corporation had installed a Muzak channel
in its 7-11 chain stores in Southern California's Thousand Oaks district.
The goal was to drive away gangs of loitering teenagers. The plan
worked so well that Southland wanted to repeat the "Muzak Attack" in
other parts of Los Angeles County. This story is all the more fascinating
because the music played was not elevator music but Muzak's classical
channel. The juvenile delinquents were wincing not at the Syd Dale
Orchestra's rendition of "You Call It Madness" but at Bach's Brandenburg
Concertos. (Lanza, 2004: 226-227)

3.3.2. New Forms of Discipline? The Use of Functional Music for Increased Consumption

I have already speculated about how appropriate functional music in alignment
with the environment can facilitate consumption practices and addressed how
retailers design store atmospherics not just for the sake of a pleasant ambience
but with an ulterior motive in their mind – that is, *increased profits.* Unlike
modern functional music, which operates on the bodies and minds of workers in
order to enhance their productivity levels, post-industrial functional music
targets the bodies and minds of customers in order to encourage their
consumption activities. Hence, whereas the former understands and
conceptualizes *efficiency* in the area of *production*, the latter seeks to generate
efficiency in the sphere of *consumption* (MacLeod, 1979: 27)*.* Therefore, it is not
the management of production that is a concern for post-industrial functional
music, but *the management of consumption* (Harvey, 1989)*.* In a time when
architectural plans for shopping malls, grocery stores, retail shops and
supermarkets are elaborately designed down to the last detail in an effort to
encourage shoppers' access to material goods in a quick and efficient way, to
maintain orderly completion of transaction processes and to ensure customers
spend more time and cash in a particular consumption environment; functional
music would be an accomplice in a "capitalist conspiracy" (Herron, 1981: 116)
where consumers are turned into pawns in a game of manipulation that would
only serve to increase the commercial gain of "greedy capitalist pigs" (Bradshaw
& Holbrook, 2008: 26). When programmed music, which itself "presupposes

and builds upon an already-constituted commodity status for music" (Sterne, 1997: 45), is conceived and conceptualized in the marketing literature as an advertisement and marketing tool, then it would not be far-fetched to suggest that post-industrial functional music is a form of "disciplinary technology" and instrument of social control (DeNora, 2000: 132; Gioia, 2006: 253). In this respect, the same power mechanism which helped individuals to become better, more efficient *workers* that *produce* more is now operating in a different context but with an ultimately identical aim – to create better *consumers* who *consumed more*: "Muzak typifies power as a network. Diffused into the sound systems of all types of spaces, the 'castrated' music serves as a reminder of the 'normalization' imposed by consumer society. It also orders time – packaging it into discrete rhythm units in order to make us buy more and work harder. As the space of shopping centers directs our bodies, sound systems diffuse power to influence our minds" (Yelanjian, 1991: 94).

As Jones and Schumacher contend,

> […] the coding, channeling, and dissemination of functional music is one way in which power is exercised in post-Fordist, capitalist societies. […] The objects of this power are our subjectivities, our senses of self, and ultimately our very bodies. In functional music, power is exercised through the production and regulation of these subjectivities, and the disciplining of feelings and emotions. It is a power whose purpose is to create 'untroublesome' and 'useful' social subjects as […] 'consumers'" (1992: 165-166)

Once again, this issue of social control is directly related to the question of *who* actually *controls* and defines the content of the musical experience. Although providers of post-industrial functional music pride themselves in creating a service, which gives "greater client control over programming and more responsiveness to subscribers' demands" (Jones & Schumacher, 1992: 164), it was still the managements (as "clients" and "subscribers") who had the final word upon deciding which musical selections to be played. As Lanza rightly pointed out, although "the promotional literature coming out of Muzak's U.K. offices brandished the motto 'Music – with YOU in control', […] the royal 'you' to which it refers is likely to be the business owner more than the staff worker or

the visiting customer" (2004: 218). Being the sole arbiters over the contours of aural experience, the management can change and modify the style and volume of music *ad libitum*, depending on the time of the day, seasons[84], special days and events[85] or the density of customer flow:

> For example, morning in all the stores is when as one manager put it, "laid-back" music is played, typically at lower volume levels. In Euphoria, relaxing music is standard for morning. In Naked, Rick described how a typical day begins with "quite a slow tempo in the morning which rises throughout the day and begins to slow again near the end of the day. That's for the staff as well…" (DeNora, 2000: 139)

Here, Rick's description of the typical working day in a retail store resembles the "fatigue curves" of industrial workers that we described in the previous chapter. However, and this is only one reason why Stimulus Progression would never work in a service environment, the traffic in a retail space is not as "stationary" as in an industrial workspace and prone to more sudden changes in the number of individuals it contains in any given time. Therefore, sometimes managements are required to adapt by "subliminally pacing and setting the mood of the customer" (Korczynski, 2003: 328) through going to a change in musical style:

> At Babe, fast-paced music is used to create activity and also to reinforce activity, to match fast flow. There, and in other stores, the staff we spoke with believed that fast music encouraged fast shopping. At sale time, when it is host to greater numbers of customers and more goods crammed into the shopping space, Mistral uses faster-paced, snappier music, the kind that may serve as inspiration and template for snappy bodily movements and - implicitly - snap decisions. […] At other times,

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[84] DeNora, for instance, relates how British retail stores typically play Christmas tapes sent from corporate headquarters every New Years' to create a fitting atmosphere with the spirit of the season. One memo sent by management to staff at Directions describes the tapes selected for Christmas as follows: *"Chosen tapes for December:* (1) 'The No. 1 Xmas Album' - I'm afraid there's no escaping Bing Crosby's White Xmas, but this tape is a new release and includes more recent Xmas hits. This tape will be particularly effective on Sundays & late nights. (2) 'Best Party in the World Ever' - This tape is excellent and includes new mixes of old and new hits. Customers have reacted very well to this. Suitable for every day…" (2000:140).

[85] DeNora also describes how some stores adjust their musical offerings depending on the time of the year or current events. While one store, she explains, used the soundtrack to the 1997 movie *Romeo and Juliet* to promote their articles on Valentine's Day, another played more solemn and somber songs at the time of Princess Diana's death in order to "match the mood of the nation" (2000: 139-140).

> when business is slow, shops may attempt to hold customers in the store, to encourage them to look at things slowly, and to seduce them, ultimately, into handling the goods, trying them on and making a purchase. As the manager of Elysium put it, "Slow music creates a slower mood among staff and shoppers." (DeNora, 2000: 143-144)

Simply by switching from a slow- to fast-tempo, then, the managers can modulate the in-store traffic flow of customers as they wish and in ways that will yield the highest amount of profit for them. As with the modern forms of functional music, managers' "belief" in music's manipulative powers and scientific support[86] in defense of it were intermingled. For instance, the Personal Research Committee of the Administrative Society reports in their survey of 336 member firms that the majority of corporations who provided functional music for their employees *believed* it improved their morale and relieved the monotony of their tasks (Walter, 1971; see, also, Yalch & Spangenberg, 2000[87]). In another survey comprising 52 retail establishments conducted by Burleson (1979), it was found that most managers (%76) shared the *belief* that their customers were buying more as a direct result of the functional music being played[88]. Interestingly, according to the results of the same study, this *belief* in the persuasive powers music possess was shared by the customers themselves, where 63% of 353 shoppers claimed they either "purchased more" or "probably purchased more" in stores that a functional music playing while they were shopping. The "paternalistic" component of functional music was also present in its post-modern incarnation. Linsen's (1975) study found, for instance, that in addition to their *belief* that they would spend more time and money in a store with background music, 67% of

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[86] MacLeod, for example, mentions about studies that claim, "for every minute a customer spends in a retail store, he or she will spend approximately one dollar" and "with music in a store, the customer will remain in the store an average of three minutes longer" (1979: 25). However,
as was the case with some industrial psychology studies propagated on behalf of increased production, the results of these studies should be taken with a pinch of salt at best.

[87] Compared with the characteristics and uses of modern functional music, Yalch and Spangenberg's study had one interesting finding. The scholars realized that it was "unfamiliar music" rather than familiar tunes that prodded customers to stay more and shop for longer durations (2000: 90).

[88] However, as Milliman warns us, "when the same managers were asked if their beliefs were based upon any actual research conducted either by themselves or, in the acse of multi-store organizations, by the store's central Office, the response was, without exception, 'no' and/or 'not that I know of'". (1982: 87)

shoppers expressed the opinion that the presence of environmental music is a "sign" that the store's management cared about its customers.

Yet functional music's influence on increased consumption is not just a matter of wishful thinking, but substantiated and corroborated by strong, scientific field experiments as well. For instance, in one study Milliman tested the effects of background music on supermarket shoppers and found a direct causal link between the tempo of an instrumental background music and the pace of in-store traffic flow as well as the daily gross sales volume purchased by customers (1982: 90). The results of his experiment suggested an average increase of 38.2% in sales volume[89] when the music's tempo has changed from a fast to a slow one. Changes in musical tempo had similar outcomes in restaurant settings. Roballey et al. (1985) found that fast-paced background music had a significant increase in subjects' eating speed without their awareness. Using the findings of this study as their framework, McElrea and Standing (1992) also discovered a direct correlation between musical tempo and drinking time, claiming customers finished their drinks and left the establishment much earlier in fast music condition. In another study, Lammers (2003) took musical volume instead of tempo as his independent variable and concluded that the daily purchase amount, or tab, "was significantly larger when the background music was soft in volume than when the background music was loud" (2003: 1025). The difference in tab volumes, he argued, constituted a support in favor of the importance of *musical fit* since soft music was probably more in congruent with the restaurant's serene, ocean-side location, thus resulting in more meals and drinks being purchased (ibid).

The results of these scientific studies carry with them important managerial implications: owners of fast-food franchises, for instance, would want their clients to finish their meals as quickly as possible and open space for other customers. These owners, then, may opt to play fast-tempo music, which would highly likely to cause a much faster eating speed. Or for restaurants with

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[89] In the fast-tempo music condition, the supermarket grossed about $12,112,35 while the slow-tempo music brought $16,740,23 in revenues, indicating an average increase of $4,627,39 per day (1982: 90).

unaccustomedly longer periods of serving times, it would be much reasonable to avoid slow-tempo music in waiting areas as they would get "semantically entangled" with perceived wait durations and, hence, foster the impression that time (and queue) is not moving forward (Oakes, 2003: 697-698). Given this seemingly limitless possibilities manipulation of functional music provides for service managers, the question we should ask becomes whether these instances constitute a form of *disciplinary technology* in a Foucauldian sense? Would it make an analytical difference when the target of power apparatuses essentially remained the same, still the bodies and minds of individuals, but their aim is somewhat changed? This is certainly an interesting question to consider given the lack of investigation in this area – after all, Foucault's proposition was primarily reserved for certain institutions (schools, prisons, barracks, hospitals, etc.) that did not include spaces of unbridled consumption, like shopping malls or retail and grocery stores.

If we understand *discipline* and *disciplinary technologies* the way originally conceptualized by Foucault, then, based on our discussion so far, a case can certainly be made in favor of post-industrial functional music constituting a disciplinary power. The ultimate goal of disciplinary methods is to control the operations of the body and eventually rendering it more docile and utilitarian (Foucault, 1977: 137). It is in this context that the unyielding presence of functional music in consumption spaces serves as a disciplinary power: it constitutes complying bodies in the service of increased consumption and profits. Just consider the following excerpts taken from 3M Corporation's advertisement booklet "Music to Make Money By" for instance:

- "It's always profitable to make people relaxed and comfortable."

- "Music helps make people happy and more contended, while it helps you to make money."

- "Music for business helps get the job done… profitably."

- "Music can turn browsing into buying. [It] creates a *buying atmosphere* in retail store, a supermarket or a drug store… customers will spend more of their total buying time (and their money) with *you*." (MacLeod, 1979: 25, *emphases in original*)

Through manipulating the aural dimensions of the physical environment, then, the promoters of post-industrial functional music aim to generate more profits and revenues for their clients by turning customers into more "relaxed," "happy," "comfortable," and "contended" subjects. It is in this context that post-industrial functional music can be said to be simply offering a logical and amenable solution to the problem of uncertainty generated as a result of the increasing rationalization of service and consumption environments. As Ritzer argues, rational systems entail and allow for greater control over certain uncertainties of life (1983: 106) and, in the domain of consumption, there is no other "great source of uncertainty, unpredictability and inefficiency" (Ritzer, 2004: 106) for marketers than customers. The act of consumption is not always pre-mediated and majority of shoppers are prone to succumb into point-of-purchase, impulsive acts of buying. Therefore, rather than trying their fortunes with the irrational consumers, the managers have to actively seek and find ways to manipulate and divert shoppers' attention, and with that their money, to their products. Post-industrial functional music is an agent in this general scheme of consumer manipulation, which is used to subtly and subconsciously nudge them towards more pointless consumption. Here consumption becomes an end in itself, just as production was in the manner which modern functional music was deployed and it is exactly in this respect that post-modern uses of functional music can be understood as a "Tayloresque extension of Fordist phenomena whereby customers enter a kind of conveyor-belt system that moves them through the restaurant in a lock-step manner desired by the management. [And] music plays a complicit role in creating this conveyor-belt style of organized consumption, coaxing customers to travel at suitable speeds through a retail setting dependent on the manager's manipulation" (Bradshaw & Holbrook, 2008: 30-31).

3.3.3. The Use of Post-Industrial Functional Music on Service and Retail Employees

It has already been demonstrated that, while designing a soundtrack for a store, audio architects primarily take the cultural tastes and musical considerations of target audiences into their account rather than the benefit of retail workers (see, Smith & Curnow, 1966: 255). Therefore, it is often the case that the relationship customers and employees have with the environmental music are different. While the former is only exposed to music for the duration of their stay in a store, the latter is forced to endure and listen to blaring programming for an entire working day. That's why the possible reactions by the staff to programmed music are frequently characterized in negative terms, like they are captives of a sonic assault that blatantly disregards their welfare. Stanley Green, in his 1957 interview with Muzak's Donald O'Neill refers to this apparent absence of consideration for public area workers and notes that, "what happens to the 'industrial worker' – waiter, cashier, hat check girl – who takes the steady dose of 'public area' music was not discussed. Probably that is why they are irritable people, in need of a counter-Muzak service" (cited in MacLeod, 1979: 27). This is especially true for employees working in remote or inter-personal services, who usually have to spend extended periods of time in one place. Therefore, maintaining their physical and mental well-being becomes more of a concern for managers if they expect their employees to be more productive and contended (Bitner, 1992: 67). Ideally, then, functional music has to be designed in a way that would sustain employee welfare rather than working against it.

But this should not automatically imply that the experiences of customers and staff are completely dichotomous. As DeNora reminds us, employees working in retail stores can be considered as "prototypical target customers" since "they are chosen in part of their similarity to target consumers" (2000: 138) in the first place because of their affiliation with the product and the brand. Therefore, it would be safe to assume that the same musical principles applied to customers would also apply to store personnel as well:

> This structuring of agency – in particular, emotional agency – applies to shop staff as well as shoppers. [...] With regard to staff, the idea is that music helps them to do "emotional work" (Hochschild, 1983), enter into a mode of agency conducive to the emotional features of their job – that is acting like a lead-user (of shop goods) and generally fitting in, in terms of appearance and temperament, with the shop's ambiance. (2000: 138-139)

If this is the case, then, there might become a "potential for management[s] to use music not only to pace and structure work by pacing and structuring customers, but also to directly pace and structure the work behaviors of the front-line staff" (Korczynski, 2003: 329). This creates a situation where, in addition to the problem of efficient consumption of goods and services, the proponents of functional music are forced to consider the potential effects of their service on the efficiency of retail employees as well. And although there are several studies in the field of organizational behavior on the influences of physical setting on employee satisfaction, productivity and motivation (Becker, 1981; Davis, 1984; Steele, 1986; Sundstrom & Altman, 1989), music's potential role and benefits in each of these aspects are not studied in a legitimate detail[90].

One area in which functional music was found to be a positive factor in workplace and employee efficiency was salesclerks' persuasiveness. It has been suggested that, in situations where a sales pitch by an employee is considered to be weak by the customer, functional music as a peripheral cue can become a source of distraction, thus further interrupting the sales encounter and the completion of transaction. On the other hand, if the sales clerk's pitch is strong and arguments are convincing, slow tempo can enhance the cognitive response to sales speech and, therefore, increase the likelihood of persuading the customer and completing the sale (Chebat et al., 2001: 117-121; see also, Petty & Cacioppo, 1986; Bruner II, 1990: 100). These findings conform with the earlier argument by Yalch and Spangenberg that "soothing music would be appropriate in retail settings [...] where it is desirable for the salesperson to engage the customer in conversation prior to the purchase decision" (1990: 56).

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[90] One exception might be Muzak's own study on the perceptions of süpermarket shoppers, which states that: "Supermarkets who are subscribers to Muzak require that music assist them in serving the customers as well as in providing for *a motivating environment for their employees*" (cited in Yelanjian, 1991: 93).

Hence, functional music, specifically of a softer variety, has a huge, and relatively untapped, potential for increasing worker efficiency through strengthening the sales message.

Again, in the final analysis, the potential value post-industrial functional music has for employee efficiency depends on the question of *autonomy* and identifying *who* decides on store's music policy. And the answer generally comes down to the way a company is structurally and hierarchically organized:

> At the large national and international chain stores, local or branch variation was minimized, in favor of homogeneity. The manager of Canyon told us that they had the idea that in any branch within the same time zone, one should be able to hear the same music at the same instant. [...] Supplied by the Muzak corporation, it is changed roughly every two months. The cassette decks are designed to play tapes on auto-reverse, so that store employees cannot play tapes of their own choosing, and company music policy is thus technologically enforced. The staff, we were told by the manager, get bored hearing the same tape over extended periods of time and "can't wait for a new tape to arrive". (DeNora, 2000: 137)

If the old adage of Muzak cited by then president Umberto Muscio is correct and the ultimate goal of environmental music is "to make the worker feel better, because if he feels better, chances are he will work better" (MacLeod, 1979: 22-23), then, it can hypothetically be inferred that "bored" or, as Green observed, "irritable" staff personnel would be less efficient in performing their tasks than employees who are mentally in a much stable state. Hence, in certain contexts, delegating the musical autonomy to retail employees could be more serviceable to keep them happy and, therefore, more willing to get on with their work. And since the staff will be selected based upon their affinity with the brand and similarities to target consumers, there is a good chance their autonomous musical selections would reflect the tastes of that particular market segment as well. However, as long as the target audience of post-industrial functional music remains as the customers, as they are the prime consumers of services and merchandises, it is understandable for managements to be more hands-on when it comes to the ambient design of their stores. In such cases, audio architects will design their programming based upon what managers want their stores to be about and the type of market segment they plan on appealing to. Although it

would certainly be ideal to reach a viable musical reconciliation that would cater both employee preferences and customer needs (Bitner, 1992: 67), the search for *increased consumption/profits* and not *increased employee efficiency* would always give customer tastes a privileged position in determining the content of functional musical programming. As customers are the ones that would make more money for service and retail stores, manipulation of their purchase intentions and behaviors would be the top priority for managements as well as functional music programmers[91].

3.4. The Functions of Post-Industrial Functional Music

Having ascertained that it is the customers, not the employees, that are the principal target for environmental music broadcasts, the question now becomes *how* and *through which means* that post-industrial functional music affects and influences the customers. The goal, I suggested, is increased consumption and revenues for the marketers but how exactly functional music helps them to achieve this goal? Based upon the marketing literature and the servicescapes model proposed by Bitner (1992), I argue that there are *three* main ways in which post-industrial functional music operates on consumers: *cognitive, emotional* and *behavioral*[92]. In the ensuing discussion, I will have a detailed look at each function and identify the particular means through which post-industrial functional music encourages shoppers to spend more time and money on services and material goods, starting with the cognitive aspect of consumption. However, it should be noted before I proceed that these three functional effects of music do not stand in isolation as if they are happening in a

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[91] Thus the Muzak study we have cited above continues with advices to managers on how to "meet two functional requirements" of customers instead of emphasizing the importance of employee efficiency and motivation: "the music should [...] accomodate and lengthen, if possible, the stay of the shopper in the establishment's shopping area and [...] assist both the fact and illusion of speedy check-out of the customer" (cited in Yelanjian, 1991: 93)

[92] In her servicescapes model, Bitner distinguishes between the internal responses of customers and their behaviors. According to her typology, internal responses can be cognitive (beliefs, categorization and symbolic meaning), emotional (mood and attitude) or physiological (pain, comfort, physical movement and fit). In turn, these internal responses by consumers affect their behavior, i.e. either approach or avoid the store (1992: 59-60; see also, Sweeney & Wyber, 2002).

vacuum, but, to the contrary, are always in constant interaction with each other. Enhanced mood states of customers, for instance, can elicit more positive service evaluations or affiliations with the provider (see, for instance, Berry, Carbone & Haeckel, 2002; Garlin & Owen, 2006), whereas changes in customer perceptions or affective states can lead to an increase in purchase intentions (Kotler, 1973: 53-54) and other approach behaviors – such as affiliation with the store and brand, shopping enjoyment, exploring the store, more time spent browsing (Donovan and Rossiter, 1982) –and so on. In that sense, the first two functions of post-industrial functional music (*cognitive* and *emotional*) can be best perceived as moderators which impacts and determines the parameters of the third (*behavioral*) function.

3.4.1. Cognitive and Perceptual Functions of Post-Industrial Functional Music

As an environmental factor and a peripheral cue, functional music can affect people's cognitions and the way they perceive their environment. Earlier studies, for example, have shown that post-industrial functional music can stimulate the depth and intensity of individuals' cognitive activity, which would, in return, impact their evaluations of the store environment (Dubé & Morin, 2001; MacInnis & Park, 1991). As Chebat et al. argues, these cognitive effects of functional music are especially potent in situations where other environmental cues, such as visual and olfactory ones, are either absent or significantly diminished: "When consumers' attention is distracted from the sales encounter, cognitive activity is stimulated by cues other than those related to the service encounter; in such circumstances, musical cues may then be more salient" (2001: 115). Used in such contexts, functional music can be said to act as a "message enhancer" that increases the "reception of the advertising message" (Sullivan, 2002: 324)[93]. Yet, it should not be forgotten that, if the functional

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[93] According to Bruner II, however, functional music's "message enhancing" capabilities eventually depend on the type of product being purchased. So, for instance, in situations that demand high cognitive involment, such as when buying cars and insurance, functional music would have less effect as all the cognitive attention of consumers will be directed towards the product instead (1990: 101). This seems to be in line with Park and Young's (1986) finding that

music is perceived to be too loud or distracting (in other words, becomes too much on the foreground), then there is always a possibility that it can cause "cognitive dissonance" amongst consumers and chase them away from the store (Sterne, 1997: 33-34). The same can be suggested for musical pieces that do not fit and, therefore, sits in tension with the rest of the environment (see, for instance, Simpkins & Smith, 1974).

Functional music can also be an important factor in determining the way customers perceive a particular atmosphere (Kotler, 1973). As the Areni and Kim (1993) study we recounted earlier demonstrates, customers often turn to the cues provided by functional music programming in order to make inferences about store's identity and the quality of the merchandise its providing. In an on-site experiment, where he assessed the effects of functional music on perceived atmosphere of a restaurant, Wilson (2003) found that playing of different styles of music had significantly influenced the way patrons perceived their environment. He explained that,

> No music was associated with the restaurant being perceived as the least upbeat, classical music with the restaurant being perceived as the most upmarket/sophisticated, and popular music with the restaurant being perceived as the most upbeat. Jazz music was associated with the restaurant being perceived as the least peaceful/passive and the most invigorating/stimulating, and easy listening with the restaurant being perceived as the most tacky. (2003: 98-100)

It goes without saying, then, that careful design and programming of functional music can stimulate and influence customers' cognitive activities in a manner that would be commercially advantageous for the store owner or service provider. And, based on the literature, I identify *three* main areas where cognitive functions music can be utilized for commercial purposes: distorting *the perceived waiting and shopping times of customers*, influencing customers' *product, store or service evaluations and choices* and, finally, *modifying customer attention or distraction*.

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under high cognitive involvement the music would only be a source of distraction as it would be unrelated to attribute-based message contents of the product or the pitch.

3.4.1.1. Perceived Waiting and Shopping Times of Customers

Waiting is a natural and painstakingly unavoidable component of every servicescape. Whether it is for waiting for a table in a restaurant, to go on a ride in an amusement park, to cash a deposit at a bank, on a checkout line at a supermarket, to connect with an operator on telephone; waiting can be frustrating and anxiety inducing, particularly if it is unexpected or involves a stressful outcome such as waiting for the end of a surgical operation. In those situations, it would be of benefit for service providers to give customers at least *an illusion* of forward movement, the feeling that time is passing rapidly than anticipated and the service transaction will come to fruition soon enough (Chebat, Gélinas-Chebat & Filiatrault, 1993; Greene, 1986; Groom, 1996; Hui, Dubé & Chebat, 1997; Kellaris & Altsech, 1992; Kellaris & Kent, 1992; Oakes, 2003; Scott, 1990; Sullivan, 2002; Yelanjian, 1991; Wilson, 2003). A sonic stimulation in the form of functional music as it will create a pleasant distribution, alleviating the boredom of customers queuing in line and fostering a temporal illusion that time (and therefore the line) is moving forward, even if in reality it does not. Through distorting their temporal perceptions, then, functional music can reduce the stress and annoyance levels of its customers and help keeping tempers in check. This would, ideally, lead to less people terminating their service transaction before its completion and, henceforth, mean more satisfied customers and money for the service operator (see, for instance, Hornik, 1984; Oakes, 2003; Taylor, 1994; Tom & Lucey, 1995).

Functional music's influence on temporal perceptions of customers can be explained by two strands of thought on the subject: (a) memory-based models (Ornstein, 1969) or (b) "attentional" models (Frankenhauser, 1959; Hicks, Miller, Gaes & Bierman, 1977). Proponents of the former school use a storage-size metaphor in order to argue that "allocation of larger memory space to an increased data-processing load results in larger perceived duration estimates" (Oakes, 2003: 686). In more simple terms, a particular time period would appear to be longer when an individual remembers more information about it (Yalch & Spangenberg, 2000: 145). On the opposite end of the spectrum, the

subscribers of "attentional" model suggest increased data-processing load would only divert the attention from individual's cognitive timer, thus resulting in shorter perceived duration estimates (Oakes, 2003: 686). That is, when a situation is loaded with external information and extensive cognitive stimulus, it would divert individual's attention away from the temporal movement and, hence, result in a much shorter estimate of time (as in the commonly used phrase "I could not understand how the time passed!").

The implications for the use of functional music in service and consumption spaces are clear: music can either help create the illusion of forward movement in time, or became a factor in further emphasizing its slow passage[94]. Therefore, this temporal influence of environmental music on customers' perceived waiting and shopping times has become an alluring subject for scholars of environmental psychology and organizational behavior in recent decades, each explaining music's effects either from a storage-size or "attentional" perspective. Subscribing to the former group, Kellaris and Kent (1991), for instance, argued that the more customers enjoy the functional music during a time period, the longer they would estimate that time frame to be. In this case, increased cognitive processing through use of music would give out more information, therefore augmenting the perceived duration of time (Block, 1990). In a follow-up study a year later, the same researchers investigated the relationship between musical tonality and perceived time durations. In this study, Kellaris and Kent argued that liked musical modes (i.e. major key/happy music) as opposed to disliked ones (i.e. minor key/sad music, atonal ones) produced the longest time estimates as they provided more auditory information to be encountered and processed. These results were later confirmed by Kellaris and Mantel (1994), who found that experiments underestimated the amount of time passing when exposed to disliked musical stimuli. Assessing the possible impact musical tempo can have on temporal perceptions, Oakes (2003) similarly realized that time estimates by

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[94] For example, Oakes describes how, despite the fact that it "induced substantially more positive affective response compared to fast-tempo music in the short-wait treatment" (2003: 697), individuals became more irritated with slow-tempo music as the wait period stretched well beyond what they have anticipated.

undergraduate students while waiting on a registration queue were significantly shorter when slow-tempo (comprising less data and information) compared to fast-tempo (more data and information) was played[95]. All of these studies seem to be in conformity with Ornstein's view that when individuals remember more about a particular experience (such as liked music), they would think more has happened during that period and, therefore, have a longer perceived time estimation[96].

The studies we have discussed thus far take customers waiting in line as their dependent variable, but functional music's impact on temporal perception of individuals is equally relevant and effective in shopping contexts as well. For instance, separate studies conducted by Yalch and Spangenberg (1988; 1990; 1993; 2000) have all demonstrated the fact that customers who are exposed to familiar music overestimated their shopping duration as opposed to customers who are given an unfamiliar musical background. In one field experiment, the researchers broadcasted two different musical programming – i.e. youth-oriented foreground and adult-oriented, instrumental background music – to shoppers of a clothing store and interviewed them immediately as they were leaving the store. The results of these interviews, in a possibly counter-intuitive way, suggested that whereas younger (that is, under the age of 25) shoppers *felt* they had shopped longer in the less familiar, background music condition, the older shoppers *perceived* they spent more time shopping while top-40, foreground music was playing (Yalch & Spangenberg, 1988). That is, when encountered with a music that is unfamiliar, non-typical and foreign to them,

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[95] However, as Chebat et al.'s (1993) research on the interactive effects of musical cues on customers waiting in a bank line demonstrates, musical tempo's influence on time estimations are never a direct one but mediated through the "mood" and "attention" of individuals instead. In that sense, the tempo of functional music does not act as a metronome but mainly serves to modify the structural relationships between other variables (1993: 1013).

[96] Although it is crucial to note that these results are not conclusive. For example, in another study, Kellaris and Altsech (1992) found disliked rather than liked music to generate longer time estimates, thus negating the findings by Kellaris and Kent (1991) and Kellaris and Mantel (1994). Similarly, Wansink's (1992) study would support the attentional models of temporal perception by concluding that listeners are more likely to underestimate time periods when they listen to music they enjoy and not the vice versa. In a more recent study, Garlin and Owen (2006) provided even more conflicting evidence by suggesting that faster-tempo and less liked music would induce longer time perceptions by customers, thus supporting Oakes (2003) but rejecting Kellaris and Kent (1992) and Kellaris and Mantel (1994).

the time has seemingly appeared to slow down for shoppers (Bruner II, 1990: 99), leading them to overestimate the amount of time they spent in the store. However, in a more recent study (2000), and more in accordance with the findings of Ornstein (1969), Yalch and Spangenberg found individuals to be reporting longer durations of estimated time than they have actually spent while shopping in the familiar music treatment:

> Subjects perceived themselves as spending longer when exposed to the more familiar music compared with the less familiar music. [...] Thus, although consumers shopped less when listening to familiar music, they perceived themselves as shopping longer. [...] These results show that consumers who listen to familiar music may report shopping longer, but this is more a perceptual distortion (significant effect of music) than actual behavioral differences (insignificant effect of actual time). (2000: 143)

Despite their variations in outcomes, one common thread that unifies all these studies I have mentioned in the course of discussion is that functional music can be a resource in manipulating or distorting individual's sense of time and this power of functional music can be harnessed by managements in ways that would be commercially beneficial for them.

3.4.1.2. Product, Store and Service Evaluations and Attitudes by Customers

During the discussion on the importance of retail atmospherics, I have mentioned how store atmospherics can be a distinctive element, separating a store by making it more appealing than others selling similar merchandise at the same prices. As a vital constituent of the general store atmospherics, the use of functional music can be a facilitative factor in generating positive attitudes towards the product, store environment and service staff (see, for instance, Baker, Grewal & Parasuraman1994; Chebat et al., 2001; *Marketing Week,* 1994). In other words, functional music can act as "a surrogate indicator in forming beliefs about service quality and other attributes of the service and/or the people who work in the organization" (Bitner, 1992: 63, see also Bitner, 1990). If functional music can be an element in creating positive service and store

evaluations, by the same token, its "misuse" can easily lead to opposite, undesirable outcomes. The results of an on-site experiment conducted by Chebat et al., for instance, suggest that music that attracts too much attention onto itself can be a source of detraction as "the deeper the cognitive activity, the more negative the attitudes towards the employee and toward the visit" (2001: 121) will be. As a result, in direct contrast with the claims that just the mere presence of music regardless of type is able to create a positive effect on patronage (Garlin & Owen, 2006: 761), store owners and service managers who wish to get favorable evaluations by consumers may be much wiser to pay special attention to the content of musical programming they provide.

Studies in the field of environmental psychology and consumer behavior particularly highlight one emotional component of servicescapes as a necessary, perhaps *the* necessary, prerequisite for positive service and product evaluation: *customer mood and pleasure* (see*, fun. 4.2.1*.; Dubé & Morin, 2001; Yalch & Spangenberg, 2000). This emphasis on the pleasure aspect alleges that, when in a good mood, customers are believed to become more favorably disposed towards the products and services they encounter in a consumption environment (Gardner, 1985). In that sense, music categorically considered as *pleasant* or *pleasurable* to listen to, such as classical music (Kellaris & Kent, 1994), can therefore become a factor in creating equally pleasant sales atmospheres that would reduce customer anxiety and put them in a more blissful state of mind (Obermiller & Bitner, 1984). This increased mood state, in turn, will act as a mediator and enhance customers' perception of service quality, attitudes towards the store elements and their likelihood to affiliate with the service provider (Areni, 2003; Dubé, Chebat & Morin, 1995; Garlin & Owen, 2006; Grewal, Baker, Levy & Voss, 2003; Hui et al., 1997; Chebat & Michon, 2003; Sweeney & Wyber, 2002). As Dubé and Morin (2001) conclude in their own study of effects of background music pleasure on store evaluations:

> Variations in the intensity of pleasure induced by background music exert influence on store evaluation but the effect does not occur through automatic transfer of affect […]. Instead, the underlying mechanisms of pleasure effects seem more appropriately represented by the following

network of relationships that emerged most strongly in structural analyses: pleasure intensify influences consumers' attitudes towards the servicescape, which influences store evaluation both directly and indirectly via attitude towards the sales personnel. Moreover, […] more intense pleasure, via its impact on attitude towards the servicescape, not only succeed in inducing more positive attitude towards the sales personnel, but also strengthen the relationship between consumers' attitude towards the sales personnel and store evaluation. (2001: 111-112)

Such sonically induced pleasantness, however, has to be carefully balanced against *arousing* capabilities of functional music, which, if not moderated properly, would make shoppers "more vigilant and discriminating when examining products" (Yalch & Spangenberg, 2000: 145). Hence, functional music high in *pleasure* intensity and moderate in *arousal* (such as fast-tempo classical music or slow-tempo pop music) is determined to be the ideal sonic stimulus, i.e. most likely to procure favorable outcomes both in terms of customer pleasure and their evaluations of merchandise and service quality (Sweeney & Wyber, 2002: 62-63). In addition to *tempo,* another musical element that might be a factor in making customers' evaluation of a product and service environment in a more favorable light is *musical familiarity and liking* (see, for instance, Park & Young, 1986)*.* According to Ritzer, in rational societies "people want to know what to expect when they enter a given setting or acquire some sort of commodity. They neither want nor expect surprises" (1983: 102). As rationalized settings, service and consumption spaces can bring about this predictability in environment by relying on the broadcasting of functional music that is both familiar to and liked by customers. This familiarity and liking of the functional music would, in the end, have a positive effect on patronage (Areni, 2003; Caldwell & Hibbert, 2002; Garlin & Owen, 2006) as relaxed customers would become more likely to project their positive affective state to the products and personnel surrounding them. In more simplistic terms, the liking of the environment would increase proportionally with the liking of music (see, for instance, North & Hargreaves, 1996). As Yalch and Spangenberg contend, "because individuals were expected to feel more comfortable in an environment featuring familiar atmospheric elements than unfamiliar ones, their product

evaluations were expected to be more favorable when familiar music was played compared with unfamiliar music" (2000: 145).

Furthermore, it has been suggested by some scholars that liked music can have a direct effect on consumers, which would lead them to evaluate products more positively when they are presented by a liked musical accompaniment (Gorn, 1982). Here the underlying supposition is that, when heard in a decision making context, previously liked music can affect the performance of purchasing behavior "by evoking mood-congruent thoughts [and] increasing the accessibility of positive associations to the behavior" (Alpert & Alpert, 1990; see also, Bower, 1981; Clark & Isen, 1982; Goldberg & Gorn, 1987). The liked functional music, then, have a classical conditioning effect (Gorn, 1982; Yalch & Spangenberg, 1990: 61) on consumers, priming them to veer towards particular products via a direct transfer of affect. In that sense, "just as the sound of a bell caused Pavlov's dog to think of food", liked functional music "may trigger sensations in the buyers that create or heighten an appetite for certain goods, services, or experiences" (Kotler, 1973: 54). However, even though post-industrial functional music often operate outside the level of listener awareness (North & Hargreaves, 1997), its cognitive effects on customer attitudes and evaluations towards products and service encounters should not be reduced to most simple, subconscious explanations. As studies by Alpert and Alpert (1990), Chebat et al. (1993) and Dubé and Morin (2001) show, there are often mediating agents, like mood and attention, which shape customer attitudes and perceptions. Though functional music's manipulative powers remain intact, these powers work indirectly, through the modulation of emotions, rather than directly as conditioning perspectives seem to suggest.

3.4.1.3. Customer Attention and Distraction

In addition to its effects on perceived waiting and shopping times as well as customer attitudes towards product and store environments, one final area in which post-industrial functional music can be said to have fundamental functional impact is *customer attention and distraction.* It has been commonly

recognized that, depending on their intensity and familiarity, functional music can either aid or hinder attention. Stratton and Zalanowski, for example, suggested that soothing forms of functional music can help focus attention on a particular task while, at the same time, block out distracting stimuli whereas arousing and stimulating types of musical accompaniment would more likely to attract attention on themselves and away from the activity at hand (1984: 23-24). Borling's (1981) study, where he examined music's effects on the brain alpha waves, acted as a precursor to Stratton and Zalanowski's conclusions by finding that soothing (i.e. low in arousal but highly pleasant) music could increase the production of alpha waves, thus resulting in enhanced capacity for focusing attention. Madsen, on the other hand, completely dismissed uses of any type of background music in tasks requiring constant attention, like focusing or reading, as they probably would interfere with the information processing (Anand & Sternthal, 1990) and became detrimental to the completion of the primary task (1970: 315). Arriving at completely conflicting results, Fontaine and Schwalm claimed that familiar music could successfully mitigate vigilance decrement in jobs demanding unwavering attention and, hence, become an auxiliary in the performance of vigilance tasks (1979. 73).

Results of these studies bear important implications for retail and service contexts. As we have discussed earlier, distracting customers from their internal cognitive timer (Frankenhauser, 1959; Hicks et al., 1977) may lead them to underestimate the time they spent in line or shopping. But, more importantly, functional music's effects on customer attention may even prevent or at least jeopardize the completion of service transactions. For example, in their experimental study, Chebat et al. found that the mere presence of music is enough to create a distracting effect from the visual cues, thus being "detrimental to attention to information received from vision" (1993: 1013-1014). This means that in situations that require a transfer of information from one source to another (such as a sales pitch by a staff member to a customer), just by virtue of its existence, functional music can hamper the encounter, causing less information to be processed by the receiver. This is all the more true for fast-tempo functional music, which entails an even higher level of

distraction, causing less information[97] to be recorded and classified (1993: 1015).

Here an increase in musical tempo is closely associated with cognitive *arousal*, which significantly diminished individuals' attentional capacity and ability to process outside information. For instance, Mano (1992, 1994) describes how an increase in arousal always lead to a narrowing of attention that customers can dedicate to objects and events around them. This reduction in the information processing capacity in consumers as a result of the highly arousing functional music would, eventually, compel them to use simpler decision rules while shopping or purchasing (Sanbonmatsu & Kardes, 1988). In other words, music that has fast tempo and is arousing would attract too much attention onto itself and therefore greatly reduce the amount of cognition and focus that can be given to store products or sales personnel (Chebat et al., 2001: 117-121; Hecker, 1984, MacLeod, 1979; Park & Young, 1986).

3.4.2. Emotional Functions of Post-Industrial Functional Music

In 1974, two environmental psychologists, Albert Mehrabian and James Russell, proposed a paradigm called Pleasure, Arousal, and Domination (PAD) model, which subsequently became a benchmark for many other studies conducted in the field. Starting with the simple observation that physical environments can influence the emotional states of individuals; they offered three independent dimensions to measure and explain the effects of physical space on people's feelings: *pleasure* (happy-unhappy, pleased-annoyed, and satisfied-unsatisfied), *arousal* (stimulated-relaxed, excited-calm, and wide awake-sleepy) and, *dominance* (in control-submissive) (Bakker, Van der Voordt, Vink & de Boon, 2014; Garlin & Owen, 2006: 755-756). The results of their study highlighted the

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[97] According to researchers, this includes "introspective information process[es] as well through which subjects assess their own emotional state" (1993: 1015). In other words, under fast-music, the customers can not pay any proper attention to both outside and inside information enough to process them. However, it should also be noted that the results of this study are contingent upon the presence/absence or intensity of other external, visual stimuli. So as long as they are congruent with the visual stimuli (i.e. slow music – low stimuli or fast music – high stimuli), the researchers argue, functional music can enhance attention irregardless of its tempo.

fact that the manner in which individuals perceive and behave in an environment is ultimately determined by these feelings of pleasure, arousal and dominance (see, for instance, Baker et al., 1994). That is, depending on their positioning in this emotional matrix, individuals may choose to engage in either two behaviors: *approach* or *avoidance* (Donovan & Rossiter, 1982: 39; Milliman, 1986: 286). In simple terms, if a certain individual perceives an environment as *pleasant*, he or she would be more likely to *approach* that environment (to explore more, to socially engage with others, etc.), whereas if an environment is conceived as *unpleasant,* that individual will become more likely to *avoid* it. Needless to say, functional music can be an important determinant in making an environment pleasurable (or unpleasant) and, thus, approachable (or avoidable) (see, for instance, Akhter, Reardon & Andrews, 1987; Tai & Fung, 1997). Therefore it is imperative for managements to pay special attention to the emotional implications of the music they are playing and "must manage [it] with the same rigor they bring to the management of product and service functionality" (Berry et al, 2002: 86).

In the course of our study, I have delineated three main functionalities through which post-industrial functional music can emotionally influence customers: *by maintaining customer mood and pleasure, through enhancing customer arousal,* and *alleviating customer boredom and frustration* – especially those associated with actual and perceived waiting times for a service.

3.4.2.1. Maintaining Customer Mood and Pleasure

In the preceding examination of the cognitive functions of post-industrial functional music, I have briefly touched upon the issue of how customer mood and emotions can be powerful mediators when it comes to product and service evaluations. Here I have underlined that music that is highly pleasurable and moderate in arousal has the best chance of eliciting more positive and favorable attitudes from customers to the servicescape. Previous studies have also shown that customers' mood *prior* to entering a store or a service interaction can be indicative of the ways they respond to products and employees as well as their

shopping behavior (Bitner, 1992: 65; Eagle, 1971; Goldberg & Gorn, 1987; Yalch & Spangenberg, 1990: 60). In addition to that, customer mood can also be a factor *during* the act of consumption. In this context, positive customer mood can create a positive desire for the products and other elements in the store, enhancing the likelihood of unplanned, impulsive consumption behavior by customers – i.e. purchasing goods they have no intention of, consuming more beverages, etc. (DeNora, 2000: 134-135; Sweeney & Wyber, 2002: 63). For instance, in an on-site study, Sherman, Mathur and Smith (1997) interviewed shoppers right after they made a purchase and found positive correlations between shoppers' reported mood at the time of transaction and how favorably they perceived the stores, the amount of items they have purchased and how much time they spend in the store. Given these promising results, it becomes incumbent upon store owners and service providers to create pleasant sales atmospheres that will (a) create positive moods and encourage browsers to engage in more approach behaviors (Donovan & Rossiter, 1982) and (b) ensure that they will consume and spend more money than they have planned on doing so. Functional music, then, can be a highly rewarding environmental resource for managers to carry out their organizational goals.

Another term that implies positive customer mood is customer *pleasure*, defined here as "the extent to which a shopper feels good in the store" (Sullivan, 2002: 324). One area in which functional music can help customers to "feel good" is reducing their levels of stress and anxiety. We have already seen how the use of functional music in servicescapes with an integral stress component (such as hospital) can provide a huge service in reducing stress levels of waiting patients and, hence, enhance their psychological well-being and emotional satisfaction (Tansik & Routhieaux, 1999; see also, Alvin, 1975; Bailey, 1985, Chetta, 1981; Edwards, 1985; Glynn, 1986; Prinsley, 1986; Stevens, 1991). Perhaps sedative and slow tempo musical selections (60 to 80 beats per minute) lacking "strong rhythmic and percussive elements" (Gaston, 1951: 43) might be of help in these contexts as they are proven to reduce anxiety and induce relaxation in listeners (Steelman, 1991; Tansik & Routhieaux, 1999: 77). The professed benefits of slow tempo music also apply to equally anxiety-inducing situations of waiting,

where it is found that, as opposed to fast music, slow tempo music can help relax waiting customers in both short- and long-term waits. (Oakes, 2003: 685).

More importantly, moods can directly influence the purchase intentions of customers. In the actual context of purchasing, sustaining a *congruity* between customer mood and the products on display is more consequential for the completion of a service transaction as opposed to the simple creation of positive moods to encourage approach behaviors. This was the conclusion reached by Alpert and Alpert (1990) at the end of an experiential research. In this study, they procured three samples of friendship greeting cards with differing emotional contents (happy, sad, and neutral), which were then presented to subjects with five happy (major mode) and five sad (minor mode) classical music pieces by J. S. Bach. The results of their experiment showed that, when sad music was playing in the background, the subjects became more inclined to purchase the "sad" card, with engraved messages like "missing you". In other words, "the sadder the person's mood [was], the more likely [they become] to purchase a card for a friend" (1990: 127). Here the perceived mood of functional music is expected to have a conditioning effect on customers, to make them more likely to select some products while disregarding others, as long as the mood expressed by functional music *matches* the mood of the customer at the time of purchase. Thus, the researchers argue,

> If [the] mood [of the music] is appropriate to the one which s/he feels when thinking about communicating with a friend who is away, then the subject may FEEL this card as appropriate in expressing feelings, even if the card itself is not consciously, cognitively processed as "happy" or "sad". When responses appear to be contingent upon stimulus-feeling associations, as in this instance, it may reflect a low-cognitive and peripheral processing situation. (ibid: 118)

Hence it is not always the feelings of *pleasure* aroused amongst customers that leads to managerially and organizationally sound outcomes. Sometimes negative moods and feelings too can generate desired effects *as long as they are in congruity with the product and service offered.* A feeling of melancholy spurred in customers may entice them to buy more greeting cards but it might not be as effective in different contexts, such as clothing stores or while buying groceries

– and especially in hospitals. Once again, then, the *musical fit* between organizational goals set by the service provider, the goods in offer and moods of customers becomes important in terms of determining consumption behaviors of customers.

3.4.2.2. Enhancing Customer Arousal

Taking their cues from Mehrabian and Russell's (1974) work, studies in the field of environmental psychology and marketing research often contrast customer pleasure with customer *arousal*, i.e. "the extent to which a shopper feels excited or stimulated" (Sullivan, 2002: 324). In effect, then, pleasure and arousal stands in exact opposite poles at the end of the same emotional spectrum. However, this does not imply that environments with high degrees of stimulation and excitement are always perceived negatively and, thus, avoided by customers. To the contrary, past research has consistently shown that arousal can be positively related with customers' willingness to buy (Baker et al., 1994) as well as to affiliate with the brand or service provider (Donovan & Rossiter, 1982). In other words, just as environments that elicit feelings of pleasantness and pleasure are considered more inviting and approachable than unpleasant ones, environments that are high in arousal are also viewed equally positive (i.e. "exciting"), that is, of course, unless the feeling of high stimulation and excitement is combined high levels of unpleasantness (Bitner, 1992; Mehrabian & Russell, 1974). Therefore, in order to encourage approach behaviors in customers rather than avoidance, managers need to pay close attention to the arousing capabilities of functional music while designing pleasantly appealing store and service atmospherics.

Given their binary positioning on the emotional spectrum, the feelings of pleasure and arousal are likewise constituted by different musical textures. Therefore, if soft music is often associated with and seen as a precondition for increased pleasure, then fast-tempo music is considered to be more arousing and, therefore, less pleasant (Garlin & Owen, 2006: 761; Sweeney & Wyber, 2002: 63). Often this extremely stimulating capacity of fast-tempo functional

music becomes a detriment for the commercial ambitions of servicers and retailers. We have seen, for instance, how, in complete contradistinction with soothing forms of functional music, music-induced arousal can significantly reduce information processing abilities of consumers, thus hampering their cognitive activities (Borling, 1981; Chebat et al., 2001; Smith & Morris, 1976). In addition, I have also briefly discussed how enhanced vigilance due to increased arousal engendered by familiar types of functional music can have a negative impact on consumer evaluations as it would only make consumers more discerning and detail-oriented when examining products and services they encountered (Yalch & Spangenberg, 2000: 145). In a similar vein, increased arousal is found to be negatively related to the actual time spent in a shopping environment (ibid: 139). This is, once again, explained by the stimulating capabilities of familiar music:

> Individuals who had a choice as to the duration of their shopping experience *shopped longer when listening to less familiar music* compared with more familiar music. This difference appeared attributable to differences in emotional responses to the two types of music. Individuals reported being *less aroused while listening to the unfamiliar music* compared with the familiar music (ibid: 144-145)

Taking in conjunction with the earlier discussions, the results of this study presents conflicting implications for managements. On the one hand, familiar music is understood to be a positive factor in enhancing customer mood and pleasure by rendering the environment more predictable and comfortable. However, as the above argument suggests, familiar music can also increase the vigilance and arousal of customers, thus resulting in less time spent in stores and more negative evaluations. This, once again, proves the importance of balancing arousal created by functional music with its pleasure effects. Ultimately, in order for functional music programming to be effective and managements to achieve desired results, these two musical components need to counteract one another.

An alternative way to conceptualize arousal might be the inducement and enhancement of *desire.* If functional music can be used for the purposes of stimulating and excitement of consumers, then it can also be used to channel

that excitement towards goods and products that customers had no prior intention of purchasing. Here the excitement is not just created for the sake of it, but it is excitement *for* something – a car, a diamond, shoes, etc. This manufacturing of desire amongst consumers is inextricably bound with the issue of using functional music for social control and manipulation (DeNora, 2000: 161-162). We have already seen, for instance, how the unpredictability of consumer behaviors on the marketplace can constitute a potential problem for rationalizing systems, whose overarching aim is to render every environment more efficient and predictable. Creation of desire for a particular product and ensuring consumer proclivity is one sure way for rationalized systems to make irrational and indeterminate customer behaviors more predictable and foreseeable. As Herron expounds, the uses of post-industrial functional music in the service of increased desire put it in the same footing with other marketing and advertisement tools:

> Good business requires a good market: people with money who are willing to spend it. But capitalists soon learned that waiting for the market to decide on its own what it wants to buy can be a chancey and not ideally profitable affair. It's far better to sell the need for something first, then when it comes to supplying that need, there are no surprises. [...] Style, fashion, novelty have replaced value, under capitalist media sponsorship, as the socially acceptable basis for consumer decisions. [And] that's what MUZAK [is] all about. (1981: 122)

3.4.2.3. Alleviation of Customer Boredom and Frustration

The third and final emotional function of post-industrial functional music can, in some aspects, be seen as a continuation or, at least, a newer application of its previous usages in areas of work to contexts of consumption. Just as the mere presence of background music was a source of joy and contentment for industrial workers, which helped dissipating the monotony and boredom of their repetitive work, the broadcasting of functional music in consumption and service environments can equally help dispelling the tediousness and frustration frequently encountered in retail and service environments (Kellaris & Mantel, 1996). This alleviation of customer boredom is, as we have seen,

interrelated with its cognitive functions, especially with regards to perceived waiting times (see *fun. 4.1.1.*; Oakes, 2003).

There are two possible explanations for this: the first of these suggest that when pleasant rather than unpleasant functional music is played, there will be less negative emotional reaction to waiting by customers (Hui et al., 1997). This interpretation is closely related to our earlier discussion of customer moods, which suggests that when customers are in a positive state of mind, their reactions to environment would also be positive. By the same token, an unpleasant and highly arousing music can lead to more irritated and dissatisfied customers during short waits (Oakes, 2003: 697-698), compelling them to leave earlier than expected. In short, if and when customers perceive the functional music as pleasant, they will become less likely to get frustrated while waiting in line.   An alternative explanation is the "boredom alleviation approach" (Sullivan, 2002: 330). This view posits that pleasant functional music can significantly reduce the boredom felt by an individual, which would cause that individual to devote less energy to monitoring the passage of time (Kellaris & Mantel, 1996). As a result, the perceived waiting time will become much shorter, thus resulting in a less negative emotional reaction to waiting. This more positive consideration of the waiting would, in return, may have an indirect effect on the amount of time spent by the customer in a service environment as well as his or her evaluations of the service encounter.

3.4.3. Behavioral Functions of Post-Industrial Functional Music

Perceptions and emotions engendered by post-industrial functional music ultimately find their meaning in the actual behaviors performed by consumers. As Kotler explains, "people walk around with many wants and buying intentions that don't materialize, until situational factors such as motivating atmospheres, tip the scale in favor of purchase" (1973: 54). That is, what retailers and service owners ultimately want to achieve, through manipulating the cognitive and emotional selves of individuals, is to affect the consumption behaviors of their visitors, so that they would spend more of their hard-earned cash with them

and, therefore, generate more revenues. Therefore, when functional music is used to distort the perceived estimates of customers while waiting or shopping or to enhance their moods and their derived pleasure from the service, there is purely one endgame: *more profits.* It is only natural for managers and service providers, then, to encourage in-store behaviors that will help them making more money, the *approach* behaviors, and discourage the ones that won't, the *avoidance* behaviors[98] (Donovan & Rossiter, 1982; Sullivan, 2002). In this context, I have identified *three* ways through which store and service owners can influence consumer behavior in commercially meaningful and rewarding ways: by making them *spend more time in the store through managing the in-store pace of customers*, by making them *purchase more goods*, and by *making them wait more in lines*. Once again, these potential consumer behaviors are not mutually exclusive but might be able to reinforce one another. For instance, staying longer in one servicescape, such as a restaurant, might actually cause patrons to consume and spend more on food and beverages (Herrington, 1996; Milliman, 1986; Sullivan, 2002).

Alongside with these behavioral outcomes, post-industrial functional music can also have some purely physiological effects upon consumers. At the most basic level, functional music played at full volume in stores may create a source of physical discomfort for browsers, which may eventually drive them away from the store (Bitner, 1992: 64). For instance, Smith and Curnow (1966) deduced after an eight-session musical experiment that customers spent significantly less time in supermarket during the loud sessions compared to those exposed to soft music in lower volumes. In the context of this study, an unpleasant, highly arousing music forced customers to leave the store earlier than anticipated. However, if functional music is perceived to be pleasurable and in congruent with the rest of the store space, then it might actually help customers to "fall in"

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[98] As one Muzak representative from Hartford, Connecticut describes:

> If you try to listen to our music for entertainment purposes, I can guarantee that you will not enjoy it… when you play entertainment music, you either like it or you don't. If you don't like it, then it's irritating and you probably leave the store. If you do like it and it's your song, then you might stand there and listen to it; you may forget what you came in the store for in the first place." (cited MacLeod, 1979: 23)

and have "brief body encounters" with the music without their active recognition and awareness:

> At the more workaday level of mundane movement, we observed in our ethnography of the retail scene a similar phenomenon that we came to term "brief body encounters with music". These were moments - sometimes of only a second's duration - where shoppers could be seen to "fall in" with the music's style and rhythm and where music was visibly profiling consumers' comportment, where it had an impact on the mundane choreography of in-store movement. Some of the "brief encounters" we witnessed consisted of snapping the fingers or nodding the head (to jazz), waving the hands, palms outwards (to show tunes), slowing movement, making it more fluid and putting the body in balletic postures and subtly raising the chin and head (to slow-paced, languorous music) (DeNora, 2000: 144).

3.4.3.1. Actual Time Spent in the Store and Managing the In-Store Traffic Flow

Functional music can be a strong determinant in terms of holding customers in and increasing the amount of time they spent in a store or a servicescape despite their initial intentions or considerations. Again, several musical elements can be utilized and manipulated to bring forth this particular outcome. As Smith and Curnow's abovementioned 1966 study indicates, *volume* is one of these elements. As they state, "if the store manager wishes to manipulate the number of persons in his store at any one time, he may do so by increasing or decreasing the volume of the music being played" (1966: 256). Functional music played at low volume levels rather than in full blast may create a more pleasant atmosphere, therefore indulging customers to spend more time (Garlin & Owen, 2006; Sullivan, 2002).

Tempo is another musical dimension that can be harnessed for increasing the time spent by customers in a store. Studies show that consumers spend marginally more time in a consumption environment when slow-tempo, as opposed to fast-tempo, functional music is played in the background (Alpert & Alpert, 1990; Garlin & Owen, 2006; Milliman, 1982). There may be two possible explanations for this: first, as highlighted earlier, slow-tempo music creates a

much more comfortable and relaxing environment within which customers would be more willing to stay or idle than usual. Or, alternatively, the music can be said to be physically entrenching customer bodies, modulating the pace of their movements. Here slow-tempo music is said to be causing an equally softer, more casual bodily movements by customers, therefore increasing the amount of time they are spending in a store or service space[99].

Liked and familiar music might also impact the in-store durations of shoppers. For instance, liked (i.e. pleasant) rather than disliked (i.e. unpleasant) functional music has been associated with longer consumption periods[100] (Caldwell & Hibbert, 2002; Holbrook & Anand, 1990). Similarly, Sullivan (2002) discerned that unpopular types of music would tend to decrease the duration of customer stay, even when compared with the total absence of music. On the other hand, when presented with popular forms of music, subjects stayed longer for an average of 36 minutes (2002: 327). The impact of *musical familiarity,* on the other hand, on the actual time spent by customers in store environments is still a matter of contention and disagreement in the literature. Building upon the earlier findings by Smith and Curnow (1966: 255), who established an inverse relationship between arousal and the amount of time spent, Yalch and Spangenberg argue that, less familiar forms of musical selections will lead to less aroused customers, who would, as a result, spend more time in a store (1990; 2000: 144-145). The findings of other studies contradict this conclusion. Garlin and Owen, for instance, report "more familiar music result[ing] in subjects staying marginally longer at a venue than if […] the music less familiar" (2006: 760).

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[99] Functional music's influence of diners' eating speeds, which we have already discussed, can lend some credibility to this presupposition (see, for instance, Milliman, 1986: 288).
[100] Wilson's 2003 study on the effects of functional music on perceived atmosphere and purchase intentions of restaurant patrons constitutes an interesting exception. As opposed to other studies, he found that broadcasting of classical music (which is generally categorized as more pleasant) had an adverse effect on time spent by customers at a restaurant, resulting in greater amount of people leaving the restaurant early in the evening. He attributes the counter-intuitive findings of his study to lack of musical fit as he explains that 53.3 percent of subjects considered classical music to be inappropriate and incongruent with restaurant's intended atmosphere (2003: 106).

3.4.3.2. Number of Sales and Purchases Made in the Store

Actual sales figures can be a valuable and strong indicator for assessing post-industrial functional music's behavioral implications. If its efficacy can be proven by demonstrating, in no uncertain way, its effects on purchasing behavior, in a language most managers would understand (i.e. financial returns and sales numbers[101]), then the use of post-industrial functional music can also become a huge incentive for retail and service owners who were not previously using the service. And there exists strong evidence that post-industrial functional music does, in fact, increase the number of sales made by stores and servicescapes. Milliman (1982), for instance, found a 38.2% increase in average sales volume when a supermarket played soft-tempo music (72 beats per minute or less) rather than fast-tempo music (94 beats per minute or more). He attributed the results to functional music's physiological effects, suggesting that, with gentler tempos of functional music "customers move more slowly through the store [and] they tend to buy more. Conversely, as customers move more quickly through the store, they tend to purchase less" (1982: 90). An in-house research conducted by MUZAK Company at two different grocery stores similarly reported higher sales per customer when their own programming was broadcasted compared with treatments of radio music, environmental music and no music (Ware & Patrick, 1984). These findings were later confirmed in another study by Milliman, this time tested in a restaurant setting. In this study (1986), he found that slow-tempo music not only be a factor in encouraging patrons to drink more alcoholic beverages, but also in significantly increasing the average gross from 48.62$ under fast-tempo music treatment to 55.82$ - a difference of 7.2$. For Wilson (2003), it was not musical tempo *per se*, but the musical style that led to a similar outcome. He retained that when more upbeat and "upmarket" styles of music were being played, as opposed to languid tunes of classical music, individuals consumed more drinks and, hence, spent more

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[101] As Ritzer notes, *calculabity* (i.e. the emphasis on quantity rather than quality) is one of the most defining characteristics of a rationalizing society (1983: 103). This centrality of calculability may account fort he emphasis put on production numbers by industrial employers as well as on sales numbers by retail managements, thus further highlighting the importance of functional music in attaining them.

money on alcoholic drinks (2003: 106). Lammers (2003) also found slow-tempo music to be influential in generating higher amounts of purchase and a larger tab at an oceanside restaurant.

In their own experimental study, Smith and Curnow (1966) not only reached the counter-intuitive conclusion that an increase in musical loudness will not affect total sales but, more importantly, found rate of spending to be greater in loud music sessions for about 55.6 versus 53.0 cents per person-minute (1966: 255). This is all the more interesting considering the fact that shoppers spent significantly less amount of time at stores when the music was louder. Thus, despite spending less time at a store, customers spent more money when exposed to loud music. Their results also indicated no differences for customer satisfaction for both soft and loud music treatments, implying that high volume music did not engender avoidance behaviors among shoppers. However, when the same musical conditions applied at a restaurant, it did not generate the same outcomes. Sullivan (2002), found lower volume level to be a more important determinant than musical style or tempo when it comes to increasing customers' levels of expenditure on food and drinks. He recommended aspiring restaurant owners to play slow popular music at a low volume as this type of music would be more likely to "increase the expenditure of patrons due to the pleasure and approach behavior induced by the typical environment" (2002: 330).

3.4.3.3. Actual Waiting Times of Customers

In a previous section (*fun. 4.1.1*), we have established how post-industrial functional can manipulate the *perceived* waiting estimates of individuals. During that discussion we have emphasized how, depending on its elements, functional music can make time *seem* to pass much faster or slower. Yet, when it comes to the issue of influencing customer waiting times, the potentialities of post-industrial functional music well extend beyond its cognitive abilities. Functional music, it has been argued, can also influence the *actual* waiting times of consumers (Stratton, 1992; Ramos, 1993). For instance, Milliman (1986)

identified a positive relationship between musical tempo and *actual* waiting times of customers over an eight-day experiment period. His results suggested that, the average waiting time of 47 minutes in slow-tempo condition for each company to be seated was significantly decreased to an average of 34 minutes when switched to a fast-tempo musical stimuli (1986: 88). Although he does not further elaborate on the potential reasons for this drastic change, it is highly likely that customers' dining speed increased drastically as functional music became faster, opening up new tables for waiting customers to be seated.

In another study, North, Hargreaves and McKendrick (1999b) investigated the effects of on-hold music on the waiting times of callers. Subjects who called the special number reserved for this experiment were promptly greeted with one of three conditions: the callers in the first group were given 45-second excerpts of original Beatles songs, the second group received the panpipe renditions of the same songs while the final group only heard a message that indicated line is busy without a musical accompaniment. The results of their study indicate that callers who have heard music while waiting (the first two groups) had a more positive emotional response to waiting and therefore stayed on the line more than customers who didn't hear any music. Moreover, although the original Beatles songs scored the highest ratings of liking, panpipe rearrangements were deemed more "fitting" to the context and, therefore, led to the longest waiting times (1999b: 163). The overall conclusion seems to imply that, when customers perceive musical stimuli to be *fitting* (in the context of this study, background music is considered more appropriate than foreground music), they would be more willing to wait on the telephone.

CHAPTER 4. DIGITAL FUNCTIONAL MUSIC

4.1. Introduction

In 2011, after two years it has first filed for bankruptcy (Duke, 2009), the Muzak Company, which has been the stalwart and pioneer of background music industry throughout the twenty-first century, has been acquired by an Ontario-based company, aptly titled *Mood Media,* for a deal that has purportedly cost 305 million dollars (Das, 2011; see, also, Anderson, 2015: 812). Mood Media Corporation's chokehold on the functional music market has been solidified and consolidated a year later with their purchase of Muzak's one-time competitor DMX Inc., this time for a relatively modest fee of 86.1 million dollars (Sterescu, 2011; see, also, Kassabian, 2013: 85). The back-to-back acquisitions of two of functional music's most prominent purveyors means that Mood Media has now become the world's largest provider of traditional functional music programming, delivering custom-made foreground as well as on-hold music to retail stores all over the globe. While companies such as Mood Media are still keeping the initial vision of Muzak alive by designing functional music that would "build stronger brand associations and connect with customers on a more personal and emotional level"[102], the nature of audiences and their listening habits, to which earlier Muzak programmers were accustomed, have been drastically altered in recent years. Today, as a result of the proliferation of mobile music listening media and the overall "technologization of life" (Lash, 2007: 70), much of the functional music we encounter does not take place in public spaces and in the presence of others, but instead it is experienced privately and while on the move via the smartphones and digital music streaming applications of users. According to the recent "State of the Industry"

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[102] https://us.moodmedia.com/sound/custom-music-business/

report published by International Federation of the Phonographic Industry (IFPI), for instance, in 2018 the revenues generated by digital music streaming accounted for almost half (47%) of the entire global music revenue, with 255 million active users streaming music daily on one of more than 400 online music services[103] (Hagen, 2015a). In countries such as Norway, by 2014 seven out of ten Internet users had access to and were frequently using either Spotify or WiMP (Tidal) streaming services (Kjus, 2018: 10). Such dramatic rises in the number of people streaming music online and the overall changes taken place in the nature of our musical experiences are indicative of a new type of functional music, which I will term as "digital functional music" (hereafter DFM).

The aim of this chapter is to situate the most recent forms and practices of music listening via digital streaming services into the general framework of the history and evolution of functional music. But before proceeding with our discussion on the characteristics and functions of DFM, it is important to address the three important paradigm shifts that occurred as a result of music's transition into the digital plane, which, as the argument goes, had a profound impact upon the ways functional music is conceived and experienced by users of digital technologies. These three shifts include: *(i)* the transformation of musical object from a *physical* to a *virtual* one; *(ii)* the changes in the modes of collecting music from models based on *ownership* to that of *access*; and (iii) the nature of musical experience moving from *homogenous* and *static* forms towards *fluid* ones allowing more *flexibility* and *elasticity* on behalf of users. I argue that, in addition to completely transforming the manner through which functional music is produced and consumed, these technological and cultural developments have opened new avenues for power and control to be exercised in the digital period, while simultaneously providing users the tools to resist such forms of technical domination. Therefore, in order to have a better grasp of the social and political implications of DFM, we will first need to have a closer look at the overall changes brought forth by digital music technologies.

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[103] https://www.ifpi.org/news/IFPI-GLOBAL-MUSIC-REPORT-2019

4.2. Paradigm Shifts in Digital Music Listening

4.2.1. From Physical to Virtual: Music Moving Into "the Cloud"

The period leading up to the end of the millennium constituted a watershed moment for the future of recording music industry as it witnessed considerable advancements and achievements in digital information and communication technologies in general, and digitalization and miniaturization of musical recordings in particular (Leijonhufvud, 2018). These technical developments, on the one hand, held exciting potentials and promises for the future of musical production and consumption. In 1989, for instance, the Fraunhofer Institute in Germany was granted a patent for their MP3 compression technology (Wikström, 2009), which enabled the codification and conversion of audio materials into digital files that can, then, be conveniently stored on computers and hard drives. Through discarding or masking any extraneous or "inessential" information in a musical recording, i.e. those range of frequencies that cannot perceived by human ear, through a process called perceptual coding (Sterne, 2012), the MP3 compression technology is able to reduce, or *miniaturize* (Beer, 2008: 73; Bull, 2007: 2-3), a music material up to a tenth of its original size (Leijonhufvud, 2018: 69-72). The technology of lossy-digital data compression, then, can take a tangible object (like a vinyl record or a cassette) and transform its musical content into *intangible* and *immaterial* digital files, which, then, can be uploaded on the Internet and become accessible to virtually anyone with a bandwidth connection[104]. Relinquished from its material constraints, music could now move between individuals and networks with a much greater velocity than ever before and, having been significantly reduced in size, could also be easily stored in a virtual "Cloud" – that is, "the large hubs and data centers comprised of networked servers that are connected to the Internet" (Hagen, 2015a: 13).

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[104] It is vital to remember that this is not an absolute change but a *possibility* and potentiality brought about by digital media. Users still need material hardwares (such as computers, external disks, etc.) to store and keep these intangible files.

Digitalization of music and its subsequent transferring into a virtual Cloud had basically two serious ramifications for the music economy. *First*, the untethering of ties between musical objects and physical units (Edwards, 2015: 9) necessitated a complete reconfiguration and reorganization of music industry, which has always traditionally been dependent on promoting and selling of material products. As Wikström explains, "in the old music economy, the content (music) and the medium (disk) were inseparable, and the music industry clearly was an industry of physical goods" (2009: 6). The advent of virtual digital media, such as MP3s, clearly disrupted this entire system and, to a great extent, replaced it with an intangible one that made "more music more available" (Hagen, 2015a: 15) for audiences. This sheer *abundance* and *availability* of music put traditional gatekeepers and mediators, who were accustomed to have a certain degree of control upon the means of musical distribution, in a more precarious and uncertain ground:

> In the old music economy, the network constituted by music companies and the audience had a relatively low level of connectivity. Basically, there were strong connections from the music firms to the audience, but only weak connections between the members of the audience. [...] In the new music economy, the importance of physical music distribution and mass media has been radically reduced, while the importance of Internet media has exploded. These new communication technologies have an entirely different structure from the previous hierarchical media. The technologies lower the barriers which previously have restricted the capability to distribute information to the network, i.e. the capability to upload information to the Cloud. Now, the capability to upload is theoretically accessible to everyone connected to the network. (Wikström, 2009: 5)

This process of *disintermediation* brought about by the digitalization of musical media indicated a redistribution of power "from industrial producers to artists or small-scale producers" and to users themselves, as it enabled the establishment of "more direct link[s] between the producer (or artist) and the consumer of music, thus bypassing intermediaries such as retailers, distributors or record labels, on whose services artists or record producers have been dependent to get their music to a mass audience" (Kaitajarvi-Tiekso, 2016). In the context of DFM, these structural changes in the music industry meant the replacement of traditional gatekeepers and intermediaries with new agents and

actors, which, as we shall see later on, had a profound impact upon how functional music is produced and consumed within digital services.

Second, from audiences' point of view, having music on an Internet-based, digital Cloud storage system indicated a reconfiguration of the ways individuals interacted with and experienced music online (Beer, 2008). In the unit-oriented system of traditional music economy (Wallach cited in King, 2012) listeners usually bought and collected material units and organized by showcasing them in a personal library or archive. However, in the *consumption-based* system promulgated by new media (ibid; see, also, Marshall, 2015), users do not necessarily *own* music items but they *access* or *stream* them in real time from networked servers that are hosting vast quantities of musical content (Hagen, 2015a; Hargreaves & North, 1999: 72). This transition from *ownership towards access* is the second most fundamental paradigm shift caused by digital media technologies, and it is to that we now turn our attention to.

4.2.2. From Ownership to Access: Music Streaming as a Service

Writing on the sensibilities of being a book collector in *Unpacking My Library,* Walter Benjamin highlights the notion of *ownership* as "the most intimate relationship that one can have to objects" (1968: 67). From this perspective, possessing and accumulating cultural materials and, thereby, claiming sole ownership over them becomes tightly entangled with notions and ideals of identity. That is, by revealing and disclosing glimpses of our selves, personal libraries of cultural collections act as markers and representations of individual identity and material biography – they tell something about us and, through their intimate tale, we become "alive" in them (ibid; see also; Beer, 2008: 75-76). But how can we conceive of *ownership,* the way Benjamin so eloquently prompted us to do, in an era when cultural objects are constantly being stripped away from their material existence and indiscriminately cast upon a virtual terrain? Does the concepts of *ownership* and *collection* still retain their analytic validity in terms of defining listeners' interaction with musical objects or do we

need new conceptual tools to help us understand musical experience in the digital age?

The central argument raised here is that, despite strong indications suggesting a continuation of pre-digital practices of individual ownership and collecting on the digital space[105] (Hagen, 2015b, McCourt, 2005; Nag, 2018), musical experience today is predominantly shaped by having *access* to vast musical archives on the Internet, and by *streaming services* who provide said access to users with or without charging a nominal fee. In other words, rather than downloading or purchasing individual units (like songs or albums), contemporary listeners prefer to stream music in real-time without necessarily making or having a copy of the streamed content[106] (David, 2016: 55). The verb *streaming* here refers to the interactive process whereby a stored content (whether music, book, video, etc.) in the Cloud is delivered to users as a continuous stream of data (Hagen, 2016: 228). Streaming, therefore, is entirely different from *downloading*, which lets the users *own* and store the entire content as a separate file. As opposed to traditional models, then, in an access-based music economy, users do not primarily act as *collectors* or *owners* of musical objects, but rather *renters* (Hagen, 2015b: 626; Marshall, 2015: 179), or, perhaps more accurately, *subscribers* of digital content[107]. *Collecting* material objects, in the sense of Benjamin's use of the word, has become a sort of anomaly (Åker, 2017; Marshall, 2014) in the period of digital and virtual media where users can now gain unprecedented levels of access to vast online musical

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[105] As Tarleton Gillespie claims, "questions of ownership of music in the financial sense are tangled with, and thus have to deal with, a sense of ownership of music in other senses, i.e. cultural ownership. This is deeply part of what record collectors and fans are about, and also very much what shared playlists is about – this is 'my' music." (cited in Burkart, 2008: 249).

[106] While it is true that with the abilities unlocked by streaming technologies users do not have to privately possess a copy of the musical items, they can still "collect" and retain the digital records of their streaming events, which is essential to build an online profile (see, for instance, Karakayalı et al., 2018: 12-14).

[107] According to Eriksson, Fleischer, Johansson, Snickars and Vonderau (2019), this movement towards subscription-based models is a very novel turn in digital music media, which, until recently, was still dominated by a mindset predisposed towards accumulating and storing content. As they point out, even when Spotify was first founded in 2006, the digital culture was a "storage culture" rather than a "streaming culture", which could be evinced from the gradual increase of the storage capacities of Apple iPod's from 2001 onwards – from a capacity of mere 5 GB in early models to 160 GB in later ones (2019: 40-41).

archives where there is no scarcity of new content to be found. Therefore, according to Hagen,

> In comparing music-streaming practices with earlier ideals for music collecting [...] one immediately encounters the dilemma that digital formats and streaming services make it impossible to "collect" music as such because the format offers music through subscription rather than ownership. Symbolic substitutes for physical collections must then arise through software interfaces designed to enable (or restrict) access to music and other cultural objects encoded in digital formats. These interfaces require us to cede control to technology in a way that in turn offends the music collector's sensibility: "The controlled life of the music user within the digital enclosure seems incommensurable with the empowered music user who went to record stores and bought, sold, traded, and collected CDs, LPs, and cassettes, who retained the rights of first sale with which to build a collection." (2015b: 627-628)

Whereas ownership, then, has connotations of permanency and finality, *access* is always provisional and *temporary*. As Leijonhufvud captures in a brilliant analogy, "*access,* compared to *ownership*, could resemble a library compared to a store. At a public library, goods are accessed and borrowed whereas at the store the good must be purchased" (2018: 111-112, *italics in original*)[108]. The replacement of ownership with *access* opens up a brand new conceptualization of music, "music as a service" (Wikström, 2009: 104), where users do not directly pay for musical products but, instead, the services that host them. The economic conventions based on ownership and access are, therefore, quite antithetical to each other:

> For a streaming service, the goal is not to sell individual records but to make it feel worthwhile to pay a monthly subscription fee (or accept advertising interruptions, which Spotify's free version entails). While CD sales depended on the occasional purchase decision of the visiting customer, that is, the business model of a streaming service relies on continues use and long-term engagement. (Kjus, 2018: 140; see also, Kjus, 2016)

Following Kjus' remarks, we can argue that what is at stake in access-based models is not the quality of the musical offerings streaming platforms have in their archives but *the service* they provides to their users, i.e. whether their

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[108] It is no coincidence, therefore, that digital streaming services are often labeled "online music libraries" while, in contrast, content delivery systems still based on ownership models, such as iTunes, continue to define and identify themselves as "stores" instead.

musical databases are current and up to date, whether they have Premium features (if not, how much advertisement they broadcast between songs), whether their interface is easy to use (i.e. user friendly), or whether their recommendations are novel and relevant (Celma, 2010) for the listener, and etc. In a digital environment where almost any recorded music is "virtually" available for anyone, users will only become "willing to pay for services which help them navigate through the vast amounts of information" (Wikström, 2009: 7) and connect them with music they like. In short, in the world of *access* and *streaming*, the meaning-creation value of musical experience has shifted from the objects themselves to the ways they are *delivered* to the user by different *services*: "The disappearance of hard goods, in the form of physical recordings, heightens the transition from a world of cultural goods to a world of cultural services. The result is that 'value' is not an inherent character of the product, but the manner in which it reaches the consumer" (McCourt, 2005: 251; see, also, Kibby, 2009; Nag, 2018). With the advent of digital streaming systems, that is, music's meaning-making and experience-creating capabilities have moved from the *content* of the musical product to the *context* of its delivery.

4.2.3. From Constancy to Fluidity

The last paradigm shift entailed by digitalization of musical media concerns the shift from constancy of musical experience to states of *fluidity* (McCourt, 2005). The notion of fluidity can refer to two separate but inter-related processes with regards to digital music media: (i) fluidity may refer to the constant changes taking place in the interface designs of different streaming services and (ii) it may indicate the ever-growing increase of personalized and context-sensitive forms of music listening in the digital age (Kjus, 2018: 155). While the former attribute tackles the more technical issues of software infrastructures, the latter deals exclusively with the nature of musical experience in the digital landscape and conceives "digital music as something processual, porous, entangled, and dynamic" (Eriksson, 2016: 7). All in all, the concept of fluidity helps us understand the *flexible* nature of digital music streaming services and how these

services afford and invite users to actively take part in creating (or curating) personalized content that would suit their listening or psychological contexts.

With regards to first conceptualization, several scholars have already observed how digital services do not have constant or "fixed" software interfaces but, rather, *dynamic* ones that constantly change as new information becomes available (Eriksson & Johansson, 2017; Eriksson, Fleischer, Johansson, Snickars & Vonderau, 2019; Hagen, 2015b, 2016; Leijonhufvud, 2018). This information may come from outside, like a new album release or new content being added to the database, but may also be generated as a result of users' interactions with the system, like recommendations of new content appearing on the homepage. The interface may also change depending on the device being used: the users of mobile and desktop devices won't see identical content even if they display the same page. Similarly, streaming service interfaces may change over time, the content that was featured in the morning may be absent during the afternoon or evening.[109] Finally, even the songs displayed on streaming services can be conceived as *fluid,* since they can also magically appear or disappear depending on the arrangements made with record companies that supply the copyrighted content from their own catalogues[110]. The underlying idea here is that, whether they change for temporal, technical, business-related or personal reasons, digital streaming services are "unstable" technological constructs that are always "in flux" (Hagen, 2015a: 45) and "a constantly evolving state of becoming" (Leijonhufvud, 2018: 32, 202)[111].

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[109] In the context of Spotify's Featured Playlists, through which the service continuously offers new editorially-curated playlists depending on the time of the day, the authors explain the "fluidity" of Spotify interface with the notion of "real-time", i.e. a concept used "to describe media characterized by fresh, dynamic or continuously processed content" (Weltevrede, Helmond & Gerlitz cited in Eriksson & Johansson, 2017: 73). According to Eriksson and Johansson, the construction of "realtimeness" imbues these digital forms of content delivery with a fresh and updated feeling that conforms to their open and participatory natures.
[110] One rather extreme example for this is the incident aptly titled "Swiftgate", which ensued in late 2014 following the globally-acclaimed artist Taylor Swift's decision to pull off her entire music catalogue from Spotify as a protest against the incredibly low amount of royalties paid by the service to artists. At the time Spotify was paying somewhere between $0.006 to $0.0084 per each stream (see, for instance, Collins & O'Grady, 2016; David, 2016; Marshall, 2015)
[111] In her own study on Spotify, Susanne Leijonhufvud, borrowing Bauman's (2000) concept, describes music streaming services as *liquid* technologies to underscore their volatile and dynamic characteristics. She relates a story about two Spotify employees in a Meetup she attended, where they boldly proclaimed "by the time you read this, things have already changed" (2018: 32).

Digital streaming services can also be said to embrace notions of *fluidity* and *flexibility* with regards to being able to offering their users ephemeral and context-sensitive musical experiences (Anderson, 2015: 819; Hagen, 2016). As Nowak and Whelan explain, "digital musics move around networks, and people do things with them, are affected by them and use them actively in an improbably wide and locally embedded range of ways" (2016: 128). Having the virtual world of music available to them, users can "actively take part in shaping their experiences", seamlessly switching between songs on a whim or creating musical lists that would correspond to their moods or current activities:

> Users test, share, curate, sneak-peek, plan, explore and improvise as part of their everyday music management. As a *user-generated experience,* then, music streaming also involves emotional, cognitive, psychological and physical processes. Put differently, what the streaming format is, invites, implies, and insists upon, depends on *active* users who are willing to embrace and develop their personal practices, experience and sense making as part of their user experience. (Hagen, 2015a: 12)

Unlike previous modes of musical delivery that came with a designated and pre-packaged order of songs in an album format, users of digital streaming technologies can change, rearrange, pick, skip, delete or replay songs and playlists in various ways, as the moment or situation dictates it. In other words, while old musical media can be considered as "frozen", due to the fact that they do not allow any user input in their production and consumption, digital streaming services are more user- and context-oriented in the sense that they let users decide and choose what songs to play in which order. In other words, the fluid and flexible nature of the software infrastructure affords users a much greater room for *maneuver* (Nag, 2018: 26), thus rendering context- and moment-sensitive musical experiences possible. In accordance with Manovich's observation that contemporary digital media, including softwares, are "explicitly designed to be customized by users" (2009: 323); the digital streaming services offer dynamic memories (Ernst, 2013), which can be bent and shaped according to the user's will.

In this section I have tried to demonstrate that musical experience in digital media is to a great extent defined and shaped by three inter-dependent *movements*, which are (i) the movement of musical objects from *physical to virtual*; (ii) the movement of musical accumulation from collecting and *ownership to access and streaming* and; (iii) the movement from *constant* and *solid forms of musical experience to fluid and flexible* modes. In the remainder of this chapter, my intention is to connect the previous discussion on changes in digital music media to the broader narrative of functional music. I argue that these three paradigmatic shifts had a profound impact upon the characteristics and functions of DFM, as well as the ways in which functional music is being produced and consumed in the digital space. In the following pages, I put forth two distinctive attributes of DFM that distinguishes it from "Muzak" of industrial and post-industrial periods. These characteristics are: (i) DFM as not programmed but *algorithmic* music and; (ii) DFM as not massifying but *individualistic,* or *user-centric,* form of experience.

4.3. Characteristics of DFM

4.3.1. DFM as Algorithmic Music

The first defining characteristic that separates DFM from its predecessors is that it is not programmed by human experts and specialists, but instead produced by algorithmic technologies. In our discussion of modern functional music, we have seen how industrial psychologists and other scientific experts, through their collaboration with factory managements, came up with a scientific programming technique called *Stimulus Progression Curve* (SPC), which, through gradually increasing the musical tempo and brightness in fifteen-minute intervals, believed to stimulate workers in repetitive jobs to make them more efficient and productive in their tasks. Similarly, we have discussed in detail how functional music programmers abandoned SPC and instead turned to a new programming technique called *Quantum Modulation* (QM) as the implementation of functional music growingly shifted in the post-modern

period from the regulation and rationalization of industrial production to audio architecture and designing of retail atmospherics in an effort to stimulate and increase consumption practices. Despite their differences in aims and techniques however, in both industrial and post-industrial forms of functional music it was always only human experts and specialists who had the entire control of musical programming.

In DFM, on the other hand, we see instances of an "algorithmic turn" (Uricchio, 2011) where the control and autonomy previously enjoyed by humans in the production of functional music are, instead, being more and more delegated to computational decision-making processes. However, this shift in production techniques of functional music should not imply a total disappearance or exemption of humans from the creative process of DFM (Popper, 2015). As Morris explains, "music's digital format has made it infinitely analyzable and quantifiable in ways that make it increasingly amenable to algorithmic exploitation, but for almost all current music recommendation services, humans and machines work together during intermediation; services like Spotify[112], Beats and Pandora simply play up the ratio differently in their quests for distinction and differentiation" (2015: 456). Despite to some extent being a hybrid process of human-machine interaction (Beer, 2013; Crang & Graham, 2007: 792), what we are witnessing in contemporary digital media and DFM is the gradual disappearance and diminishing capacity of previous gatekeepers and emergence of new agents in their stead in the form of computerized codes and other computational techniques (Striphas, 2015). Although human agents still retain some of their authority (Gillespie, 2014: 175; Mackenzie, 2006), especially with regards to computer engineers and programmers designing

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[112] In a column written for *Wired* magazine, David Pierce (2015) claims that treating humans and machines as two ontologically-separate fields in digital music production would be wrong, especially with regards to the Spotify context. He argues,

> It's easy, but incorrect, to dump these approaches into two buckets: humans and machines. If you do so, you'll piss off everyone at Spotify, another of the implicit targets of Apple's "people are better" campaign for Apple Music. At Spotify, the team says, they're most interested in learning how to perfectly blend man and machine. That's the only way to get to the real goal: to build better playlists by any means necessary.

these algorithms as well as the editorial staffs of streaming services who are curating much of the DFM playlists, today the majority of DFM being heard or consumed by users is the result of the technical operations performed by these smart algorithms and our continuous engagement with them.

In the preceding section, I have alluded to the fact that due to the transposition of physical objects into the seemingly infinite virtual space, we have now an unprecedented wealth of information and musical selections available to us that simply was not for the previous generations of listeners. As contemporary audiences we live in an era defined by the "economics of abundance" (Anderson, 2006; Jennings, 2007), where we instinctively know that the content we are looking for is located somewhere within that digital space, though we might not know or be sure of *how* to procure that information. The amount of information available is so massive that even during times when we know what exactly we are looking for, the content we are after may elude us, remaining hidden and obscured among heaps of other unrelated data. One major downside of having everything available – at least in theory –, then, is that it is not humanly viable to sift through every existing information in the digital space. Unlike analogue archives, like a telephone directory or a library catalogue, where people can go over each item individually, the totality of digital content on the Internet is not entirely over-viewable for users (Leijonhufvud, 2018: 213).

Thus, the question becomes, how does one go about and manage to find what he or she is seeking for when confronted with such an exorbitant amount of data over the web? How do we, as users, encounter, discover and interact with musical objects in the Cloud? In the following discussion, I will argue that, by addressing the critical issue of navigating through the information overload online, *smart algorithms* – along with the streaming services and recommendation engines powered by them – have become the primary source for all music-related experiences of users of digital media. By dealing with the problems *of excess* of information and *access* to content*, these computational processes define, shape and determine how we engage with functional music on the Internet, and how, in return, we are shaped and defined by them. But before

moving on to the question of *how,* we first need to address *what* exactly these algorithms are?

4.3.1.1. The Digital Production of Musical Knowledge: Algorithms and Recommendation Engines as Cultural Intermediaries

In the most simplistic sense, algorithms refer to encoded mathematical "procedures for transforming input data into a desired output, based on specific calculations" (Gillespie, 2014: 167). In other words, algorithms are data-driven *problem-solving mechanisms* that take a query inserted into the system by a particular user and generate results most relevant to that query in the swiftest fashion possible. Algorithms, therefore, are not merely a few lines of code hidden behind a software interface (Mackenzie, 2006) but, rather, "codes with consequences" (Gillespie, 2014: 192), or "consequential actors" (Ziewitz, 2016: 5), that simultaneously act both as gatekeepers of information and *producers* of new knowledge. According to Gillespie, through determining the parameters of finding and collecting information in the virtual space, an algorithm "represents a particular *knowledge logic*, one built on specific presumptions about what a knowledge is and how one should identify its most relevant components" (2014: 168, *italics in original*). That is, working "behind the screens", algorithms select, filter, sort, organize, classify, discard, include, exclude and hierarchize cultural knowledge in different datasets in automated and, allegedly, "objective" ways before presenting and recommending them to us as the best and most relevant amongst all the available options. Thus, what algorithms do is that they define the conditions of possibilities for the production and consumption of knowledge online since it is these computerized processes that decide what cultural information to display in which order (Frere-Jones, 2010). It is precisely in this capacity that algorithms become "arbiters of culture" (Hallinan & Striphas, 2016: 131), where humans no longer hold the exclusive rights of being the sole producers, curators, arbiters or interpreters of cultural information (Striphas, 2015: 400).

In the more specific context of DFM, the growth in the importance of algorithms as well as the amount of responsibilities delegated to them by human experts in knowledge-production and culture-formation meant an equal growth in the significance of music recommendation engines and streaming services that heavily rely on these algorithms. These content delivery systems require algorithms to sort through and make sense of all the potential information in the "dataverse" (Bowker, 2013) to come up with the most relevant and personalized music recommendations. Previously, the cultural act of recommending music was primarily a social and "editorial" one – it was either done by one's close acquaintances or self-proclaimed experts like record shop owners/employees or editors and critics of magazines. But now that virtualization and miniaturization of audio materials resulted in a sheer abundance of musical objects available online, algorithmically-powered softwares has taken the helm in musical recommendation and helping individuals discover new musical content (Jennings, 2007: 83-84) [113][114].

[113] However, as our discussion on the social aspects of online functional music services will demonstrate (see 4.3.2), musical discovery and recommendation is not entirely at the prerogative of algorithms as humans are still able to freely share and inform other users about new musical findings.

[114] One curious example regarding this shift from social to algorithmic music recommendation involves WiMP (now Tidal), a Norwegian-based streaming service. Launched in 2010, the streaming service WiMP's ("Wireless Music Player") roots stretch back to an actual brick-and-mortar store called *Platekompaniet* – a national retail music chain which was founded in Oslo in 1992 and enjoyed an overwhelming local popularity in Norway throughout the pre-digital era. The virtualization movement of musical products forced the company in 2009 to open an iTunes-like online shop, named WiMP, for selling mp3 files, but they soon decided to switch to a streaming-service model after witnessing the global success of Spotify. However, what separated WiMP from its counterparts was the fact that, despite moving from a brick-and-mortar record store to a digital music-streaming service, the company still made full use of the knowledge and expertise of their clerks instead of entirely relying on algorithms. These clerks, who were recruited after a "rigorous quizzing regarding up-to-the-minute musical knowledge" (Kjus, 2018: 125), especially with regards to local bands, now constituted the core of editorial groups that recommended new albums and curated playlists on the service. In that sense, WiMP presents an interesting case with regards to the continuation of pre-digital forms of musical recommendation and discovery in an age dominated by algorithms and other computational techniques. As Kjus explains,

> A recurrent principle underpinning their [WiMP's] strategies for presenting music online was that there had to be "someone behind the counter," according to Sveinung Rindal. He led what became known as WiMP's "editorial group," which decided on every track that was featured on the front page of the service's website, and on its growing number of editorial subpages. WiMP therefore offered a curated alternative to Spotify, which was based to a greater extent on automated and algorithm-based recommendations. While WiMP also included a set of automated pointers to "similar artists," its human touch was considered to be a competitive asset. (2018: 127)

As a consequence, today we see a proliferation in the number of new agents[115] who are becoming more and more influential in terms of affecting and determining the circulation of cultural goods, thus, in effect, acting as key *cultural intermediaries* in today's digitally-embedded societies (Morris, 2015). According to Bourdieu (1984), cultural intermediaries refer to a specific set of actors, generally belonging to the social and economic cast of petite bourgeoisie, who possess and wield an exceptional authority when it comes to shaping and framing the parameters individuals and different market actors engage with cultural goods (Fairchild, 2014; Maguire & Matthews, 2012). As Jeremy Wade Morris elaborates, "intermediaries, then, are contextually specific actors who are involved in framing the interactions between cultural goods and those who encounter them, [...] by virtue of the cultural legitimacy they accrue" (2015: 449). These intermediaries include occupational professions such as "the producers of cultural programs on TV and radio or the critics of 'quality' newspapers and magazines and all the writer-journalists and journalist-writers" (Bourdieu, 1984: 325). The work conducted by these cultural intermediaries resemble the operations undertaken by, what Hirsch (1970) calls, "pre-selection systems" set up in various recording and copyright industries. As Hirsch explains, the occupational members of a pre-selection system have to be able to "predict accurately which of the items produced will pass successfully through each stage of the complex filter" (1970: 5). They were, in other words, gatekeepers that facilitated the audiences' decision-making activities by reducing and eliminating the number of available products on the market (Wikström, 2009: 22).[116]

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[115] According to the *International Federation of Phonographic Industry* (IFPI) data, there were about 400 licensed online music services, originating in over 150 territories internationally (IFPI, 2015)

[116] In his book, *The Music Industry: Music in the Cloud,* Patrik Wikström details the stages of filtering and pre-selecting that takes place in record industries. According to his analysis, any aspiring artists has to go from at least for different checkpoints, where each time they were evaluated by a different gatekeeper (A&R agents, record companies, promoters and distributors and, radio stations and other media outlets) before reaching to the general public. He concludes that, it is only after this grueling ordeal that "eventually one artist 'in a million' will be heard by the mainstream audience on commercial radio stations" (2009: 55). While these filtering systems are still to a large extent intact, they are either "transformed" (Jennings, 2007: 197) or replaced by other mediators and aggregators as a result of the new algorithmic intermediation systems.

Such pre-digital networks of editorial and cultural intermediaries have not disappeared altogether, yet, the cultural authority they previously enjoyed as the sole gatekeepers of cultural information has to a great extent diminished as a result of algorithmic techniques. As Celma explains, "in the brick-and-mortar era, the market pre-filtered those products with lower probability of being bought by people. [...] Nowadays, with the unlimited shelf space, there is no need to pre-filter any product. Instead, what users need are *post-filters* to make the products available and visible, and get personalized recommendations, according to their interests" (2010: 88, *emphasis added*)[117]. However, this should not, as Jennings reminds us (2007: 21) be conceived as an either/or scenario, where users have to pick one form of knowledge logic over the other, but, rather, as the case of WiMP streaming service demonstrates, a *supplementary* one, where algorithmic and editorial knowledge can further contribute to the richness of the other:

> We might consider the algorithmic as posed against, and perhaps supplanting, the *editorial* as a competing logic. The editorial logic depends on the subjective choices of experts, who are themselves made and authorized through institutional processes of training and certification, or validated by the public through the mechanisms of the market. The algorithmic logic, by contrast, depends on the proceduralized choices of a machine, designed by human operators to automate some proxy of human judgment or unearth patterns across collected social traces. Both struggle with, and claim to resolve, the fundamental problem of human knowledge: how to identify relevant information crucial to the public, through unavoidably human means, in such a way as to be free from human error, bias, or manipulation. (Gillespie, 2014: 192)

Despite working with the same set of problems, however, digital modes of knowledge production has at least three fundamental attributes that separate them from previous forms of editorial and cultural intermediation: i) algorithmic knowledge production depends and lives on "big data", including both the generation of data as well as their feeding back into the recommendation engines; ii) working with huge amounts of cultural

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[117] However, it is also important to remember here that the "interests" Celma was referring to are not always pre-given but can also constantly change and evolve as a result of users' constant interactions with algorithms and recommendation engines.

information allow these systems to offer tailored and personalized programming and, iii) unlike editorial intermediaries who can justify and explain their selections, the processes and operations of algorithms are largely hidden from the users. Since these themes will keep cropping up in the remainder of this chapter, it would be interesting for now to restrict our discussion to the differences between "editorial" and digital forms of functional music production based on these three attributes. I suggest that, since the production of modern and post-modern functional music depended on the programming expertise of few specialists, they can be understood as another type of editorial knowledge logic. In these forms of functional music production, there was little or no use for the data collected from the audiences subjected to their programming. The only exception, as we have discussed, was the listener research and audience survey analyses (see *sec. 2.2.1.1.*) conducted in the field and face-to-face by *Music While You Work* executives. By integrating demographic information with data on the listening patterns of workers, these quantitative methods of audience analysis constitute a much cruder model that predates today's complex algorithmic computations. However, unlike the latter, the information gathered from workers was very limited in number and can only be said to have a very trivial and, at best, an indirect effect on the content of programming. In post-modern functional music, on the other hand, there was no instance of any type of data collection, where the programs followed a pre-designed musical *flow* like radio to create a specific atmosphere depending on the type of store. Compared to modern and post-modern types of functional music, data holds a much more valuable position in DFM. In fact, it would not be overestimating to claim that data and the data feedback loop generated by on-demand streaming and recommendation systems constitute the backbone and lifeblood of DFM. In the words of Robert Prey, "on contemporary music streaming services all listening time is data-generating time" (2016: 32, 41). Unlike other forms of functional music, DFM systems track, collect, categorize, bundle and quantify all psychographic and behavioral data that arise from users' interactions with their systems, profile information, click patterns, purchase histories or thumbs-up and thumbs-down judgments (Anderson, 2015: 827) and use all of these data to create their programming.

Fortified with all that information about their listeners, the recommendation engines and streaming services can, therefore, tailor much more personalized forms of programming instead of the "one-size-fits-all" approach of modern and post-modern functional music[118]. I will tackle with the subject of personalization in some detail later on as the second major characteristic of DFM, so, for now it is suffice to state that recommendation and streaming services, as parts of algorithmic knowledge logic, embody and embrace huge potentialities for individuation that former functional music production techniques severely lacked of. But, perhaps most importantly is the fact that this whole data processing and personalization operations are largely conducted by algorithms "behind the screens", i.e. they were imperceptible by and concealed from the everyday users of digital technologies. Unlike industrial programming of functional music, which scientifically followed the ebbs and flows in workers' circadian rhythms throughout a workday, and post-industrial functional music programming, which was specifically designed to *fit* a certain consumption context, the underlying logic behind an algorithm's recommendation to users may sometimes seem arbitrary as "most listeners are unaware of precisely *why* they were recommended a particular song" (Prey, 2018: 1096-1097) in some streaming services. That is, the inner workings of most streaming systems today are to a great extent "black-boxed" (Anderson, 2011, Beer, 2017, Eriksson et al., 2019; Gillespie, 2007, 2014; Leijonhufvud, 2018, Pasquale, 2015) either for business purposes or our own ambivalence towards the technical issues surrounding algorithmic operations. In either case, this "hidden" nature of

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[118] This, however, is not to suggest that personalized functional music recommendations generated by algorithms are infinitely "better" to its more traditional programming methods. As Karakayalı et al. argue:

> Granted, the algorithmic system has access to 'bigger' data than human actors. But suggesting that this is sufficient for determining, say, the 'taste' of a flesh-and-blood user amounts to assuming that 'information' as 'some mysterious entity is responsible for imbuing people and objects with shape, quality or character'. We do not think that the term 'better' is warranted in *this* sense. What we can say, however, is that, *in conjunction with their utilization as self Technologies, recommender systems also offer a distinct type of 'companionship' to their users.* (2018: 16, *emphases in original*)

algorithms has important political implications for the everyday life of users, who acknowledge every piece of information and recommendation presented by algorithms as a credible and objective output of "disinterested machines" (Kjus, 2016: 135).

In conclusion, in today's "algorithmic culture" (Galloway, 2006; Striphas, 2015) we see the emergence of algorithms, as well as the recommendation engines and streaming services that use them, as new and important cultural intermediaries. Utilizing a mixture of editorial and algorithmic knowledge logics, these algorithm-driven music delivery and discovery systems have become the main producers of DFM. But *how* does these emerging sets of intermediaries create cultural knowledge in general, and DFM in particular? As I have briefly referred, the answer predominantly lies with algorithms' capacity in dealing with the *problems of excess* and *access* – that is the ability of algorithms to provide unrestricted *access* to music through filtering and ordering the chaotic *excess* of data emerged as a result of the digitalization and virtualization of musical materials.

4.3.1.2. The Problem of Excess: "Big Data" and "Paradox of Choice"

In 1985, while still working as an associate for the *International Business Machine Corporation* (IBM), Robert Mercer underscored what will become the unofficial maxim and underlying logic of many contemporary on-demand streaming services when he quipped, "there is no data like more data" (Bertin-Mahieux, Ellis, Whitman & Lamere, 2011). His initial vision was confirmed almost three decades later in a report published by *The Economist,* explaining that "the amount of digital information increases tenfold every five years. […] By 2013 the amount of traffic flowing over the internet annually will reach 667 exabytes according to Cisco, a maker of communications gear. And the quantity of data continues to grow faster than the ability of the network to carry it all" (cited in Kassabian, 2013: 113). Clearly, the amount of information stored in the Cloud today stretches beyond any humanly comprehension and, what's more, the information just keeps piling up as individuals go about their everyday life online, leaving traces of data each time they click on a website or stream a

particular type of music. This constant and complex accumulation of information in amounts that preclude any human or computational processing is what scholars commonly refer as the "big data" (see, for instance, Snijders, Matzat & Reips, 2012).

This abundance and *excess* of musical information in virtual space brings with it a new set of advantages and disadvantages for the users. As Jennings claim, "many aspects of the era of abundance are highly desirable" since the sheer availability of music "spoilt [users] for choice in ways to discover new music entertainment" through offering and rendering possible "the enticing prospect of a 'celestial jukebox' where you can pull down almost anything you can think of from a digital store in the sky and listen to or watch it at your leisure" (2007: 3). Similarly, independent artists and music producers, who, in the pre-digital era, were forced to go through particular "pre-selection" and "pre-filtering" networks, could now share their works without any industrial constraints or bottlenecks and find new, previously obscured, niche markets for their products – thus creating a *Long Tail* of musical products available online[119] (Anderson, 2006). The end-result is that contemporary audiences have more music at their disposal with less industrially mandated obstacles limiting their ability to find and enjoy new music.

On the other hand, the abundance of musical options online can lead to a sense of deprivation on behalf of users (Fleischer, 2009). When faced with too many other options users may often feel themselves entrapped in a "paradox of choice" (Schwartz, 2004), where they may find it hard to commit to a single selection when there are so many other alternatives available with so little time to explore them (Nag, 2018). This may, in turn, left users feeling "paralyzed" (Celma, 2010: 4) and can significantly reduce their "ability to form a lasting devotion to music" (Nag, 2018: 14) as well as diminishing the amount of

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[119] However, the ability to freely upload music online does not automatically guarantee that they will find a market or even ever be heard by a single listener. The website *Forgotify* (www.forgotify.com) is a perfect testimony to this fact. As Eriksson et al. (2019) reminds us, about 20 percent of music catalogued at Spotify has never been heard – not even once and *Forgotify*'s discovery model is based upon finding this "zombie music" and "giv[ing] them a new life in new ears".

enjoyment and satisfaction they gain from listening (Åker, 2017: 83). As Anderson put it succinctly,

> For listeners, to be confronted by such an expansion of individualized downloadable (and now streamable) free or low-cost music was often bewildering. When presented with any large array of affordable or free options, consumers can be mentally paralyzed by the worry that they aren't making the most efficacious and fulfilling choice. This anxiety-laden paradox of choice optimization haunts digital consumer activities from music streaming to online dating. Choice in such an expended field is both effortful and anxiety inducing. (2015: 826)

Apparently, then, as users we need all the help and tools we can get to survive in "the digital jungle" (Åman & Liikkanen, 2013; Hagen, 2015c) of online music. We no longer worry about *what* to find online or whether the musical content we are looking for is available – in fact, we often take for granted that it is somewhere out there in the vast digital space, waiting to be procured. The question today rather concerns *how* to find that content (Adomavicius & Tuzhilin, 2005) without getting distracted or lost in a haystack of data. As Levitin remarks, "the issue for the consumer has shifted from 'what is available' to 'what are the best available strategies for searching a virtually infinite data bank, all of which is available?' […] The pressing question has now become: how do you *select* what you want to play given a virtually infinite number of alternatives" (2007: 4, *emphasis in original*). This was the predicament addressed by Spotify's co-founder Daniel Ek in a press release dating back to 2013, where he summarized the current situation thusly: "here's what our users are telling us: Spotify is great when you know what music you want to listen to, but not so great when you don't. […] The biggest unsolved question for most users is, *how can you help me figure out what I'm going to listen to*? And for artists, it's, how am I going to be heard?" (Ek cited in Eriksson et al., 2019: 61, *emphasis added*). This issue of assisting and guiding otherwise overwhelmed and anxiety-prone users and finding the right musical options in an effort to connect them with the music they like constitutes the second part of the problem surrounding DFM, that is, the *problem of access.*

4.3.1.3. The Problem of Access: Navigating Through Musical Jungle with Streaming Services

In his best-selling book *The Long Tail: Why the Future of Business Is Selling Less of More,* Chris Anderson claims that "the secret to creating a thriving Long Tail business can be summarized in two imperatives: 1. Make everything available. 2. Help me find it" (2006: 217). If the first of these dictums points to the problem of excess I have just discussed, the second can be said to be referring to the problem of *access.* But when it comes to "helping people find" whatever "it" is they are searching for, there is and can not be "*one* service that provides an all-encompassing discovery solution" (Jennings, 2007: 4). Instead, when it comes to music, what we have is different recommendation and streaming services pursuing different *access* methods depending on their aims and revenue-extraction models. According to Patrik Wikström (2009), there are broadly *five* categories to which we can split these music delivery systems: (i) *single-song download,* (ii) *memberships with limited download quotas,* (iii) *all-you-can-eat memberships,* (iv) *ad-based models* and, finally, (v) *value-based pricing models.* The *single-song download* models constitute the earliest attempts in terms of providing users access to online music databases and are still spearheaded by *iTunes,* which, with over 50 million customers and four billion songs sold[120], became the globally leading music retailer by early 2008. As their name suggest, these models let users purchase and download single songs without forcing customers to get the complete album and, furthermore, they don't require any subscription whatsoever. Unlike single-song download, the second type of streaming services, i.e. *memberships with limited download quotas*, expect their users to subscribe to their platform and, in exchange, allow consumers to download a specified and limited number of tracks each month for a much lower price compared to their competitors. *eMusic,* the second largest online music retailer after *iTunes*, is an example for this model of streaming (Jennings, 2007: 80-81). While these first two access-models were highly common in the early days of online music, *all-you-can-eat* type of

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[120] https://www.apple.com/newsroom/2008/04/03iTunes-Store-Top-Music-Retailer-in-the-US/

streaming services have gained traction among users in recent years. These "music rental" services, among them the most popular ones being *Spotify, Rhapsody, Omnifone* and *MusicStation,* grant members an unlimited amount of on-demand access to their music catalogues for a substantial monthly subscription fee depending on the service in question.

Some *all-you-can-eat* streaming services, such as *Spotify*, combine their access model with an *ad-based* revenue extraction method. In other words, they don't necessarily require a mandatory subscription to their service but instead give away access to music for "free" and, instead, generate revenues primarily from the advertisements they broadcast after a certain number of tracks has been streamed. Building on the legacy of commercial broadcast radio stations, which operated with the same programming principal, these "feels-like-free" music services (Wikström, 2009: 105-106) predominantly aim to cater those audiences who are not willing to pay any money for music, which they know they can get for free albeit in a less legal manners. Some *ad-based* music services, like *Pandora*[121] or *last.fm*[122], even completely imitate the earlier radio format and define their services as "digital radio"[123]. However, compared to terrestrial radio stations and their pre-designed program formats, these algorithmically-curated digital services provide an added-value of

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[121] Pandora's chief technology officer Tom Conrad states that the underlying notion behind their service was to "build an experience that fundamentally about audio, not about hundreds of thousands of artists' pages and recommendation pages and its of hyperlinking and this big Web site you come to ... Lots of people have already done that. We wanted to build something that was really, really simple - sort of a one-click radio [station]" (cited in Rosencrance, 2006: 32).

[122] As one of the co-founders of *last.fm,* Martin Stiksel suggest in an October 2006 interview, the concept of *discovery* had a huge impact on their decision to embrace a radio-like format for their service: "Last.fm always had an emphasis on making you discover new music. On demand is not about discovery... We also find radio very attractive because radio keeps you on your toes and you never know what's coming next" (cited in Freire, 2008: 106).

[123] The reappropriation of "radio" label and the subsequent organization of a streaming service in accordance with this particular format have some glaring financial benefits. As Eriksson et al. explain,

> In the United States, a streaming service without on-demand functionality may be classified as radio and therefore does not need to strike licensing deals with each record company. It would simply pay a certain royalty to a collecting society, SoundExchange. The result was that Pandora had to pay much less than Spotify for every minute of music streaming and hence could stick to an advertising-based business model. It also meant that Pandora could not expand beyond those few nations with a similar copyright system. (2019: 57-58)

personalization, where each user can modulate the flow of their streaming stations to their own likes and tastes (Freire, 2008; Manabe, 2016). On the other end of the *ad-based all-you-can-eat* streaming services spectrum we have platforms like *Spotify, Deezer, Rhapsody* and *WiMP (Tidal),* which, unlike *Pandora* or *last.fm,* do not offer a radio-like experience of continuous stream of songs, but instead provide music "on-demand", or, as one Spotify slogan used to tell: "Music whenever you want it, wherever you are" (Eriksson et al., 2019: 62)[124]. In other words, as opposed to less interactive services where a listener is given an algorithmically-designated stream of songs, the listener can choose freely what music they want to hear (Marshall, 2015: 178). And, at last, we have the *value-based pricing models,* which are supposedly creating a more "democratic" business model by letting customers decide the value they want to pay for the content they are getting[125].

In spite of the differences in their revenue-generating techniques and the ways they allow users to access their catalogues, each category of music delivery system offers a unique proposition to deal with the overarching problem of *excess* in digital media. In addition, each of these categories for music streaming relies on and makes extensive use of algorithmic systems (albeit with differing degrees as suggested earlier). These automated computational processes helps streaming services to collect and make sense of all the data available online and then sort and categorize them into different relational databases, which constitutes the informative foundation for the musical recommendations such services make to their users. Therefore, in order to understand what we mean when talking about DFM as algorithmic music, despite their "black-boxed" or "inscrutable" (Ziewitz, 2016) nature, we should at least have a preliminary understanding of how these algorithms work in the context of streaming and recommendation services and the production of DFM. In what follows, I suggest two general ways to approach this issue: the first is looking at how information

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[124] I will compare and analyze the operational logics of *Pandora* and *Spotify* as case examples in a much-detailed manner at the end of our discussion.
[125] This model was infamously utilized by renown rock band *Radiohead* in 2007, when they released their final album *In Rainbows* on their own website and let their fans pay whatever they saw fit, even nothing, for the album (see, for instance, Nowak & Whelan, 2016: 115-117; Wikström, 2009: 110).

is produced online and made "algorithm-ready" (Gillespie, 2014) while the second is understanding how this information is organized into databases, which then can be used for recommendations by streaming services. Following this discussion, I will then close this section by investigating the algorithmic techniques used by the two leading streaming services today, Pandora Radio and Spotify.

4.3.1.3.1. "Readying for Algorithms": User-Generated Inputs for Online Knowledge-Production

I have suggested early on how "big data" constitutes the lifeblood of contemporary "algorithmic culture", whose operations depend on the incessant generation and mining of various types of information found online. These informational data, by their own very nature, are "messy" since every single interaction we engage online - be it a single click, logging in, or time spent on a certain page, etc. – constantly produces new informational bits and pieces regarding that particular event. For these convoluted chunks of information to become legible and operable by algorithms, they first need to be collected and sorted, and, in effect, converted into "data". According to Gillespie, "data is both already desiccated and persistently messy. Nevertheless, there is a premediated order necessary for algorithms to even work. More than anything, algorithms are designed to be – and prized for being – functionally *automatic*, to act when triggered without any regular human intervention or oversight. This means that the information included in the database must be rendered into data, formalized so that algorithms can act on it automatically" (2014: 170, *emphasis in original*; see, also, Winner, 1978). There are primarily two ways into which information can become "algorithm ready" (ibid): through *implicit* and *explicit* forms of user feedback (Celma, 2010; Koren, Bell & Volinsky, 2009). I argue that, through implicitly and explicitly gathering feedback about their users and their online behavioral patterns, algorithms can even get "smarter" by constantly tweaking and refining their operations in the face of newly gathered information. Each interaction or "entanglement" (2014: 183) with the algorithm will "tell" them something new about us, which then, in return, be used for better

personalization of their recommendations as well as for their operations to be conceived objectively more reliable by the users.

4.3.1.3.1.1. Implicit User Feedbacks

Implicit user feedback refers to data collection techniques that take place *passively* or indirectly from the user. As suggested above, users of online media are not always particularly cognizant about the data that has been generated as a consequence of their online activities. The taken-for-granted nature of the ubiquity of digital media may also preclude users to become aware of the fact that their actions online are constantly being monitored and scrutinized by different hosting or streaming services (Turow, 2012). However, each time we login to a certain webpage or a software application, or check out something online, we give away a slice of information about ourselves, which, then, are added to the construction of our algorithmic "data double" (Haggerty & Ericson, 2000) or "data shadow" (Andrejevic, 2013). An *implicit* type of feedback may, therefore, include the location of the user in addition to other personal and potentially delicate information such as "the history of purchases, the time spent on a webpage, the links followed by the user, the mouse movements, or analyzing a media player usage (tracking the play, pause, skip and stop buttons)" (Celma, 2010: 21). In other words, implicit forms of feedback are the digital traces we leave behind every time we get and interact online.

4.3.1.3.1.2. Explicit User Feedbacks

Contrary to the hidden and concealed characteristics of implicit feedbacks, *explicit user feedbacks* are openly and often consciously performed by willing users. This type of feedback production had especially become a common fixture of online experience after the participatory culture enabled by Web 2.0 and "tearable web" (Jennings, 2007) technologies. In its broadest sense, *Web 2.0* refers to recent digital developments and transformations, which signaled a shift from static and "read-only" (Leijonhufvud, 2018: 105) forms of online

experience towards more participatory and collaborative ones. That is, these new technologies offer users more creative freedom in terms of generating and sharing their own curated content with a virtual community of peers (Beer, 2009: 986), as exemplified by technologies such as wikis, blogs and social networking sites. In that context, Web 2.0 technologies may have been said to build upon and, ultimately, replaced the outdated Web 1.0-based websites. As Bakardjieva and Gaden explain,

> [...] to the extent that Web 1.0 was dominated by solitary, even if self-initiated, practices of searching and drawing on symbolic resources, it offered limited affordances to the practices of the self. It did not support adequately their essential element [...], namely, the opening [of] oneself up to the scrutiny of a public, of crisscrossing the self-other frontier. The individual remained atomized and isolated even if connected to the proverbial knowledge at his or her fingertips. (2012: 404)

The moment of transition from cruder and "isolated" forms of Web 1.0 to open and participatory nature of Web 2.0 constitutes an important threshold for the production and consumption of DFM in two senses: (i) first, the participatory ethos of Web 2.0 allows users to create and publish content at will, which, in return, engenders more *metadata*[126] for algorithms to feed and mine upon and; (ii) the more interactive and interoperable nature of Web 2.0 technologies gave DFM services a more *fluid* and malleable character, which could endlessly be utilized by users in more context-sensitive and personalized ways. That is, by providing services "designed to be customized by users" (Manovich, 2009: 323), Web 2.0 systems offer a more personalized and flexible experience of DFM.

One of the most commonly used explicit user feedback mechanism in Web 2.0 services is collaborative *social tagging* (Eck, Lamere, Bertin-Mahieux & Green, 2008; Lamere, 2008; Trant, 2009). *Tags* are unstructured and public "free text

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[126] The concept of *metadata* refers to information *about* information (Downie, 2003: 301) or, rather, "data about data" (Eriksson, 2016; Jennings, 2007: 131-132). According to Pachet (2005), when it comes to musical materials, there are three types of metadata online: *editorial*, *cultural*, and *acoustic*. The *editorial metadata* concerns the information manually generated by experts, such as those that can be found on *All Music Guide* (allmusic.com). *Cultural metadata,* on the other hand, refers to information and personal opinions about musical pieces by users shared in blogs, forums or other social networking sites. Finally, *acoustic metadata,* includes the musical properties of songs that can be parsed and categorized either by editors (Pandora's original model) or algorithms that can map the acoustic "fingerprint" of songs (Spotify and Echo Nest's preferred model; see, for instance, Ellis, Whitman, Jehan and Lamere, 2010).

labels that are applied to items such as artists, albums and songs" and are "typically used to facilitate searching for items, exploring for new items, finding similar items, and finding other listeners with similar interests" (Lamere, 2008: 101). In other words, social tags are a form of *cultural metadata,* created by non-expert users at their own discretion and without the overarching guidance of a vocabulary and terminology[127]. Since there are no governing principles accompanying the tagging process, there are also no restrictions on the number of tags that can be assigned to a single item. The tags that are assigned to a musical track may refer to its objective attributes – such as the year it was recorded, or the genre that it belongs to – but they may also contain *functional* and *personal* descriptions – such as the mood of the song (Hu, 2010) or the activity it may accompany, or a subjective disposition towards it ("love it", "hate it", "awesome", etc.). Although users generally assign tags for reasons of self-organization, when done collaboratively by many users, these tags accumulate into a *folksonomy* (Van der Wal, 2007), which becomes representative of the "wisdom of the crowds" (Celma, 2010: 31; Jennings, 2007: 226). If a certain song is consistently tagged by the same labels by different users, that tag is understood to be a correct and fair representation of that song, thus furthering the reliability of the recommendation algorithms[128].

Another form of *explicit user feedback* commonly used in streaming and content delivery systems is *ratings* (Koren et al., 2009: 44)*.* Contrary to tags, which may contain a high level of noise as a result of the absence of certain guiding rules and restrictions, *ratings* are a more direct and reliable way to measure user

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[127] Despite its liberating potentialities for users, the absence of a common tagging language sometimes associated with problems plaguing the tagging activity. One of the common problems is *polysemy,* where the same word can contain different meanings. For instance the word *love* used as a tag may signify that this is a love song or that particular user loves that song (Celma, 2010: 34; Lamere, 2008: 111).

[128] Identically, since there is no control mechanism, there is no "checks-and-balances" when it comes to correcting mis-labeled tracks, which can seriously hamper the objectivity of algorithms that work with these tags. A rather funny instance of such use of malicious tags are related by Lamere:

> For example, the 558 "Brutal death metal" tags that have been applied to Paris Hilton [on last.fm] make her appear to be the number one "Brutal death metal" artist. A recommender based upon social tags would likely to recommend "Brutal death metal" artists to fans of Paris Hilton, and would also recommend Paris Hilton to fans of the Brutal Death Metal genre of music. (2008: 111)

response. These ratings can be in the scale of 1-5 (which is used by movie-streaming platform *Netflix*) or in the form of a "thumbs-up" or "thumbs-down" button - the latter being the preferred method of data collection on user preferences by leading streaming platforms like Spotify and Pandora. Despite being a more dependable way of gathering explicit feedback data, the rating system is not immune to problems. The proclivity of users in consuming and rating only the most popular titles, as well as the vast number of relatively less-known and obscure items stretched all through the Long Tail, mean that some database contents may remain unrated, which may, in turn, lead to their exclusion from the recommendation process of algorithms (Jennings, 2007: 65-66). There is also the problem of *ambivalence* commonly encountered in services using the scale-rating system. In the context of Netflix, for instance, Hallinan and Striphas explains that "among the more troubling aspects is the inability to give a film or television program an 'average' rating of 2.5, or to render distinctions on the basis of half-stars more generally" (2016: 120). The authors continue by quoting a blog post published on company's website by an employee, who, in the process of replying to the complaints their recommendation system are getting from customers, gave a rare insight into the usually secretive way their algorithms operate:

> For those of you who are concerned that there is no good middle ... please consider using 3 stars for that purpose because *that is the way we use it in our recommendation system.* 4-5 star ratings tell us to boost up movies like it when predicting for you and 1-2 star ratings tell us to punish movies like it when we predict for you, but we treat three stars as a neutral signal. ("Todd" cited in Hallinan & Striphas, 2016: 120).

As the above quotation explicates, in order to perform their task with utmost skill and come up with the most accurate predictions for their users, algorithms require clearly specified and refined data indicators. Once this data is *implicitly* or *explicitly* collected, they are then indexed and stored in *databases* of different music streaming services and recommending engines. According to Manovich, along with algorithms, these "data structures […] are the two halves of the ontology of the world according to a computer" (1999: 84). In other words, for algorithms to work, they need to have a database of information, which they can exploit to generate relevant recommendations. As Gillespie contends,

"algorithms are inert, meaningless machines until paired with databases on which to function. [Therefore,] a sociological inquiry into an algorithm must always grapple with the databases to which it is wedded" (2014: 169). In the preceding analysis, I have tried to present some of the ways information is produced by users online, whether consciously and willingly (such as tags, ratings, as well as giving out information in *profiles*) or without their knowledge, i.e. the digital traces they leave every time they visit a website or stream a track. If the collecting and indexing of data constitutes the first part of the problem, as Gillespie and Manovich seems to concur, then, in order to have a full grasp of the entire picture, we will also need to understand how algorithms use and exploit these data for their recommendations. Hence, in the following discussion, I will look at some of the most common algorithmic filtering techniques recommendation and streaming engines utilize in the quest of finding the most accurate and relevant content for their users.

4.3.1.3.2. Making Algorithms Work: Prediction and Recommendation of Relevant Musical Content

The underlying operational logic of all music recommendation systems is quite straightforward: matching *users* with a particular set of *items.* According to Celma,

> Intuitively, the recommendation problem can be split into two sub-problems. The first one is a prediction problem, and is about the estimation of the items' likeness for a given user. The second problem is to recommend a listen of N items – assuming that the system can predict likeness for yet unrated items. Actually, the most relevant problem is the estimation. Once the system can estimate items into a totally ordered set, the recommendation problem reduces to list the top-N items with the highest estimated value (2010: 15)

As we have mentioned earlier, users require tools that would ease their crippling anxiety by helping them navigate in the overwhelming cacophony of online data. A recommendation system's success, therefore, depends upon the help they offer to users in finding and discovering new content that they would

be unlikely to procure when left to their own devices to survive in the online jungle. Powered by their massive databases, these systems can accurately *predict* what a certain user might like to hear depending on their previous listening behavior or the explicit feedbacks they have provided to the system. In that context, these recommendation engines can be said to resemble "a kind of lighthouse, for people trying to maneuver in the sea of online music" (Kjus, 2018: 155). Through gathering user inputs and feedbacks and utilizing them in their computational process to predict future listening behaviors, these algorithms open up new possibilities and show us new paths towards musical discovery. However, in congruence with their different access models (see *sec. 4.3.1.3.*), services can use different, or a combination of several, prediction and recommendation techniques. According to Celma, there are typically five types of information-filtering and prediction methods recommendation services can use: *demographic filtering, collaborative filtering, content-based filtering, context-based filtering,* and, *hybrid approaches* (2010: 22). Despite their disparate models, each filtering system aims to come up with the most precise and relevant list of recommendations by computing the similarities and the level of likeness either between a group of *users* or *items.*

4.3.1.3.2.1. Demographic Filtering

Recommendation services using *demographic filtering* techniques classify and categorize users according to their shared demographic information and extrapolate their recommendations based on these common demographic traits. Demographic data clusters can be created according to personal (e.g. age, gender, economic or marital status, etc.), geographical (town or country) and psychographic (interests, lifestyles, etc.) information that are usually provided by users when creating their personal profiles while signing up for a service (Celma, 2010: 22-23). A recommendation system can then come up with suggestions based on this data, on the assumption that users that share the same demographic attributes are likely to enjoy the same things. For instance, "for a new user, recommendations are made by first finding which

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[demographic] category he falls in and then the cumulative […] preferences of previous users is applied to that category which he belongs" (Ryngksai & Chameiko, 2014: 252). In that sense, the recommendations based on demographic filtering methods remain too stereotypical and generalized for users, who are accustomed to and would expect more personalized and nuanced predictions from their recommendation engines (Celma, 2010: 22-23).

4.3.1.3.2.2. Collaborative Filtering

One of the most preferred recommendation techniques employed by various digital services today – among them being, for example, the world's largest online retail company *Amazon* and the popular streaming service *last.fm* – is *collaborative filtering.* Unlike making informed guesses based on demographic data, the systems using collaborative filtering predict user preferences through past user-item interactions and the implicit and explicit feedbacks given about a certain item by multiple users. The underlying idea characterizing collaborative filtering is simple: if two users display similar tastes and listening patterns, then, when a song or an artist user *A* listens to is recommended to user *B,* there is a high likelihood that user *B* will enjoy that song or the artist as well. This method is also known as *user-based collaborative filtering*, where the system "identifies users that are similar to the queried user and estimate the desired rating to be the weighted average of the ratings of these similar users" (Pathak, Mandava & Patel, 2019). The same logic applies to *item-based collaborative filtering*, i.e. if a user gave positive ratings for two previous items that share identical characteristics, it is highly probable that he or she will like when a third item with similar attributes is recommended. Whether item- or user-centric, recommendations made by collaborative filtering techniques, thus, are based on the previous behavior of and feedbacks provided by other like-minded consumers (see, for instance, Chen & Chen, 2005; Koren et al., 2009; Su, Chang & Tseng, 2013).

Despite being more accurate in their predictions compared to demographic filtering methods, collaborative filtering techniques are inherently plagued by *popularity bias* since the majority of users only consume or rate the most popular items on a service's archive. Therefore, the systems using collaborative filtering rarely recommend songs or albums at the tail part of the "Long Tail" and, hence, reinforce only the few most popular items (Celma; 2010: 145 Jennings, 2007: 82). Since collaborative filtering methods are skewed towards the most popular content they suffer from "rating diversity" (Su et al., 2013: 304), which means that a lot of content goes unrated in the database, leading to a *cold-start* problem especially when it comes to recommending content for the new subscribers of a service[129]. In addition to these shortcomings, there is also, what Eck et al. (2008) label, the issue of *transparency*, which means that recommendations made by collaborative filtering are incapable of explaining *why* a particular set of items is recommended to a user beyond the simple explanation that "customers who listened to x also listened to y".

4.3.1.3.2.3. Content-Based Filtering

Content-based filtering methods, on the other hand, may help the overcoming of the cold-start and transparency problems frequently encountered in collaborative filtering. Contrary to predominantly *subjective* sets of data input used by collaborative filtering methods, like ratings or user listening behavior, *content-based filtering* collects and uses *objective* characteristics and descriptions taken from musical items themselves, such as rhythm, harmony, pitch, and etc. In other words, rather than users' listening patterns and their evaluations of different musical items, the recommendations in content-based filtering are made based upon the similarities in musical attributes of songs themselves. The datasets that comprise of these *acoustic metadata* can be either organized *manually,* that is annotations made by domain experts, or *automatically,* i.e. extraction of musical features by trained machines (Celma, 2010: 28)*.* As we shall see in the upcoming discussion, Pandora Internet Radio

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[129] For more information about the cold-start problem in Collaborative Filtering methods and some suggested ways to overcome it, refer to Lika, Kolomvatsos and Hadjiefthymiades (2014).

and their patented Music Genome Project constitutes a perfect example for the manually designed content-based filtering systems, where each musical trait is entered into the database by a select-group of music professionals. Since this process is entirely done by hand, it is extremely time-consuming and generally suffers from problems of *scaling.*

To overcome the labor-intensive nature of manual content-based filtering techniques, services may instead rely on machine learning methods that can analyze and annotate audio files automatically, otherwise known as *autotagging.* As Tingle, Kim and Turnbull explain, "autotagging involves the automatic generation of tags based on an analysis of the audio signals. That is, using human-annotated training songs, we learn a *classifier* that can predict tags for an unannotated song based on audio features that are extracted from the song" (2010: 55, *emphasis in original*). Through designating particular sonic parameters as *classifiers* and training these classifiers to automatically extract musical attributes from songs, then, these acoustic-fingerprinting technologies (Jennings, 2007: 170-171; see also, Ellis, Whitman, Jehan & Lamere, 2010; Prockup et al., 2015) can create relatively larger databases in a much smaller fraction of time as opposed to manual content-based filtering methods[130]. Autotagging can also effectively deal with the *cold-start* issue by generating tags based on acoustic features of songs that are not yet tagged by users or experts. One particular issue, however, is that, these humanly trained classifiers are generally more capable in extracting low- or mid-level attributes, like tempo, rhythm or the tonality of a song (Celma, 2010: 53), but not so much when it comes to high-level (or "functional") descriptions, such as predicting the *mood* of a certain song (see, for instance, Feng, Zhuang & Pan, 2003; Laurier et al., 2010).

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[130] As Jennings (2007: 104-108) inform us, whereas the experts at Music Genome Project are only able to add 15.000 new tracks to their database of half a million songs each month, automated content extraction systems such as *MusicIp,* enjoy a database of over 20 million tracks.

4.3.1.3.2.4. Context-Based Filtering

If content-based filtering techniques are about the objective musical attributes of songs, then, the fourth method of filtering for recommendation services, *context-based filtering*, refers to the process of "gathering external information *about* the items (e.g. gathering information from weblogs, analyzing the reviews about the items, etc.)" (Celma, 2010: 22). This particular method has recently come into vogue, especially with the emergence of digital "infomediaries" (Morris, 2015) such as The Echo Nest, which made it their business plan to gather as much as contextual information about music, like *editorial* and *cultural metadata,* as possible by mining the web. Writing on the bourgeoning scholarly field of Music Information Retrieval and the recent "contextual turn" towards musical data, Downie sums up the differences between content- and context-based filtering techniques thusly,

> For the most part, the notion of similarity for the purposes of retrieval has been confined to the codified, and relatively limited, areas of music's melodic, rhythmic, harmonic, and timbral aspects. Thus, music objects that have some [sic.] intervals, beats, chords, and/or orchestration in common are deemed to be "similar" to some extent, and hence are also deemed to be potentially "relevant" for the purposes of evaluation. [...] In what ways, however, do we assess the similarity of a user's *experience* of one piece with others in a collection? How is a desired mood or physiological effect to be considered "similar" to a particular musical work? How would we modify an "experiential" similarity measure as the mood and perceptions of the individual users change over time? How do we adjust our relevance judgments under this scenario of ever-shifting moods and perceptions? (2003: 304-305)

We have seen above how musical extraction and retrieval techniques based on content-based systems can fail in terms of determining the particular mood of a song. Therefore, one way about answering the important questions raised by Downie, can be to utilize other, more context-based techniques, which can sift through thousands of webpages and blog posts in order to collect *semantic* and *cultural* metadata with regards to how people talk about or tag the emotional content of songs. As we will see in our analysis with regards to flexible and context-sensitive uses of DFM, this "outside" information about musical tracks can be a valuable source for the production of DFM playlists in various

streaming services. That is, the way people talk about music and the accumulation of this information, eventually feeds back into the functional music playlists that we as users consume everyday.

In addition to providing mood- and emotion-related information, *context-based* filtering systems recently gained a more literal meaning as a result of the proliferation of smartphones and other "everywear" (Gilmore, 2016) devices. By being perpetually connected to online services, these gadgets permit the sharing and "collection of data points like location, motion, time of day, and nearby contacts [as well as other] contextual signals that recommendation systems can draw on" (Prey, 2018: 1092). This information, in turn, can be harvested to create music recommendation systems that are sensitive to people's geographical location. [1] One such example for such a system is called *SoundAbout,* created by Pirkka Åman and Lassi Likkanen, which, by collecting location data through their GPS in real-time, lets users to "experience music related to the different locations in various ways, for instance by seeing what music has been listened in different districts of the city during a particular time span, select a list of favorite artists or songs and attach that list in favorable location, and see who else in different locations share their taste in music" (2013: 542). As the authors argue, music recommendations based upon the actual geographical context of people have the power to augment the spatial experience of different places, thus *aestheticizing* the nature of the encounter. One extreme example for such context-based filtering and recommendation is an application developed by the organizers of Nordland music festival in northern Norway, who

> [...] asked artists from their region to produce and record songs dedicated to specific sites in the region. These recordings were then released on the festival's mobile application, which, via a PGS-location system, activated only when the user was at the place in question. For example, the band Krakesolv recorded a song dedicated to the experience of standing on the Mjelle beach, facing the Atlantic Ocean. This is one example of how concert organizers use new media to benefit from their [users'] physical locations. (Kjus, 2018: 143)

4.3.1.3.2.5. Hybrid Approaches

Finally, a recommendation service may adopt a combination or mixture of the above-mentioned filtering techniques. One obvious advantage of employing a *hybrid approach* is that, it can compensate the shortcomings of each method, thus enhancing the overall accuracy and reliability of the recommendations a service makes. For instance, a service that rely on both content- and context-based filtering can come up with a rich tapestry of both *cultural* and *acoustic* metadata, as our discussion of Spotify and Echo Nest will demonstrate. Similarly, systems that utilize both collaborative and content-based filtering techniques, such as the one employed by Spotify's *Discover Weekly* playlists, can strike a perfect balance between generating both familiar (by virtue of collaborative filtering's inclination towards popular songs/artists) *and* novel suggestions. This was the outcome of an experiment conducted in Celma (2010), which concluded that

> CF [collaborative filtering] generates more familiar songs than CB [content-based] and HY [hybrid approaches]. Thus, CB and HY provide more novel recommendations, although their quality is not as good as CF. [...] Regarding recommendation approaches, the context-free and popularity agnostic CB algorithm sometimes point in the wrong direction (it is not that easy to discriminate between a, say, classical guitar and a harpsichord, based solely on audio content) and gives poor or non-sense recommendations. [...] In this sense, the proposed hybrid approach drastically reduces the space of possible similar tracks to those artists related to the original artist. This avoids, most of the time, the *mistakes* performed by the pure CB. (2010: 163-165)

4.3.1.4. Two Cases of Music Streaming: Pandora Radio and Spotify

When it comes to dealing with the dual problems of *excess* and *access,* music streaming and recommendation services of *Pandora Internet Radio* and *Spotify* represent two unique yet diametrically opposed paradigms. Therefore, a comparison between the music retrieval and recommendation techniques employed by these two services present a good opportunity to substantiate our previous arguments with regards to conceptualizing DFM as "algorithmic music". With a combined global user base of over 280 million *active* listeners

each month[131], Pandora and Spotify today represent the two most essential and popularly used streaming services. As our discussion below will demonstrate, these services not only mediate the ways users interact with music today, but also act as the primary producers of DFM that users experience by incorporating it to their everyday routines and movements.

Although both can be considered as examples for *all-you-can-eat* streaming services with *ad-based models,* unlike Spotify, Pandora does not provide an on-demand service, meaning users have no control over the selection of songs (Freire, 2008; Marshall, 2015: 178). While the users can still impact the flow of a streaming by giving up thumbs up or thumbs down buttons, they cannot "select individual tracks or build playlists but are instead supposed to lean back and enjoy a personalized radio station" (Eriksson et al., 2019: 57). Despite being competitors in the digital music market, the distinctive solutions offered by both Pandora and Spotify in overcoming the common problems facing today's digital audiences suggest that they should be conceived as complementary rather than being antagonistic or antithetical to each other. As one statement commonly attributed to the founder of Spotify Daniel Ek states, while "Spotify is the future of the record store […] Pandora is the future of radio" (cited in ibid, 2019: 58). Below, I will discuss how each particular approach displayed by both services,

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[131] Data collected from: https://www.businessofapps.com/data/spotify-statistics/ https://www.statista.com/statistics/190989/active-users-of-music-streaming-service-pandora-since-2009/

One major reason why Pandora has a relatively fewer number of active users than Spotify stems from its "radio" status. As Eriksson et al. explain,

> In the United States, a streaming service without on-demand functionality may be classified as radio and therefore does not need to strike licensing deals with each record company. It would simply pay a certain royalty to a collecting society, SoundExchange. The result was that Pandora had to pay much less than Spotify for every minute of music streaming and hence could stick to an advertising-based business model. It also meant that Pandora could not expand beyond those few nations with a similar copyright system. (2019: 57-58)

This means that, outside United States, Pandora is currently only accessible from Australia and New Zealand. Spotify, on the other hand, operates in 79 countries spanning across the globe, which contributes significantly to its number of users.

has, in its own way, different implications for the production and consumption of DFM online, starting with Pandora Internet Radio.

4.3.1.4.1. Pandora Internet Radio and the Music Genome Project

Conceived in late 1990s by programmers and music enthusiasts Tim Westergren and Jon Kraft, Pandora Internet Radio declares to have a single, very elementary mission that goes straight through the heart of the problem of access: "To play only music you'll love [and] help you connect with the music YOU love"[132]. The decision to use an informal "you" to address a visiting user is by no means an accident, since the creators of Pandora "believe that each individual has a unique relationship with music [and that] no one else has taste exactly like yours"[133]. Unlike terrestrial radio broadcasts where each listener that's tuned in is thereby have to listen to the musical selections programmed by a particular DJ, then, users of Pandora can create their own radio stations – up to a hundred of them–, which they can endlessly refine according to their own personal tastes and mood at the moment of listening. The system will gather each feedback provided by the listener and, based upon this criteria, the musical selections will eventually "get better"[134] for the listener.

We have stated earlier how, as opposed to its more interactive streaming counterparts, Pandora affords a "lean-back" approach to music listening. That is, even though users can occasionally nudge and direct the course of streaming music, they cannot control or decide what songs will play in which order. Hence, Pandora users are never quite certain what the service will throw at them next and, therefore, they remain constantly on their toes. This particular method of music selection and recommendation can be said to be very conducive to musical discovery and the name of the service seems to imply and highlight this aspect of digital music experience. Derived from ancient Greek mythology, as the website instructs us, Pandora was a very "curious" being who "received many gifts from the gods, including the gift of music, from Apollo". Yet, as the

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[132] http://www.pandora.com/about
[133] https://www.pandora.com/about/mgp
[134] http://www.pandora.com/about

myth goes, while what swarmed out of Pandora's box contained only the misfortunes and calamities that would befall and plague the humanity for years to come, what the streaming service, in turn, offers is a "reward" that would be enjoyed only by "the musically curious among us with a never-ending experience of musical discovery"[135]. The only characteristic the service inherited from the myth was that, given its non-interactive nature, once something is out of the Pandora's box there is no recapturing or retrieving it: "As soon as a track has streamed and the next begins, listeners can't return to the previous musical selection; they can only move forward to the next track" (Szymanski, 2009: 21).

But how does this intricate system of content creation and musical recommendation work? In other words, how and on what grounds the streaming service decides what will come out of the musical "box"? The answer to these questions lies in the ingenuity of *Music Genome Project,* "the most sophisticated taxonomy of musical information ever collected"[136]. Music Genome Project is a *manually* generated *content-based filtering* technique, whose database is a result of decades long difficult and very labor-intensive analytic work of a handful of trained musicologists. Every recommendation and track selection a user encounters while streaming music at Pandora's interface is powered by the Music Genome Project and its massive database. Therefore, in order to understand how DFM is produced in Pandora streaming service, we need to have a broader understanding of the inner workings of Music Genome Project.

4.3.1.4.1.1. The Music Genome Project (MGP)

In his book on the digital culture of music listening and discovery, David Jennings (2007) traces the origins of Music Genome Project to the early work of American folklorist Alan Lomax and his ambitious attempt to devising a coding system that would quantifiably analyze each and every song that was personally

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[135] ibid.

[136] https://www.pandora.com/about/mgp

collected by him all around the world. Inspired by the promising new technology of computerized analysis methods, Lomax invented a new coding system called *cantometrics,* literally meaning "the measure of song" (2007: 102). As one member of his cantometrics team relates, the overall idea behind the project was to compose, for the first time in history, a vast digital library of world music by manually reviewing and classifying hundreds of recordings based upon their different sonic and other "stylistic profiles", an idea which was appropriated later by Pandora on a much grander scale:

> In 1960, Alan realized that for the first time in history it was possible to assemble under one roof a comprehensive collection that would not only represent but analyze and decipher the performance styles of all the world's peoples. His first step was to assemble collections by other field recordists and combine them with his own, creating an unprecedented audiovisual archive of music from all over the world. To make sense of this vast assortment of songs, he a and a group of colleagues from several disciples [sic.] (musicology, dance, anthropology, linguistics, and statistics) [...] developed a method of analysis they called Cantometrics, a democratically easy-to-learn coding system through which an ordinary listener with minimum preparation could create a "style profile" for a song. Using 37 criteria of observation, the Cantometrics team analyzed over 4,000 songs – around 10 representative songs from over 400 cultures. Each song profile they made was recorded on a computer punch-card. [...] Only a computer was capable of handling this enormous data set and looking for the *patterns* hidden within[137]. (*emphasis added*)

Despite similarities in their approaches to musical analysis, there are some important distinctions that separate cantometrics from its more modern incarnations such as the Music Genome Project. First, given its comparatively archaic means of music collection and classification, *cantometrics* was often, quite ironically, constrained by the computerized technology it was hoping to exploit. For instance, there was an upper limit for the values that can be assigned to each of the 37 scales – the number of values could not exceed 13 since that was the maximum number of columns a computer punch-card could contain at the time (Jennings, 2007: 102). Second, since the overarching goal was to create a musical library, the cross-cultural *patterns* that cantometrics analysts trying to determine between songs were mainly meant for pedagogical reasons rather than discovery or recommendation of new songs. On the other

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[137] http://aln2.albumlinernotes.com/Popular_Songbook.html

hand, working on a virtual space with no material restraints, staff members working on the Music Genome Project have no limit on the number of values and attributes they can assign to a single song. That is, since they are not bound with the physical constraints of a punch-card, they can come up with an endless number of more nuanced descriptions for each song. Furthermore, while motivated by a similar desire to map out sonic properties and profiles of each song through the manual work of trained experts, unlike its predecessor, the Music Genome Project ultimately uses the similarity patterns between musical tracks to create a personalized listening experience for their users. In other words, the idea is not to educate aspiring music enthusiasts of the similarities or differences between the songs of different geographic regions but to generate "stations that play music you'll love – and nothing else"[138].

While it is true that users cannot pick and choose what songs to play or listen to, this by no means imply that the selections made by Pandora recommendation engine are random. In order to generate a personalized diet of music recommendations, staff analysts at Music Genome Project deconstruct each musical work into its various, distinguishable musical characteristics called *genes.* Each specific gene represents a particular event contained within a song and can include anything from the gender of the lead vocalist, to type of background vocals or the level of distortion on the electric guitar[139] to less common musical conceptualizations like "headnodic beats, vinyl ambience and screwed production" (Szymanski, 2009: 21). According to the patent application filed for Music Genome Project in 2001, a given song can contain approximately 150 *genes* but the number varies depending on the genre of the musical track. For instance, whereas rock and pop songs have about 150 genes due to their more straightforward musical arrangements, lyrically-driven genre of rap music can contain 350 genes, whereas even more complex forms of popular music, such as jazz and world/classical music, have approximately 400 and 300-500 genes in each song respectively. The accumulation of separate genes into logical groups make up the *chromosomes,* which, when pieced together, reveal the

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[138] https://www.pandora.com/about/mgp
[139] https://patents.google.com/patent/US7003515B1/en

genetic make-up of a particular song, or it's *genome*[140]. As indicated earlier, the construction of a single genome for a specific song can be incredibly arduous since this process usually requires the work of thirty music experts, who have been through an intensive 40-hour genome training session[141], to spend an average of 20 to 30 minutes on a 4-minute song (Joyce, 2006; Popper, 2015; Tischler, 2005). Compared to automated content-based filtering systems, this manually facilitated operation may make it difficult for Pandora to keep up with the current world of music as only between 250 and 350 new CDs are being purchased and analyzed a week (Tischler, 2005).

In a manner resembling the one used by Stimulus Progression Curve programmers in modern functional music (Anderson, 2015: 823), after identifying each musical traits of a song a numerical value between 0 and 5 is assigned, again by experts, to each gene in half-integer increments. The genes with lesser values are treated as non-essential and, therefore, can be neglected and exempted by recommendation algorithms combing the database for similar songs. Genes that have higher values, on the other hand, have more likelihood to be matched once a streaming station has been set into motion by the user. These genes with higher values are called *Focus Traits* and they represent

> the distinguishing aspect[s] of a song. When an end user enters a source song into the system, its genome is examined to determine which focus traits have been determined by music analysts to be present in the music. [...] The identified focus traits (or a subset) are presented on-screen to the user. This tells the user what elements of the selected song are significant.[142]

Once a station has been initiated by entering a source or "seed song", the recommendation engine will automatically analyze the genetic make-up of the

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[140] ibid.

[141] In order to be employed by Pandora, an analyst needs to fulfill certain requirements. As the company website (http://www.pandora.com/about/mgp) declares,

> The typical music analyst working on the Music Genome Project has a four-year degree in music theory, composition or performance, has passed through a selective screening process and has completed intensive training in the Music Genome's rigorous and precise methodology. To qualify for the work, analysts must have a firm grounding in music theory, including familiarity with a wide range of styles and sounds.

[142] https://patents.google.com/patent/US7003515B1/en

source song and other songs in the database and will calculate the distances between them based on their shared attributes. The songs with more matching Focus Traits will constitute each other's nearest neighbors and, perceived as good matches by the system, will therefore be recommended to the user. The recommendation is always accompanied with an explanation appearing on the screen about *why* this particular song was selected by the engine. Following a brief statement aimed to justify the selection made by the engine (*"Based on what you have told us so far..."*), the explanation will list all the focus traits of the song being recommended to the user. While such explanations may provide a higher transparency and confidence to the selections made by the recommendation algorithm (Celma, 2010: 7; Sinha & Swearingen, 2002), it does not automatically guarantee that the users will accept them at face-value. In other words, it is still the users who determine and modify the course of a station's streaming through giving *thumbs-up* if they enjoyed what the algorithm picked out for them or *thumbs-down* if they did not. Behind the "screens", each feedback provided by the user will manipulate and readjust the *weighing vector* used in determining the similarity distance between the songs. If the user clicks on a thumbs-up button, the algorithm will acknowledge it as a positive feedback and, by increasing the weight of the genes belonging to that particular Focus Trait, will become more likely to recommend songs that are similar to it. If, however, a user gives a negative feedback for a certain song by hitting the thumbs-down button, the weight of the genes will be reduced and a station's streaming order will change. That means, by constantly providing feedback, the users can manipulate the algorithmic operations carried by the system, hence resulting in a listening experience individually tailored in accordance with the users' tastes.

Just like *genes,* however, not every interaction carries the same amount of feedback value for the system. For example, skipping a song has less of an "informative weight" for the recommendation algorithm compared to a thumbs-down button. As Pandora's former chief scientist Eric Bieschke elaborates,

> You can skip a song because while you like it you have simply heard it too much, or you're just not in the mood for it at that moment. And if

you're a new user, you may be looking for something very specific […] or you may just be curious about how our song selection process works. So with a skip we have to divine its intent which is not easy. […] Rare signals (user interactions) [on the other hand] are very valuable and have big implications. So if you're a longtime user who never hits the skip button and then you suddenly do it, we pay close attention to that and respond accordingly. (cited in Diallo, 2013)

In conclusion, through manually annotating musical objects with "expert" and "acoustically-objective" tags (Jennings, 2007; Tingle et al., 2010), Pandora Internet Radio and its affiliated database the Music Genome Project offer a valuable and an ingenious solution to the problems presented by issues of *access* and *excess.* With the help of its staff of expert musicologist, Pandora constructs a musical genome for each song in its giant database, which forms the basis of the recommendations the service makes. Each time a user starts a station by entering a "seed song", the algorithms start calculating the distances between the source song and other songs in the database based on their musical attributes and, finally, suggests songs with the most similar genetic construction. After recommending a particular song, the system keeps collecting *implicit* (skipping a song, for example) and *explicit* (thumbs-up/down) feedback on users. Each feedback triggers an algorithmic reaction, leading to a subsequent increase or decrease in the weights given to certain genes. The end result is a personally customized stream of music, believed to be as unique as the tastes of the user doing the listening.

4.3.1.4.2. Spotify, Echo Nest and Taste Profiles

Whereas Pandora Internet Radio relies on the expertise of its human staff before utilizing computer algorithms to fetch and recommend songs, Spotify entirely reverses this process by prioritizing algorithms to collect and sort across vast amounts of data first and, only after then, using the curatorial capabilities of its editorial staff to generate digital functional playlists. Hence, instead of manually cracking the individual DNA of songs through decoding them into several "objective" musical traits, Spotify, with the help of its data mining partner *Echo Nest,* automatically analyses and maps out the acoustic profile of various songs, while at the same time gathering millions of editorial

and cultural metadata generated daily by users in various blog posts and websites online. Having collected all these acoustic and semantic data, Spotify then proceeds to use them as a database for creating context-sensitive playlists or individually designed *Taste Profiles*. While the former involves the editorially curated *mood* and *activity playlists* that users can use to "soundtrack their lives"[143] with, the latter completely relies on algorithmic techniques to generate every Monday a personalized playlist for each user based on their previous listening behaviors called *Discover Weekly.* In the following discussion, I will analyze the algorithmic infrastructure that makes the production of *Discovery Weekly* and other digital functional playlists possible but, first, some brief contextual information about the Spotify software is due.

Founded in 2006, Spotify, the current global leader among digital streaming services, initially began its venture as a general "media distribution platform", which included but not limited itself to the delivery of musical content. It was only after a short while that the company decided to focus on music streaming and greeted the visitors to its first webpage in 2007 with a brief message that read: "Spotify gives you the music you want, when you want it. Your choice is just a search box or a friendly recommendation away. You'll be amazed by the speed and control you have with Spotify" (cited in Eriksson et al., 2019: 43). As this statement indicates, the first interface of Spotify software was quite primitive compared to its current design, brandishing only a simple search box that pledged and granted a basic access to its modest musical database. According to Eriksson et al., Spotify's reliance on a search box during its initial phases of development pointed towards a conceptualization of user "as a sovereign individual, who already knew exactly what he or she wanted to listen to and did not need help with music recommendations" (2019: 44). What Spotify basically did was offering a multitude of songs in its library for free, which, they believed, presented an attractive, and legal, alternative to pirated music consumption. In that context, it can be suggested that, in its incubation

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[143] https://www.spotify.com/us/about-us/contact/

phase, Spotify was mainly concerned with the issue of *access*[144]. They simply provided a service and a tool (search box) for users to find the songs they are looking for. It would take some years and an exponential growth in the musical database of the service, for the creators of Spotify to deal with the problem of *excess*:

> In 2012, the focus had been on growth in numbers, but 2013 would be the year for Spotify to address a very different issue: "*The abundance of choice. How do you make sense out of 20 million songs?*" Until this point, Spotify had followed the on-demand doctrine, which tended to ignore the question of *meaning making.* The user was treated as a sovereign individual who already knew precisely what music he or she preferred to hear. Spotify's task was simply to respond to a request from the user, providing "whatever you want, whenever you want it". (2019: 60-61, *emphases added*)

To that end, Spotify made some new adjustments to their service starting with the acquisition of *Tunigo* in May 2013, a software company that was active on Spotify platform as a separate application that curated functional music playlists based on specific activities and moods. If purchasing of and subsequent integration with Tunigo was indicative of a "curatorial turn" (Eriksson et al., 2019), that move would soon to be solidified as Spotify began its recruitment of musically-informed individuals a year later for its own team of music editors and playlist curators. This shift in Spotify's emphasis from giving users "the music they want, when they want it" towards providing an "always on soundtrack of their lives" can be observed from an advertisement they published on their website for a music editor position:

> At Spotify, our vision is to *provide the perfect music for every moment*… We're growing our world-class music *curation* and editorial team and are looking for a multi-talented self starter, go-getter with limitless ambition and an undeniable hunger for progress and passion for music. This role calls for someone who can identify and execute the best music playlist listening

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[144] This previous disposition of the service can also be discerned by the fact that, in its early years, Spotify interface was completely overwhelmed by playlists on different genres with the notable exception of the more "functional" playlists such as moods and activities. In fact, as Leijonhufvud notes, "in the early days of Spotify, back in 2009, there was a list of every available genre published at Spotify news [which] presented 944 genres such as *Belly Dance, Hungarian Folk, Polka* or *Raga* as well as very specialized genres like *Modern Electric Chicago Blues* and *Modern Electric Texas Blues or Neo-Glam* or *Neo-Prog*" (2018: 214). This numbers are all the more bewildering when compared to the current number of genre categories on Spotify a decade later, which is a meager 18, covering only the most general and popular genres of music such as *Pop*, *Rock* or *Classical*, etc.

experiences for a multitude of *moods, moments,* and *genres,* has a passion for performance-oriented analytics, and has her/his ears to the ground in the music community. (cited in Eriksson et al., 2019: 62, *emphases added*)

As the above statement makes it clear, as long as Spotify is concerned, the era of the "sovereign individual", who was perfectly aware of what musical content he or she was looking for prior to listening, had come to an end. Instead, the independent and autonomous listener of the early search-box interface was now replaced by an idea of an individual who is lost among the millions of musical choices and needs a little bit more guidance than just a "friendly recommendation". From 2013 and onwards, instead of merely mediating users' access to a huge musical library, Spotify streaming service would fashion itself as the *producer* and curator of DFM experiences. Eriksson et al. interprets the implications of this "curatorial turn" as a change in the selling from the provision of "not more music but *better* music" (ibid). However, I will add that it is not just *better* music that Spotify was seeking to offer, but the *right* music – that is, *right* music for the occasion, for the mood, for the moment or the activity a certain user is engaged with. Spotify's goal was not simply to provide new and more advanced tools for their users to discover new and potentially "better" music; no, the aim was the creation of a functional music service that would accompany users in their everyday pursuits, from the moment they wake up until (and, in fact, *during*) they go to bed to sleep[145]. In that context, Spotify can be said to revitalize the *everydayness* of functional music that was one of the cornerstones of pre-industrial life. No more shall the use and consumption of functional music be restricted to factory spaces or shopping malls and retail stores; it would once again be a constant backdrop to daily travails of humans working in front of their computers at offices or commuting to and from their jobs.

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[145] These typical everyday events are what Spotify labels as *Moments,* where each "moment" suggests a particular context that could be soundtracked by providing the right music. As the former vice president of product lead at Spotify, Shiva Rajaraman argued in an interview, "people weren't listening to music they were used to. They weren't creating and organizing a huge library; they were building mini-libraries, playlists, each one for a different moment in their lives". This transformation in listening behaviors made him thinking , "what if we took this to its full conclusion [...] where instead of orienting around this idea of having music you put in a library, we orient more around your life? [Such as] music that might kickstart your morning, music that might help you run faster in the afternoon, music that might help you fall asleep at night" (Pierce, 2015).

4.3.1.4.2.1. The Echo Nest and Data Mining of Musical Information

Obviously, providing a perpetually available soundtrack to people's everyday lives is a monumental task and, for this ambitious purpose, Spotify has acquired *The Echo Nest,* one of the leading music analytic firms on the market, in the March of 2014. Founded in Boston in 2005, Echo Nest's vision was to traverse across massive corpuses of online data in order to collect information that would later "build smarter music experiences that help fans to better discover, share and interact with the music they love"[146]. Today, its large database of musical information[147] continues to power up over 400 hundred software and recommendation applications and websites - including but not limited to industrial giants such as Yahoo!, Vevo, Twitter, Microsoft, Reebok and Coca-Cola - and reaches over to 100 million music lovers monthly. In short, it is the task of the companies like The Echo Nest to collect and render intelligible the messy and colossal bulk of musical information online and to sort and classify them into plausible and logical categories based on different musical and extra-musical attributes. These automatically generated musical databases, then, constitute the backbone of recommendations and functional playlists generated by streaming services such as Spotify.

The company's origins can be traced back to the doctoral works of its two founders, Brian Whitman and Tristan Jehan, both of them alumni of MIT Media Lab at Cambridge. As Eriksson (2016) explains, the studies conducted separately by Whitman and Jehan would later on form the basic technical infrastructure that lay behind their data mining operations – i.e. *autotagging* and *semantic analysis*:

> Jehan's dissertation was explicitly inspired by the work of Alan Turing and explored the possibility of building "a machine that defines its own creative rules by listening to and learning from musical examples". His thesis work included the construction of advanced tools of audio analysis – so called

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[146] http://the.echonest.com/company/

[147] It is claimed that Echo Nest has "a knowledge base of more than a trillion data points, covering about 37 million songs and 3.3 million artists" (Prey, 2016: 33)

machine listening tools – with an ability to automatically predict, classify, and make immediate judgments about audio elements of musical pieces. [...] Rather than primarily turning to audio analysis however, Whitman focused on computer aided semantic analysis of text to dig deeper into the essence of music. Having a clear predictive element to it, the aim of Whitman's research was partly to create an automatic system that could foresee personal tastes, and provide individually tailored music recommendations by studying what people say about music online. If Jehan's research was about finding a way to make a computer "listen" to music to uncover its inner traits and meanings, Whitman's investigations were thus instead an attempt to make a computer "read" its way to similar results. (2016: 5-6)

The acoustic analysis component of the system basically replicates on a larger and automated scale what the employers at Music Genome Project do manually by parsing entire musical objects in just a few seconds of time and processing their acoustic signals into thousands of unique segments (Morris, 2015: 453). According to Brian Whitman, the Echo Nest software "ingests and analyzes the MP3, working to understand every single event in the song, such as a note in a guitar solo or the way in which two notes are connected". He continues by stating that an "average song has about 2000 of these 'events' for the system to analyze. It then makes connections between that song and other songs with similar progressions or structures" (Whitman cited in Prey, 2018). The "events" Whitman is referring to here correspond to what Pandora refers to as "genes" and, based on the much higher number of musical attributes analyzed and stored by Echo Nest, it is plausible to suggest that automated content-based filtering can generate more acoustically fine-grained databases compared to ones done with human hands and minds. But The Echo Nest does not just stop there, they also conduct a semantic analysis of all the discursive information exchange taking place online every day in forums, blog posts, tweets, music reviews, social media exchanges, etc., amounting to about 10 million documents each day[148]. Once the algorithms finish going through this enormous amount of

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[148] As Eriksson's (2016) brilliant study on the data collection methods of Echo Nest demonstrates, however, not every cultural information collected by the system represent a clear and useful data. On the contrary, often the system encounters with, what she labels as, "rotten metadata" constituted by *dead links* that are no longer operational, *orphan blog posts* where the text had no relationship whatsoever with the target artist that has been searched, *name confusions* where the same words with two completely different meanings are displayed and, finally, *re-posts* where the same results has been displayed multiple times. In other words, the data that has been mined and provided by The Echo Nest to its affiliated service may sometimes

data, The Echo Nest began compiling of various "keywords found in descriptions of the music and its creators, and then links them to other artists and songs that have been described with similar keywords and phrases" (Prey, 2016: 33). For instance, explains Jeremy Wade Morris, "if terms like 'dreamy' or 'ethereal' are frequently used to describe a Beach House album, The Echo Nest assumes there is a connection between these words and the band's sound" (2015: 454).

In other words, by employing algorithms to automatically analyze both the musical attributes of different songs *and* the way people discursively talk about and define these songs, The Echo Nest is capable of covering through and collecting all the important types of metadata - *editorial, cultural* and *acoustic* - that Pachet (2005) was referring. Such combination of different forms of metadata can surely be perceived as an improvement of Pandora's recommendation engine, which, by relying solely on the sonic characteristics of songs, suffers profusely from the "semantic gap" (Celma, 2010: 53), or the "cultural myopia" (Mandl, 2014). We have suggested earlier that, recommendation services that primarily utilize content-based filtering techniques, whether automatically or manually like Pandora, can become inadequate in terms of extracting *high-level* or subjective information such as the perceived mood of a song. Therefore, they cannot make use of this extra-musical data in their recommendations, thus offering only "an undifferentiated horizontal line for affect management: track after track of music similar to but slightly different from the algorithm's originating seed (Anderson, 2015: 823). However, by adding this extra layer of cultural information to their data analysis through a semantic analysis of editorial websites (such as *AllMusic*) or individual weblogs, The Echo Nest can effectively discern whether a certain song is *happy* or *sad*, which would effectively increase the quality and accuracy of the recommendations made by the streaming platforms using their service. In short, by combining automated content-based filtering and cultural metadata extraction techniques, The Echo Nest offers a much larger and sophisticated

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contain information that is no longer available on the Internet (thus cannot be checked for accuracy) or information that is simply irrelevant to the search query.

musical database compared to Pandora's Musical Genome Project that could be accessed and utilized in different ways by various streaming and recommendation software[149].

Once data has been gathered through machine listening and cultural "reading" techniques and stored in the "musical brain" (Jehan, Lamere & Whitman 2010) of the service, it can be exploited by Spotify editorial team for creating various context-sensitive playlists that would suit any and every type of mood and activity the users might find themselves in. All of the functional music playlists one encounters on Spotify interface, from the most popularly streamed playlists such as *Mood Booster* and *Your Favorite Coffeehouse[150]* to lesser-known ones like *Rainy Day* or *Almost Home*, may have been created by human editors but they are all powered up by the semantic and acoustic information collected by Echo Nest's algorithms. What editors merely do when creating these playlists is to login to a playlist-building application called *Truffle Pig*, which is only accessible to Spotify employees, and type in particular keywords to a search box that relates to the idea they have for a playlist. These keywords can be anything from a particular musical genre to more abstract emotions or feelings such as *calm* or *comfortable,* or perhaps a time of day like *morning* or *afternoon.* Once a certain keyword is inserted into Truffle Pig search box, the system will scan The Echo Nest's database and generate candidate songs corresponding to the keyword. The editors can, then, listen to each song and create a playlist based on the songs they like. As Jim Lucchese, the CEO of The Echo Nest, explains, The *Truffle Pig* application

> [...] lets them [the editors] build a playlist from almost anything: an artist's
> name, a song, a vague adjective or feeling. You tell Truffle Pig you want, say, a

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[149] Any digital service or aspiring application developer can utilize without any payment the information harnessed by Echo Nest to power up their own website by entering the Spotify Application Programming Interface (API) (https://developer.spotify.com/documentation/web-api/) and extract any data they are planning to use in their service.

[150] Writing in *Wired* magazine, David Pierce (2015) gives his readers a detailed account of how a playlist like *Your Favorite Coffeehouse* with millions of followers was first created. He states that the playlist, like the other functional music playlists on Spotify "began with the hypothesis [...] that you could replicate the experience of sipping a latte in a comfy chair while reading a book, without having to fight for a seat or spend six bucks on a cup of joe". The underlying idea, then, was, as the creator of that playlist Doug Ford suggests, "to make it is so no matter where you were, you could invoke that feeling".

twangy alt-country playlist. That's enough to get started. Then you refine: "Say you want high acousticness [...] with up-tempo tracks that are aggressive up to a certain value. It'll generate a bunch of candidates, you can listen to them there, and then drop them in and add them to your playlist. (Lucchese cited in Pierce, 2015)

In a nutshell, then, The Echo Nest's massive database of acoustic and cultural metadata makes it possible for Spotify editors to create playlists not only based on genres but also on different *feelings* and *emotions.* While the users of Pandora can only *personalize* the streaming musical content to the extent of their shared musical traits, Spotify listeners can utilize other extra-musical, i.e. "cultural", information, such as their current mood states or the activities they are engaged in, while selecting among the professionally-curated playlists as well as creating their own. This ability of Spotify platform, in turn, leads to the further functionalization and individualization of digital music, which we will discuss in as the second characteristic of DFM in addition to its algorithmic nature.

4.3.1.4.2.2. Taste Profiles and Discover Weekly

In addition to procuring valuable metadata that generates the framework on which Spotify's functional music playlists can be built upon, The Echo Nest service also creates an algorithmic estimation of Spotify users based on their previous interactions with the service. As Paul Lamere, the director of developer platform at Echo Nest, discloses, "every time a listener adjusts the volume on the player, every time they skip a song, every time they search for an artist, or whenever they abandon a listening session, they are telling us a little bit about their music taste" (Lamere, 2014). All these bits and pieces of information implicitly and anonymously captured from a user's activities contribute to the construction of an overall *taste profile*, i.e. "a persistent, real-time record of music play data (artists and songs) and behavior (favorites, ratings, skips and bans)" (Morris, 2015: 455). In other words, by engaging in a perpetual and "an ongoing taste monitoring project" (ibid), The Echo Nest creates an "algorithmic identity" (Cheney-Lippold, 2011) or a "digital dossier" (Solove, 2004) for each user, which is believed to be representative of their

unique musical identities and dispositions. Or, as Ajay Kalia, the product leader overseeing the project at Spotify, likes to define, they are "the foundation of *personalization* at Spotify" (Kalia cited in Heath, 2015, *emphasis added*).

The process of monitoring begins as soon as a user registers for the Spotify streaming service and starts interacting with the interface. In fact, as Brian Whitman explains, the profiling of users starts taking place prior to their first engagement with the system since just the simple "fact that you are using an iPhone instead of an Android [tells] a lot more about your music taste. It's low level signals that definitely when combined tell you a lot" (Whitman cited in Prey, 2016). These *taste profiles,* however, are not solid or fixed entities that remain constant after they are formed. Instead, they change dynamically and adapt as more new data starts flowing back into the system about users' interaction with the service or their listening patterns. In order to keep up with the ever-shifting musical tastes of their audiences, The Echo Nest continuously refines and adds to the "music segments" they use to estimate each listener's "unique musical identity". These segments currently include:

- *Genres & Styles:* The musical affinity of the listener for one or more of the 710 musical genres
- *Artists:* The musical affinity of the listener for certain singers and artists
- *Mainstreamness:* Whether the listener listens to well-known or relatively obscure artists
- *Diversity:* Whether the listener prefers specific musical genres or listens a variety of different styles
- *Freshness:* Whether the listener prefers recently published music or nostalgic songs
- *Locality:* Whether the artists preferred by the user are concentrated on a single geographical area or spread worldwide
- *Currency:* Whether the listener prefers music that is currently in heavy rotation
- *Discovery:* Whether the listener is open to finding out emerging but not yet trending artists
- *Song Hotttnesss:* Whether the listener prefers an artist's most popular songs or lesser-known ones[151]

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http://corpcdn.echonest.com.s3.amazonaws.com/filer_private/2014/01/27/audience_understanding_finalx.pdf

Every time a user streams a particular song or an artist, then, that song or artist is evaluated by Echo Nest's Taste Profile system based upon these parameters. The first two attributes, *genres/styles* and *artists,* aim to capture the musical taste of the listener by assigning an *affinity score* to artists/genres every time they are streamed to assess whether they are central to one's taste or not (Popper, 2015). The remaining segments, on the other hand, measure the listening patterns and behaviors of the user, i.e. whether they display a consistent behavior or deviate from it. For instance, if a user scores high in the *discovery* segment, the recommendation engine can more confidently suggest new songs, as it will think that the user will be open to trying out novel musical experiences. The ultimate picture that emerges from this process, the "taste profile", is believed to be an accurate representation of the musical tastes and preferences of a user. *As the company paper referred above claims, understanding audiences based upon their streaming behaviors is a good way to "monetize" them since these data can be exploited for individualized ad targeting as well as determining who the "low-" or "high-value" listeners for the streaming service are or will be[152] (Prey, 2018; see, also, Leijonhufvud, 2018). But, aside from these "sinister" reasons, classification of users into different taste clusters can also be utilized for increasing their streaming experience through the provision of increasingly more individualized and tailored personal recommendations. This was the idea behind Spotify's introduction of *Discover Weekly* in July 2015, which quickly became one of the most popular ways users consume digital music online with over 40 million listeners tuning in and streaming approximately 5 billion tracks during the process (Prey, 2018: 1090).

Discover Weekly is a personalized playlist that automatically updates every Monday and contains 30 songs that are handpicked by Spotify. In an effort to provide relevant and novel recommendations for their listeners, Discover Weekly's recommendation algorithms make use of both *content-based* and *collaborative-filtering* methods. As a press statement made by Spotify shortly

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[152] This may be one reason why taste profiles are not overviewable by the users. As Eriksson et al. notify, despite the "requests to make them public, resettable, or exportable between services", so far "these taste profiles are not revealed to users" (2019: 141) or are in no way over-viewable by them.

after the service was first initiated briefly explained, "Discover Weekly combines both your personal taste in music with what others are playlisting and listening to around the songs that you listen to" (ibid: 1091). In other words, before recommending songs, it takes into account the tastes and preferences as well as previous listening behaviors of a specific user *and* the playlists created by other subscribers. As Adam Pasick explains, for their Discover Weekly playlists,

> Spotify considers everything from professionally curated playlists like RapCaviar to your cousin Joe's summer barbecue jams. I*t gives extra wring to company's own playlists and those with more followers*. Then it attempts to fill in the blanks between your listening habits and those with similar tastes. In the simplest terms, if Spotify notices that two of your favorite songs tend to appear on playlists along with a third song you haven't heard before, it will suggest the new song to you. (Pasick, 2015, *emphasis added*)

The emerging results from a user's listening activities and songs that are contained in playlists of other users with similar tastes are combined with the specific *taste profile* of a user and the result becomes Discover Weekly, a personalized list of new songs that user is believed to have never listened to before but would surely enjoy. According to Matthew Ogle, the product manager of the Discover Weekly service,

> On one side, we've built a model of all the music we know about, that is powered by all the curatorial actions of people on Spotify adding to playlists. On the other side, we have our impression of what your music taste is. Every Monday morning, we take these two things, do a little magic filtering, and try to find things that other users have been playlisting around the music you've been jamming on, but that we think are either brand new to you or relatively new. (Ogle cited in Pasick, 2015).

In conjunction with the professional curation of context-specific playlists promising to accommodate every spectrum of mood and emotion as well as a wide variety of everyday activities and contexts, then, the Spotify streaming service also provides a *user-centric* digital listening experience through its *Discover Weekly* recommendation engine. By monitoring and analyzing past user listening behaviors and combining them with the playlisting activities of other musically like-minded users, Discover Weekly generates a brand new and

personalized playlist that not only aims to cater to user's musical preferences but *to predict* their tastes too. Therefore, it not only represents a tool for musical discovery but a musical gateway for *self-recognition* too: the 30-track playlist updated each week represents the unique *musical identity* of each user. A similar point has been made by Susanne Leijonhufvud, who claims that "when Spotify presents its feature of Discovery with 'Your next favorite song is waiting for you', the service breath the capability of guiding or even parenting the user to, not only discover but to develop toward or into something. Hence, by letting the expressions of the autonomous human body find new music can equal *finding oneself*" (2018: 274, *emphasis added*). Greeting users with a freshly picked selection of songs every week, then, the *Discover Weekly* tool not only allows listeners to discover new songs each time they listen to their playlist but to weekly (re-)discover one's own self as well.

One potential shortcoming of the service, when compared with Pandora's recommendation engine, is that listeners of Discover Weekly may not always know *why* exactly a particular song was suggested to them as there are no additional explanations attached to recommendations (Popper, 2015). Despite this lack of transparency, however, Discover Weekly affords a level of *personalization* and *individualization* that has so far been unrivaled and unsurpassed by its counterparts. The recommendations generated by Pandora Internet Radio, for instance, are based upon shared musical traits, which means that, unless a user decides to open up a new streaming station, he or she will receive songs that are characteristically very similar with each other, usually within the same genre, which is hardly conducive for further personalization. On the other hand, since it is primarily built upon different taste profiles and users' interactions with the streaming interface, Discover Weekly can offer a broad and eclectic range of musical selections that would appeal to different musical tastes an individual may have or different moods and contexts the user might find herself in. And therein lies the popularity of Discover Weekly: it does not simply reappropriate or remediate an older format, like radio, in a digital medium but makes full use of algorithmic and human information production techniques to produce individually-tailored listening experiences that reflects

each user's unique musical identities and dispositions. The seemingly infinite possibility for *personalized* music listening is crucial for our understanding of functional music in the digital period and constitutes its second key characteristic.

4.3.2. DFM as Individualistic Music

In the previous forms of functional music, the programming was made in consideration of a certain population group. Whether it was increasing the efficiency of factory workers engaged in repetitive assembly-line tasks in industrial workspaces or enticing shoppers to buy and consume more goods, the aim of functional music was directed at a multiplicity and, therefore, *massifying.* Even in the pre-industrial period, where there were no proper and modern models for *programming* such as Stimulus Progression or Quantum Modulation, functional music was performed for the benefit of an entire taskforce. Work bands toiling in the fields, sailors hoisting the sails or heaving the anchor, waulkers strenuously preparing the tweed for clothing – in all of these examples a song was chanted to coordinate the efforts and alleviate the monotony of the task for everyone rather than a single member. As the production and programming techniques of functional music in the digital age gradually shifted and delegated to automated algorithmic computations, however, the production and consumption of functional music become more and more atomistic and *individualized.* Whereas the preceding forms of functional music always imagined and conceptualized their target as a mass *audience,* DFM aims to operate upon disparate and isolated individual *users,* or, "highly differentiated *micro-audiences*" (Hallinan & Striphas, 2016: 128, *emphasis added*). This change in objective can be deduced from the preferred manner of streaming services to address their listeners with an informal *you*: such as "the music *YOU* love" (Pandora) or "Soundtrack *your* life" (Spotify). In other words, as opposed to "the one broadcast/many listener model" of previous types of functional music, then, DFM works with the more *user-centric* "one broadcast/one listener model" (Anderson, 2015: 814).

The *individualizing* aspect of DFM may be examined in terms of the double processes of *production* and *consumption*. With regards to the former, we have already seen how algorithmic methods of data collection and the ability on behalf of users to provide constant feedback to the recommendations made by streaming services has led to highly personalized musical experiences online. We have also discussed how the construction of taste profiles that are representative of the unique musical preferences and identities of users in an effort to generate fresh recommendations every week by Spotify's Discover Weekly constitutes the most ambitious and ideal example for the personalization of DFM production. However, besides these "service-facilitated streaming practices" (Hagen, 2015c), there are also individual actions taken by users themselves that significantly contribute to the personalized forms of DFM production (see, for instance, Jennings, 2007: 117). In addition to providing the service with real-time feedback (with thumbs-up/down buttons, for example), one of the most common practices undertaken by users of streaming services in this context is the creation and active management of various *playlists.* These customized playlists often have a *functional* character, as they tend to thematically revolve around particular subjects that pertain to the emotional states and routine everyday tasks and activities of users (Kjus, 2018: 155). Hence, in addition to giving users the option to broadcast editorially-curated context-sensitive playlists, the streaming services afford their users to produce their own musical content by allowing them to create musical playlists that would generate the sonic backdrop of their everyday lives, therefore, in effect, serving as a "malleable lifeworld resource" (Hagen, 2015a). In that sense, music streaming services can be said to be *liberating* and *empowering* users by turning them from mere consumers, who were obligated to listen the musical selections designed by some anonymous programmer, into *active creators,* or *produsers* (Bruns, 2007; Leijonhufvud, 2018), of musical content. No longer forced to consume the music that was imposed upon them, the users could now become an active and integral part of the production process of functional music too.

Just like the changes taken place in its production, the *consumption* of functional music would also become immensely individualized due to the advances in the

digital media technologies. In the past, the general public who were constantly and involuntarily exposed to functional music broadcasts in public places are frequently described by the critics of Muzak as *captives* since, these detractors believed, no one in their right mind and with even a little taste in and understanding of music, would willingly listen to such horrendous musical performances devoid of any aesthetic sensibilities. In a 1949 hearing, for instance, New Yorker editor Harold Ross argued that, the prevalence of public broadcasts of recorded music would eventually lead to a situation in which "the individual becom[es] the captive of the sound-makers and los[es] the right to choose whether he listens or doesn't listen" (Ross cited in Radano, 1989: 448). Echoing the same sentiments with the same choice of words few decades later, the globally acclaimed violinist and conductor Yehudi Menuhin, who served some time on the Executive Committee of UNESCO's International Music Council, would become instrumental in the passing of a resolution by his committee unanimously denouncing "the intolerable infringement of individual freedom and the right of everyone to silence, because of the abusive use, in private and public places, of recorded or broadcast music" (cited in Lanza, 2004: 153). One reason behind the hatred and enmity against functional music in public places and, thus, the characterization of audiences as captives of this music stems from the fact that, it is virtually impossible to escape it and even harder to close one's ears to it as one would naturally do with their eyes when encountering a distasteful scene or imagery. Unlike our eyes, "we have no ear lids" and, thus, "we are condemned to listen" (Schafer, 2003: 25).

However, as Bull indicates, recently the "technology has come to the aid of the ears" (2007: 12); first, through the invention and proliferation of mobile music technologies such as the MP3 players and smartphones and, then, through the sheer availability of headphones, which help listeners to block out any unwanted sound. Whereas the older forms of functional music consumed collectively and communally by a particular population, the majority of consumption today takes places in *private* via personal computers, desktops or mobile phones of users (Zhang et al., 2013). Even when individuals find themselves in the presence or in the company of others, they can effectively

isolate themselves by putting on some music with a pair of earbuds, which creates a visual equivalent of shutting the door to outside world or hanging a "do not disturb" sign (Heye & Lamont, 2010: 137; Skånland, 2012: 221). In a sense, then, digital users are empowered, as they are no longer "condemned" to be the involuntary captives of public broadcasting of functional music at public spaces such as at work or shopping centers. With the help of these new mobile listening technologies and equipments, individuals have successfully reclaimed, what Ross earlier defined as, "the right to choose whether to listen or not" – with the headphones acting now as "earlids", it was up to the users now to choose what they want to hear. In fact, this newfound deliverance from publicly imposed forms of music pit digital consumption of functional music with its earlier forms. In her study on the uses of MP3 players across London, for instance, Miriam Simun revealed that each of one her interviewees kept on their MP3s and headphones in commercial stores as they refused, in an open "act of defiance", to be subjected to the blaring functional music coming from the speakers (2009: 938). This is clearly a new breed of functional music consumers, unlike the industrial workers listening to the day's broadcast of *Music While You Work* while stationed at their workplaces or the shoppers moving steadily to the sounds of Muzak coming out of supermarket aisles or retail shops. The new consumer of DFM opts to close her ears to such music and, instead, replaces it with a steady intake of individualized musical streams flowing out her personal listening devices and the headphones wrapped around her head or dangling from her ears. If we try to depict a paradigmatic image of this new consumer, we might, for instance, think about an urban stroller or an office worker wearing earbuds hop[ing] to create a cocoon of musicalized ego-defense while crowded among the cubicles of other similarly cocooned mental laborers" (Anderson, 2015: 832). Whether it's an urban *flâneur* or a desk laborer engaged in a creative task, in digital forms of functional music, it is often a single individual who does the act of musical consumption.

Although the techniques of its production and consumption have become highly personalized and user-centric, there is also a profoundly *social* component to DFM that warrants a further scrutiny. One such quintessentially social aspect

when it comes to the production of DFM online is *collaborative filtering,* and the emerging *folksonomy* of tags, which we have already accounted for in our investigation of the user-generated inputs for algorithmic knowledge-production. By annotating and labeling musical objects with miscellaneous descriptive "tags", users engage in a "communal informing" (Beer, 2009: 996) process and, thus, become a part of a collective effort in the production of various semantic and cultural metadata, which, as we have seen, then can be collected by data analytics systems such as The Echo Nest and can be used to curate multiple digital playlists. Or, as in the case of last.fm, the joint tagging activity by users can be used to produce various radio stations, which users can immediately start streaming by clicking on the related tag (Jennings, 2007: 19-20). That means, when a certain content has been tagged on last.fm, it subsequently becomes available for public consumption by the community of users.

Yet, it is not just the tags that are visible on last.fm, but individual *music profiles* of users as well. Unlike the "taste profiles" compiled by Spotify and The Echo Nest, which are hidden from the inquisitive gaze of the users they belong to, these music profiles are open, not just for the user herself, but for every visitor of the service. An average music profile on last.fm includes detailed individual information about the listening patterns of users (how many different tracks, artists or albums are *scrobbled* by users; during what period of the day and for how long), their tagging activity and how many new tracks, artists or albums they have discovered. Based on the data it gathered, then, the system ranks each user in a *leaderboard* based on these three categories. These leaderboards let users to see and assess how their listening behavior fared compared to other users of the service and, perhaps encourage them to stream and discover more if they end up at the bottom tier of the scoring sheet. Through providing some friendly competitive edge to the act of streaming, these leaderboards remind users that their individual and isolated listening activities always take place among a community of other users.

An additional benefit of having open and accessible music profiles on services like last.fm is that, users can find others who share similar musical tastes and preferences with them and befriend them by using the *follow* option on their profiles (Setty et al, 2013). At times, these digital friendships can materialize into real-life ones at the discretion of users or when last.fm suggests local gigs by artists a user and her *followers* constantly listen to, thus providing an opportunity to come together and possibly make new friends (Jennings, 2007: 172). Such social streaming services, then, can contribute to the formation of "networked publics" (Boyd, 2010; Ito, 2008; Varnelis, 2008) by allowing users with shared musical inclinations and dispositions to get together and assemble in digital space, thus facilitating the interaction and transaction of musical information between them even when the social ties connecting them are considered to be "weak" (Baym & Leadbetter, 2009; Granovetter, 1973). That is, despite having no prior connection or knowledge about each other, users can follow one another, share their listening activities and recommend new music, by simply based upon their shared musical affinities. This was the conclusion reached as a result of a qualitative study on the sharing and following activities of Spotify users by Hagen and Lüders (2017), who report that:

> Informants follow weak ties selectively without primarily emphasizing the social relationship as reason for the connection. This form of following is instead motivated by perceived music fellowship or recognition, or what we term music homophily. [...] People follow weak ties as well because they supply relatively effortless access to music, insights and recommendations. Following them is a means of benefiting from an extended and knowledgeable network of music-listening peers (2017: 11-12).

Following other users, artist pages or even playlists (whether curated by editors or users themselves) can, therefore, be an important part of digital music streaming experience since, as one Spotify statement puts it, it can turn ordinary music fans and streamers "into recommenders just by listening" (cited in Leijonhufvud, 2018: 239-240). Here, as in other areas of digital streaming, we see Spotify pioneering the social appropriation of music listening through building a partnership with the leading social networking site Facebook in early 2010 (Cionci, 2011). The forging of a business coalition between these two

services would have some fundamental, and eventually financially lucrative, implications: first, immediately following the agreement, Spotify interface became more "social" and interactive, allowing users to build their own personal profiles, adding and following other people and sharing music instantaneously with their circle of friends (Eriksson et al., 2019: 53). Spotify users could now also create *collaborative playlists,* meaning that two or more users can contribute to the curation of the same playlist by adding or discarding songs. Second, it allowed users to connect their Facebook accounts to their Spotify, thus making seamless data generation and transaction between these two services possible. Related to this development, finally, the previously solitary acts of music streaming on Spotify truly became social and public, as, whenever a user started streaming music on her Spotify application, her activities are published and became visible simultaneously to her friends on their Facebook pages and newsfeeds. As Eriksson et al. explain:

> The integration of music services was clearly visible for users of Facebook. At the left-hand side of the interface now appeared a Music Dashboard, including statistics for which songs were trending among friends. On the right-hand side, the news ticker showed in real time what friends were listening to and what app they used for listening – giving Spotify's trademark valuable exposure. And in the central home feed, Facebook would occasionally provide updates (2019: 56).

Although the streaming activities of users at Spotify are publicly visible to their friends by default, those who may not want to *share* their activities can do so by switching to an *offline mode* of listening, whereby the streaming content won't be published and, therefore, become over-viewable by others[153]. Similarly, users who do not want their playlists to be accessible by others, for whatever reason, can do so by hitting a "*make secret*" button, thus successfully concealing the playlists in their profile. Since preferences in music are often understood to hold important clues for an individual's identity, the decisions users make to share certain content while hiding others are often linked to issues of identity work, i.e. the ways individuals manage their perception by others and how much they want to reveal of themselves to public gaze. As the previously cited study by

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[153] Though, as Leijonhufvud reminds, even though the musical activity is not published in offline or private mode of listening, the system will still continue to collect data on the user; thus calling into question how "private" the listening experience truly is (2018: 284-285).

Hagen and Lüders (2017) claim, users can generally be classified into one of three groups depending on their level of comfort they display while social streaming and the amount of content they are willing to share. In the first group are *share-all* users, who do not care about other people's opinions about their musical tastes and regard everything as shareable. S*elective sharers,* on the other hand, only share particular playlists "curated with effort and ingenuity, when they want to be associated with this music or when music preferences are considered appropriate taste statements" (2017: 8). Finally, *non-sharers* see music as too personal or intimate to be shared with others or think the music they are streaming is at odds with their desired self-presentation. What underlies all three groups is a shared awareness of the fact that their streaming does not take place in a vacuum; that, even if they were listening to music alone in a room, or privately with their headphones, there is always a digital public present, monitoring their activities and silently judging their musical selections.

The user-initiated activities of *tagging, following* and *sharing* we have described above are all instances for the social and collective production of DFM. Yet, as we have seen, this social production of DFM can also emerge as a result of the work of algorithmic processes, such as categorizing users based on their shared demographic data (*demographic filtering*) or their past purchasing or rating behaviors (*collaborative filtering*). According to Gillespie, such algorithmic operations and filtering techniques lead to the emergence of, what he calls, "calculated publics". Unlike networked publics, which are a result of users' own volitions and interactions with each other on the digital space, *calculated publics* are entirely the result of algorithmic data processing and computations. "When Amazon recommends a book that 'customers like you' bought", Gillespie argues, "it is invoking and claiming to know a public with which we are invited to feel an affinity" (2014: 188). Therefore, even when they strive to make the most customized and personalized recommendations for their users, streaming services who rely on such filtering and recommendation techniques always assume a certain public, "users like you", who share similar tastes and listening behaviors as the user. In other words, there always appears to be a modicum of

"social" even in what looks to be the most perfectly tailored and personalized recommendations – such as those encountered on *Discover Weekly*.

Finally, in addition to its social production by users and algorithms, DFM, just like its predecessors, can be consumed in a collective and communal fashion as well. There even exists playlists at Spotify specifically and professionally curated for occasions that require the congregation of multiple people – such as the *Tailgate Party*[154] for sporting events, or *Classical Intimate Dinner*[155] for hosting an elegant get-together. Despite constituting only a meager portion of the overall functional playlists at Spotify and being much less popular in terms of the number of their followers, the mere presence of these "social playlists" retain us from making sweeping generalizations about the individualistic nature of DFM compared to its previous forms. Just as DFM is not *entirely* algorithmic, it is also not *entirely* individualistic: there is a mixture of both personal and social considerations going into its formation and consumption. Having said that, what we witness in digital forms of functional music is a level of personalization and individualization, both in terms of its production and consumption, to a degree that is simply unprecedented by older types of functional music. In order to be able to understand the depth of this individualization, I suggest three further affordances DFM provides for its users to be considered: (i) the increasing *mobility* and *portability* of DFM as a result of the technological developments in mobile listening devices and applications; (ii) the growingly *malleable* and *personalized* forms of streaming DFM services offer to their users and; (iii) DFM becoming more *context-specific* in the ways it is used and consumed by users. Taken together, these three attributes entail a highly individualized form of experiencing functional music that was missing or, rather, technologically impossible to achieve in its previous historical incarnations.

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[154] "The right music can make a good tailgate great. So crank up this country collection in the company of good friends and great sporting events".

[155] "Classical music to set the mood for your intimate dinners together with love [sic.] ones and friends".

4.3.2.1. Mobility and Portability: Functional Music on the Move

The earlier modes of functional music were strictly constrained in terms of time and space, and, in that sense, can be considered as *stationary* and *sedentary.* The broadcasting and dissemination of pre-industrial functional music, for instance, was severely limited to the vocal range of its performer(s) and it was produced and consumed *there and then.* Moreover, since the main reason for its production and performance was to aid the successful completion of a particular task, it ceased to exist as soon as the task in question came to an end. In industrial forms of functional music, the broadcasting of music was reserved for delineated time frames, specifically for those periods when there were dips on the levels of production as the energy and the spirits of the workers seemed to sag considerably, such as during the mid-morning or late-afternoon (Wyatt & Langdon, 1938). In addition, the broadcasting of functional music selections was completely reserved for the factory floor, where workers were engaged in repetitive and monotonous tasks associated with assembly-line production. In fact, the separation between functional work music and other forms of broadcast entertainment was so strict and highly regulated that, in complete contrast to *Music While You Work,* the BBC had specifically designed a new type of programming called *Workers' Playtime,* a live-entertainment show broadcasted three times a week during lunch-times and pre-designated shift-breaks at selected war factory canteens (Baade, 2012: 66; Nicholas, 1996: 133). If, therefore, *Music While You Work* was strictly *for* working and boosting the efficiency of factory workers; *Workers' Playtime* was for entertaining, morale boosting and distracting the workers from the wartime and alienating conditions surrounding their jobs. The difference between the aims and objectives of these two programs can also be discerned from their contents: while *Music While You Work* was programmed in accordance with strict scientific guidelines and contained no potentially distracting vocals and instruments, *Workers' Playtime* often contained humorous performances by professional comedians and impressionists. In post-industrial forms of functional music, on the other hand, the programming and broadcasting of functional music has varied from context to context, changing constantly as

shoppers moved from one store to another depending on the atmosphere their owners want to create or the nature of the goods they are selling. As Sterne (1997) has so brilliantly analyzed in his field study of the Mall of America in Bloomington, Minnesota, even when located in the same shopping setting and neighboring each other, different retailers pick different styles of functional music that they believe to best *fit* and capture the overall vibe and objective of the establishment. Hence, for instance, while an elegant and refined lingerie store catering to a bourgeois, upper-class identity, such as *Victoria's Secret,* played classical music "to legitimate the[ir] store as a respectable place to shop", a *Levi's Store* at the same shopping center, may decide to play a booming rock music with stimulating video accompaniment in order to attract their target clientele of young and hip shoppers (Sterne, 1997: 36-39). In each case, the functional music being played differs depending on the space one occupies and it is also constrained in time – the music stops when the shop closes. In all these three types of functional music, then, a listener has to be present in a certain place at a particular time in order to be able to experience the functional music – whether at a working field, a factory floor or a retail shop. In each instance, the functional music is constrained within the physical territory in which it is being broadcasted and, once a user exited that particular space, it ceased to become *functional*.

As opposed to these stationary and sedentary modes of functional music, DFM is neither restrained to time nor space and, hence, is more *active* and *mobile.* It can even be considered as *agile*, since it can constantly and seamlessly accompany individuals as they move across different places. Conveniently kept and stored in people's pocket phones as just another smart application, digital music streaming services playing and broadcasting functional music can, as Spotify likes to remind us, be accessed "whenever you want it, wherever you are", thus transcending the circumscribing restrains of time and space that plagued its predecessors. Yet this newfound *mobility* of functional music is by no means exclusive to the recent advancements in portable digital technologies and *softwares*, like smartphones or *streaming applications,* but, in fact, primarily a legacy of earlier mobile listening *hardwares* such as the Sony Walkman,

Discman or the Apple iPod (Frith, 1996; Hargreaves & North, 1999). First released in 1979, the most "primitive" of these portable media players, *the Walkman* effectively transformed the ways individuals interacted and consumed recorded music materials by rendering it possible, for the first time in history, to listen to music of one's own choice while *on the move*. Dubbed the "Walkman effect", this compact and miniaturized "walking gadget", says Hosokawa, endowed the urban subject with a musical *autonomy* that she did not possess before as it "enable[d] our musical listening to be more occasional, more incidental, more contingent. Music can be taken wherever and whenever we go. The Walkman produces or constitutes a musical *event* which is characterized as unique, mobile and singular" (1984: 169; see, also, Juslin, Liljeström, Västfjäll, Barradas & Silva, 2008: 678). Despite being harshly judged and negatively portrayed as "dumb, childish, immature, silly, withdrawn, unwilling to communicate, egocentric, narcissistic, autistic and so forth" (Schönhammer, 1989: 129) by early observers who are not yet accustomed to this technological device, Sony Walkman was the first mobile listening technology that gave listeners the opportunity and freedom to create their own desired soundscapes and private auditory bubbles (Bull, 2004, 2007) *outside* their homes, as they cruised and traversed the urban landscape (Thibaud, 2003).

A few years later, in 1984, Sony capitalized on its early success with Walkman by launching the first portable compact disc player, *Sony Discman,* onto the market. Although both technologies were instrumental in terms of making everyday music listening and consumption more accessible and *mobile*, they also suffered profusely from certain limitations typically associated with such early generation hardware devices. First of all, since they are operated by simple, alkaline dry cell batteries, these players had a shorter energy lifespan compared to recent smartphone technologies, causing power interruptions that could abruptly bring the listening experience to a premature end. The frustration would be amplified by the fact that, once they are depleted, the batteries could not be recharged (certainly not while on the move) and had to be disposed of. Therefore, unless the Walkman or Discman listener carried a

spare pack of batteries on his or her person all the time with the expectation of such an occasion, he or she would forced to suspend the listening event until the batteries are replaced. Second, there was the issue of *storage*. Since these media devices were only capable of playing only one item – a single cassette or compact disc – at a time, they were not conducive for much musical *variety*, thus necessitating a careful and elaborate planning on listeners' part with regards to what type of music they want to hear *before* leaving their home. Such premeditation on daily musical selection was handled cautiously and prudently, for it would be unpractical and inconvenient for individuals to carry multiple amounts of cassettes or discs on them. Therefore, listeners were usually aware of the fact that, if they had not picked the *right* music that was congruous with their mood and needs, they would practically get *stuck* with it for the remainder of the day.

The solution to the technical problems posed by portable tape and disc players came in 2001 with the introduction of Apple iPod. Unlike the earlier generations of mobile media technologies it succeeded, iPod was not meant for playing and listening material musical objects such as cassette tapes or compact discs but, rather, digital *MP3 files* contemporary Internet users frequently downloaded to and kept in their personal computers. The capability to play miniaturized and digitalized music files allowed iPods to store huge amounts of musical content, up to a whopping 40.000 songs, which, in turn, meant that they contained and presented much more musical variety and choices for compared to the owners of more outdated mobile listening technologies. No longer compelled to ponder ahead over what music to listen to or clumsily lumber around, hauling heavy bulks of individual cassettes and discs just to have a semblance of musical variety and difference in options, users could now carry their entire collection of music, literally, at their pockets, providing them a much wider room for musical maneuvering while on the move. As one informant for Skånland's study on the role of MP3 players in coping with the stressors of daily life and the overall well-being of their users reflects,

> One of the best things when I got the iPod player or when I first started
> with an MP3 player, was that I could have so much variety. As before

there was often so much stress because I had to carry with me a whole CD holder, because I didn't know what I felt like listening to later on during the day, when I was on my way home or something. I think also it was wonderful that there was so much space that I could have a wide variety of music. (cited in Skånland, 2012: 143)

Emboldened by having much larger amounts of musical objects at their disposal, the iPod users could now "fine tune the relationship between mood, volition, music and the environment in ways that previous generations of mobile sound technologies was unable to do" (Bull, 2006: 136). No longer coerced or constrained to listening just a single piece of music throughout the entire day, users could now browse their entire music library they have on their iPod devices until they find the "correct" song (Skånland, 2012, 2013) that responds to their current emotional state or feels *right* in the moment – or, as another informant puts it, "if something unexpected happens" (Skånland, 2012: 144-145). In the context of mobility, this increased freedom of musical choice signals a parallel increase in the degree of autonomy and control the users have over their physical experiences as well as their emotional states. As Bull contends, with the iPod

> Users are also able to adjust their privatized soundtrack whilst on the move, thus micro-managing their mood with great precision and skill. iPod users demand an instantaneous response to the nuances of their mood, signifying a ratcheting up of expectations demanded of new technologies such as the iPod. [...] The carrying of large slices or perhaps all of one's musical library in a small piece of portable technology appears to liberate users from the contingency of mood – they no longer have to predict what they will want to listen to or the vagaries of potential future moods. (2007: 127-128)

As the above quotation by Michael Bull implicates, the notion of *mobility* does not only refer to the expansion of freedom on behalf of users to become able to carry larger amounts of music everywhere they go, but also to *responsiveness* the music has for the fluctuations in users' physical or emotional states[156]. Hence, in addition to providing users access to a larger musical collection, a

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[156] One informer in Skånland's study suggests, "I like to get all the music there together, to be able to, if I, I know that I have such wide range of moods sometimes that if I don't hit it on the spot, I become a little grouchy" (2012: 144). Echoing similar sentiments, another informer for Bull's study says that "there are times where I will put on one song and then half-way through it I will change my mind and switch to another song because my mood changed or the song wasn't capturing my mood correctly" (2007: 129).

truly *mobile* listening technology should also be able to cater every need and desire of the individual, however varied or unconventional they may be. In that sense, despite being an indisputable improvement on the previous mobile listening technologies of Walkmans and Discmans on both regards, the iPods still had some glaring shortcomings, especially when compared with the digital streaming technologies. First of all, despite being able to store and contain much larger amounts of musical objects, the iPods could only play the musical material the user has already *owned,* whether legally purchased from iTunes or illegally obtained from peer-to-peer file sharing services. That is, as opposed to *access-based* Cloud storage-systems like the one utilized by digital streaming applications, the users were, in a sense, still limited in terms of musical content they were able to listen to. Despite being reprieved from the obligation to choose a single album for an entire day, the users soon found out that they still had to make some tough decisions when it comes to selecting which tracks they want to keep on their iPods and which they can do without and discard in order to open up some more storage space for adding new albums. Plus, there was the issue of *interoperability* as explained by Kjus thusly:

> Initially, iTunes used a proprietary copy-protection technology (DRM) called Fair Play which restricted consumers from playing the music they had acquired on iTunes on any portable device other than the Apple iPod. If consumers decided to switch to another non-Apple portable music player, they had to purchase the same songs all over again. This business strategy is referred to as *system lock-in* and is aimed to make it difficult and expensive for those customers who want to change to another competing technology. (2018: 102; see, also, Leijonhufvud, 2018: 109-110)

Although Apple eventually abandoned its decision to use DRM (Digital Rights Management) copy protection in the spring of 2009 as a result of the pressure mounted by customers and competing service providers, for a long time it meant that the users who purchased and downloaded tracks from iTunes could not listen to them on their own mobile devices and, thus, were obligated to purchase a separate iPod for the sole reason of enjoying the tracks they already had legal ownership of. The recent surge in digital streaming services, however, completely eliminated the problem of *interoperability* as well as the lingering issue of *storage* that previously haunted every type and generation of mobile

media. For one, digital streaming services such as Spotify and Pandora Radio are not *hardware* devices but *software* applications, meaning the users do not have to purchase a separate device to use them. Instead, the users can start listening to music by simply downloading these applications on the devices they, presumably, already have such as smartphones, desktop computers, laptops, iPads, gaming consoles, car stereos and smart television sets. Having a single registered account on the system ensures that users can access the service by using any one of these devices without losing the musical content saved in their profiles. Furthermore, while the earlier mobile media technologies required the *ownership* of musical content (a cassette tape, a CD or MP3 file), digital streaming services operate with a whole different set of principles and logic. As we have already discussed in some detail (see *sec. 4.2.2*), streaming platforms do not let users to download and "collect", in Benjamin's sense of the concept, the content they provide. Instead, they let users to *access* their vast music catalogues and *stream* the content in real-time from their servers. This transition from "desktop storage to webtop access" (Beer & Burrows, 2007) and Cloud-based distribution of music effectively puts an end to problems of storage as users do not *own* the content but, rather, *rent* (Hagen, 2015c) it for a designated period of time.

Such technical capabilities brought about by new streaming services add to and extend the *mobility* of previous portable music media. Being an "everywear" technology (Greenfield, 2006; Gilmore, 2016), individuals can use these services as just another application in their smartphones and, hence, carry with them wherever they go – while commuting on buses or subways, riding their bicycles or cars, at an office or even, if permitted, at factory floors, at a shopping mall or a grocery store, gymnasiums and fitness centers, or while jogging or casually wandering around city streets. In addition to sonically accompanying individuals in their mundane everyday routines, these platforms also allow users to select and stream musical tracks across a giant archive of about fifty million tracks[157] - an amount, for the purposes of comparison, that would require more than a hundred iPods just to be stored in. Needless to say, an

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[157] https://newsroom.spotify.com/company-info/

instantaneous access to such biblical amounts of musical items further increases the freedom of choice and the potential "fine tuning" practices of users while they are on the move. In a manner that has not been matched before, then, contemporary users of digital streaming services are cognizant of the fact that their musical needs and desires, whenever or wherever they arise, will instantaneously be satisfied and quelled thanks to an instantly accessible and a very rich musical reserve consisting of (almost) all the recorded music that there is.

4.3.2.2. Personalization and Malleability: Playlisting Functional Music

The second affordance DFM has in terms of individualistic musical consumption and experience relates to *personalization,* i.e. managing and organizing digital music in ways that best reflect one's own taste and identity, or suits one's own purposes and moods. In pre-industrial functional music, the worker-performer sang for the benefit of the whole group. Even though some performers are lauded for their dexterity in singing or for their improvisational skills as the worked trudged along, the functional music, especially those sang in a call-and-response fashion, was not personalized for each member of the working band. In fact, in order to ensure physical coordination and exertion of maximum efficiency out of every worker, the songs often demanded the joining-in of everyone during the chorus or frequently punctuated by collective grunts indicating times for collective action or respite such as pulling of the ropes, raising of the steel beams or pulling of the grasses, etc. Perhaps the only time this type of functional music came close to personalization was when individual names were mentioned in and added to the lyrics of an improvised working song – an especially common practice among the small and close tribal communities across Africa and a pretty effective way in terms of educating and socializing the children of the tribe as well as shaming lazy individuals who quit working earlier than their compatriots (Bessant, 1994: 48-50).

Similarly, in industrial period, the programming and broadcasting of functional music was aimed at boosting the efficiency and productivity of the entire

workforce, not just a few employees. Although some industrial psychologists also concentrated on and measured the specific effects of broadcasted music on the efficiency levels of particular individuals (Wyatt & Langdon, 1938), the emphasis was always primarily on assessing the contribution of functional music on *average* productivity of all workers. With regards to musical content, the conductors and programmers would frequently collect data on the musical preferences and tastes of workers in their field trips of factories and even, from time to time, incorporate the musical requests coming from workers into their programming schedule. Yet these were exceptions rather than the rule and, since the primary aim was to increase worker productivity and efficiency rather than entertainment, the programming of functional music largely ignored the creative input put forth by the audiences and rigorously kept following the scientific protocols and guidelines for programming. Finally, in post-modern forms of functional music, the programming of foreground music was only *personalized* to the extent that it corresponded to a store's projected identity and whether it appealed to a certain market segment or clientele that the store desired to attract. In other words, the music was not produced in accordance with the individual musical tastes and opinions of each shopper, but, rather, by taking into account the store's entire customer demographics instead.

Characterized by the notions of *flexibility* and *fluidity*, however, DFM services allow their users to continuously interact with and customize the musical content they put on offer. As Nag claims, "the malleability is a particular quality of the digital playlist", whereas the latter is "a key feature of music streaming on smartphones [as] such an arrangement enables self-interpretation and regulation to an extent that is unparalleled by other music consumption technologies" (2018: 31). With the entire world of recorded music at their fingertips, users can retrieve millions of tracks instantaneously and then bend, flex, shape or play with them at will (Bakardjieva & Gaden, 2012: 406). No longer constrained to the broadcasts that were prepared and programmed *for* them, users can produce their own musical programming by curating, organizing and managing musical content that can also be infinitely personalized according to the wishes and volitions of a particular user. In stark

contrast with the earlier models for programming functional music, then, this *malleable* and personalized nature of digital streaming services implies that "instead of looking out through a restricted window, like the porthole on a large ship, we can all be on the bridge, with a 360-degree view and the captain's prerogative to steer in whatever direction we choose" (Jennings, 2007: 5). The most symbolic example for this newfound "captain's prerogative" for users in the digital age relates to their *playlist*-making practices, where users can add, bundle together, sequence, arrange and order songs in multiple and very creative ways in order to create unique listening experiences that aligns with their own tastes and identities as well as the contexts and circumstances they are in.

To a certain extent, *playlists* represent just another instance of Web 2.0 technologies that allow users to copy and paste content at will in order to create a more personalized experience of the web. However, just as it was the case with the *mobility* affordance of DFM, the roots of personalized playlists also stretch back to earlier, more rudimentary forms of music media. As Leijonhufvud reminds us, although the concept of playlist has been in the common parlance for a long time, which was frequently used to denote any "pieces of music put together in a particular sequence such as a concert program" (2018: 222), it was only after its reappropriation by the broadcast media that it achieved its current, more workaday meaning (Åker, 2017; Percival, 2011). For an extended period of time, then, playlisting was used to refer to a curatorial process done by a particular music professional, whether as a concert conductor or a disc jockey at a radio station. However, as developments in media technology made music more accessible to individuals, ordinary music lovers also began creating their own *playlists* and musical contents in the form of *mixtapes.* Despite being quite a tedious and labor-intensive project, these early playlist-making practices gave their creators "an opportunity to showcase their taste in music to others, to curate a collection of music for a specific event or [...] to communicate a special message to a loved one" (Fenby-Hulse, 2016: 171). Since each cassette tape could only contain a certain amount of songs (typically no longer than thirty minutes on each side), a

very careful consideration usually went into its curation and sequencing. As Nick Hornby beautifully depicts in his famous novel *High Fidelity,* deciding which songs to add was not always easy and there were certain rules governing the whole process of producing a mixtape for a loved one:

> To me, making a tape is like writing a letter – there's a lot of erasing and rethinking and starting again […] A good compilation tape, like breaking up, is hard to do. You've got to kick off with a corker, to hold the attention (I started with "Got to Get You Off My Mind," but then realized that she might not get any further than track one, side one if I delivered what she wanted straightaway, so I buried it in the middle of side two), and then you've got to up it a notch, or cool it a notch, and you can't have white music and black music together, unless the white music sounds like black music, and you can't have two tracks by the same artist side by side, unless you've done the whole thing in pairs, and … oh, there are loads of rules. (1996: 77)

As the above excerpt demonstrates, playlist-making at the age of analog media was a highly arduous and challenging task, a "craft-like process" (Fenby-Hulse, 2016: 178) that demanded a lot of deliberation and planning *before* the recording session has begun. Even though they could also be made and used for personal consumption, the main motivation that underlined the production of mixtapes was *sharing*. Often the creators of these playlists had a particular story to tell to a significant other and regarded mixtapes as an intimate way to convey their message. Each song, therefore, was selected gingerly and thoughtfully, weaving together a musical narrative that articulated and communicated the feelings and thoughts of its creator towards the recipient of the tape. The care it took to create a single, coherent story through music was all the more astonishing when one considers the limited amount of resources that were available to producers of mixtapes, i.e. the cassettes that they had already owned, as well as the absence of room for any type of mistakes they could commit. The *editing* of mixtapes was itself a very difficult and time-consuming process, and, since the user-friendly drag-and-drop features of streaming services was not yet available, often their producers were forced to discard the entire project and start anew with a new blank cassette tape.

With the transition to digital media and CD-recorders, the "story-telling" aspect of mixtapes has slowly receded and gradually became less important for the purposes of playlist creation. As the "craft-like" and strenuous process of producing mixtapes gave way to the ease and convenience of *burning* mix CDs by simply copying digital files onto a blank compact disc, users stopped putting too much time and effort in creating a musical narrative but, instead, started making playlists with various themes and diverse topics. As Avila-Torres reports, for instance, the majority of mix CDs that are sold by peddlers across Mexico City bear seemingly arbitrary titles that vaguely indicate the musical content they contained:

> Those CDs are a particular form of piracy that could be defined as "curatorial interventions". For 10 pesos, you will get around 200 songs in the most diverse curations. Many of them are classified for the kind of music they contain: "the newest of band", "hits of rancheras" or "legends of classic rock". […] Others contain songs related by some arbitrary set of tags, like "music for a Mexican party", "romantic hits of 2014" or "reggaeton mix". The least common set available is the discography […] for example "Vicente Fernandez and Joan Sebastian history", "Caifanes discography" or "Complete Juan Gabriel" (2016: 81).

One tentative conclusion that can be derived from the above quotation is that, the transition from analog (mixtapes) to digital (mix CDs) media and the conveniences it furnished in terms of creating various assortments of musical tracks, provided users an opportunity to create more personalized and *functional* playlists that would generate the appropriate aural backdrop to their everyday lives and activities (Cunningham, Bainbridge & Falconer, 2006). Through a simple act of dragging-and-dropping digital music files, the users could now produce more playlists, with longer playing durations, that did not demand any hard-work or prior planning as it did with the mixtapes just few years back. However, it would, once again, be the iPods that completely revolutionized the playlisting practices of users by making it even more effortless and easier to compile them. In a manner that foreshadowed, and perhaps inspired, the recent digital streaming services, Apple iPods had a *Playlist* feature, where users can create several playlists by adding songs from the music library stored at their device. The increased number of musical tracks that can be stored in these devices suggested that users now could create much

more nuanced and "purposeful" playlists. It would serve for our purposes here to quote in entirety an account related by Skånland (2012) with regards to how users utilize the playlist feature on their iPods for *functional* purposes, as it also perfectly captures and exemplifies the experiences of users with their functional digital streaming services. She argues that,

> Some of the subjects also have specific music they listen to at certain times of the day, or even times of the year. One of the informants has made specific playlists for each time of the day [...]. He listens to one type of music in the morning, another type during the day, and yet another in the evening:

> "Yes, it's a rather special pattern because I've made specific playlists for breakfast for example. Then I have one for the evening, called 'calm'. These are mostly used in the morning and in the evening. [...] In the morning it has to be something that gets you started, sort of a calm start. Concretely, for example 'Elle Melle' and 'Vamp' and 'Oslo Gospel Choir' and some others like these. It's a good start in the morning. And when the breakfast is over and such, for example on a Saturday, that's when you've got time to sit and play with it, then I switch over to things with full blast after breakfast until lunch and stuff. Then it switches again". (2012: 134)

Digital streaming services, as with the rest of the other affordances it provides for individuals, can be seen, for the time being at least, as the final point in a long string of historical advancements within the personalized playlisting practices of music listeners. Despite being widely criticized as lacking the "aura" (Fenby-Hulse, 2016: 174) or the personal touch of mixtapes, like the Apple company claimed[158], the playlist affordances of digital streaming services represent, as the co-founder of Spotify Daniel Ek claimed in a 2010 interview, "the next generation of mixtapes"[159]. With digital streaming services, the users

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[158] In a 2015 statement made by Apple Inc. to promote their newly fledging streaming service, Apple Music, the company argued that:

> The digital age has lost some of the personalization that was available during the analog age. For example, the creation and gifting of a cassette mixed tape was a popular activity between two parties. The compilation of songs would be recorded on a cassette tape and given to another on a special occasion such as a birthday or on Valentine's Day [...] While there have been many advancements in the use and distribution of digital music, there is still a need for improved techniques for personalizing gifts of digital music. (Apple Inc., 2015)

[159] https://www.thetimes.co.uk/article/internet-music-service-spots-gap-in-the-market-for-next-generation-of-mixtapes-zw630w783nh

can create, with much ease, playlists that are reflective of their selves and personal histories, and organize and sequence songs based on different moods, activities, occasions, genres, purposes or even seemingly arbitrary themes (Hagen, 2015b; Pichl, Zangerle & Specht, 2017). Unlike the previous forms of functional music, then, users of DFM can endlessly, creatively and interactively play with the world of music being offered to them and, as a result, can constantly *invent* new modes of being, new moods or new activities for music to accompany to, which brings us to our next discussion.

4.3.3.3. Context-Specificity: Mood and Activity-Specific Uses of DFM

Related to our previous discussions on the increasing mobility of functional music and the growing capabilities of users in terms of creating personalized playlists is the final affordance digital music services have for the individualistic production and consumption of functional music, i.e. *context-specificity.* In a sense, every form of functional music can be considered "context-specific": whether they are sung by workers in the fields, relayed in factories or broadcasted in retail stores and shopping malls, the meaning of the music stems from its *context.* When taken apart from that context or location, the music would become meaningless or even useless. That's why, for instance, the Muzak company had initially started with four different networks (Purple, Red, Blue and Green), each with a separate musical programming depending on the location of their broadcasting – restaurants, bars and grills, department stores and private residences, respectively (Lanza, 2004: 42). As we have discussed in Chapter 2, in addition to its location, the functional music also differed based on the context and types of industrial work employees were engaged in: "Green" network for the workers of heavy industries (such as armament factories, shipyards, etc.), "Purple" for light and repetitive assembly-line works and "Gold" for office tasks that require more mental focus and creativity. Moreover, as the differences in the implementation of *Music While You Work* (for productivity and efficiency) and *Workers' Playtime* (for entertainment) demonstrate, even within the same physical space and field of industrial work, the functional music changed depending on the *purposes* of broadcasters and

managements. This was also the case for post-modern functional music, in which, as we have seen in the previous chapter, the restaurant and retail shop owners could freely decrease or increase the tempo of foreground music in order to adjust the in-store traffic flow of customers.

The idea with DFM, however, is that there is no exclusivity when it comes to putting music for functional uses: the digitally streamed music can be functionally utilized *everywhere*, for *every* purpose and in *every* context. In fact, we can go so far as to suggest that, the *functionality* of DFM chiefly stems from its ability to fit and accompany every imaginable context there is. With millions of users actively engaged in the task of playlist curation, it is possible, just within a matter of few seconds, to find playlists that would suit and accommodate every conceivable context, from the most seemingly insignificant and ordinary ones - showering, sleeping, driving, etc. - to more special and seasonal occasions such as birthdays, weddings, holidays, etc. Some of these context-specific playlists found in digital streaming services may more or less be in the same vein with the previous forms of functional music and, in that sense, can be considered as a continuation of earlier modes of functional music in a digitalized environment. There are, for instance, playlists aimed at workplace productivity and efficiency[160] as well as creating suiting atmospheres for retail spaces[161] utilizing similar programming techniques (such as instrumentality and familiarity) as their predecessors.

However, unlike industrial and post-industrial forms of functional music, DFM is not necessarily productivity and/or consumption-oriented. Nor, does it have to

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[160] Such as *Your Office Stereo* ("Let us take care of your workday soundtrack") created by Spotify or a user-created playlist called *Music for Focus, Creativity, Work Productivity* ("Mix of electronic and acoustic instrumental songs meant for work, focus, being creative, and being productive. Most all [sic.] of the music is instrumental as to not distract the mind with words"

[161] There are, for instance, several "albums" by an "artist" Retail Music, whose "songs" and "hits" include "Music for Chain Stores", "Backdrop for Malls – Smooth Jazz", "Astounding Ambience for Shopping Malls", and of course, the unforgettable "Vivacious Sound for Shopping Malls" and "Soundscape for Retail Outlets". But it is not just these "artists" or even famous retail chains (such as Pull & Bear) who create and share music for retail spaces. Users themselves share such playlists as well, one interesting example being *Boomtown Vapor Music*: "This is an upbeat, high energy playlist designed for a retail store (vape shop) by a man who likes good music, regardless of genre. These are mostly popular hits that everyone will recognize, along with some gems from multiple genres which might not be recognized, but will get the feet tapping".

abide by the programming rules that governed its predecessors in previous decades. There is not a "one-size-fits-all" approach to programming at DFM– it does not have to be scientifically arranged according to a stimulus progression curve or quantum modulated to generate a certain musical flow that would fit in well with the identity of a particular space. Rather, the underlying logic to DFM is that, every type of music can be *made to fit* to a certain context with proper playlisting and presentation. There are no overarching rules governing the programming process, instead the production of functional music proceeds from the idea that every individual has a different taste and different expectations in a given context: some might like to study with instrumental classical music[162], whereas some might prefer hearing ambient electric guitar[163] or acoustic tracks[164], while some others perform better with electronica or house music[165] and even more complex arrangements of jazz music[166]. The idea underlying each of these examples is that, any type of music, regardless of its genre, can be rendered *functional* when paired with a given context.

Given its highly context-specific nature, one would not be surprised to find functional music playlists in digital streaming services that span across a great array of themes and subjects, including the most mundane, everyday activities and routines of individuals such as commuting[167], cooking[168], sleeping[169],

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[162] The most popular examples being *Classical Focus ("Enhance your focus with classical music"), Intense Studying* ("Focus-enhancing piano for your study session"), *Perfect Concentration* ("Calm piano music for enhanced concentration") all three created by Spotify.

[163] *Deep Focus* ("Keep calm and focus with ambient and post-rock music") created by Spotify, with more than 3 million followers at the time, is the most popular example.

[164] Spotify's *Peaceful Guitar* ("Unwind to these calm classical guitar pieces") and *Calming Acoustic* ("Keep calm with instrumental acoustic tracks) are examples.

[165] *Brain Food* ("hypnotic electronic for studies and a relax") and *House Focus* ("Instrumental house for when you need to focus") are typical examples.

[166] *Jazz for Study* ("Find your focus with instrumental jazz") and *Pure Mellow Jazz* ("Focus to the sweet sound of jazz")*, both created by Spotify, are examples for functional playlists in this genre.

[167] Among them *Evening Commute* ("Let this smooth mix carry you home in style) and *Traffic Jams* (Stuck in stop and go? This should help.) created by Spotify as well as user-generated playlists such as *Classical Commute* ("Classical music can't make the trains run on time, but it can certainly make your commute more bearable. Whether you travel by bike, train, car or bus, this playlist will help you decompress and find some inspiration.")

[168] One user-generated playlist simply titled *Cooking*, for instance, invites prospective listeners by stating "here's some music to dance in the kitchen. Don't be afraid to sing along and nibble on those crumbs, lick the spoon, and do whatever you want to do. Enjoy your meal".

[169] There's a whole separate category at Spotify, strictly dedicated for sleeping that includes such popular playlists like *Sleep* ("Gentle ambient piano to help you fall asleep"), *Classical Sleep*

exercising[170] and cleaning[171] to more rare and special occasions of birthdays[172], seasonal changes[173] and activities or religious holidays[174]. Digital streaming services are also capable of responding in "real-time" (Eriksson & Johansson, 2017; see, also, Weltevrede et al., 2014) to current events or to other unexpected, and often tragic, developments such as terror attacks[175], deaths of famous celebrities[176] and, even, virus outbreaks[177]. Such range and diversity in the contexts music can be put for functional use in the digital period is reminiscent and evocative of one of its long-forgotten, pre-industrial tenets, the *everydayness* of functional music. Like its pre-industrial counterpart, DFM can also be said to accompany individuals from their birth till their eventual demise,

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("Drift off to these classical peaceful melodies") and *Jazz for Sleep* ("Let these jazz tracks lull you to sleep").

[170] Like the Sleep "genre", Workout has its own separate category at Spotify for popular playlists like *Motivation Mix* ("Uplifting and energetic music that helps you stay motivated") and *Power Workout* ("For whatever activity you do that may need a punch of intensity!")

[171] One Spotify playlist, titled *Cleaning Kit*, boldly declares "no dust was found after cleaning to this playlist", whereas a user-generated playlist called *Cleaning Motivation* lists "a mix of guilty pleasures to sing out loud to, whilst leaving your chores in the dust!"

[172] Examples for these may include Spotify's own *Happy Birthday* playlist ("Great songs for your birthday! Let's celebrate!") or hundreds and thousands of playlists created by users to accompany their own birthday parties.

[173] Spotify has special playlists for every season, such as *Acoustic Spring* ("Lush folk and acoustics to signal the start of spring"), *Summer Hits* ("All the hits you'll need to make your summer sizzle"), *Autumn Lodge* ("With autumn comes darker days and colder weather") and *Winter Sounds* ("Music for the brisk and peaceful winter days").

[174] Although the Christmas playlists are the most common, there are also playlists at Spotify for other religious celebrations such as Hannukah, Kwanzaa and Ramadan.

[175] At the immediate aftermath of the Paris terror attacks in 2015, Spotify France account created a playlist called *Peace,* dedicated to the "memory of all the victims in Paris". In addition, the cover arts for other playlists featured on the homepage at the time (such as Weekend Buzz or Acoustic Morning) also displayed the French flag in an act of solidarity. In recent years, when the situation presented itself, Spotify would not shy away from taking a more overtly political stance in ideological issues. Two such instances include the creation of a "Refugee Playlist" after Donald Trump's travel ban in 2017 as well as an oft-criticized "Black Lives Matter" playlist (Eriksson et al., 2019: 139).

[176] One current example is a playlist dedicated to the memory of world-renown basketball player Kobe Bryant, comprising of 24 songs to refer to his shirt number.

[177] In the midst of recent Covid-19 pandemic, Spotify created a separate genre called "At Home" in order to indulge people staying indoors and further encourage non-compliant people to do so. The *At Home* "genre" includes several sub-categories that correspond to different activities that one can engage while in isolation, from the more mandatory ones (*Work from Home*) to self-care (*Workout, Meditate & Relax*) and for passing the time and diverting attention (*Cooking & Dining, Kids & Family, Gaming*). There is also an *Uplift* category to boost the morale of individuals in these fear-stricken times.

or, more literally, from their cradles to their graves[178]. However, taken in conjunction with the mobility and personalization capabilities they afford for their users, it would be safe to suggest that the scope of *everydayness* in DFM is much more extensive than ancient forms of functional music. That is, with the help of advanced mobile technology, DFM can seep into the everyday lives of individuals with relative ease and, as such, accompany them everywhere they go and in every moment they have.

In addition to describing the everyday moments, situations and activities of users, the notion of *context* may also be used to refer to the emotional states and ever-shifting feelings individuals might have. To that effect, music's mood inducing and altering capabilities had already been widely acknowledged and cherished by scholars writing mostly in the field of music psychology (Batt-Rawden, DeNora & Ruud, 2005; DeNora, 2000; Juslin & Laukka, 2004; Juslin et al., 2008; Levitin, 2007; Murrock, 2005; Roe, 1985; Saarikallio, 2007; Saarikallio, Nieminen & Brattico, 2012; Sloboda, O'Neill & Ivaldi, 2001; van Goethem, 2010). However, as our previous discussion on functional music has highlighted, the concept of *moods* had a very peculiar and narrowly defined meaning when it came to programming functional music broadcasts. While the above-mentioned authors had seen and treated mood-changing effects of music as an end in itself, for programmers of functional music moods were always understood as a *means* toward particular ends. In other words, the "tonic" qualities of music were only appreciated to the extent that they successfully brought about and helped the achievement of the desired outcomes – whether raising the morale and spirits of factory workers to increase their productivity or making customers relax and feel at ease so they can linger on and spend more money on items and services.

Even though there are still some DFM playlists operating with the same traditional premise of earlier types (for instance, seeing relaxation as a key requisite for better and much deeper concentration like *Deep Focus*), the

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[178] This assertion can be taken literally as there are multiple playlists on Spotify for putting babies to sleep (*Baby Sleep, Sweet Lullabies, Lullabells, Harp Lullabies*) and for funerals and the death of a loved one (*Coping With Loss*).

majority of playlists falling under the general *Mood* category at Spotify perceive the eliciting and evoking of different mood states in listening subjects as a worthy end in itself. For such playlists, then, attaining a certain emotional state is not conceived as a precondition towards achieving a loftier goal but, instead the ultimate objective itself. Putting multiple moods on offer that stretches from the most positive[179] towards the most negative[180] whilst covering all the shades of the spectrum in-between[181], these instantly accessible playlists "encourage listeners as never before to explicitly play with moods, to try out their tonalities and colorings at work, home, and anywhere with network reception" (Anderson, 2015: 838). By trying out different moods like "garments which can be pulled out of a closet, tried on, and easily be put back again" (Eriksson & Johansson, 2017: 75), individuals can use DFM therapeutically, to seamlessly *get in* and *get out* of emotional states through sustaining and enhancing desired moods and distracting themselves from unwanted ones. The ability to play and interact with different mood tracks can help individuals to turn inwards and reflect on themselves, which may act as a tool for self-realization and grant a better understanding of what one feels at the moment. The insightful account provided by one respondent about the virtues of iPod use in mood regulation in Skånland's study can very well be applied to the contemporary users of digital functional services and their experiences with mood playlists:

> Sometimes I can use [music] to investigate [my mood] a little. [...] If I'm sad or wonder what kind of - if I feel a bit strange, I can listen to some poignant music, so that I can examine the feeling a little. [...] For my part,

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[179] Confirming the earlier findings by Juslin et al. (2008), Heye and Lamont found out in their study of MP3 players that listeners of mobile media are overwhelmingly disposed towards eliciting positive emotions while listening to their devices (2010: 111) and the popularity of "happy" and mood-boosting playlists at Spotify attest to this fact as well. With a combined number of over 10 million followers, *Happy Hits!* promises to "boost your mood and fill you with happiness", while *Mood Booster* invites users to "get happy with this pick-me-up playlist full of current feel-good songs!".

[180] Despite being considerably less in numbers and followers compared to playlists with positive vibes, negative mood playlists offer users a musical company in their miseries with such playlists like *Life Sucks* ("Feeling like everything just plain sucks? We've all been there") or *Sad Beats* and *Sad Indie.*

[181] Mood playlists at Spotify intend to cover a whole range of emotions, not just the basic "positive" or "negative" ones. There are, for instance, playlists aiming to inspire confidence among their listeners (*Confidence Boost, Walk Like a Badass, Feelin' Myself*), mellowness (*Your Favorite Coffeehouse, Café con Leche, Soul Coffee, Front Porch*), tenderness (*Tender*), rage (*Rage Beats*) and melancholia (*Melancholy Instrumentals, Deep Dark Indie*).

> I'm in a period in which I have lots on my mind all the time [...], so that in a way it can help me find out what mood I'm actually in, and examine it. [...] In a way I search through to find out the mood I'm in, and feel it. [...] and then maybe also to try to understand why, and do something about it. (2012: 179)

Our analysis thus far outlined and investigated the two major characteristics associated with digital forms of functional music. The first of these characteristics considered the role of *algorithms* in the production of DFM. I have argued that, although humans still retain some of their editorial and curatorial capabilities, their programming duties and responsibilities today are to a great extent delegated to and, thus, being performed by automatic computational mechanisms instead. The increasing role of algorithms in producing functional music we encounter in digital spaces led me to label DFM as *algorithmic music.* Second, we have seen how, unlike the previous types of functional music, DFM operated with a "one broadcast/one listener model" (Anderson, 2015: 814), thus giving rise to *individualistic* and *user-centric* modes of producing and consuming functional music. I have further suggested three affordances (*mobility, personalization* and *context-specificity*) that relates with and complementary to the individualistic uses of DFM. In the remainder of this chapter, I will discuss some of the social and political implications these characteristics have for the contemporary users of digital streaming services. Since DFM represents the final point in the long trajectory of the evolution of functional music, the primary aim of this section will be on discerning any continuities or caesuras with the functions of previous types of functional music.

4.4. Functions and Uses of DFM

In May of 2015, the digital music streaming giant Spotify unveiled a new feature for their application called *Spotify Running.* As its name suggested, the idea behind this new tool was to provide users with an appropriate sonic backdrop as they were out jogging or exercising on a treadmill. However, the recently retired *Spotify Running* was not simply another running playlist among many,

but constituted an ingenious attempt for taking functional music onto a completely new level[182]. In order to further motivate the users and keep them pushing and testing their limits, the feature aimed at measuring and detecting the amount of steps taken per minute (i.e. the running "tempo") by individuals through using the sensors on their smartphones, and, then, playing a track with a musical tempo that matched their running pace. If, for example, a particular jogger took 160 steps each minute as she was running, then, the service would only offer songs that have 160 beats per minute, thus successfully synchronizing music with the strides and movements of the runner. Similarly, as the speed of the user increases to a sprint or decreases to a leisurely run, the system will instantaneously adjust its musical offerings to match the new pace, thus ensuring a seamless exercising experience for the individual and always keep him or her in "the zone".

Despite no longer being operational, the short-lived feature of *Spotify Running* constitutes an interesting case with regards to our discussion on the functions and uses of DFM. Based on the above explanation, we can surmise two general procedures performed by the system. First, the service collects information based on the actual physical movements of their users. In that context, the data-generation is contingent upon the bodily actions performed by users. If, for instance, the jogging pace of the individual drops beyond the threshold of 140 steps per minute, the application would no longer consider it as "running" but walking and, hence, would stop recommending new songs (Mitroff, 2015). Hence, it is imperative for users to stick to a certain pace in order to keep the streaming of music going without any potential disturbances. From this particular point of view, one might be tempted to put forth the proposition that, with Spotify's running feature, it is actually the users who are in control of the musical flow as it is their pace and movements that is determinant of the

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[182] Actually, as with all the individualistic affordances digital streaming services have for users that we have outlined above, the credit for the origins of this idea first and foremost belongs to Apple and their 2006 collaboration with Nike to create Nike+iPod Sport Kit, which permitted indivudlas to connect their iPod device with their Nike footwears. As the press release for the partnership between two companies explained, "with the Nike+ footwear connected to iPod nano through the Nike+iPod Sport Kit, information on time, distance, calories burned and pace is stored on iPod and displayed on the screen; real-time audible feedback also is provided through headphones". (https://www.apple.com/newsroom/2006/05/23Nike-and-Apple-Team-Up-to-Launch-Nike-iPod/)

contents of service's musical offerings. In other words, it is users who can change the tempo of the music as they wish by simply picking up or decreasing their running paces.

However, on the other hand, a counter-argument can be made by saying that the music does not simply match or accompany the user but also "entrains" and conditions her bodily movements as well. Tia DeNora defines musical entrainment as a harmonious relationship between music and the physical body whereby the latter "and its processes unfold in relation to musical elements […] aligned and regularized in relation to music […] musically organized, musically 'composed'" (2000: 78). That is, the body simply follows the cues originated by the streamed tracks and it is this music that drives the individuals forward, their pace and tempo designating and modulating the pace and tempo of the exercise. According to this second point of view, then, it is not the users who control and determine the steady flow of music but instead the recommendations put forth by the streaming service that controls and regulates the physical actions of user in a perfect synchronicity. Confronted with the double nature of the running feature of Spotify in particular and DFM in general, the question then becomes "who is in control here?" and "who is prompting whom?" (Leijonhufvud, 2018: 2-3, 247).

In this section, I will suggest that the potential answers that can be given to these questions primarily fall into two separate camps. In the former are those who fervently believe that the algorithmic knowledge production in digital streaming services is just another method and manifestation for the techniques of domination and power operating in digitally embedded societies. According to these authors, the individualizing nature and characteristic of DFM is merely an illusionary one that can at best serve as a carefully crafted fable to satiate the desires and ambitions of users to carve themselves a so-called "personal" identity in order to differentiate themselves from the hordes of other users who are doing the same for themselves. According to this view, then, a person cannot truly become an autonomous individual within the digital space, as he or she is constantly being shaped and framed by algorithmic processes on which they can

exert little or no control at all. On the opposite end are those who retain that the recent digital technologies harbor rich potentialities for self-governance and personal empowerment for individuals that were so far inexistent or inaccessible in the realm of everyday life (Gilmore, 2016: 2534-2535). For the proponents of this latter view, digital streaming services can act as a form of *technology of the* self, whereby users can exploit the opportunities and affordances provided to them by these platforms "to affect by their own means […] a certain number of operations on their own bodies and souls, thoughts, conduct and way of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection or immortality" (Foucault, 1988: 18). That is, through a reflexive and imaginative use of digital functional services, users can subvert the algorithmic rationale or, rather, turn it into a tool for their own purposes and desires and, thus, open up new spaces for agency and self-transformation for themselves (Bakardjieva & Gaden, 2012: 403). However, these two opposing views should not be conceived as an either/or scenario, where readers would feel obliged to pick one over the other (see, for instance, Karakayalı et al., 2018). On the contrary, it is my aim to highlight that, rather than being a technology of self or a technology of control, DFM should be understood as a bit of *both* – an experience characterized by a perpetual struggle between two different sets of technologies, where "liberating and enslaving forces confront one another" (Deleuze, 1992: 4). Users are neither totally subjugated by the algorithms nor they are entirely free from their influence. Rather, DFM requires a constant negotiation between users and algorithms, a continuous giving and receiving of information in a cyclic loop of feedback. Hence, in order to operate, it requires both an agency on the part of the individual user and her "entanglement" with the algorithms (Gillespie, 2014) as well as the modulatory power of algorithms that sorts, filters and categorizes individuals into certain groups.

4.4.1. Towards Societies of Control? Biopolitcal Modulation of Everyday Life

In 1992, prominent French scholar Gilles Deleuze penned a short but powerful essay entitled *Postscript on the Societies of Control.* In this piece, Deleuze argues that the "generalized crisis" that contemporary societies are confronted with "in relation to all the environments of enclosure" (1992: 3-4), such as prisons, hospitals, military barracks, factories and schools, are indicative of a general demise in *disciplinary societies* (Foucault, 1977), which exercised their power and control through the organization of such enclosed spaces from the eighteenth century onwards. He boldly proclaims that the institutions that were once representative of the way control is exercised in disciplinary societies are now "finished, whatever the length of their expirations periods" (1992: 4) might be. According to Deleuze, at the wake of disciplinary societies "operating in the time frame of a closed system", dawns a new type of society, the *societies of control,* that are instead characterized and shaped by "the ultrarapid forms of free-floating control" (ibid). The remainder of his work is, thus, dedicated to sketching out the preliminary characteristics of this "new forces knocking at the door" and which currently are "in the process of replacing the disciplinary societies" (ibid) of past.

Based on Deleuze's specifications, we can delineate *three* particular characteristics that define the societies of control, which distinguish them from the disciplinary societies. First of these relates to the open and *mobile* nature in which control is employed in contemporary societies. As Deleuze points out, in disciplinary societies one never completely ceased passing from one closed environment towards another, each with its own language and dictated set of rules: "first, the family; then the school ('you are no longer in your family'); then the barracks ('you are no longer at school'); then the factory; from time to time the hospital; possibly the prison, the preeminent instance of the enclosed environment" (1992: 3). More importantly, each time individuals moved from one closed institution to another, the disciplining process had to start anew since each institution had separate rules of governance and operational logics.

In societies of control, however, one is no longer obliged to start again from the beginning since "one is never finished with anything – the corporation, the educational, the armed services being metastable states coexisting in one and the same modulation, like a universal system of deformation" (1992: 5). Power is no longer concentrated and exercised in accordance with the differing governing logic of institutions within closed walls, but rather is de-centralized, diffused, "free-floating" and *mobile*, encountering individuals in less visible and more subtle manners than it ever did before.

Closely related with its open and mobile nature is the second characteristic of the societies of control: *modulation.* In disciplinary societies, the bodies and minds of individuals are kneaded, shaped and molded "out of a formless clay" (Foucault, 1977: 135) until an ideal and desired form has emerged – that of a worker, student, prisoner or soldier. As power is exercised within discrete sites and within the closed spheres of isolated institutions, discipline is always disjointed and discontinuous, changing its form as individuals move from one enclosure to another. The societies of control, on the other hand, operate with an entirely different power logic, in which discontinuous discipline is replaced by continuous and perpetual *modulation.* Whereas the concept of discipline is implicative of an end and finality (as one can always finish being a student by graduating or a worker by retiring), control is always "continuous and without limit" (Deleuze, 1992: 6). In societies of control, therefore, individuals never attain a level of absoluteness or wholeness, but always in a perpetual and constant state of *becoming.* As Deleuze explains, "enclosures are *molds*, distinct castings, but controls are a *modulati*on, like a self-deforming cast that will continuously change from one moment to the other, or like a sieve whose mesh will transmute from point to point" (1992: 4).

Finally, with the transition from disciplinary societies to societies of control, the locus of power and governance shifts from individuals to, what Deleuze terms as, *dividuals.* Operated by a new type of machinery, that of computers (1992: 6) and algorithms capable of data extraction and processing, the previously autonomous and unified bodies of individuals can be endlessly divided and

reducible to various data representations, thus becoming *dividuals.* In other words, through "the data collected on us, the technologies of control can separate who we are and what we are from our physical selves. The data become the representations of ourselves within the web of social relations; the data are the signifiers of our discrete preferences and habits" (Williams, 2005: 108). It is, then, this digital representation of our actual, material selves that has now become the axiom of control in modern societies. According to Deleuze,

> The disciplinary societies have two poles: the signature that designates the *individual*, and the number or administrative numeration that indicates his or her position within a *mass.* This is because the disciplines never saw any incompatibility between these two, and because at the same time power individualizes and masses together, that is, constitutes those over whom it exercises power into a body and molds the individuality of each member of that body. [...] In the societies of control, on the other hand, what is important is no longer either a signature or a number, but a code: the code is a *password*, while on the other hand the disciplinary societies are regulated by *watchwords* (as much from the point of view of integration as from that of resistance). The numerical language of control is made of codes that mark access to information, or reject it. We no longer find ourselves dealing with the mass/individual pair. Individuals have become *"dividuals,"* and masses, samples, data, markets, or "*banks*". (1992: 5, *emphases in original*)

Even with only a slightly cursory review of Deleuze's work, it is possible to draw some parallels between his analysis on the changing nature of power and control in contemporary societies and the ways DFM is utilized in as opposed to its earlier forms. Whereas traditional Muzak was broadcasted in enclosed environments and operated on the bodies and minds of individuals in an effort to create better workers or shoppers, DFM accompanies users everywhere and requires continuous interaction and a constant exchange of information between computers and users in order to generate data profiles on the tastes of listeners for a better and more personalized musical experience. Furthermore, while Muzak was administered in a top-down fashion in order "to distribute in space; to order in time [and] to compose a productive force within the dimension of space-time whose effect will be greater than the sum of its component forces" (1992: 3), digital forms of functional music are everyday, self-appropriated "tools for building permeable microclimates or microspheres of mood within which individual users attempt to manage their diverse

portfolios of resilience, hope, optimism and self-efficacy" (Anderson, 2015: 815). In the previous forms of functional music, it was relatively easy to locate where the source of power and legitimacy lied, as they were strictly characterized and governed in accordance with well-specified hierarchies – that of between the management and workers in the case of industrial functional music and shop owners and customers in post-industrial functional music. In both cases, *loudspeaker* acted as an instrument of power, obediently relaying intricately crafted musical offerings designed and programmed specifically to act as a social lubricant in public spaces or a physical and psychological stimulant at workplaces. When prompted, the programmers behind Muzak's broadcasts always compared their product and drew their analogies with *air conditioners*, another tool for environmental *control*. Yet it was not merely the creation of a pleasant atmosphere that proponents of Muzak sought after, it was the disciplining and controlling of the individuals *through* the designing of the environment to which they inhabit. No wonder, then, Muzak always attracted rather harsh criticisms (Groom, 1996; Schafer, 1994) while also being prominently featured in dystopian novels. It was, as Attali suggests, the top-down, standardized "monologue of power" that accompanied and hemmed "in a daily life in which in reality no one has the right to speak anymore" (1985: 8-9).

DFM, on the other hand, is not simply a medium or vessel that allows for the one-way transmission and communication of power. To the contrary, as the complex set of relations involved in its production and consumption exemplify, DFM do not operate with the same dualisms and hierarchies that characterized its earlier forms. First of all, in its digital forms, the functional music is not *forced* or *relayed* on users, but *suggested* and *recommended* to them. The users are no longer the "captives" of music *per se* since it is now up to them to either listen the musical "programming" or select and search for a more suitable alternative that is more in congruence with their emotional states and current contexts. Second, DFM does not operate with the same dichotomous principle that governed its predecessors, in which the lines demarcating the programmers and consumers were strictly defined. Users of digital streaming services are not simply "consumers" merely absorbing the playlists intended for

them but, rather, as a result of their constant interaction with streaming services and data-generating inputs, are also the indirect-producers of the musical content that are displayed and recommended for them. Third, functional music is no longer being broadcasted by loudspeakers in confined spaces, but instead through the individual headphones (the "earlids") of users, allowing them not only to carry music wherever they go but also to determine the conditions and parameters of their engagement with functional music offerings as well. Therefore, while we may consider traditional forms of Muzak, with their well-defined hierarchies and binaries, as *arborescent*, the more mobile and heterogeneous forms of DFM can be said to be *rhizomatic* instead (Deleuze & Guattari, 1987). Fourth and finally, as can be evinced from the example of Taste Profiles compiled by Spotify and Echo Nest, the dividiualized data representations of users are never conclusive but constantly "performed into being" (Prey, 2018: 1088) as new data becomes available after each interaction of the user with the system. Our digital identities, in other words, are never complete or finalized but in constant state of modulation and optimization.

In light of the changes taken place in the nature of functional music, then, we are clearly confronted with a "new monster" (Deleuze, 1992: 4) that, unlike its previous forms, defies being classified and categorized as a disciplinary technology. One particular manner in which we can conceive of and characterize this new set of power relations entailed by DFM is to consider it as a type of "post-hegemonic" (Lash, 2007) as opposed to hegemonic power. While the hegemonic power can, in the most simple sense, be understood as having *power over* someone– as in factory managements having power over their workforce – and often exerted by a hegemon that is "above […], outside and over" of their subject of interest, power in the age of post-hegemony is considerably less overt and visible and instead "comes to act from below [and] it no longer stays outside that which it 'effects'. It becomes instead imminent in its object and its processes" (2007: 61). Lash expounds his argument by suggesting that

At stake are two modes of power-knowledge. The first is the power-over

that Foucault talks about in terms of surveillance and discipline. The second is when power starts - in more contemporary times - to work from *below*. When it begins to circulate in the capillaries of society. In the second mode, power enters immanent to life and forms of life themselves. [Hence], at stake is a shift from mechanistic to *vitalist* power. [...] We are no longer normalized: instead *we self-constitute in difference*. [...] But when power enters into us and constitutes us from the inside - not through our normalization but through our difference, through partly producing (i.e. not reproducing) this now disequilibriate difference - it becomes far more difficult to unmask. (ibid, *emphases added*)

Using Lash's power binary as a model for our discussion, we can propose industrial and digital types of functional music as two perfectly illustrative cases of hegemonic and post-hegemonic modes of power respectively. In industrial (and, for that matter, post-industrial) functional music, the music comes from outside and, literally, from *above*, often from "a set of ceiling speakers nestled alongside [the] air-conditioning vents" (Anderson, 2015: 815-816). Similarly, the measure of success for programming stems from its *power over* and effect on the physiological and psychological conditions of individuals, as reflected in their rates of productivity or consumption. Highly immersed in their own privatized soundworlds with appropriately placed headphones in their ears, however, the users of DFM frequently feel and experience music *within* themselves. In other words, for users of digital streaming services the music does not originate from some outside source that is well above and beyond them, but it is generated *inside* their pockets and playing right *inside* their ears. For instance, Heye and Lamont describe how users of mobile music listening media use headphones to create their own sonic cocoons and auditory bubbles while out in the public, which allows them to relax and interact and connect with their *inside* worlds and moods (2010: 106). Compared to previous forms of functional music such immersive listening experience entails a profoundly different relationship with power at the digital age. Power, that once was exercised from above and outside, now moves inside and "penetrates your very *being.* Power, previously extensive and operating from without, becomes intensive and now works from *within*" (Lash, 2007: 59, *emphases added*).

With DFM that is, the goal is not to provide an affective sonic stimulus or mental tonic from outside that would operate on and mold the bodies and minds of individuals to make them more efficient workers or consumers, but a chronic "organization from the inside [...], self-organization" (Lash, 2007: 60) that never seems to cease or finalize but constantly optimizes and modulates the selves and beings of individuals as a form of "perpetual training" (Deleuze, 1992: 5). Functional music in its digital form does not, therefore, *discipline* the individuals but gently nudges, recommends, coaxes and persuades listeners to take up, fulfill and occupy certain prescriptive and normative subject positions advertising a healthy and productive way of living instead. It does not necessarily *force* users to be industrious and efficient but invites them to "get into a morning flow" (*Productive Morning*) at the early hours of the workday or "forget [their] afternoon coffee and beat the slump with this re-energizing playlist!" (*Re-Energize*) when they get tired as the day wears on. It offers procrastinating minds a "burst of inspiration [...] to spark [the] creativity" (*Creativity Boost*) and manic students that get easily distracted, "music to help [them] concentrate during [their] homework" (*Piano Study*). However, despite such claims to the contrary, not every workday is considered and conceptualized by digital streaming services as time to be productive and efficient. On the contrary, most functional music playlists conceive and treat a regular working day as something that needs to be endured and got over with, that something nobody enjoys doing but nevertheless compelled to do. For instance, we see playlists sympathetically recommending music "to get you through your whole workday" (*Music For a Workday*) or simply "to help you carry through your workday" (*Working From Home*). Yet, it is exactly through their endurance and determination to survive and plow through another workday that makes and keeps these users productive and efficient. In addition, once they are done with another "horrible work day" (*Acoustic Work Day*), they can put on their headphones at the bus or subway and "let this smooth mix carry [them] home in style" (*Evening Commute*). Once at *Home Sweet Home,* functional music can help users to "slow down" (*Calm Vibes*) and "stay relaxed" (*Totally Stress Free, Mellow Beats*), thus allowing users to replenish their energy and reproduce themselves so as to endure and "get through" another workday.

However, as Eriksson and Johansson remind us, DFM playlists do "not only push users toward increased productivity, but also privilege a mode of entrepreneurial subjectivity in which users are encouraged to direct their desire for change *inwards*" (2017: 76, *emphasis added*). That is, digital playlists do not only encourage productive modes of being, but also motivate users to become happy, confident, healthy and all-around well-adjusted individuals that can successfully cope with the hardships and struggles of everyday life. At Spotify, one can find multiple functional music playlists directed at increasing the overall health and wellness of users. In one of its most popular mood playlists, for instance, Spotify service reminds its listeners that they are "on top of the world. Don't forget it" (*Confidence Boost*), while *Happy Folk* offers to "brighten your day with a folksy mix of mood boosters!" Whenever users feel *Alone Again* or that *Life Sucks,* the service is always there to prompt them to *Just Smile* ("Come on man. Just smile!") and "turn that frown upside down with these pop classics" (*Positive Vibes*). Whether through gently pushing users towards being more productive by helping them rest and survive the working day or increase their feelings of well-being through regulating their moods, in all of these above-cited examples we see a new type of social control based on the biopolitical modulation of users that "uses the capacity of suggestion to softly persuade users towards models of normalized behavior and identity through the constant redefinition of categories of identity" (Cheney-Lippold, 2011: 177). Users, then, become ancillaries to control not through confinement and subjugation but through their own practices of self-management and self-organization in their quest to become happy and productive members of the general society.

4.4.2. DFM and Aestheticization of Everyday Life

If digital functional playlists act as conduits of biopolitical control and regulation of different population groups[183], then how can we account for the existence of millions of user-generated playlists similarly aiming for increased

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[183] The examples cited above, with the sole exception of *Acoustic Work Day*, are all deliberately taken from Spotify's own account to give more legitimacy and "officiality" to claims regarding the biopolitical uses of digital functional music.

productivity and bodily and mental well-being? Do users willingly, or blindly, submit themselves to a control apparatus directed to organize themselves from within or are there also other considerations at play as well? Certainly, as Deleuze himself predicted, "motivation" (1992: 7) displayed by people is an indispensable part for the continuity and sustainability of control societies. There is, for instance, an inherent "trade-off between the benefits of receiving personalized music recommendations and the loss of privacy" (Celma, 2010: 48), meaning that users may become more willing to reveal and disclose private information about their selves if they know that would increase their likelihood to access more individualized content. Similarly, users will become more motivated to create their own playlists if they believe functional music would enable them to smoothly perform their tasks at work or lift their spirits when they feel down. Truth is, users *want* to be more productive and lead happy, healthy and confident lives. Therefore, they frequently create playlists that will help them "stay on task, focus, study and be productive"[184] or put together songs that are "all about self love, confidence and acceptance" in order to help those who "feel lost and unhappy" to become and "feel motivated and powerful!"[185] Such examples can be easily multiplied but what they all signify is that, power and control in the post-hegemonic order does not operate with coercion or brute force but, instead, through the voluntary and continuous practices of self-discipline and self-regulation of users.

However, as Gilmore points out, "to see these technologies […] only in the negative sense of governance – as structuring a mode of being *for* us that in some way removes our biological agency – does not consider the very real benefits" (2016: 2534, *emphasis in original*) DFM can entail for its users. To analyze functional music playlists only from the viewpoint of biopolitical control may cause us to overlook the many potentialities, opportunities and affordances digital streaming services provide for the enrichment of the everyday lives of their listeners. The presence of numerous user-generated

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[184] *Productive/Mostly Instrumental* by Corbin Mathias
(https://open.spotify.com/playlist/2KHsDGIDL57WFEXIagRdbU?si=H0flcytuRIiBoj9x7PO6ig)
[185] *Feel Beautiful – Self Love and Confidence* by Luisa Gaffga
https://open.spotify.com/playlist/32Qoz77FkRiu73s7tqp1lU?si=Up7igmLKS26c5l70SY9t2Q

work and concentration-related playlists at Spotify testify to the fact that users are, at least to a certain extent, convinced that listening to these playlists while on a task will have a positive effect on their productivity and allow them to complete their job in the fastest and most efficient manner. However, even when their beliefs and notions about music's productive virtues are challenged, users may still prefer working to a musical accompaniment rather than working in silence because, as one commentator puts it, "it's still worth it to work with music"[186] as functional music adds a modicum of color and life to a workday, which users desperately in need of in order to survive and "get through". Although the nature of and conditions surrounding their work has changed drastically since then, in terms of their preference and eagerness to work with musical accompaniment, the white-collar office workers can be likened to factory workers during the Second World War, who, as Kerr found out, were more likely "to elect jobs in a department where music is being played" rather than one without it (1943: 439). These two different groups of workers are united in their shared belief that, even when there are no discernible effects of music on their productivity, it is still better and much preferable to work with music than having no music at all.

The utilization of functional playlists for purposes other than productivity or the attainment of certain goals is suggestive of an entirely different type of experience of digital streaming services by users, which I will call the *aestheticization of everyday life* (Featherstone, 1991)*.* Unlike its uses for productivity and mood elevation, here the functional music is not used as a *means* toward a given end but rather its enjoyment becomes an *end* in itself (Simmel & Hughes, 1949). In other words, music is not *functionalized* through serving the successful completion and fulfillment of some ulterior motive but rather becomes functional in terms of providing a pleasant and suitable sonic accompaniment to users' everyday activities or mood states, thus *enhancing* and rendering them more enjoyable. With functional music's affordance to create context-specific soundscapes, that is, seemingly mundane daily travails can

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https://www.reddit.com/r/LifeProTips/comments/3gviwd/lpt_love_to_play_music_while_working_play_a_video/

become more *emphatic* and moods can be *amplified*. Through transforming the ostensibly routine and ordinary events into something that are extraordinary and remarkable, the functional music, then, can *aestheticize* the everyday life of individuals.

There are two ways in which we may consider users' aestheticization practices are taking place: they can either be diametrically opposed to DFM's biopolitical uses or they may act as complementary to them. In terms of the former, the underlying idea behind users' utilization of functional music is *not* to become more productive, fitter, healthier or happier individuals, as a biopolitical power would intend, but rather to create pleasant sonic accompaniments to times and moments they are *not* being productive[187] or simply want to wallow in and "enjoy" negative emotional episodes. Here, we may think of the various mood playlists curated by users in order to sustain and maintain their negative feelings or emotions, with playlists featuring "songs to cry to"[188] were made specifically "to listen to when you are feeling down"[189]. The goal with these playlists, then, is not to elevate one's mood with the aid of functional music so as to engender feelings of euphoria or confidence, but use music in order to sink further down and immerse oneself in negative feelings, like the times when one "feel[s] worthless and want to make it worse"[190], or when they "get ready to want to cry and scream because life sucks!"[191]. One can posit the counter-argument here that aestheticization of negative moods and emotions through functional music playlists can actually benefit users in the long run as acknowledging their negative emotional dispositions and facing them head-on

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[187] A playlist self-descriptively titled *Studying (But Not Really Studying)* by Ignacio Villar, for instance, describes the content of the playlist as "music I play when I tell myself I'll be productive but know that I won't be"
(https://open.spotify.com/playlist/1WRvs6dOI5UtNrCcKIaBvU?si=0GiSWeNARm28xwKGxzeol Q)
[188] *Songs for Depression* by Nat Stern
(https://open.spotify.com/playlist/79QplpJQMyFq8XQRVGszer?si=sysd7e9vR-mFe2bv5BWz_g)
[189] *Depressing Songs* by Ethan Herndon
(https://open.spotify.com/playlist/0UuEgVF3sbRsUhcYac6GmV?si=rXja4efNRZ-PS34LjGfmow)
[190] *Ready to Stop Surpressing [sic] Your Emotions* by Caiden
[https://open.spotify.com/playlist/0UDbvpqTuvlpQZgQuq5dCN?si=yg8MdNvHS6-uu2zqoUkjQw]
[191] *Teen depression* by madibella216
(https://open.spotify.com/playlist/7wEoXwwgIyaF0W0Dn37Y6s?si=Kl3SPGMgQ7Wp9V1VHrej FA)

would eventually help them emerge as happier and more content agents. While there are some examples conforming to this assertion[192], the large number of playlists curated specifically for "enjoying" negative moods suggests that users do not always intend to achieve a better and mentally healthier versions of themselves but, to the contrary, use functional music for the sole purpose of further reveling and relishing in negative emotions.

Along with such mood-specific uses, the aestheticizing qualities of DFM can also act as an appendage to its biopolitical uses. For instance, earlier we have observed how some digital functional playlists made specifically for workspaces and work-related activities do not necessarily consider or conceptualize working as a time for being productive or efficient, but rather as something insufferable and unbearable that individuals nevertheless have to endure every day. In these descriptions, work as an activity is imagined and perceived as entirely antithetical to *leisure* and devoid of all the senses of freedom and festivity commonly associated with the latter. Streaming of DFM by users during work hours, however, can successfully efface the strict boundaries demarcating these two domains, therefore allowing the playful qualities of leisure time to seep and infuse into the routinized work environment. Through transforming the mundane and ordinary rhythms of workplace into something fun and festive-like, DFM not only aestheticizes the work activities of individuals but also *inadvertently* and *indirectly* helps users to become more efficient as well. Hence, even when the primary motivation is not aimed towards productivity, the users may *feel* like they have worked better and accomplished more with functional music in the background. As one user explains, DFM "is awesome for getting through work, it makes you feel like you're managing to accomplish something epic even if you're just rearranging spreadsheets"[193], while another concurs by adding that "It's like I'm working for something much more

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[192] Despite being titled *Songs for Anxiety and Depression,* for instance, a playlist by user Alex Navarro tries to strike an optimistic tone nonetheless by reminding his listeners that "we will get through this. Everything is inevitable, and that includes things getting better. Just live life facing forward, and the universe will do the rest"
(https://open.spotify.com/playlist/4cuV8CzDjpIkHfFnn2XkFm?si=Odwd_SmfT_6eEb3Jw0fpMg)
[193]
https://www.reddit.com/r/LifeProTips/comments/3gviwd/lpt_love_to_play_music_while_working_play_a_video/

important than what it really is, as if it could save humanity from something disastrous"[194]. The use of functional music in both instances, then, not only increases the perceived productivity of users, but aestheticizes and turns the simple, menial tasks of working into something "epic" or, in fact, *heroic* (Featherstone, 1992). Hence, with DFM, work does not need to be conceived as something that one unwillingly has to bear, endure or "go through with" anymore, but something that one can enjoy and have fun with as well. As one user quite imaginatively depicts in her playlist description, work, despite all the "horrors" it contains, can still be pleasurable as long as one has the right sort of sonic accompaniment:

> So your boss is an eldritch horror who makes you relive your brother's death, you're trapped in an institute with colleagues investigating you for murder, and the damn printer is jammed AGAIN. That's no excuse for not putting on some bangers. Have a dance, you'll feel better[195].

In addition to these two characterizations, I would like to suggest and add a third aspect related to the aestheticization of everyday life through DFM, which I believe to be central to its evolutionary trajectory. I argue that the ability of users to dictate and regulate the aural parameters of their work endows them with *aesthetic control* (Bull, 2007) and autonomy over their working environments that they had not been able to enjoy since the programming and broadcasting of functional music has been snatched away from the worker-performers of pre-industrial times and entrusted to industrial psychologists and experts instead. That is, through the aestheticization of the work process and the amalgamation of work with leisure, the utilization of DFM during the workday creates an experience that can neither be strictly defined as work nor leisure but as something in-between, such as the one experienced by seasonal workers at Kent hop fields in early twentieth century (Korczynski et al., 2008; see, also, chapter 1). DFM allows users to redefine and reconfigure the conditions surrounding their work by helping them to adjust, regulate and modulate their moods and energy levels at will. If faced with a particularly

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[194] ibid.

[195] *Tim Stoker's Happy Office Funtime* by elsie-black (https://open.spotify.com/playlist/6jWx9MwsAvB7o8SxJ9VyAX?si=ML_xUbTTS9emnKlQQ43F BQ)

engaging and meticulous task, for instance, a user may select across one of her own customized playlists or, perhaps, simply tune in and stream to Spotify's *Deep Focus* in order to shut everything around her and deeply concentrate on the job at hand. If, however, the task in question does not require much mental effort by the user, she can relax to the relaxing and mellow sounds of other *Chill* playlists such as *Relax & Unwind* or *Your Favorite Coffeehouse.* Although, just as with the pre-industrial forms of functional music, the type of functional music or playlist listened to may depend on the demands of the work performance, the decision on how to utilize them and in what capacity eventually and ultimately rests by the streaming agent, who acts as the sole arbiter and author of her experiences.

A particularly commonplace everyday routine activity through which we can vividly observe the aestheticizing practices of users by utilizing DFM concerns *commuting* to and from work, whether by bus, subway or a personal vehicle. Commuting occupies a contentious place within the sociology of everyday life as it firmly stands at the intersection of work and leisure. That is, while commuting is not technically counts as "work", it still nevertheless is a "constrained" and "compulsive time" (Lefebvre, 1991: 53), or, as Debord contends, "a surplus labor which correspondingly reduces the amount of 'free' time" (1959: 57) that individuals might have. In that context, while the time spent commuting takes place prior to and after the working sessions, i.e. during the supposedly "leisure time" of individuals, its still experienced like an "extension of the working day" (Highmore, 2004: 310) because of all the constraints and limitations it puts upon the freedom of commuters. Furthermore, in addition to being an appendage of the working day, commuting, especially by mass transportation, can be perceived as a highly stressful part of everyday, often depicted by users in adverse terms such as "harsh, warm, cramped, and tiring" (Skånland, 2011: 27). Having a pleasant sonic accompaniment in such disquieting and taxing situations can, therefore, elevate some of the negative experiences of everyday commuting and transform "the intolerable into the tolerable" (Bull, 2007: 147), whereas the absence of such musical background can only aggravate and heighten the negative aspects of commuting, as one informer explains: "[...] And

then to take [public transport] on those days I had forgotten my iPod, was just *horrible.* I thought it was unbelievably rotten. While the times when I had my iPod, then I got to sit half an hour in peace and listen to music" (Skånland, 2012: 218).

Having DFM as an aural backdrop while commuting, on the other hand, can significantly diminish or entirely eliminate the stress and anxiety encountered in long traffic jams during rush hours as well as those caused by the noise and overcrowding in buses and subways, thus transforming a tedious everyday activity into an immensely more pleasurable and enjoyable one. The aestheticizing capabilities and qualities of DFM can, therefore, "permit users to wrest back some control from the multiple and invasive rhythms of daily urban life" (Bull, 2007: 147), hence turning the constrained time of commuting into free and, even, "desired time" (Skånland, 2011; 2012) for users. Digital functional playlists can help users to "ease the pain of [their] commute"[196] or to "open up [their] head and heart before the long workday"[197] and even "help" users to maintain their composure when they are "stuck in stop and go"[198]. In any event, DFM allows users to claim back commuting as their *own* free and leisure time by aestheticizing a "boring" everyday activity through "spicing it up" and rendering it more "exciting", as the following user sums up:

> Please tell me I'm not the only one who listens to certain tracks during my commute so as to make the trip a little more exciting. I normally have to walk to a bus stop, board it, stop at the metro, take the metro and then walk to my destination. A lot of this is replicated barring the bus ride in P5 so I thought I'd spice up my commute with the following tracks. […] I know listening to these almost transports me to Shibuya, making my trip less boring than it's ever been. (ThePhantomArcher)

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[196] *Rap Commute* by Ron Bruford
(https://open.spotify.com/playlist/1rAN12UsWsQcJnEz1audd3?si=c9xkj2g6SWaFWAmxxKhKrw)
[197] *Morning Commute* by Samantha Regula
(https://open.spotify.com/playlist/7AZfXGe4tV5WeJuP5IvQoK?si=4K2YdCW4TVWTKhfzweIVsQ)
[198] *Traffic Jams* by Spotify
(https://open.spotify.com/playlist/0mY9BQvlpraYLzg9BfKuVa?si=wU_DCUsqQzOaRhNbAa2DlQ)

5. CONCLUSION

As the preceding discussion on the extensive and rich history of functional music clearly demonstrates, functional music has always been an integral part of and an active agent in the social, economic and political organization of different types of societies over the course of many centuries. In traditional communities, up until the invention of steam-powered heavy machineries and their subsequent infiltration of work contexts, functional music served the critical purpose of regulating the labor process through entraining, coordinating and synchronizing the bodily movements of individual workers until they began performing effectively as a single and coherent whole. Utilized predominantly in situations where the work at hand demanded strenuous bodily effort and physical exertion by a collective group of laborers, such as sailors heaving the anchor or chain-gangs breaking up rocks with their pickaxes under the blistering sun, the call-and-response chanting of functional music not only helped improving the efficiency of the whole taskforce by extracting the last ounce of strength from each member but also ensured the fulfillment of a particular task in the safest and smoothest fashion as possible.

With the advent of industrialization in late 19th century, however, the locus of the functional music has shifted to factories and other industrial workshops, as the previous performers of work songs, i.e. manual agricultural laborers, have become disenfranchised and flocked in multitudes to the sprawling city centers to seek their fortunes as wage earners. In its new configuration, functional music's primary goal was to counteract the alienating nature of repetitive mechanical tasks by acting as a "mental tonic" that created a pleasant sonic alternative to the repressive environment of factory space and relieved the nervous tension emerged amongst workers as a result of the soul-crushing monotony and boredom associated with their assembly-line duties. While the complaisant attitude displayed by managements towards the broadcasting of such uplifting functional music programs like *Music While You Work* on their

factory floor may at first strike observers as an uncharacteristically benevolent act of good-will and paternalistic accommodation of the workforce by the employers, who until recently perceived music as inimical to proper factory discipline and duly cracked down against any spontaneous attempts at singing with pecuniary penalties, in actual fact, the morale-boosting qualities of industrial functional music were merely perceived by its programmers as ancillary and complementary to its more *disciplinary* uses that aimed to aurally manipulate worker bodies and psyches in order to attain optimum productivity. In other words, it was first and foremost functional music's favorable impact upon the production and output rates in factories rather than it's stirring and cheering qualities that most concerned the managements and, thus, encouraged them to retain their broadcasting subscriptions.

Such disciplinary uses of functional music in the quest for improved efficiency and profit maximization would continue to underscore its foreground presence and deployment in public spaces as shopping malls and other commercial outlets became a very common fixture of urban landscapes, providing a new favorable pastime for individuals who got plenty of money and time to spend on their hands. Seizing and capitalizing upon the earlier success Muzak broadcasts had in industrial settings, the proprietors of various commercial establishments (such as bars, restaurants and retail stores) as well as the managerial staff of other servicescapes (including hotels, hospitals and banks) began subscribing to environmental music services specialized in designing custom-made functional music that *fits* to the brand and identity the service provider wants to project to its intended customer base. However, whereas the overarching aim of the broadcasting of functional music in factory spaces is the management and regulation of production in a manner that would enhance the overall productivity and efficiency of the workforce, in its *post-industrial* or *post-Fordist* condition, functional music's central aim becomes *the organization and regulation of consumption* instead. Accordingly, and in spite of the overwhelming number of staff members employed in the service industry, it is no longer the bodies and minds of laborers that constitute the primary objective

for functional music's disciplinary power but, rather, that of customers and *consumers*.

In light of all these organizational and regulatory roles undertaken by functional music over the course of history, we can, finally, turn our attention to the central question posed at the outset of this study: *what does the current techniques in the production and consumption of functional music tell us about the nature of existing power relations in contemporary societies?* How, in another sense, can we understand and account for the ways control and power are exercised today by taking into consideration the transformations in the functions, uses and characteristics of functional music that emerged as a result of its recent move into the virtual and digital domain? In an effort to formulate a viable answer to these questions, in the concluding section of this study, I will revisit some of the fundamental themes and issues previously raised throughout this research, specifically with regards to the industrial and digital uses of functional music. For the purposes of this endeavor I will, first, reintroduce the discussion on the main characteristics and uses of Muzak that we held in Chapter 2, this time in reference to the two key analytical concepts used by Adorno during his investigation of the popular music of his period, i.e. *standardization* and *commodity listening*. Second, and before bringing this chapter and study to a close, I will return to the question of control and self once again and discuss what implications DFM has for the biopolitical modulation of everyday experiences of users as well as for the various self-care and aestheticization practices users regularly engage online through the creative production and consumption of different mood and activity playlists.

According to Adorno, the abstraction and alienation of music from the everyday life of individuals as a result of its *commodification* and subjection to market principles creates a situation in which musicians, artists and other songwriters are constantly pitted against each other in a fierce competition that is the hallmark of capitalist monopolies. This highly contentious nature of culture industry implies that as soon as one particular song achieves a considerable success on the market, immediately "hundreds of others sprang up imitating the

successful one" (Adorno, 2002d: 443). In other words, once the formula for commercial success is provided by a single song, many other aspiring bands and songwriters follow in its stead by *imitating*, almost to the letter, the same musical formula pursued by the initial hit song. This essentially creates a very *paradoxical* situation for the musicians as, on the one hand, publishers want and expect pieces of music that are fundamentally the same with all the other current hits dominating the charts while, at the same time, their musical creations have to be at least slightly different from all of the others so that they can be successfully *plugged* and get constant airplay. As Adorno explains, "only if it is *the same* does it [a song] have a chance of being sold automatically, without requiring any effort on the part of the customer, and of presenting itself as a musical institution. And only if it is *different* can it be distinguished from other songs – a requirement for being remembered and hence for being successful" (ibid: 447-448, *emphases added*). The trick, then, becomes the slight alteration of details and parts of musical pieces that has the most chance of success in terms of sticking into audiences' minds and being hummed by them, while to a great extent not disturbing and, thus, maintaining the overall framework of the successful hit song formula. In due time, as more and more structurally and characteristically similar songs continue to be churned out by the culture industry, the musical standards guiding their production become crystallized, frozen and institutionalized to an extent that any deviations from the aesthetic norm and "non-compliance with the rules of the game became the basis for exclusion" (ibid: 443). *Exclusion* here might refer to anything that hinders a musical piece from reaching the wider public and, hence, receiving commercial success; for instance, not securing any radio time or being relegated to the bottom of popular music charts.

Having a musical practice that is overwhelmingly based on the principle of unscrupulous imitation and replication of only the most successful hits in particular and commodification of music in general, has *two* overarching implications for the culture industry and musical experience as a whole: *First,* the subjection of musical pieces to same production techniques that are highly resembling of the factory assembly lines results in *the mass production of*

standardized musical goods (Adorno, 1945: 212) that are aesthetically and stylistically very identical to each other "except for conspicuous bits such as hit lines" (Adorno, 2002a: 305) and other embellishments that give a musical work its "unique" and distinguishing characteristic[199]. Such emphasis on the *parts* in the production of popular music at the expense of creating a meaningful and original *whole* is absolutely antithetical to, what Adorno labels as, good serious music[200], in which "every detail derives its musical sense from the concrete totality of the piece [...] and virtually contains the whole and leads to the exposition of the whole, while at the same time, it is produced out of the conception of the whole" (2002d: 439-441)[201]. In popular music, every detail and part can be substituted with another without having a visible (or, rather, an "audible") impact upon the overall structure of the song since musical detail in this type of music "has no bearing on a whole" (2002d: 441). On the contrary, in good serious music every detail exists in a dialectical relationship with the whole to such an extent that extracting of one would lead to the immediate collapse of the entire musical structure. Hence, it follows that, whereas the listener of a good serious music – such as Beethoven – has to pay an unwavering attention to the harmonic details of the piece in order to grasp and understand

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[199] However, as Adorno is quick to remind us, even such supposedly original, experiential or previously unfamiliar aspects of musical products can be susceptible to normalization, standardization and *pseudo-individualization,* one example being the improvisational passages in jazz songs

> [...] where spontaneous action of individuals is permitted ("Swing it boys") [but] are [ultimately] confined within the walls of harmonic and metric scheme. [...] Hence, very few possibilities for actual improvisation remain, due to the necessity of merely melodically circumscribing the same underlying harmonic functions. Since these possibilities were very quickly exhausted, stereotyping of improvisatory details speedily occurred. Thus, standardization of the norm enhances in a purely technical way standardization of its own deviation – pseudo-individualization" (Adorno, 2002d: 445)

[200] As opposed to *bad* serious music, which, according to Adorno, can be "as rigid and mechanical as popular music" (2002d: 441).

[201] In a later text, originally published in 1965, Adorno expounds upon his definition of the musical whole thusly:

> The musical whole is essentially a whole composed of parts that follow each other for a reason, and only to this extent it is a whole. [...] The whole is articulated by relations that extend forward and backward, by anticipation and recollection, contrast and proximity. Unarticulated, not divided into parts, it would dissolve into mere identity with itself. To comprehend music adequately, it is necessary to hear the phenomena that appear here and now in relation to what has göne before and, in anticipation, to what will come after. (2002b: 319)

the meaning of the whole, no such case can be made for the consumer of "passive and undialectic" (2002c: 395) popular music, who "can supply the 'framework' automatically, since it is a mere musical automatism itself" (2002d: 439). As Adorno explains,

> The primary effect of this relation between the framework and the detail is that the listener becomes prone to evince stronger reactions to the part than to the whole. His grasp of the whole does not lie in the living experience of this one concrete piece of music he has followed. The whole is pre-given and pre-accepted, even before the actual experience of the music starts; therefore, it is not likely to influence, to any great extent, the reaction to the details, except to give them varying degrees of emphasis. Details which occupy musically strategic positions in the framework - the beginning of the chorus or its reentrance after the bridge - have a better chance for recognition and favorable reception than details not so situated, for instance, middle bars of the bridge. [...] But no stress is ever placed upon the whole as a musical event, nor does the structure of the whole ever depend upon the details. (ibid)

This lack of concentration and attention on the part of the popular music listener constitutes the second implication commodification of music has for modern musical experience – *commodity listening.* According to Adorno, standardized popular music engenders an equally standardized way of listening and relating to music since "*structural standardization aims at standard reactions*" (ibid: 442, *emphasis in original*). The oversaturation of the market with identical musical products and their constant and overbearing presence on radio airwaves due to practices of plugging creates a situation in which listeners' frame of mind is perpetually being assaulted by the ceaseless repetition of similar musical offerings and, as a result, the listening individual becomes anesthetized and unable to generate anything more than automatized reactions and responses to music. In this infantile and regressed state of music listening (Adorno, 1945: 213; 2002a: 303), the *recognition* of individual differences between songs, as opposed to the grasping of "a concrete and unique musical totality" (Adorno, 2002d: 453) like in serious music, becomes an end in itself. Thus emerges a vicious cycle: the more a particular song is repeated on the radio, the more it becomes firmly engraved in audiences' consciousness. This habituation of listeners through repetition ensures that every time the same song is played, it will become more instantly recognizable and more

familiar to listeners. Recognition and familiarity by audiences will eventually translate into the song's acceptance as a commercial success and become surrogates for its *popularity* (Adorno, 2002a: 288; 2002d: 457). Once a song is deemed a success by virtue of its familiarity, the demand for its repetition on the radio will increase[202], hence, it will be "played again and again and made still more familiar" (ibid: 294).

The endless repetition of standardized songs on the radio eventually leads to the emergence of *consensus music,* where only the most familiar and popular songs that made into public consciousness are accepted as successful and valuable by the general society, as well as the degradation and regression of musical habits into a form of *commodity,* or *atomistic listening.* Contrary to the forms of *structural listening* cultivated by good serious music pieces demanding full concentration on the details and being "critical of everything that is mired in the momentary [and] of bad naiveté" (Adorno, 2002b: 318), distracted, inattentive and passive modes of *commodity listening* "dispense as far as possible with any effort on the part of the recipient" (Adorno, 1945: 211), who suspends all intellectual activity during the act of listening and listens only according to a formula (Adorno, 2002a: 302) that was already provided and pre-given to her. According to Adorno, as a result of commodity listening

> Not only do the listening subjects lose, along with freedom of choice and responsibility, the capacity for conscious perception of music, which was from time immemorial confided to a narrow group, but they stubbornly reject the possibility of such perception. They fluctuate between comprehensive forgetting and sudden dives into recognition. They listen atomistically and dissociate what they hear, but precisely in this disassociation they develop certain capacities which accord less with the concepts of traditional aesthetics than with those of football and motoring. [...] They are childish, their primitivism is not that of the undeveloped, but that of the forcibly retarded. (ibid: 303)

Based on our overview of the two key concepts of standardization and commodity listening, we may begin to draw some parallels between Adorno's

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[202] As Adorno, quite derogatorily, suggests "there is actually a neurotic mechanism of stupidity in listening, too; the arrogantly ignorant rejection of everything unfamiliar is its sure sign. Regressive listeners behave like children. Again and again and with stubborn malice, they demand the one dish they have once been served" (2002a: 307).

work and the themes we have raised in Chapter 2. The *first* of these pertains to the degree of standardization in programming of industrial functional music. If, as Adorno suggests, "the standardized products" offered by the culture industry are already "hopelessly like one another" (2002a: 305), then one can suggest that industrial functional music programs that use these standardized musical products as their source material are even *more extremely and radically standardized* as they take these popular music pieces and subject them to an additional stage of standardization and, therefore, resulting in a process of, what we may call, "double-standardization". However, this time it is not the particular sections, such as "the beginning of the chorus or its reentrance after the bridge" (Adorno, 2002d: 439) that go through transformation, but very specific and individual musical elements such as *rhythm, melody, vocals* and even *the tone level* of songs that become scientifically determined, modulated and manipulated during the re-orchestration process. Throughout this rigorous scientific programming and re-arrangement phase, and especially in the context of designing a Stimulus Progression sequencing, any musical dissonances or other potentially attention-grabbing deviations and aberrations are entirely eliminated so as to ensure that, ultimately, "nothing fundamentally novel will be introduced" (ibid: 438) to the listener, who will always remain on a familiar and "safe ground" (ibid: 446) during the course of the broadcast.

Second, both standardized popular music and industrial functional music operate through *distracted and inattentive modes of listening*. As we have seen earlier, one of the major factors that contributed to BBC's decision to introduce a special programming on January 1940 for soldiers stationed abroad, called the "Forces Programme" (FP), was their realization and acknowledgement of the fact that majority of their audiences were using their radio broadcasts as *background* accompaniment rather than listening them with rapt attention as programmers hoped they would. Up until then, BBC's cultural policy was predominantly defined by the imagery of a tired businessman, who, after a long day at work, would tune in and listen intently the offerings of serious music as a way to decompress and relax (Baade, 2006: 356). It would take nearly two decades and an outbreak of a global conflict to make BBC understand that there

are "new audience[s] with specific listening needs" (Baade, 2012: 48), like soldiers fighting at the front or workers relentlessly laboring at factories, who do not necessarily or primarily seek aesthetic satisfaction or cultural elevation from musical broadcasts but a light entertainment offering an escape from the grim reality that they face every day. While a tired businessman may have the luxury to afford relaxation by comfortably leaning back in a chair and fully immersing himself in the music, what factory workers incessantly laboring in soul-crushingly repetitive tasks essentially crave for is a musical "tonic" and stimulant that would cheer them up by distracting and diverting them away from their troubles and make them forget about, even momentarily, the alienating conditions of their work. As Adorno contends, such fundamental discrepancies in the musical expectations and needs of different audience groups, as well as the differences in their modes of listening, primarily stem from

> the present mode of production, to the rationalized and mechanized process of labor to which, directly or indirectly, masses are subject. This mode of production, which engenders fears and anxiety about unemployment, loss of income, war, has its "non-productive" correlate in entertainment; that is, relaxation, which does not involve the effort of concentration at all. [...] A fully concentrated and conscious experience of art is possible only to those whose lives do not put such a strain on them that in their spare time they want relief from both boredom and effort simultaneously. [...] On the other hand, the stimuli they provide permit an escape from the boredom of mechanized labor. (Adorno, 2002d: 458)

This above quotation by Adorno also explains why special care and diligence was given by the programmers of industrial functional music to add as much *variety* as possible to their broadcasts. The producers of functional music believed that musical repetition and monotony in their programming would only emphasize and make even more explicit the boring and monotonous nature of the repetitive labor process. Hence, in order to preclude such unintended and unfavorable consequences, they tried to highlight the musical color and "glamor" (ibid: 448) of their offerings so that they could successfully counteract the alienating aspects of factory workspaces as well as compensating for the absence of joy and color at the lives of the workers, who were constantly fatigued and over-worked (see, for instance, Freymann, 1941; Reynolds, 1942).

As Adorno explains, the notions of musical variety and glamor has important implications for

> […] the mechanization of labor and to the workaday life of the masses. Boredom has become so great that only the brightest colors have any chance of being lifted out of the general drabness. Yet, it is just those violent colors which bear witness to the omnipotence of mechanical, industrial production itself. Nothing could be more stereotyped than the pinkish red neon lights which abound in front of shops, moving picture theaters and restaurants. By glamorizing, they attract attention. But the means by which they are used to overcome humdrum reality are more humdrum than the reality itself. That which aims to achieve glamor becomes a more uniform activity than what it seeks to glamorize. (Adorno, 2002d: 448).

Third, and in very close connection with the above point, is the assertion that both light popular music and industrial functional music primarily serve a "diversionary function" (Adorno, 2002a: 291) with "a soporific effect upon social consciousness" (Adorno, 1945: 212) instead of a critical one. In that context, both can be considered as examples to *objectivist music* as they are primarily characterized by their "intention of *diverting attention* from social conditions [and] attempts to make the individual believe that he is not lonely, but rather close to all others in a relationship portrayed for him by music without defining its own social function [as well as] to show totality as a meaningful organization which fulfills individual destiny positively merely through its transformation into the aural medium" (Adorno, 2002c: 408, *emphasis in original*). As instances of objectivist music, both are equally culpable in terms of perpetuating and promulgating *false consciousness* (Adorno, 2002c: 421; see, also, Adorno, 1945: 212) and the further alienation of listeners through evoking a fiction in the illusory "image of a non-existent 'objective' society or, in terms of its intentions, of a 'fellowship'" (Adorno, 2002c: 396) that is absolutely at odds with the social reality and true needs of the masses. In that sense, both standardized light music and musical offerings of industrial functional music purveyors such as Muzak and *Music While You Work*, can be considered as "the most alien of all music to society" as neither of them express "anything of social misery and contradiction" but rather form in themselves "one single contradiction to this society" (ibid: 425). They, in other words,

inadvertently sustain the hegemonic status quo by merely offering a diversion and escapist satisfaction from the problematic social conditions that surrounds individuals rather than expressing and challenging the very reality that engenders such feelings of alienation and escapism in the first place:

> The ideological essence of "musical life" is its ability to satisfy the needs of the bourgeoisie adequately – but to do so by means of a form of satisfaction which accepts and stabilizes the existing consciousness, rather than revealing through its own form social contradictions, translating them into form and cognition regarding the structure of society. (ibid: 421)

Adorno argues that the main reason why individuals perceive light musical entertainment as harmless and tolerate it as "kitsch" is that, unlike serious music, popular music does not flaunt or feign any artistic pretenses and, basically, "lays no claim to aesthetic rights" (ibid: 425). This is exactly the same pretext that industrial functional music producers use over and over whenever the aesthetic value of their product is called into question or the potentially detrimental and socially manipulative effects of their broadcasts are pointed out to them. For instance, foreboding the coming of such criticisms, an internal BBC memo sent by the co-producer of *Music While You Work*, Neil Hutchison, to producers three weeks after the show started its broadcasting explicitly states that "from the point of view of the general listener we are asking for *a bad piece of program building.* There must be *as little variation of tempo as possible* [...] and *artistic value must not be considered*" (Hutchison cited in Jones & Korczynski, 2006: 149, *emphases added*). The principal aim of *Music While You Work* or any industrial functional music programming, as Hutchison suggests, is not to generate aesthetically appealing music that would cultivate the musical tastes of its listeners but, rather, "to produce something which is rhythmically monotonous and repetitive [that is capable of] 'sustaining' *background* of bris, cheerful but *unobtrusive* music" (ibid, *emphases added*). The underlying premise of his instruction is that, since it has no artistic ambitions whatsoever, industrial functional music should not be criticized on the grounds of aesthetic and ideological preconceptions and instead, like popular music, must be tolerated by the general public as harmless kitsch. This crafty loophole provides a perfect defense and cover for programmers and producers of industrial functional

music to disguise themselves and divert responsibility whenever their products are criticized on aesthetic, cultural and intellectual grounds as can be evinced from the answer given by former Muzak director Umberto Muscio in an interview:

> You know I was at this meeting the other day, and I was approached, and they said, you know, with this *wonderful opportunity* why is it that you don't improve the cultural taste of people? Now we obviously can't play Beethoven's Fifth. It would be almost sacrilegious, because we have to play in these ... segments. What can you do? A one minute segment? Two minutes? The answer is that we're not a cultural medium. Muzak is part of the Environment and we've got to be Contemporary [...] but, beyond that, we can't cater to ... *tastes*. (Haden-Guest, 1973: 15-16, *emphases in original*).

It is rather interesting and ironic to see Muscio, out of all the possible alternatives, using Beethoven's Fifth as his example to rationalize his company's stance over issues of aesthetic cultivation and cultural responsibility as this is the same exact example used by Adorno to demonstrate how the changes in audiences' relationship to Beethoven's Fifth is indicative of the general decline of musical taste (2002a: 288) and the prevalence and pervasiveness of commodity listening among audiences in modern societies:

> A symphony of the Beethoven type, so-called classical, is one of the most highly integrated musical forms. The whole is everything; the part, that is to say, what the layman calls the melody, is relatively unimportant. Retrogressive listening to a symphony is listening which, instead of grasping the whole, dwells upon those melodies, just as if the symphony were structurally the same as ballad. *There exists today a tendency to listen to Beethoven's Fifth as if it were a set of quotations from Beethoven's Fifth.* We have developed a larger framework of concepts such as atomistic listening and quotation listening, which leads us to the hypothesis that something like a musical children's language is taking shape (1945: 213-214, *emphasis added*).

Hence, one can suggest that, through committing the "sacrilegious" act of chopping Beethoven's Fifth, a piece whose meaning can only be understood in its synthesis and totality, into "segments" and by bringing its melodic structure more into the fore during the re-orchestration, industrial functional music further contributes to the regression of listening. But how exactly does industrial functional music perpetuate the "false consciousness" of the masses?

This question brings us to the *fourth* and final similarity between popular and industrial functional music, i.e. both being a form of *consensus music.* According to Adorno, one of the sure signs of *the liquidation of the individual* and passivity of masses in modern societies is their self-professed liking and preference of passive and alienating light musical entertainment over serious art music (Adorno, 2002a: 292-293). As he argues, despite acting against the interests of the general public, the producers and publishers of popular light music products could "preserve a good conscience in the matter since one is offering the listeners first-class goods" and, if further objections are raised claiming "that these are already a drug on the market", they can put the matter to rest with "the reply that *this is what they wanted*" (ibid: 300-301, *emphasis added*). Although it is difficult to compare the popularity enjoyed by light music with that of public broadcasts of scientifically orchestrated functional music – since, unlike the former, the latter has never become a "commodity" that was bought and sold on the market –, Muzak executives' stance throughout the years, like their counterparts in popular music industry, has also been shaped and defined by an undercurrent of a patronizingly paternalistic belief that they were simply "giving the masses what they want" (Adorno, 2002d: 458) despite the overwhelmingly pejorative portrayals of their products by audiences as a source of public irritation and nuisance. For instance, when pressed on the issue of the potentially manipulative effects of their musical programming, Muzak's Managing Director Bill Michael simply replied that "Yes, [...] We *are* manipulating your subconscious. *But we are doing it for your own good!*" (Haden-Guest, 1973: 45, *emphases in original*). In Muzak's own line of thinking, then, they were simply doing a favor to whole society by providing a sonic security (ibid: 52) and health care (Herron, 1981: 122-123) service, which they believed to be successful in counteracting the harsh and alienating aspects of everyday modern life and, thus, helping individuals to better adapt to their social environments. This faith in the supposedly indispensable societal value of industrial functional music was also shared by Lanza, who argued that "Muzak helps human communities because it is a non-verbal symbolism for the common stuff of everyday living in the global village. [...] Muzak promotes the sharing of

meaning because it *massifies* symbolism in which *not few, but all, can participate*" (2004: 150, *emphases added*).

One particular technique used by Muzak programmers to create a service that everyone could feel a part of was the *amalgamation of different musical tastes* of individuals by arranging only the most popular and familiar songs of the period. As the aforementioned quote by Muscio also alludes to, the overarching goal pursued by Muzak Company was not to cater to individual tastes but their *liquidation* through the creation of a single, massified functional music programming that is believed to represent the overall and general musical preferences of the whole society. As another former Muzak designer Christopher Case, in a very un-Adornian vein, explains, "when musicians are left to themselves to make art for the sake of art, not considering public taste, demographics or psychology, they will put together something that won't please everyone. My task is to amalgamate tastes. Imagine trying to please 80 or 90 different viewpoints of the way things should be" (Lanza, 1991: 48; 2004: 149). This liquidation of individual musical tastes and preferences through their amalgamation at the hands of functional music programmers helps Muzak to forge a "social cement" (Adorno, 2002d) that brings under its broad bosom disparate and atomistic individuals by offering them something that they are all familiar with and, hence, can personally relate to. In such a musically induced sensation of fellowship and togetherness, the individual "thus forgets his own isolation and accepts *the illusion* [...] that he is embraced by the collective" (Adorno, 2002c: 431). The utilization of the most popular and familiar music pieces during the programming of functional music, thus, perpetuates the manipulation and passivity of the masses by hiding the existing social antagonisms and contradictions and festering the illusion in musical form that a cohesive and harmonious society, where, "not just a select few, but all can participate" is possible. This was the underlying moral of the story recounted by former Muzak executive Rod Baum, in which he witnessed the unifying and "democratizing" capabilities of his functional music programming first-hand:

> In an office for a garment factory outside of Atlanta, the workers got tired
> of the Muzak and used a radio for their background music. If they turned

on rock, 25 percent of the people in the workplace didn't like it. So they got a committee together and took a vote. They played the classical station, and only 10 percent of the people ended up liking it. So they tried a country station, and 60 percent didn't like it. They had another meeting. They decided on one day for each format: country one day, classical the next, disco for maybe half a day. But the 10 percent who liked whatever was playing got tired of people glaring at them. Finally the office manager called us and asked if they could have the Muzak back. It proved what I was doing was working. *Muzak proved the least of all possible evils.* (Rod Baum cited in Lanza, 2004: 163-164, *emphasis added*)

In addition to its standardized programming techniques and utilization of only the most familiar musical products as its programming material, *the top-down implementation of functional music via loudspeakers* also constitutes a very elemental factor in the overall manipulation of the masses. Whereas the pre-industrial forms of functional music are first and foremost defined by their organic and spontaneous creation *by workers for workers*, the industrial forms of functional music, as well as the standardized goods of popular music they heavily rely upon, can primarily be characterized by "the relinquishing of spontaneity" (Adorno, 2002d: 465), where every stage in the re-orchestration and re-arrangement process is carefully curated and determined by various specialists and experts based on scientific considerations and measurements. In pre-industrial functional music, the active participation in the spontaneous creation of the music by all members of the taskforce, especially during the singing of the refrains[203], not only ensures uniform somatic activity as a single unit but also creates a sense of group identity and togetherness. Accordingly, the productivity and efficiency of the workforce is maintained through the incorporation of each individual to the labor process through the

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[203] With the commodification of music, however, any social and communal value song refrains had for the pre-industrial societies has vanished as they are transformed by the culture industry into a symbol of alienation instead:

> In its stereotyped figures, light music attempts to master the fact of its alienation by absorbing the reporting, observing, and detached individual, as soon as he begins the refrain, into a fictive collective. This individual, in turn, finds his significance enforced through his participation in the objectivity of the refrain; indeed, he experiences the content of the refrain text as his own content in the couplet. He then recognizes this content in the refrain with astonishment and elevation as a collective content. (Adorno, 2002c: 431)

synchronization of their physical movements with the rhythm of the music. In industrial functional music, on the other hand, this feeling of "togetherness" does not come about naturally and organically by the singing of the workers, but is rather enforced and *relayed* upon them through the broadcasting of functional music that is believed to be representative of their general tastes. Similarly, productivity and efficiency is sustained not through entraining laborers' body movements with the music, but rather its implementation in an effort to divert the attention from monotonous nature of repetitive tasks and, hence, boosting workers' morale through offering an escape from the alienating factory space.

On the one hand, the significant transformation in the attitudes of factory managements towards having a musical accompaniment during the labor process from severe contempt and outright prohibition to initial acceptance and total embracement reflects a shift from an entirely antagonistic stance towards a highly *paternalistic* accommodation. Utilized as a mental tonic and stimulant, the provision of functional music on the factory floor enhanced and boosted worker happiness through transforming "the tired, drawn faces, the wearied droop of shoulders, the glances at empty seats" into "smiles, the squaring of bent shoulders [with] chins uplifted" (Reynolds cited in Baade, 2012: 60), particularly after an anxiety-ridden night full of air raids. Industrial functional music for managements, then, was a relatively cost-free way of *giving the masses what they want* by dissipating the gloom of being a factory worker during the war without diverting laborers' attentions from their task in a manner that would impede their productivity. However, such altruistic attitudes displayed by factory owners were not necessarily intended as an end in themselves but, rather, primarily conceived as a *means* towards *increasing the productivity and efficiency* of their workforce. In other words, managements only considered having functional music at their factory floors as a worthwhile investment only insofar as *happy* workers created *better* and *more efficient* workers as Muscio claimed (MacLeod, 1979: 22-23). In that sense, the *paternalistic* uses of industrial functional music cannot be understood independently from its more *disciplinary* uses (Foucault, 1977), whereby factory managements utilized

functional music as a technique of discipline and control in an effort to increase productivity and efficiency through creating a *more docile and obedient workforce*. As Burris-Meyer concludes,

> Our interest is in emotional control. We are interested in exerting it directly by emotional stimulus, and by inducing physiological change as the basis for emotion. In industry the ends to be achieved by emotional control obviously are: To suit the man to his task; to give the work the status of a calling; to make it for the man, not what he lives by, not that which produces the pay envelope, but a major element in living. If that can be done, even if only in part, the work improves and the employee likes it. If you have control of the stimulus, if you can define it in terms of intensity, spectrum and cyclic quality and then measure the rate and quality of production, lateness, early departure, absences, accidents, and any discoverable indices of employee morale, without the worker's knowledge that he is a subject, you have a valuable technique for the study of emotional control and can, incidentally, find out what music in industry is good for, and how good it is. (1943: 262)

Despite his characteristically cynical portrayal of popular music and the overwhelmingly disparaging comments he made on the subject throughout the course of several grumbling treatises, Adorno nevertheless had not completely repudiated or dismissed the liberating and "illuminating" potentialities popular music tunes can have as objects of sonic background accompaniment. In one of his earliest pieces dating back to 1934, aptly titled *Music in the Background*, Adorno valorized live music entertainments provided by in-house café and pub orchestras as one of the last vestiges that "exiled Music […] pushed to the edge of existence" could still persevere after being "shooed off the street" (2002e: 506) and from the immediate life of individuals. Unlike its standardized counterparts being relentlessly pushed by the culture industry via incessant loops of radio airplays, the arrangements performed by big band orchestras do not lend themselves to even the most prosaic forms of commodity and formulaic listening as they are made solely for the purposes of *background*. In other words, one does not need to heed any attention to it or even "have to listen to it" while it gently floats like a cloud above the patrons and unsuspectingly "seeps into the murmur of the[ir] conversations" (ibid: 507). But it is exactly through this background quality, that is, it being just another "objective event" (ibid) amongst others that café music manages to *assemble* and ascribe meaning to the

seemingly trivial incidents and occurrences routinely acted out in the stage of everyday life:

> The coldness from table to table; the strangeness between the young gentleman and the unknown girl across from him, who waits for the looks that will give her permission to be offended. All this is not, for the life of you, eliminated by the music, but instead *caught up and bound together.* The gentleman will certainly not dare to accost the girl here, in the expensive establishment with live entertainment. But coldness, desire, the strangeness of the closeness between the two – the music *transports* it with an abrupt gesture into the stars, like the name of Ariadne abandoned. The accosted girls themselves do not need to pay attention to it. As soon as it gets too loud, they remove their bodies from the astral even with the cry: Waiter! The bill! And strike the glass with their spoon. *This, however, is simultaneously the sound of café music.* (ibid, *emphases added*)

One reason why café music can so successfully disguise itself in the background is the fact that, as was the case with industrial functional music programming, there are "no original compositions [that] are played, no piece as it is conceived", but, rather, only the "arrangements for the salon orchestra, which falsifies and alters it" (ibid: 508). Café music neither has any pretenses about its purely functional role nor it flaunts to have any artistic and aesthetic aspirations. It simply arranges sonic potpourris from "bouquets of dead flowers", i.e. the "once-famous [but now] forgotten masters" of musical achievement, by taking out only the "best-loved melodies" (ibid: 508-509) from an entire composition and seamlessly conjoining them in a manner that would allow for a continuous and uninterrupted musical presence to keep customers company. It is, therefore, merely an "appearance", a façade that strives and "wants to represent orchestras" (ibid: 508) but only ends up being a poor and shabby imitation of their grandiosity. And, for Adorno, therein lies the brilliance of café music: through arranging only the most popular tunes for background use, it relinquishes any aesthetic pomposity, thus "emancipat[ing] [itself] from all human seriousness and all genuineness of artistic form" (ibid: 508) that is commonly associated with good serious music. Taking the long-forgotten tunes "from the unconscious memory of the listeners" as its sole musical material, café music reawakens "their ruins to new, ghostly life" (ibid: 509), in which their

melodies can once again brightly "shine like a star against the background"
(ibid: 508):

> In dissolution the works fall silent. Here they become audible once again.
> Not, it is true, they themselves, in their structured form. But the ruins of
> their sound have been joined together in a second, strangely transparent
> form. [...] Its glow is netherworldly. It can remain unnoticed because it is
> unreal. But it is not a black shadow, rather a bright one, like milk glass.
> One can, as it were, hear vaguely through this music, through to the next
> room. This is why it shines. (ibid: 508-509)

According to Adorno, then, "background music is an acoustic light source"; it
"lights up" those who encounter it as their images become "brighter, sharper
[and] more clearly defined" (ibid: 508) simply by the virtue of its existence.
Similarly, "when café music falls silent, it sounds as if a miserly waiter is turning
off a couple of electric bulbs" (ibid), thus condemning everyone to the
disquieting void and stillness of the stultifying darkness. The point that Adorno
seeks to convey here is also the same narrative that we have been encountering
time and time again in the accounts and experiences of wartime factory
workers, which unequivocally confirms that having a musical accompaniment
(especially during repetitive and monotonous tasks) is categorically much more
preferable to its silent alternative as it considerably enhances the mental well-
being of industrial laborers by adding *color* to the gray and drab environment of
the factory. However, the stimulating capabilities of background music should
not be purely understood in a straightforward fashion or taken at their face
value, as the illumination metaphor used by Adorno in his essay is his rather
clever way to allude and point to the social and political issues confronting
modern-day societies. For, as Leppert contends, what is ultimately at stake in
Adorno's investigation of background music is a promise of hope and an ideal
for a better future – that the luminescence of background music does not merely
lights up everyone in its presence but also invites and engenders social critique
by "illuminat[ing], however dimly, what might have been":

> For Adorno, the potential realization of "what might have been" marks
> the socially hopeful possibility (or threat) of conjuring from auditors a
> social critique, however vague, of the very conditions (antimusical to the
> core) that produce the musical ubiquity of Muzak and its aftermath in the
> first place. [...] Whatever the grim reality of the metaphoric affinity
> between music and the myriad rhetorics of everyday life under the

> conditions defined by late capital, music, however debased – and indeed, however potentially debasing – still points to something better. […] Put differently, the presence of music – *any* music – references a lack. And lack, properly understood, is not an ontological condition but a social one. Lack, in other words, invites critique; critique in turn is the precondition for social change. (2005: 95-96, *emphasis in original*)

It is my contention that the double mechanism implicit in Adorno's analyses of popular and background music (i.e. that music can at once reaffirm the hegemonic and asymmetrical power dynamics while at the same prompting and eliciting a critique of the social and political conditions underlying them) can serve as a theoretical model for understanding the complex network of relationships that DFM has with the ways power and control are exercised, as well as resisted, in contemporary societies. As our discussion in Chapter 4 revealed, the current uses of DFM constitute "a permanent field of tension" (Karakayalı et al.: 2018: 19) in which algorithmic control and self-cultivation practices of users can simultaneously, albeit often uneasily, co-exist. On the one hand, as our analysis has shown, the techniques used in the digital production and consumption of functional music clearly suggests an extension and articulation of previous (read: pre-digital) social control technologies into the new media. However, the role of new media in expanding the scope for the biopolitical uses of functional music does not, and should not, mean that they are simply a new outlet for Muzak to politically express and exert itself. Rather, as functional music moves towards the virtual terrain, its former disciplinary implementations also undergo a significant transformation that enables former control technologies to better adapt to their new, online contexts (see, for instance, Karakayalı & Alpertan, *forthcoming*). In this sense, perhaps it would henceforth be more tenable to use the term *post-Muzak* instead of "neo-Muzak" (Anderson, 2015) while referring to the practices of functional music streaming, as the affordances provided by online media, coupled with the technical innovations in portable music listening, endows these technologies of control with more potentialities and opportunities to permeate and transfuse the everyday lives of listeners than its antecedents ever could.

The affordances engendered by functional music's transfer to online media and the implications they have for the contemporary power and control

technologies are threefold. *First*, whereas traditional forms of functional music were broadcasted periodically in enclosed settings, DFM can accompany users anytime and anywhere. This, in turn, allows power to operate in more flexible and mobile manners, rendering possible the continuous modulation of users even while they are on the move. *Second,* contrary to the top-down implementations of Muzak, DFM presupposes and necessitates a constant engagement with its recipients. In other words, the production of DFM is highly contingent upon the constitution of a recursive feedback loop with users, whereby the data generated by users' previous interactions with the system are compiled and algorithmically processed by streaming services in an effort to come up with better and more personalized recommendations. In practice this implies that, unlike the public audiences of functional music broadcasting who are forced to consume the pre-determined musical content without having an input or a say in its programming, the users of digital streaming services can actively steer and adjust the course of musical recommendations offered to them (as is the case with online radio stations like *Pandora*) or pull up songs from the virtually bottomless database of musical offerings to create differently-themed playlists (the basic model for on-demand music services such as *Spotify*). The enhanced capabilities of users to design and personalize their own musical experiences in an ever-expanding field of online musical choice indicates that functional music, in its digital configuration, can no longer discipline the bodies and minds of subjects by dictating a uniform, "one-size-fits-all" model of musical programming. Rather, DFM services generate and publicize a large variety of musical content (from individual songs to entire playlists) that supposedly covers a whole plethora of mood states and activities users engage in daily, and then *recommends* these musical items to users based on their tastes and listening habits. This, as Beer contends, is indelibly a new and much softer "expression of power, not of someone having power over someone else, but of the software making choices and connections in complex and unpredictable ways in order to shape the everyday experiences of the user" (2009: 997). Therefore, instead of a forced relaying of a single programming expertly designed to boost productivity and efficiency, in DFM services we see instead software trying *to inspire users to become more procreative and well-*

adjusted subjects by gently asking questions like "*do you want to boost your productivity* while working from home?" and eventually leaving the decision up to the users by stating that "here are some music you *may* listen to" (*Office Sounds[204], emphases added*).

Third, and finally, the continuous negotiations that users have to make daily in their interactions with streaming services suggest that control exercised by DFM via the biopolitical modulation of everyday experiences of users is essentially an indefinite and indeterminate process that takes on new shapes and forms every time users login to the system. The personal profiles users create while registering to online streaming services are, from that moment on, constantly "performed into being" (Prey, 2018: 188) without any particular purpose or end-point in mind. Hence, users' taste profiles in music streaming services are always *incomplete*, or in a perpetual state of *becoming*, as each new interaction with the service reveals another, potentially fresh information to the software about the characteristics of the users and who they are. More importantly, however, is the fact that this "perpetual training" (Deleuze, 1992: 5) of users in online streaming services is not achieved through forceful coercion or subjugation, but through the voluntary submission and motivation (ibid: 7) of individuals to willingly share information with the software to get tailor-made recommendations that would help cultivate their music tastes. It can be argued that, this highly interactive nature of digital streaming services ensures the perpetual modulation and control of subjects by "creat[ing] a state of *dependency*" amongst users and "inducing a desire in them for constantly transforming themselves" (Karakayalı et al., 2018: 19, *emphasis in original*). In other words, as users become more eager to continually use these services to cultivate their music taste, they also become more firmly enmeshed and entangled in a power mechanism that aims to control their behaviors and conducts from a distance.

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[204] https://open.spotify.com/playlist/7ojcoAJrOQOA66Z0xHwPxP?si=5nh6sbAAQ76plTL6CGK-CA

Taken together, these three changes in the uses of functional music brought about by its transfer from pre-digital to online media points to an expansion and proliferation of power networks in contemporary societies. However, just as the open and participatory nature of DFM makes it even more convenient for power "to circulate in the capillaries of society" (Lash, 2007: 61) in a more de-centralized and free-floating fashion, at the same time, it also opens up new spaces and affordances for the haphazard and spontaneous uses of functional music by users in ways that cannot be wholly managed and subsumed by the dominant power structure. As our discussion on the aestheticization practices of users has highlighted, listeners today enjoy a considerable amount of freedom in terms of creating their own music lists or selecting across a wide range of ready-made playlists that best reflect their musical tastes or fits to their current emotional states and activities they take part in. Such increased ability of users to seamlessly curate, select, browse, skip or delete musical content depending on the context they are in imbues them with "aesthetic control" (Bull, 2007) over their own emotions and conducts, which often leads them to use digital playlists for different and innovative purposes other than the ones previously envisaged or anticipated by a control technology. Hence, we see multiple instances where users create playlists not for the sake of rendering themselves more productive or improving their mental conditions, but precisely for opposite reasons such as wallowing in negative moods, "to get through" a horrible working day or simply "just be[ing] happy doing nothing"[205]. These specific uses of functional music in contexts where individuals may especially feel vulnerable for having no control over the circumstances surrounding them (such as feeling emotionally overwhelmed, being stuck at traffic while commuting to work or getting bogged down in boring office tasks) can significantly help them to wrestle back some agency and control by adding a modicum of aurally-induced playfulness to their current predicament and, thus, transforming "the intolerable into the tolerable" (Bull, 2007: 147). In this respect, the use of digital functional playlists for aestheticizing and "self-moodification" (Karakayalı & Alpertan, *forthcoming*) purposes can be likened to

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[205]
https://open.spotify.com/playlist/5GU4Scn0fc0Ofc0UEsXwKf?si=bJhkoqqOSvm66Fw8k3XYpw

Adorno's characterization of orchestral arrangements in café music: through bundling together a motley assortment of popular and familiar songs to create an uninterrupted and unobtrusive musical experience, DFM playlists can function as "acoustic light sources" that "light up" the everyday life of their users and illuminate "what might have been" by offering a more enjoyable alternative to the banal and tedious aspects of our quotidian existence and turning the humdrum of everyday routine into something exhilarating and remarkable for their listeners.

This study has argued that that the contemporary uses of DFM services are primarily characterized by this ongoing tension between technologies of control and technologies of self and favoring one explanation over the other for the sake of a clear and easy resolution could preclude us from fully grasping the complex network of relationships through which control and power operate in modern societies. While not offering any clean-cut solutions for the dichotomous nature of our online musical experiences, this study has attempted to understand the changing power relations through contextualizing recently popularized digital music streaming services into the broader evolutionary trajectory of functional music. Today, streaming services like Pandora and Spotify are the major source for millions of users to reach and interact with functional music playlists, and despite that Muzak as a company has recently been relegated to the dustbin of history, its successor Mood Media still continues to pump custom-made functional music to retail stores and other service spaces all across the globe. As everyday unsuspected consumers of various types of functional music, it is, therefore, incumbent upon us to become more inquisitive and critical about the political considerations and motivations underlying functional music's widespread prevalence in our immediate life. This study constitutes a step towards this direction. Going forward, we constantly need to be alert and watchful about "what [we are] being made to serve" (Deleuze, 1992: 7) by functional music's control mechanisms while, at the same time, always maintaining an unwavering resolve in uncovering its empowering potentials by constantly asking ourselves what, in fact, "might have been".

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