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## “Acoustic wallpaper” under control – the case of *musique d’ameublement* and Muzak

**ABSTRACT:** Attention is one of the most important cognitive processes. Its functioning and key characteristics play a vital role in the perception of music, especially in everyday situations when music becomes an acoustical background. Thanks to selectiveness, shift and division of attention, the listener can balance between an active and a passive act of listening, however, the results of auditory perception may be difficult to determine.

Can the sender, in the process of musical communication, manage the listener’s attention in such a way as to achieve the effect of “acoustic wallpaper” understood as a perception-based effect of background music, where music, in line with the sender’s intentions, is located in the peripheral zone of the listener’s attention, within extensive attention? What function, from the perspective of the sender, is performed by “acoustic wallpaper”? Is it a target result or a mechanism leading to certain reactions in an indirect way? What factors play a decisive role for the efficiency of an adopted strategy?

The main aim of this article is to answer the above questions by the analysis of two exemplary concepts of background music (*musique d’ameublement* by Erik Satie and Muzak) through the prism of the author’s theoretical model of “acoustic wallpaper” (Makomaska, 2021). This novel approach derives from the psychologically-based reciprocal feedback model of musical response (Hargreaves, et al., 2005) and socio-musicological studies on pragmatic forms of musical communication (Brown, 2006). It assumes that the effectiveness of “acoustic wallpaper” being under control of the sender (the composer or a professional company) is conditioned by correlations between structural characteristics of music, the listener, and historical-social context. The analysis shows that the intended functions of background music (seen from the perspective of the sender) can differ from the real ones and in the case of particular concepts can be moderated by various groups of factors. The results provoke further discussion on the application potential of the proposed model in psychologically, historically and/or marketing-oriented studies on such concepts as e.g. ambient music and contemporary audiomarketing strategies implemented in commercial environments, where music located on the periphery of the listener’s attention can become an effective tool of manipulation.

**KEYWORDS:** peripheral attention, effect of “acoustic wallpaper”, *musique d’ameublement*, Erik Satie, Muzak, ambient music, Brian Eno, audiomarketing, acoustic engineering

## Introduction

Attention is a key cognitive process, defined in psychological studies as “a system responsible for selecting information and preventing negative consequences of the cognitive system overload” (Nęcka, et al., 2020, p. 168). The process deals with selective aspects of perception as the receiver “focuses on selected characteristics of the environment while neglecting others” (Reber & Reber, 2005, p. 843). The diversity of reception forms can be affected by attention level, which determines

[...] the extent to which one is attending to a stimulus. Historically, the term was used by the structuralists with a rather precise set of levels identified, ranging from the total nonattentiveness of an unconscious person to the vivid clarity of focal attention. Today the term is used without any real specification of levels or steps; rather it connotes a dimension of how much of one's attention is invested in or being attracted by a particular task or stimulus (Reber & Reber, 2005, p. 843).

Attention level translates into the place of a stimulus in the so-called attention zone. Polish cognitive psychologist, Tomasz Maruszewski explains that

[within] attention zone we can distinguish between a focal zone, being focused on at a given moment, and a peripheral zone, including less accessible stimuli. One can acknowledge peripheral stimuli but not register all their features (Maruszewski, 2001, p. 89).

In the case of the focal zone, the stimuli are located within intensive attention, which “is of a relatively narrow range but allows to thoroughly process information within the zone” (Maruszewski, 2001, p. 80). In the case of peripheral stimuli, they are most likely to be found within extensive attention, which “is of a relatively broad range, however, the processing of information here is rather superficial” (Maruszewski, 2001, p. 80).

The functioning of focal and peripheral attention is directly reflected in the process of music perception. Thanks to the mechanisms such as selectiveness, shift and division of attention (Eysenck & Keane, 2020; Juola, 2016), especially in everyday situations, when music becomes a background stimulus, the listener can balance between an active and a passive act of listening, however, the result of perception may be difficult to determine (see: Kassabian, 2013; Makomaska, 2021; Quiñones, et al., 2013).

In the context of studies performed in relation to various forms of effect-oriented, pragmatic musical communication (Brown, 2006; see also: Makomaska, 2019b, 2021), a question arises whether and how it is possible to intentionally manage the listener's attention in such a way as to achieve the effect of “acoustic wallpaper”, understood as a perception-related effect of background music where music, in line with the sender's intentions, is located in the peripheral zone of the listener's attention, within extensive attention. What role, from the sender's perspective, is played by the effect of “acoustic wallpaper”? Is it a target result or an intermediary mechanism causing various types of reactions? What factors can be decisive for the effectiveness of a given strategy?

These questions shed new light on different artistic and functional concepts of music that appeared on the ground of Western musical culture of the 20<sup>th</sup> and 21<sup>st</sup> centuries. They shift the focus to how the listener's auditory attention

can be managed by the sender and what dependencies could arise between the sender – (controlled/ background) music – the (passive) listener. These aspects basically have been overlooked in previous historically-oriented studies characterised by fragmentation and the lack of comprehensive approach (see e.g. Husch, 1984; Lanza, 2004; Potter, 2015, 2016; Vanel, 2008, 2013). The present paper offers a new way of reconstruction and analysis of selected concepts of background music (*musique d’ameublement* by Erik Satie and Muzak) through the prism of the author’s theoretical model of “acoustic wallpaper” (Makomaska, 2021). This novel approach is rooted in the psychologically-based reciprocal feedback model of musical response, developed by the British psychologists of music, David J. Hargreaves and his colleagues (Hargreaves, MacDonald, & Miell, 2005; North & Hargreaves, 2008) and in socio-musicological studies on pragmatic and effect-centred forms of musical communication (Brown, 2006).

A starting point for the analysis is the assumption that the effectiveness of “acoustic wallpaper” being under control of the sender (the composer or a professional company) is conditioned by correlations between structural characteristics of music, the listener, and historical-social context. However, the intended functions of background music (seen from the perspective of the sender) can differ from the real ones and in the case of particular concepts they can be moderated by various groups of factors. What determinants come to the fore in case of *musique d’ameublement* and Muzak? What role do the structural properties of music play? Can the proposed approach be used in research on other artistic and functional concepts of background music, such as ambient music by Brian Eno and audiomarketing practices implemented in contemporary commercial environments? How about other non-instrumental forms of musical communication?

### Towards the effect of “acoustic wallpaper” – theoretical approach

In Polish, the word *tapeta* has three meanings. According to the online edition of *Słownik języka polskiego*, the first meaning is “paper or material that you stick onto the walls of a room in order to decorate it”, the second is “picture or photograph which you have as the background on the screen of a computer”, and the third is “thick, sloppy makeup”. One of the pioneers in the studies of Erik Satie’s output (1866–1925), Rollo H. Myers (1948) was the first to introduce the concept of *wallpaper* to denote the repetitive structure of *musique d’ameublement* (English: *furniture music*). It was treated as a kind of an object (a piece of furniture), which does not absorb the listener’s attention. The term “wallpaper” was used by Myers purposefully since one of Satie’s works, published in 1917 and classified as *musique d’ameublement*, was named *Tapissérie en fer forgé*. Satie also intended to compose another work titled *Papier phonique*, which confirms that the artist treated his music as a kind of “wallpaper” (Potter, 2015, 2016; see also: Makomaska, 2018, 2019a, 2021).

The term “wallpaper”, when preceded by “sound”, “music”, or “acoustic”, changes semantically. On the one hand, it indicates repetitiveness of a given pattern as its

guiding principle but can also refer to the perception of acoustic stimuli in terms of musical background. Such an understanding of “acoustic wallpaper” amounts to an effect of a perception-based character, which becomes crucial for this article.

A starting point to pinpoint the factors that can determine whether this particular auditory effect is achieved or not is the reciprocal feedback model of musical response, as proposed by the British psychologists of music, David J. Hargreaves, Raymond MacDonald and Dorothy Miell, in the first chapter to *Musical Communication* (Hargreaves, et al., 2005), titled *How do people communicate using music?* In its simplified version, it also appeared in *The child as musician. A Handbook of musical development* (McPherson, 2006), in the chapter titled: *Musical preference and taste in childhood and adolescence*, written by Hargreaves, Adrian North, and Mark Tarrant (Hargreaves, et al., 2006). The researchers locate the issues of perception of music and reaction to music within the broader area of communication theory. They point out that:

[m]usic is a fundamental channel of communication: it provides a means by which people can share emotions, intentions, and meanings. Music can exert powerful physical and behavioural effects, can produce deep and profound emotions [...], and can be used to generate infinitely subtle variations of expressiveness [...], such that highly complex informational structures and contents can be communicated extremely rapidly between people (Hargreaves, et al., 2005, p. 1).

In such an approach, based on the principle of mutual determinism, the listener’s reactions to music are viewed as an interaction between the listener’s characteristics (subject level), music (object level), and context (situational level) which modifies the listener and (if possible) the music. The authors of this model (Fig. 1) highlight the role of factors such as (1) constant evolution and change in individual preference and taste (which can shape the relationship between music and the listener), (2) individual use of music as a resource in different situations

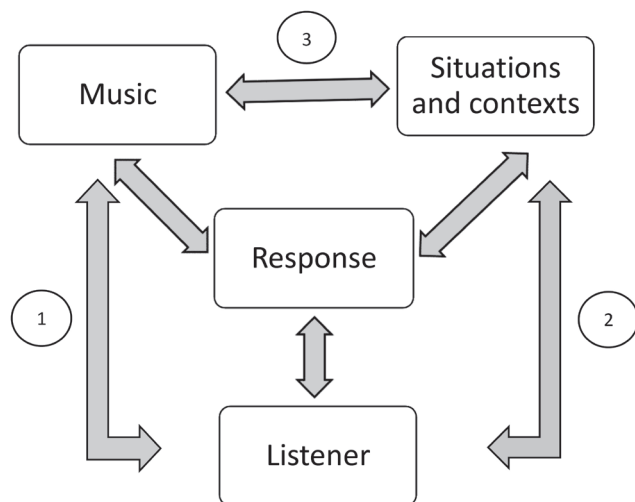


Figure 1. Reciprocal feedback model of musical response– simplified version  
(based on: Hargreaves, et al., 2006, p. 137)

(which conditions the relationship between the listener and situations, contexts), and (3) situational appropriateness of genres and style, i.e. musical ‘fit’ (which affects the correspondences between music, situations and contexts).

If we treat the effect of “acoustic wallpaper” as a result of an interaction between three dimensions (music, listener, context), there should be some modifications introduced on the level of its simplified schema. The main challenge is to pinpoint potential factors that can determine a given attention level and, as a result, can affect the active or passive perception of music. In line with the assumptions of the reciprocal feedback model of musical response, each of the levels pertaining to the listener’s contact with music (subject level, object level, situational level), as well as their correlation, will play a greater or lesser role in the process of music perception and reaction to it.

It is worth noting that, in line with cognitive psychology of music, the listener’s characteristics are divided into three major groups: psycho-sensory conditions (including the characteristics of the hearing system, which are typical of the human being and various perceptiveness- and hearing-based abilities of particular individuals, underlying their musical skills), cognitive and emotional-motivational conditions, which apply to the human mind in general and result from the listener’s personality, musical training, and interests (Jordan-Szymańska, 2014). Within the area of cognitive conditions, researchers make a distinction between two aspects, i.e. the processual and structural one. The former “applies to the dynamic capacity to process information, i.e. how thoroughly and how much information can be processed by the cognitive system in a given amount of time” (Jordan-Szymańska, 2014, p. 32). The latter is related to cognitive structures coded in the long-term memory, referring to the listener’s knowledge and experience. The attention level, involved in the processual aspect of a perception act, affects the active or passive perception of music. Simultaneously, it is strictly related to the listener’s emotional-motivational factors, which belong to the area of relations between the object and subject level.

The studies suggest that attention resources are not constant and depend on the so-called activation system responsible for maintaining an appropriate level of arousal (Reber & Reber, 2005). What plays a role here is the attitude to the music being listened to. When the listener is interested in the music, the subjective cost of attentiveness will be significantly lower than when they are not interested in or reluctant to it. It also depends on the two subjectively interpreted dimensions: familiarity-unfamiliarity and simplicity-complexity of music material. This translates into experiencing pleasure-displeasure and is a measure of the listener’s preferences (Berlyne, 1971, 1974; North & Hargreaves, 2008).

It can be assumed then that in the case of contact between the listener and music, attention level will result from the correlation between the subject and object level since a key role in achieving the effect of “acoustic wallpaper” will be played by musical preference. In line with the psychobiological theory of acoustic stimuli (Berlyne, 1971, 1974) it is possible that while listening to simple and familiar music, the listener will use less attention resources, and potentially there will be more resources left for other actions. A different set of variables will result in different reactions. For example, intensive stimuli (e.g. loud sounds, i.e. a psycho-

physical factor) or those vital to satisfy one's needs (ecological factor) or pointing towards the novelty, complexity or incompatibility of information carried by the stimuli in reference to the expectations (collative factor) will automatically activate the so-called bottom-up attention, which seems an interesting starting point for the sender wishing to manage the auditory attention of the receiver.

On the object level, one of the most important aspects is the musical structure, especially its repetitive patterns, which mediates the process of perception (Huron, 2013; Margulis, 2014). According to Anna Jordan-Szymańska, repeating particular sounds or sets of sounds allows:

[...] the listener to predict, with a greater or lesser probability, certain patterns in the melody. Predictability, according to the theory of information, is linked to redundancy. The level of redundancy of a message (melody) is inversely proportional to the uncertainty level, i.e. unpredictability of information included in the message. The more redundant the message is, the less information it contains, hence it is more predictable. The more information it contains, the more unpredictable it becomes (Jordan-Szymańska, 2014, pp. 55–57).

When the receiver listens to someone repeating the same thing, the message becomes more predictable (highly redundant), and can be processed with the use of lower attention resources. A low level of redundancy will result in an increased attention level, since novel stimuli require attentiveness. Passive perception will be accompanied with a high level of redundancy, which may be of interest to the sender willing to achieve the effect of “acoustic wallpaper”.

The final result of perception processes is also dependent on a broader historical, cultural context, encompassing a set of factors determining the ways in which people create, perform, perceive and react to music (see: Chełkowska-Zacharewicz & Kaleńska-Rodzaj, 2020; Kassabian, 2013; Makomaska, 2021; Quiñones, et al., 2013; Sterne, 2012). The relation between music and the listener can be also modified by its situational context, which can affect music perception. In principle, places designed for listening to music, described by some researchers as *sonic museum* (Kivy, 2001, p. 72), e.g. concert halls (with live music), or private spaces, will engage top-down attention, directed intentionally at music. However, even here there may be listeners who will not listen to it attentively (see: Chęćka-Gotkiewicz, 2010). The other type of spaces are places with background music. In extreme cases, the effect of “acoustic wallpaper” can be treated as an objective, a key element of the strategy described as acoustic engineering. It can be defined as actions that aim at projecting, constructing, and modifying acoustic space through programmed music with the help of scientific and technical knowledge. An effect of such a strategy can be a modification or alteration of the listener's reactions and behaviour, in line with the values and interests of the influence-exerting objects (Makomaska 2017a, 2017b, 2018, 2021). The issue of “acoustic wallpaper”, placed in the context of acoustic engineering and research on instrumental forms of communication, offers a novel research perspective. It focuses on the final effect, which is a modification or alteration of the listener's reactions and behaviour, according to the sender's intentions. In extreme cases programmed music, intended as an acoustic back-

ground, can be treated as a tool of manipulation aimed at controlling the listener’s behaviour (Fig. 2).

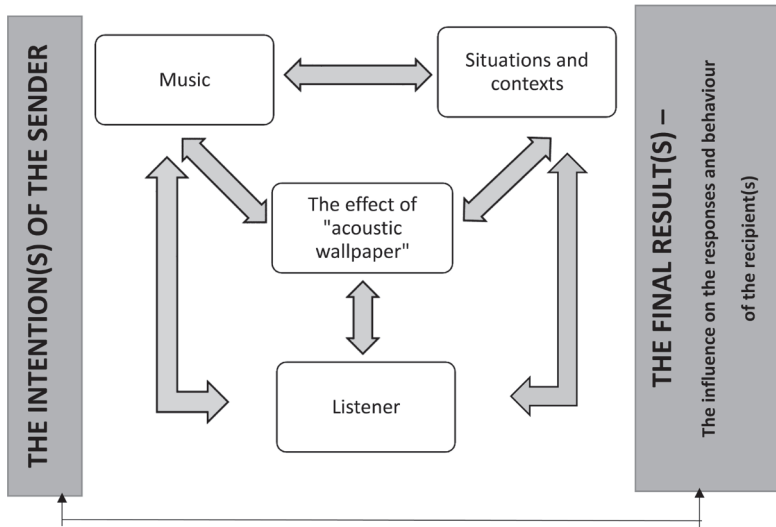


Figure 2. The effect of “acoustic wallpaper” in the strategy of acoustic engineering (Makomaska 2021, p. 50)

The proposed theoretical model originally presented in my latest book in Polish is rooted in an interdisciplinary perspective, primarily taking into account social and cognitive psychology of music and broadly understood research on communication (see more in: Makomaska, 2021). Although the model is placed in the context of an acoustic engineering strategy, its application potential goes beyond this framework. In full or modified version, it can become an interesting reference point for the reconstruction and analysis of selected artistic and functional concepts of background music that shape the extensive and diverse panorama of cultural phenomena of the 20<sup>th</sup> and 21<sup>st</sup> centuries, such as *musique d’ameublement*, Muzak, ambient music, audiomarketing, etc. Its application provokes a key question: what is the end and means of achieving the perceptual effect of “acoustic wallpaper” by the sender in particular cases? From the above question arises another one: is it possible to find some correlations between selected artistic visions and functional solutions, despite obvious differences observed between them, stemming from their socio-historical contexts<sup>1</sup>? In search for the answers, it is worth taking a closer look at selected, exemplary concepts through the prism of the model of the “acoustic wallpaper” effect.

<sup>1</sup>To find out more on socio-historical genesis of each concepts and their main theoretical assumptions, see: Makomaska 2017, 2018, 2019a, 2019b, 2020, 2021.

### Case 1: *musique d'ameublement* by Erik Satie

Probably the first intentional attempt to manage the listener's attention in order to achieve the effect of a non-absorbing background was made by Erik Satie, in the context of the Paris avant-garde movement in the 19<sup>th</sup> and 20<sup>th</sup> centuries. The theoretical concept of *musique d'ameublement* was practically reflected in a cycle of five works composed in the period of 1917–1923 (Orledge, 1990; Potter, 2013, 2015, 2016; Volta, 1998). It consists of *Tapisserie en fer forgé* and *Carrelage phonique* from 1917, the *Sons industriels* cycle (1920), featuring *Chez un 'bistrot'* and *Un salon*, and *Tenture de cabinet préfectoral* (1923). All of these works come with an original title, and the compositions from 1917 are accompanied by Satie's comments written on the margin of the manuscript, instructing about the spaces and contexts in which the works should be performed.

*Tapisserie en fer forgé*, composed for the flute, clarinet, trumpet, and string instruments, was composed “for guests at a great party. To be played in an entrance hall<sup>2</sup>”. Another work, *Carrelage phonique*, written for the flute, clarinet, and string instruments, was composed to be performed as background music to having lunch or the ceremony of civil marriage. A high status of the ceremonies during which the music was supposed to be performed is not reflected in the music material itself. Both works consist of only four bars, repeated as long as it was needed. Satie relied on simple, quasi-ostinato structures, which, when looped and repeated forever resemble perpetual motion. *Tenture de cabinet préfectoral* (1923) is of a similar structure, composed for Agnes Elizabeth Meyer (née Ernst). According to Darius Milhaud, the work was supposed to “furnish the dame's library in Crescent Palace with something pleasant for the ear, just like Manet's still life paintings furnished it with something pleasant for the eye” (Milhaud, 1949, s. 138). Once again, the major principle here is extreme repetitiveness, which, in line with the composer's assumptions, should make the listener stop paying attention to music and instead treat it in terms of a comfortable element of the surroundings.

The effectiveness of the composer's actions is arguable, especially in the case of the works from 1917, since they were never published or performed in his life. *Sons industriels* had its premiere in 1920 in Galerie Barbazanges in Paris. Satie's two compositions were performed between the three acts of Max Jacob's comedy titled *Ruffian toujours, truand jamais*. Satie assumed that in the interludes to the play, the audience would be admiring the paintings in the gallery, with live music as the acoustic background. The premiere of *Sons industriels* was the first public and the only documented performance of *musique d'ameublement* in Satie's life with his active participation (see: Potter, 2015). However, the audience's reaction diverged from the composer's expectations. Milhaud, who played the piano part together with Satie, gave an account of the listeners' reactions:

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<sup>2</sup> „*Tapisserie en fer forgé* – pour l'arrivée des invités (grande réception) – À jouer dans un vestibule”. The composer's comments written on the margin of the manuscript.



Contrary to our instructions, as soon as the music started, the listeners hurried back to their seats. Satie shouted in vain «Talk! Walk around! Don’t listen!» They listened, they were quiet. It was a failure (Milhaud, 1949, p. 138, after: Potter, 2016, p. 168).

The concept of “furniture music” was an experiment through which Satie attempted to manage the listeners’ attention. In a perverse way, it requires that the listeners should perceive music in a passive manner. From the perspective of the “acoustic wallpaper” model (see: Fig. 2), both the context and the characteristics of music material (especially repetitiveness and use of familiar musical motives<sup>3</sup>) could help Satie to achieve the effect of “acoustic wallpaper”, treated as an end in itself. The composer rightly assumed that, after some time, the listener, bored with its monotony, should stop being attentive to it and instead direct their attention elsewhere. However, such a conclusion does not exhaust the issue. Justyna Humięcka-Jakubowska stresses out that ostinato structures

[...] for the most part of the composition cause habituation, i.e. getting accustomed to their auditory image, which leads to them being followed less attentively within a musical work. However, a change in a parameter carried out within an ostinato structure (e.g. in temporal relations between sounds) can again attract the listener’s attention to the acoustic image shaped by them, hence it can cause dishabituation (Humięcka-Jakubowska, 2006, p. 76–77).

It seems that Satie, rather, plays with the listener’s attention, a claim supported Caroline Potter, a British researcher who states that he:

uses mechanistic repetitive musical material in most of his works, often deliberately blurring the dividing lines between background and foreground and between mechanical and human. Often quoting familiar tunes, sometimes with satirical intent, it is as if Satie were constructing a barrel organ punched card or cylinder. But he often plays with his mechanisms by purposely introducing flaws, setting up something predictable or familiar and then jolting listeners out of their complacency (Potter, 2016, p. 17).

There is no doubt that in case of *musique d’ameublement* the practical realisation of the notion verified its theoretical assumptions. It turned out that the idea of “background music” did not fall on fertile ground since for the listeners, used to listening attentively to music of an artistic quality, the imposed, passive reception of music was a challenging and incomprehensible task. This is evidenced by the reaction of confused listeners, who could not ignore live music of *Sons industriels* even though they were instructed to do so. The effect of “acoustic wallpaper” was not achieved, therefore from the perspective of its effectiveness, it was a failure. It seems that in the light of “acoustic wallpaper” effect the crucial factors which contributed to the ineffectiveness of the composer’s strategy were the listeners’ characteristics.

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<sup>3</sup> *Un salon* from *Sons industriels* contains fragments of *Mignon*, an 1866 opéra comique by Ambroise Thomas, i.e. *Romance* “Connais-tu le pays, où fleurit l’oranger?” from Act I (vocal part, bars 13–20), as well as fragments of *Danse macabre* (1874) by Camille Saint-Saëns (bars 50–8) (see: Orledge, 1990, p. 319).

## Case 2: Muzak and *Stimulus Progression*

The key influence on the development of the functional approaches towards background music was exerted by Muzak, an American company that dealt with programming and providing music to private and public facilities for more than 70 years, beginning from 1934. The company was founded in 1922, together with the project of *Wired Radio*. Created by American Major General George Owen Squier (1865–1934), the project aimed at using electrical lines for transmission of information signals, music, and advertisements, which were to reach the households of private users (Lanza, 2004). Squier changed the company's name into *Muzak*, which continued the mission of *Wired Radio* and followed the trends set to standardise and rationalise music in accordance with the principles of “scientific-based management” and industrial psychology (Makomaska, 2017, 2021).

At the end of the 1940s, *Stimulus Progression*, a scientifically-oriented approach, became the company's flagship endeavour which aimed at maintaining the optimal (from the sender's perspective) level of the listener's arousal through programmed music. Novel solutions were developed by a crew of engineers, psychologists, and acousticians. Muzak invested in research, and the development of a novel way of music programming was supervised by a specialised group of engineers, i.e. audio architects. According to Don O'Neill, the former vice-president and author of *Stimulus Progression*: “Muzak is a «non-entertainment» (implying non-artistic) sound form that one is meant «to hear, not listen to»” (after: Radano, 1989, p. 450). The sender intentionally aimed at creating “acoustic wallpaper” which would not distract the listeners' attention and, simultaneously, would be used “to combat monotony and offset boredom at precisely those times in a workday when people are most subject to these onslaughts” (Muzak's materials, after: Lanza, 2004, p. 49). An appropriate music programming was supposed to be the key to success, working contrary to workers' “fatigue curve”. The increased level of stimulation was expected to appear in crucial workday moments (especially at about 11 a.m., and 4 p.m.), when workers were fatigued most. Gradually, the effect of stimulation was believed to counter negative tendencies of dips in work efficiency and to break the moments of crisis.

To achieve these goals, 15-minute segments were used, made up of 6 or 7 carefully arranged musical works. The average duration of each segment was between 2 and 3.5 minutes, with 15-minute silence following. This was partly due to technical reasons, and partly due to the company-funded research showing that alternating music with silence limited listeners' fatigue and made the “stimulus” more effective (MacLeod, 1979; Lanza, 2004; Makomaska, 2021). The daily schedule was meant to correlate with the listeners' needs, i.e. stimulating music was played when the listeners were less energetic and needed stimulation.

The previous experience in music programming, supported by research (done within the area of industrial psychology) showed that the best results are achieved with “familiar, enjoyable” music. This idea was promoted by Ben Selvin, president of *Programming and Music Production*, representing Muzak Corporation at the Symposium on Music and Industry, held in New York by the Acoustical Soci-

ety of America (a prestigious society of scientists and practitioners dealing with acoustics). In the article *Programming Music for Industry*, published in 1943 in *The Journal of the Acoustical Society of America*, Selvin asserted that music designed for a workplace must have “the type of tune the «man of the street» understands” (Selvin, 1943, p. 131). Therefore, popular tunes, old-time favourites, Latin American tunes (about once an hour) and classic tunes should be preferred. Another issue that needed to be addressed, apart from “what to play”, was “how to play”. According to Selvin, good music designed for a workplace requires proper transcription, arrangement, and interpretation. What should be avoided are arrangements which are startling in their openings, including a change of timbre every 20 or 30 seconds, a change of key between choruses, vocal refrains, and fancy endings. Music designed for a workplace should be “strictly instrumental... and never over-arranged or tricky” (Selvin, 1943, p. 131).

Muzak favoured arrangements of familiar tunes, i.e. “most popular new tunes and all-time favorite standards. All recorded in today’s pleasant contemporary style” (album cover: *Muzak: More Than Music*, 1979). They were arranged in such a way so that all the vital musical aspects were kept under control. The company implemented a stimulation assessment scale to go with each tune, locating the mood of a tune on a scale. Its numerical value was the sum of particular component elements (i.e. tempo, rhythm, dominant group of instruments, number of instruments). The key element was the carefully prepared music material, and an adequate configuration of particular elements translated into a linear progression of stimulation, ranging from 0 to 6. At each stage of music programming, Muzak aimed at an objective quantification of music material. At the same time, in various periods of its activity, Muzak purposefully revealed its know-how through promotion materials (e.g. demo albums, press advertising, leaflets) in order to validate the scientific character of its endeavours (Makomaska, 2021). Ronald M. Radano (1989) observes that in terms of their repertoire, music programming offers a review of:

the most conspicuous songs and performance practices of twentieth-century America. Muzak presents a kind of consensus music, a repertoire that brings together those songs and performance practices that have gained the broadest approval from the national public culture-music that stands at the centre of the main-stream of American (Radano, 1989, p. 455).

The concept of *Stimulus Progression* is an example of an intentional application of the effect of “acoustic wallpaper” within acoustic engineering, where the sender (e.g. the owner of a factory or a store) cooperates with Muzak, a professional company responsible for the programming, recording, and provision of music, aiming to have some control over the listener’s reactions and behaviour. The diversity of places with music “seeping in” shows that the company’s operation was of a large-scale character, involving various functions of acoustic background. As claimed by Hervé Vanel:

Muzak succeeded in two important areas: first, in the creation of network capable of massively distributing and literally integrating music into our surroundings; and second, in effectively shifting the level of attention devoted to music to a point of approximating zero (Vanel, 2008, p. 107).

The concept did not stand the test of time and was not competitive enough. Muzak's fate was sealed with the growth of mainstream music played in original versions. According to Simon Jones and Thomas Schumacher (1992), these trends started bottom-up in the 1980s, initiated by store managers, with young people being their target group. Muzak no longer set the trends but had to follow the solutions incorporated by others who relied more and more on foreground music, understood as:

music programming that consists of songs in their original form, as recorded by the original artist. The music itself is still meant to serve as a background wherever it plays, but it is «foreground» in that it can draw attention to itself in ways that background music cannot (Sterne, 1997, p. 32).

Foreground music replaced the product of Muzak and contributed to the development of today's practices of managing acoustic space, especially in commercial environments (Makomaska, 2017, 2019b). However, for decades the strategy of *Stimulus Progression* built on scientific and technical knowledge was very effective, which is reflected in the number of the Muzak clients (see more in: Lanza, 2004; Makomaska, 2021). The perspective of "acoustic wallpaper" model shows that the sender implemented its strategy in a consistent and thoughtful way, according to the rules of acoustic engineering. A key role was played by carefully designed musical material (taking into account the musical preferences of the listeners). Its presentation should contribute to directed stimulation (Brown, 2006), because the sender used music to produce immediate effects in the area of attention, arousal, emotion or mood. For this purpose, the so-called "formulaic devices" were controlled, including appropriate type of melody (contour), rhythm, tempo, volume, register, etc. They are characterized by clear communication features, so they allow the effective achievement of the intentionally assumed effects (basically excluding cognitive responses), also on a mass scale.

## Conclusions & Implications

The presented case studies show that the "acoustic wallper" model can be a very useful research tool in psychologically oriented studies on history of music revealing hidden aspects of musical communication which can be easily omitted in traditional approach. The comparative analysis of both concepts shows that in the case of *musique d'ameublement* from the composer's point of view "acoustic wallpaper" effect can be treated as a target result. Although the musical material (based on the principle of repetition) predisposed to passive listening, the recipients, due to their auditory habits resulting from the historical and cultural context, were not able to meet the sender's expectations. However, the interpretation of this "auditory experiment" requires a more in-depth analysis, because

[t]he concept of *musique d'ameublement* is, on the one hand, a manifestation of a new understanding of art and, on the other hand, a prophetic vision, especially in the context of changes in

the technique of sound recording and reproduction in the 20<sup>th</sup> century and the omnipresence of music in the contemporary world, in which music increasingly often plays the role of an acoustic background both in an individually shaped acoustic space and in public places (Makomaska, 2019a, p. 136–137)

Satie’s *musique d’ameublement* eludes any clear qualifications and it is a great simplification to treat the composer as a precursor of Muzak, as confirmed by the present analysis (see more in: Makomaska, 2019a). Undoubtedly, Muzak’s activity can be seen in terms of the successfully applied “acoustic wallpaper” effect that mediated the induction of responses mainly at the physiological and affective level. The effectiveness of the strategy was guaranteed by the appropriate structure of the musical material (i.e. instrumental arrangements of mainstream music) and its presentation in accordance with the principles of *Stimulus Progression*. The traits of the audience also played an important role as, thanks to technological development, they had more and more access to the reproduced music, which more often was perceived in a passive way, as an acoustic background (see more: Lanza, 2004; Makomaska, 2021; Vanel, 2013).

Although this paper stresses only selected aspects of both presented concepts (treated as some examples of the practical implementation of the “acoustic wallpaper” effect), it seems that such a perspective can give an interesting insight into various musical phenomena observed in the past and also those which are present nowadays. Both *musique d’ameublement* and *Stimulus Progression* had an impact on further artistic and functional musical concepts. Their influence could be found, e.g. in ambient music by Brian Eno and in audiomarketing (see: Makomaska, 2017, 2018, 2019a, 2019b, 2020, 2021). The perspective of “acoustic wallper” model reveals that Satie’s and Eno’s solutions are similar in many respects, also on the ground of musical material. The French artist aims to achieve the effect of background music through a mechanical repetition of short sequences of a rhythmic pattern, partly relying on familiar music. Eno explores the sound characteristics of electronic music, and operates with repetitive patterns (even though they could be used randomly). Both notions depart from the supremacy of musical pitch and instead focus on a work’s temporal dimension, free from dramatic moments and dynamic development. Eno resigns from the traditional means of arranging a musical work, with his concept of music being filled with background music (see more in: Makomaska, 2018). Ambient music was supposed to be music of the environment with which it blends. Depending on the listener’s preferences, it can function in the peripheral or focal zone of attention. Thus, ambient music seems to be another example of “acoustic wallpaper” effect treated as an end in itself. Similarly to “furniture music”, it is the listeners and their preferences that are of key importance. Ultimately, Eno (just like Satie) did not achieve the intended effect, and the attempt to introduce the suggested solutions into real-life spaces was not effective for ambient music, as evidenced by the failed projects attempted at airports, relying on *Music for Airports* (see more in: Lanza, 2004; Makomaska, 2021; Tamm, 1988).

In the case of audiomarketing, in which programmed and basically foreground music (Sterne, 1997) becomes one of the elements of a modern place of sale designed in accordance with the rules of the experiential and sensory market-

ing strategy (Bitner 1992; Kotler 1973–74; Krishna, 2010) the effect of “acoustic wallpaper” seems to be not as obvious as with Muzak. Similarly to the concept of “furniture music”, it is the listeners and their characteristics that are of the essence, deciding upon the success or failure of the audiomarketing strategy. From the perspective of the sender the “acoustic wallpaper” effect is always treated as a tool that (depending on the sender’s specific objectives) should lead to intended and induced responses on physiological, affective, cognitive or behavioural level. However, the final effects seem to be optional, especially when the senders construct their message on the basis of predictable mechanisms of a higher order, diverse on an inter-individual level (see more in: Makomaska, 2019b, 2021, in press).

In the case of functional concepts (such as Muzak and audiomarketing) the model of “acoustic wallpaper” effect inexorably provokes a discussion of an ethical character. The “scientific” basis successively increased the demand for Muzak, but also contributed to the accusations thrown by the company’s employees who viewed it as an unacceptable practice aimed at “brainwashing” and “mind control” (see: Lanza, 2004; Vanel, 2013). Audiomarketing strategy seems to be even more disputable since music located in the zone of peripheral attention can affect the listeners / customers not only through the mechanisms responsible for directed stimulation, but also processes leading to directed association using specific linkages between musical structure and social meaning (Brown, 2006). The crowning of the multi-layered structure of influence is the transmission of meanings grounded in cultural connotations. It makes music an effective channel of communication on a massive scale, being able to shape the attitudes towards a given place, brand, or product (Makomaska, 2019b, 2021; North, et al. 2018). This observation tips the balance in favour of treating audiomarketing as hinged on the thin borderline between persuasion and manipulation as the effect of “acoustic wallpaper”, used in conjunction with foreground music, can become a tool used for manipulating listeners’ behaviour.

The model of “acoustic wallpaper” effect seems to be an interesting reference point for further interdisciplinary research, enabling the analysis and comparative studies of apparently distant phenomena. It can be modified and applied in various fields covering not only examples of acoustic engineering and/ or artistic concepts, but also individual practices of contemporary listeners who in everyday contexts very often create themselves their own “auditory bubble” usually based on the “acoustical wallpaper” effect.

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