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The Sounds of Crime and Punishment; a Review of Different Prison Types in Regard to Their Binary Soundscapes

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Abstract: The paper tackles the soundscapes of prisons as a manifestation of the power relations within the physical and spatial landscapes of imprisonment. In this context, the paper argues that duality between the notions of crime and punishment as well as between the actors who represent the rebel and the law is directly reflected in the soundscapes of prisons. In parallel with aforementioned duality, soundscapes of prisons seem to exhibit a binary nature. Following a short review of theoretical framework of 'power-soundscape relationship', impact of hearing mechanisms on human psychology and audio-spatial mechanisms of auditory surveillance and suppression will be cross-examined with specific reference to evolution of prison spaces in historical perspective particularly based on the literature about the daily lives of prison inmates and guardians.
Keywords - Acoustics of power, politics of sound, prison acoustics, soundscape

I. INTRODUCTION

"Crime and Punishment" F.M. Dostoyevski

("Lizaveta! Sonia! Poor gentle things, with gentle eyes…. Dear women! Why don't they weep? Why don't they moan? They give up everything … their eyes are soft, silent and gentle…. Sonia, Sonia! Gentle Sonia!'.."**)**

The paper discusses the nature of the opposite soundscapes with specific reference to various spaces within prisons, particularly when those spaces are considered from the viewpoint of the duality between the notions of crime and punishment as well as between the actors who represent the rebel and the law (i.e. convicts and guardians). The key argument of this paper is that any soundscape, very much like the physical landscape, emerges as a direct manifestation of its substance in regard to the relation of this substance to the sources of power and the prevailing processes of its execution in that specific societal context. Thus, the paper claims that the soundscapes of crime and punishment has always represented a binary nature in relation to the changing contexts throughout history.

From the perspective of Hegelian dialectics, crime and punishment appears as the counter-pairs (i.e. thesis and anti-thesis) of abnormal human behaviour according to accepted sets of moral values in a specific society. Usually, these accepted norms are seemingly accepted by the entire community despite the fact that they are mainly determined by the powerful actors in the society through witty and intricate mechanisms of so-called participatory decision-making processes. In other words, crime is defined as a challenging act from the perspective of the social and legal stability provided by the collective consensus in regard to the rules of public behaviour, whereas punishment is seen as the counter-response of the society to such a challenging, and thus threatening, initiative against the public solidarity, hence against those who enforced this seemingly-established climate of consensus. Obviously, this eternal duality of crime versus punishment, manifests itself in terms of spatial dimension as it happens in all phenomena. Such a manifestation of any phenomena clearly covers a wide spectrum ranging from physical to perceptual aspects of it. The dialectic of crime-punishment is of no exception in that sense. Thus, prisons appear as a typical spatial manifestation of the duality of 'crime and punishment' where the established rules of citizenship, power relations are questioned and re-established in terms of architectural space configuration. In regard to the aforementioned perceptual aspects of such manifestation, phenomenology of space and human senses may shed light for further understanding of how the duality of 'crime and punishment' is reflected on human psychology and human perception towards a more consciously constructed duality through public perception of power relationships. Among other senses, hearing of sounds and the emergent soundscapes are of particular interest here. Therefore, the paper will address such a duality of crime and punishment through critical analysis of their binary soundscapes respectively. Along this path, firstly, theoretical framework of 'power-soundscape relationship' will be revisited, and then, audio-spatial mechanisms of auditory surveillance and suppression will be examined with specific reference to prison spaces.

II. POWER-SOUNDSCAPE RELATIONSHIP AND BINARY NATURE OF 'CRIME VERSUS PUNISHMENT'

Foster (2002) [1] explores a broad range of issues in regard to how crime and design are interrelated. During the discussions in his book, he insinuates how design is instrumentalized by those who control the

power. Here in this paper, two auxiliary arguments are derived from these debates; first one of which, is that space is a reflection of power relations with all its complementary aspects of human perception (including auditory senses of environmental perception), and second of which is that the design of environment (in terms of both spatial and phenomenological aspects) is such a powerful tool to manipulate human behavior that those in power usually control public realm by deliberately designing physical environment in relation to the intended spatial, visual, auditory, olfactory and tactile characteristics that are required for establishing full control over masses. Having discussed its relation to power (Dovey, 2010) [2], it is of interest to understand the nature of soundscape, that is to say its technical characteristics and social as well as cultural ramifications. Thompson (2002) describes soundscape as 'auditory or aural landscape which, like a landscape, is both a physical environment and a way of perceiving that environment', and emphasizes its cultural dimension that incorporates scientific, aesthetic and social circumstances that regulate the control of sound in that realm particularly in regard to how (and to what extent) sound will be heard by various groups in society [3]. Obviously, the notion of 'control of sound' brings along the notion of 'power' in the sense that who is going to decide 'who will hear what'. Inevitably, the existence of a power to control creates a duality of 'those in favor of' and 'those against' that power. Such duality, as in all phenomena, manifests itself in the spatial aspects of urban realm. Hence, like the physical landscape, soundscape reflects the duality of social context through its binary nature in regard to power relationships within this realm. The binary structure of soundscape appears as a very efficient way of dealing with the intrinsic conflicts and emergent contradictions of any context or any relevant phenomena in which the soundscape is being shaped.

The audible attributes of physical space emphasize the role of human (particularly auditory) perception and in understanding built environment and the coded messages conveyed through space particularly those regarding any political decision, initiative, act by the powerful to those who are oppressed. In this context, it can be suggested that the very essence of the public nature of urban and architectural space lies within its capacity to stimulate human sensory mechanisms freely to encourage not only the maximum interaction with but also full awareness of their physical environment to be able to enjoy, benefit from and contribute into it towards enhancement of human existence and freedom in space. Thus, our appropriation of space and its complementary sensory mechanisms for self-enhancement and communal-empowerment are quite humane and, in a way, automatic reflexes. Likewise, our submission to the auditory dimension of our environment to the extent of taking it for granted legitimizes its role as an agent of practicing the power of the authority on our everyday lives and within our daily spaces. Therefore, understanding and decoding the auditory environment that surrounds us is as much significant as understanding and deciphering how spaces are organized around us to control and manipulate us in benefit of the authorities that govern us.

III. SOUNDSCAPE OF PRISONS; HUMAN HEARING AND SOUND AS A MEDIUM OF SEGREGATION, SURVEILLANCE AND SUPPRESSION

At this point, it is intended to decipher how prisons are spatially organized and how soundscape is associated with this spatial configuration. Moreover, it is of particular interest to what extent the soundscapes of prisons reflect above-discussed binary nature of crime and punishment when considered within an historical perspective of the evolution of prison as an architectural archetype.

Therefore, this section will start with a short historical overview of prisons and continue with how the notion of 'sound' is tackled in the design and organization of prisons as well as how it is used as a tool for social segregation. Casella (2003) [4] discusses that a modern form of social management was witnessed between 1770 and 1850 through institutional confinement. English architect William Blackburn worked on four 'reformed' types for improving physical conditions and sanitation in prisons. He also introduced, as Casella (2003) describes, a system consisting of particular spatial order, classification, and segregation over the convicts. These attempts were clearly first deliberate initiatives to exert some sort of power over the 'other' by those in charge of managing the 'modern society'. When Jeremy Bentham (Bentham, 1995 (1787-1791)) [5] introduced his extraordinary designs for the Panopticon (an ideal model for modern prison), which has a circle of prison units around a central surveillance tower, the prisoners became under 'a state of constant visibility that guarantee the self-functioning of power'. The acoustic dimensions of Panopticon model will be discussed in the following sections of the paper. However, it suffices to say here that much effort was put to lay a pipe system to establish a one-way control of sound traffic within the prison.

In fact, the potential of 'sound' to control human mind and public perception had long been discovered and had been used at various levels to classify people and manipulate them to certain extent throughout history. However, modern society, particularly with the rise of technology, witnessed the climax of its exploitation. Indeed, regarding intrinsic qualities of the soundscape, some sort of social segregation seems to be embedded in the modern construction of the contemporary 'soundscape'. This paper claims that binary nature of soundscapes is utilized to amplify social segregation. Quoting Thompson's (2002) definition of the modern idea of 'sound as signal', McCartney (2010;2) [6] points out the binary nature of hearing as well as differences in the perception

of hi-fi and lo-fi sounds. Mc Cartney (2010) exemplifies the reflections of this damaging polarization by discussing the incidence of prison reform in Pennsylvania. He points out Quaker reformers who introduced the concepts of solitude, silence, and controlled acoustics into prisons. It can be considered as an inflection point in the evolution of incarceration in terms of the institutionalization of the role of soundscape in prison spaces. Thus, it seems the binary, hence segregative nature of 'sound' is fully applied in the overall atmosphere of prisons through intrinsic characteristics of 'soundscape'.

IV. SPATIAL MECHANISMS OF AUDITORY SURVEILLANCE AND SUPRESSION WITH REFERENCE TO PRISONS

Having examined the role of sound for segregating people as those in authority versus those in non-complience, it is critical to understand how mechanisms of sound and its dissemination is synchronized with spatial configuration to constitute a specific soundscape. In terms of spatial configuration, Dovey (2010) suggests that spatial rituals as well as their architectural framing help stabilizing and legitimating the authority. Architecture serve this legitimation in association with spatial assemblages. Architecture plays this role either by celebrating and reproducing spatial rituals or by symbolizing authority of the state and by embodying a feeling of intimidation or threat in case of non-compliance. He gives prisons (in addition to courtrooms) as examples of the stage sets for the practice of authority, explaining them in detail. As prisons being the extreme example of this manufactured, set soundscapes, how sound completes this specially created paradox (safety & danger, security & openness) through auditory landscape will be discussed here.

Kirkpatrick (2013) [7] says soundscape of prison is designed in a binary manner: either too loud or inhumanly quiet. Indeed, the studies on the soundscape of prisons reveal two types of auditory environment which might be associated with different positions of people against the law, that is to say officials/guardians on the one hand and the convicts on the other. Dovey (2010) explains this power relationship as a spatial paradox deliberately achieved through space and binary soundscape organization.

At this point, the following questions in regard to auditory mechanisms of auditory surveillance and suppression can be asked; how sense experiences may determine social action, how various sense experiences may condition social life in accordance with the roles of power of the actors in an institutional context and how norms and rules may constrain experiences of sensation in this context, regulating social order or initiating resistance against power and control (Yeung & Somashekhar, 2015) [8]. The following sections will focus on the mechanisms of institutional control over these experiences (Howes and Classen, 2014: 110) [9]. It is of interest to know both how social establishments condition them, as well how social actors can possibly overcome these sensory control mechanisms. Doubtlessly, the rules, routines, and disciplinary sanctions in such institutional contexts constitute a sensory environment that regulates these experiences in benefit of those in power.

4.1. Historical Look into the Aural Architectures of Imprisonment (Soundscape of Imprisonment)

The specific aural design of any prison would be determined not only by its type and management policies but also by how a society conceives discipline and rehabilitation of those who violate penal codes. As Sett Cluett (2013) [10] argues, the audio-architecture (soundscape) of these buildings encourages auto-surveillance and self-regulation. Such a self-policing is clearly rooted in the fear of reprisal, an anxiety about the trace of the voice echoing and betraying the intentions of the speaker. The effect of reverence and/or deterrence produced by acoustics is synchronized with the power inherent in acoustics to encourage the monitoring of speech (Cluett, 2013).

As mentioned above, Panopticon emerges as one of the first models of imprisonment in history. Bentham's Panopticon clearly shows the effectiveness of power figured by vision (pan-opticon), however, the equivalent aural-surveillance (pan-audion) is often neglected in interpretations and discussions of Bentham's design in literature. However, in the original Bentham scheme, it is evident that Betham gives an important role to the sound and hearing with a special sound-conducting and amplifying instrument. Bentham himself provides a long discussion of the Panopticon's acoustic tubes, which are operating between the central tower and the cells, by which "the inspector hears even the faintest whisper of the inmates" (Bentham, 1995 (1787-1791)). Bentham's prison (which he defined as "A machine to grind rogues honest,") also introduced "solitary cell" as a leading mechanism not only to isolate convicts from each other but also to rehabilitate (Casella, 2003). No matter how rational and humane it was, , Bentham's 1790s scheme provided a totally a brutal design. A horrifying carceral landscape had been created with the combination of principles by Bentham in regard to surveillance and isolation and Blackburn's circular plan (Casella, 2003). Siisiainen (2012) [11] discusses in 'Foucault and the Politics of Hearing' that in Foucault's view the auditory surveillance component is absent in functioning of Panopticon. Foucault (1995) writes:

In his first version of the Panopticon, Bentham had also imagined an acoustic surveillance, operated by means of pipes leading from the cells to the central tower. In the Postscript he [Bentham] abandoned the idea,

perhaps because he could not introduce into it the principle of dissymmetry and prevent the prisoners from hearing the inspector as well as the inspector hearing them [12].

Yeung & Somashekhar (2015) discusses that Foucault argues that visual surveillance is more effective than acoustic control in sustaining disciplinary power simply because acoustic control cannot provide the principle of dissymmetry. According to Yeung & Somashekhar (2015), here, instead of conceiving seeing and hearing as potentials of subversion , Foucault debates on seeing and hearing only in terms of surveillance, which can be associated with an attempt to change the established social order and its structures of authority and hierarchy. Thus, Panopticon could also be conceived as a model where vision and sound are united as sensory mechanisms of governmentality.

4.1.1. Separate and Silent Systems of 19th Century.

In regard to the history of soundscapes of imprisonment, two types of prison systems can be mentioned; separate and silent systems. How these two types evolved historically and become differentiated illustrates the adoption of binary logic in the soundscapes of prisons as a mechanism to segregate convicts and guards.Bentham's ideas and principles to exert visual and auditory surveillance were adopted for prison design in England during the 19th-century. Not only cellular but also institutional confinement were used for ensuring that convicts could be safely kept in space while staying as objects of maximum observation and knowledge (Hancock & Jewkes, 2011) [13]. Casella (2003) describes radical acoustic control measures. These measures, for instance, exercised by the guards who wandered along the cast iron balconies where all types of nuisance noises were amplified throughout these silent corridors whereby footsteps of the guards were muffled by their soft leather boots. The inmates were confined to a total solicitude with segmented stalls and enclosed exercise yards as reported by (Casella, 2003).

State penitentiaries of the United States make a great exemplary of exploration of the ideas of surveillance, isolation and power exertion in the 19th century through sensory control; especially 'silence rules' and 'acoustic control' in prison environment. As Yeung & Somashekhar (2015) discusess; the focus on acoustic control to be conceived in conflict with the visual surveillance, because architectural features that provide visual control could not always stop convicts from talking and making sounds.

It is of utmost importance to comprehend how sensory control was a crucial issue in US along the 19th century and how it helped the institutionalization of the modern prison. Yeung & Somashekhar (2015) draw reader's attention to the architectural design and the sensory ecology of these prisons which were rendered meaningful both by institutional rules and architectural features. Both the use of sound-control as well as the enforcement of the 'rule of silence', which were essential for 19th-century prison reformers, were abandoned in contemporary prisons. However, the last decade started to witness the 'comeback' of 'rule of silence' and 'isolation' again with super max prisons of US.

Under the 'Separate System', inmates were assigned to solitary labor within their isolated cells (particularly) of the Eastern State Penitentiary in Pennsylvania at Cherry Hill during 1829. Although punishment for crimes had been essential for all communities until early 1880s, Prisons were a relatively new concept. The Quakers had built the Walnut Street Jail in Philadelphia in 1773 and expanded it later in 1790 under a state act. It was one of the first institutions in the US that was established and designed to punish and rehabilitate criminals in modern terms. The main idea was to keep prisoners in solitude so that they would not have negative impact on each other and would reflect on their life and crimes and face up to themselves. As Andrzejewski (2008) reports aural surveillance has been stretched to the point that forms are manipulated to direct sounds to the centrally positioned keeper [14]. High vaulted ceilings are designed thus, also reducing the ability of prisoners to communicate with each other. Extended walls between cells are designed to prevent communication between inmates and to prevent the foreknowledge of the arrival of guards down the corridor. The idea was that even when taking exercise, or in chapel, prisoners could not see or talk to each other (Andrzejewski, 2008).

On the contrary to 'Separate System', the 'Silent System' gathered convicts within communal workshops to be engaged in silent assembly-line work as can be exemplified by New York's Auburn State Penitentiary of 1823 (Casella, 2003). While the inmates were working collectively, not only making 'unnecessary' noises such as talking, singing, laughing but also exchanging gazes were banned at all times (Rothman, 1995; Powers, 1829) [15].

The bell, which signaled the starting and finishing of daily activities, was another dimension of disciplinary control over the soundscape of the prison. The physical motions of the inmates were synchronized through rhythmic sounds such as 'clicking'. Thus, the visual order that is observed throughout the marches of inmates and their line-formation were audially complemented by these sounds (Yeung & Somashekhar, 2015). The effects of these sounds like the clicking or the bell were amplified against the background of enforced silence . In regard to the strong acoustic control in US penitentiaries, Tocqueville and Beaumont wrote:

'Everything passes in the most profound silence, and nothing is heard in the whole prison but the steps of those who march, or sounds proceeding form the workshops' (quoted in Rothman, 1995: 109; Beaumont and Tocqueville,1833 [16]).

According to Yeung & Somashekhar (2015), the planners and reformers of prisons had been engaged with, mostly, hearing, talking, sound-making, and acoustic control in constructing disciplinary order. In the prisons which had adopted the 'Silent System', acoustic control was the primary problem because they presented the convicts many chances for interacting with each other (Pillsburry, 1989) [17].

4.1.1.1. Architectural Challenges of Separate and Silent Systems of 19th Century.

As Yeung & Somashekhar (2015) reports, referring to Clark (1850) [18], prison planners and architects worked on designs of individual cells, cell doors, connection of cells with ventilation and sewage pipes during 19th century to isolate inmates from each other and the exterior, however, acoustic control through architecture had challenges. For instance, as Yeung & Somashekhar (2015) reports, cell doors needed to be open allowing visual continuity (in Foucault's sense). Also, the use of iron grating for producing cell doors did not prevent sounds from transmitting from one cell unit to others. Thus, convicts could still chat despite these doors and walls. As a matter of fact, soundproof glass units could only be built many decades later.

Philadelphia's Eastern State Penitentiary had another interesting example of architectural challenge. It had adapted the 'Separate System'. Inmates were confined all day long in isolated cells. As Yeung & Somashekhar (2015) reports, referring to Johnston (1994) [19], the prison had individual sewage ducts for each cell, which were foreseen as a way to facilitate isolation (and by extreme silence). However, inmates could still tap their pre-concealed tools adopting special ciphers to communicate, particularly when water level was quite low through an underground pipe that would link private washstands that were installed for all cells (Johnston, 1994;2000). This was the case even when isolated behind thick limestone walls.

Pentonville was one of the model prisons of mid-19th-century London. Here, acoustic control was essential. Joshua Jebb, as the key architect of Pentonville, came up with a complex network of pipes that was installed for completely disconnecting prison cells (Jebb, 1844) [20]. According to his complicated plan, as Yeung & Somashekhar (2015) reports, none of the cells were directly linked. Instead, separate pipes and shaft systems were designed for the flows of fresh and stale air. However, Jebb's system was complicated and expensive, not many prisons could follow the suit.

4.1.1.2. Impacts of Separate and Silent Systems of 19th Century on Prisoners and Assessment of Power Relations.

In the 'Silent System' prisons of 19th century US prisoners entered the prison wearing hoods to conceal their identities. The same happened in Pentonville in UK, where prisoners were forced to wear peaked cap masks to keep anonymity. This isolation was also designed to neutralize the impact of sound within the precinct of prisons. The 'Separate System' was designed as a disciplinary silence to bear down on the body as the final mark of the law and push the criminal into a state of deep solitude so that they could reflect on themselves and their crimes. However, quite often this led to insanity (Brandon, 2010) [21].

As Shalev (2011) [22] reports the extensive use of solitary confinement during early 19th century in prisons. Grassian & Friedman (1986) [23] identifies solitary confinement as the primary source of psychotic illnesses (including hallucinations) among prisoners referring to reports in the medical journals of the time. Indeed, as quoted by Grassian (2006) [24] from J.J. Medley case report by Miller (1890) [25], the United States Supreme Court inhesitantly admitted that profound psychiatric harm was caused by solitary confinement.

Shalev (2011) argues that admitting solitary confinement as the reason of mental illness in prisoners, brought along the dismantling of isolation prisons on both sides of the Atlantic by the late 19th century. It would be argued that the soundscape of isolation was giving no realm of resistance, subversion or anything of the kind for the prisoners in their relations with the authority or the powerful.

In 19th century newly built prisons in the United States, therefore, preferred the 'silent system' instead of the 'separate system' which was also. It also required more effort in the stage of architectural design. The 'silent system' did not seek complete isolation, however, imposed an ecology of aural isolation. According to Yeung & Somashekhar (2015), virtual separation of inmates was expected at all times because inmates' talking was prohibited (except when authority addressed them). Paradoxically, however, resistance of inmates became more clear through this silent yet congregate arrangement.

It is interesting to note that, paradoxically, this extremely mute environment triggered an urge for talking among each other. According to Yeung & Somashekhar (2015)'s view, the detailed disciplinary records, inmates in the Wyoming Territorial Prison often broke down their acoustical isolation by sound-making. Here, auditory and sonic activities such as 'talking', 'talking loudly', 'making unnecessary noises', 'laughing', 'singing' were the most usual type of prison infractions. In fact, sonic acts constituted almost one-third (32%) of all violations between 1891 and 1901 (Yeung & Somashekhar, 2015).

Yeung & Somashekhar (2015) argues that how power relations were experienced (in auditory terms) in prisons could easily be observed in disciplinary records. Since the guards and wards, rather than inmates, were reporting and documenting the perceived noise-making, the descriptions of sounds made by inmates became 'unnecessary noise', 'loud noise' or 'abusive talk'. As the representatives of public authority, the duty of guards and wardens was to differentiate sounds of resistance from various 'white noises'. The authorities had been given the right to 'sense' the auditory motivations both through regulations of prisons as well as by their organizational roles and power relations in relation to the convicts.

The prison authorities and inmates had different ways of seeing, hearing, touching or smelling in a prison, which can be described as a sensory ecology and social field in which actors set and try their power relations (Martin, 2011) [26]. Silence and isolation was imposed as a way of power exertion. However, there is a potential for subversion in 'silent system' in contrast to the 'separate system'. The inmates also try to redefine their environment and sensory ecology; thus by their 'loud talking' and 'unnecessary sounds', inmates push prison guards and wardens towards their own sensory field (Yeung & Somashekhar, 2015).

4.1.2. Prison Systems of 20th Century; Prison Types and Inmate Classification in US.

Following an historical outlook to the 19th century prisons, in this part of the article, it would be focused on type of contemporary (i.e. 20th century) prisons and inmate classifications in US to discuss the soundscape of different type of prisons in relation to the inmate classification. With its huge prisoner population and various types of prisons, US prison system makes a good exemplary to assess the soundscape of 'contemporary' prisons. The United States keeps the world's highest rates of incarceration as shown in World Prison Population List which is published by International Centre by Prison Studies (Walmsley, 2013) [27].

Prisons are run at various levels of security in the United States. These levels range between minimum-security prisons which usually accommodate non-violent criminals and Supermax facilities which keep well-known offenders and terrorists. Even though there are variations; the main prison types in US can be classified as follows (Incarceration 101), (Cooksey, 2008) [28], minimum and medium security, close security, maximum security and supermax. The soundscape of prisons varies depending on the type of housing, the level of interaction between the inmates and between inmates and guardians.

4.1.2.1. Architectural Challenges of Solitary Confinement and Silent Soundscape of 20th Century Prisons.

Despite the basic concerns such as 'isolation of inmates' and their 'uninterrupted visibility' had prevailed, primary architectural challenges for the prison design in the 20th century seem to had gradually shifted towards those that are mainly related to technological issues and how advanced technology is integrated into spatial configuration of prisons. Doubtlessly, sound technology and its integration in both the spatial organization of prisons and the design of required soundscape had been no exception.

Cellular and institutional confinements are used together in the 19th century prison design not only for ensuring that convicts were anchored in space but also they were removed from social circulation in the society. Moreover, it was intended to turn them into objects of maximum observation both to control them and obtan knowledge about them. In the 20th century, however, prison architecture put more emphasis on high-modernist attitude towards rejection of ornamentation (Hancock & Jewkes, 2011). Having mostly seen in post-war renovation of facilities (i.e. army barracks, hospitals, mental asylums etc.) architectural aesthetics was primarily based on a more modern and rational notion of 'authority' rather than an idea of arbitrary, unrestricted exercise of feudal or ecclesiastical power. Thus, it was much more invasive.

During 1960s and early 1970s, prison designs adopted architectural styles that conveyed the message of authority and efficiency for emphasizing the notion of power. Prisons like Gartree or Long Martin deployed austere styles. However, they were also conceived as to have utilized humanely functional styles of progressive modernism. Nonetheless, they were still inferior to their office counterparts in terms of urban locations (Hancock & Jewkes, 2011). The establishment of Private Finance Initiative (PFI), dating back to early 1990s, enabled more comprehensive contracts that consider finance, design, construction and management of prisons as a whole. Thus, new institutions of incarceration have started to be built on the basis of efficiency and security with minimum cost.

With reference to Halden prison in Norway (with lowest population of prisons) as one of the most typical examples of new generation of prisons, Pratt (2007) [29] argues that they provide conditions which approximate those on the outside as much as possible instead of those that degrade or dehumanize inmates. Moreover, Halden is known to be the first prison in the design of which interior designers were employed and artworks were used.

4.1.2.2. Impacts of Solitary Confinement and Silent Soundscape 20th Century Prisons on Prisoners and Assessment of Power Relations

Based on the existing body of evidence from the nineteenth century, Shalev (2011) argues the profound impact of solitary confinement on health and well-being. It is already known that it caused permanent damage particularly when used for periods which are longer than 4 weeks. However, as Grassian (2006) argues, the experience of the nineteenth century experience with solitary confinement is not well-evaluated. The incidence of mental disturbances and the severity of these disturbances was really high as reported by many researchers. The degree of isolation is even stronger today. During the 19th century, while prisoners of isolation prisons who had access to work (despite it was performed in silence), all activities such as work, education or other diversion (i.e. radio, television or even reading material) could be restricted or totally withheld as means of punishment system in 'modern' isolation sections of prisons during the 20th century. Thus, the 'isolation' became much stronger.

International experts have officially defined solitary confinement as a brutal type of psychological torture (Reyes, 2007) [30]. The potentially damaging effects of solitary confinement are also recognized by national and international institutions. It is considered as an extreme practice of imprisonment which should only be deployed not only as a last resort but also only for short periods of time. Thus, the abolition of the use of solitary confinement as punishment is discussed, in the United Nations in 1990.

The effect of sensory deprivation due to solitary confinement is researched through experimental studies and models. In the result of these experiments, short-lived tolerances are reported by the subjects. Considering the fact that these experiments are far from the real experience of enforced isolation in real prison context, the results still demonstrate how powerful the impact of isolation can be on humans. Zuckerman's (1964) study [31], for instance, shows that nearly two-thirds of subjects tolerated isolation only for periods between 3 to 14 days. Also, the average time to be able to stay in a silent room was ranging from 29.24 hours to 48.70 hours (Smith and Lewty, 1959;342-345). The maximum case, in this experiment, remained in the silent room for four days. According to Davis et al. (1961) [32], confusion and fear of going insane started after two hours. Similarly, the research by Gendreau et al. (1968) [33] focused on the deprivation of inmates. 10 inmates were isolated in conditions of low level of illumination and sound in isolation cells for 7 days. Following this period, they sought lower level of visual input yet similar level of auditory input as their own pre-test behaviors. These studies show the impact of auditory isolation on inmates.

Consequently, the results of scholarly research (such as Grassian, 1983 [34]; Grassian & Friedman, 1986; Brodsky&Scogin, 1988 [35]; Korn, 1988 [36]; Miller, 1994 [37]; Kupers, 1999 [38]; etc.) prove that solitary confinement carries serious psychiatric risks. Isolation causes emotional damage, declines in mental functioning, depersonalization, hallucination, and delusion (Scott & Gendreau, 1969 [39]; Grassian, 1983; Brodsky & Scogin, 1988; Korn, 1988; Miller, 1994; Kupers, 1999). Numerous psychological and physical symptoms, such as perceptual changes, affective disturbances (notably depression), difficulties in thinking, problems of concentration and memory as well as problems with impulse control can be seen among inmates that are exposed to isolation (Grassian, 1983; Brodsky & Scogin, 1988; Grassian & Friedman, 1986; Miller, 1994).

Auditory dimension of solitary confinement was associated with the rigid regime and extremely high level of control on prisoners' lives. McCleery (1961:272) [40] defines it as "an authoritarian system of social control", while Haney (1993) [41] describes it as the "totality of control".

Based on Henry Charriere's ('Papillon') experience in isolation on 'Devil's Island', a French penal colony in Guyana, one can suggest that seeing and especially hearing other prisoners break down is deliberately used as an extremely stressful experience for convicts. Some political prisoners, like Nelson Mandela for instance, have shown strong resilience during prolonged times of confinement although their experience were also quite difficult [42].

Reyes (2007) gives an account of the leaders of the Tupamaro movement in Uruguay who were imprisoned for several years in strict solitary confinement during the 1970's. They were banned from communicating with anyone including the guard who delivered their meals through a hatch in the cell-door. According to these prisoners, solitary confinement was the worst form of torture that they were exposed to. One prisoner even stated that "electricity [torture] is mere child's play in comparison to prolonged solitude" (cited in Reyes, 2007:607). America's Most Isolated Federal Prisoner Thomas Silverstein, who had been kept in an extreme form of solitary confinement with "no human contact" for 28 years describes his experience as such:

"In addition, the bright, artificial lights remained on in the cell constantly, increasing my disorientation and making it difficult to sleep. Not only were they constantly illuminated, but those lights buzzed incessantly. The buzzing noise was maddening, as there often were no other sounds at all. This may sound like a small thing, but it was my entire world" (Casella & Ridgeway, 2011) [43].

In sum, all these consequences can be conceived as deliberate attempts to manipulate the phenomenology of the prison environment by changing human perception. Reyes (2007) gives an account of sensory deprivation (that is caused by absence of noise, voices, thus by utter silence) and sensory hyper

stimulation (that is caused, for instance, by steps in the corridor that are amplified). Thus, modern cells seem to be much more ‘‘solitary’’ and more traumatic than old and dilapidated prison units.

4.2. An Outlook into Mechanisms of Sonic Torture

No matter how seemingly illegal ‘torture’ is in most of the world, it is also known that ‘physical torture’ or ‘psychological torture’ appears to be used in the realms of imprisonment. Considering the binding status of the legal frameworks in regard to torture, ‘sonic torture’, among various means of torturing, have emerged as a type that leaves no marks, and the unspeakable quality of sound makes the task of testifying even more troublesome and it fails to indicate the level of pain unless we hear it. Therefore, it has largely been used throughout recent history.

In addition to this paper’s main argument in regard to the close relation between ‘power and sound’, the intrinsic potential in the nature of ‘sound’ to be used for torturing those who act against those in power, had been enhanced by the contemporary technologies related to sound. One typical example is the large speakers at the entry way of the Camp Croppen, Bagdat. Those speakers ensured that everybody would hear the same music and vibrate to sounds that produced the power’s presence as palpable and as a physical force for 12-15 hours a day. The loudness of the music prevents the prisoners to use acoustical behaviors of hearing and vocalization to interact with their environment (Cusick, 2013) [44]. The cone shaped speakers with a high degree of directionality just outside of the cells in Guantanamo’s Camp Delta was described to produce a very loud sound, where its sheer acoustical energy becomes a physical force. To explain the inexpressibility of electronic amplification’s visceral impact on listeners, Henriques (2003) [45] argued in ‘‘Sonic Dominance and the Reggae Sound System Session’’ that extreme noise levels cause specific physical reactions. He defined ‘‘sonic dominance’’ as;

sheer physical force, volume, weight and mass. . . . Sonic dominance is hard, extreme and excessive . . . a super saturation of sound . . . . There’s no escape, no cut off, no choice but to be there . . . . Sonic dominance is visceral stuff and guts . . . . The bass line beats on your chest, vibrating the flesh, playing on the bone and resonating the genitals.

In this sense sound and music becomes not a metaphor for power, but the power itself (Cusick, 2013). Thus ‘sonic torture’ had become one of the major tools of punishment in the realms of imprisonment. For instance, loud music is used to convince the prisoners the omnipotence of their interrogators. There are also ideal torture playlists or ‘futility music’ is prepared to persuade the prisoners for the superiority of his position (Smith, 2008) [46]. Johnson & Cloonan (2008) remark that the choice in prisons of heavy rock and rap, music that has the reputation for being aggressive, would have been deliberately so chosen, and would be experienced as aggressive not only by prisoners familiar with this music but also by those ‘unfamiliar with such sounds’ [47]. U.S. army interrogator Sergeant Mark Hadsell described the effects of musical noise on prisoners by saying, ‘‘these people haven’t heard heavy metal before. They can’t take it. If you play it for 24 hours, your brain and body functions start to slide, your train of thought slows down and your will is broken. That’s when we come in and talk to them’’ (qtd. in Borger (2003)) [48].

On the other hand, for Cusick, however, ‘whether soft or loud’, music is used as a way to break down ‘a human being’s psychological ability to orient him or herself in reality’, and it destroys ‘every possible register of human perception’ (Cusick, 2008) [49]. Similar to Cusick, Hill (2012) [50] discusses that the type of sound matters little: in prison, Beethoven tortures as well as Metallica, and white noise as well as ‘‘horrible ghost laughter.’’ Prolonged exposure to noise ‘‘breaks’’ prisoners to reduce their resistance to authority and to increase interrogatory compliance, it produces extreme psychological distress, it deprives prisoners of rest and sleep, and it prevents communication between prisoners. The sonic torture reduces the prisoners to “all ears” who do not hear, vocalize and interact within their environment and isolated without ever being alone with the invisible presence of power (Cusick, 2013).

As Hill (2012) discusses empowered by electronic amplification, jailors and interrogators design torture chambers so they can turn up the volume for ‘‘sonic torture”. Loudspeakers instrumentalize acquiescence and confessions when torturers maintain complete control over the level of amplification. Jacques Attali’s assertion that noise’s ‘‘appropriation and control is a reflection of power that is essentially political’’ [51] has been materialized in the sonic torture soundscape which not only consists of the noise itself, but also the devices that broadcast it and the ways people negotiate sonic torture in discourse about the war on terror and in torture policy. Not only does the noise that moves from MP3 players to loudspeakers to ears comprise the deployment of sonic torture, but so do the fingers on the volume knobs, the military chain of command, and the legal framework that justifies it (Hill, 2012). In a torture chamber, the torturer has complete control over the prisoner’s interpretation of noise. Outside the chamber, torturers begin to lose control of the sound’s effects as the noise diminishes (Hill, 2012).

U.S. psychological operations (psy-ops) instructor Lt. Col. Dan Kuehl defended sonic torture by evidencing biblical horns, arguing that ''Joshua's army used horns to strike fear into the hearts of the people of Jericho . . . . His men might not have been able to break down literal walls with their trumpets, but the noise eroded the enemy's courage . . . . Maybe those psychological walls were what really crumbled'' (Smith, 2008).

It is remarkable to see how Mohamed, a British resident and Ethiopian national, one of the most outspoken denouncers of CIA torture, who was held in in ''secret prisons'' in Afghanistan and Morocco, and at Guantanamo Bay compares the physical torture and psychological torture. He testified that the CIA ''forced him to listen to deafening rap music 24 hours a day for a month'' (Worthington, 2007) [52]. Mohamed explained that such ''psyops methods were worse'' than those that caused his visible injuries, and singled out the sonic torture as the worst since it was possible to predict the outcome of the physical pain and its duration.

At Camp Nama, a now-defunct US military prison at Baghdad's airport, a sign proclaimed ''NO BLOOD, NO FOUL''. The sign reflected the camp's interrogation ''rule'' that ''If you don't make the prisoners bleed, they can't prosecute for it'' (Schmitt & Marshall, N.D.). This rationale encourages sonic torture by distinguishing between psychological and blood-spattered interrogation methods. Moreover, Scarry (1985) [53] noted that an injury, ''Though indisputably real to the sufferer . . . is, unless accompanied by visible body damage . . . unreal to others''. Sonic torture leaves no marks, and the unspeakable quality of sound makes the task of testifying even more troublesome and it fails to indicate the level of pain unless we hear it.

Strangely enough, as Hill (2012) points out, dissociated from the context of the torture chamber, the same loud music and sound reproduction technologies that torture prisoners can delight and entertain an audience. The common conception of music as art thus helps to empower torturers and torture advocates, like Ashcroft, former Attorney General under George W. Bush, to dismiss sonic torture as little more than a mild nuisance—a form of ''torture lite''. According to lawyer Clive Stafford Smith (Smith, 2008), ''The Pentagon's semanticists have achieved their purpose, and many people think that torture by music is little more than a rather irritating enforced encounter with someone else's iPod''. Hill (2012) claims they try to create a belief that if it does not cause bleeding from the ears, sonic torturers do not "commit a foul", denying that it is torture, imposing what prisoners will hear or not. Because sonic torture does not produce visible bodily damage, torturers use the lack of physical proof to use euphemisms to redefine their interrogation techniques as humane and non-tortuous (Hill, 2012).

For Scarry (1985), the inexpressibility of the physical pain by sonic torture made the torturers successful by reducing the victims to a pre-linguistic silence. She continues to argue that "Physical pain does not simply resist language, but actively destroys it, bringing about an immediate reversion to a state anterior to language, to the sounds and cries a human being makes before language is learned." Pain destroys one's world, and, in that silence, torturers impose the myth of the state's legitimacy. The prisoner's pain is "perverted into the fraudulent assertion of power, that the objectified pain is denied as pain and read as power."

In regard to the spatial dimension of sonic torture, architectural features are designed to support and enhance the capacity of sound as a medium of conveying power and converting it into objectified pain. For instance, a quasi-total sound-proofing is used in order to muffle all sorts of sounds. Thus, sensory deprivation is inflicted. sensory deprivation is used in combination with sensory enhancement or hyper-stimulation. Hence, any noise, such as the sound of boots coming from the corridors or the slamming of doors or banging of batons on steel bars of cell is enhanced through amplification for harassing the detainee (Reyes, 2007). Suzanne Cusick (2008) discusses the processes by which music's cultural connotations became to symbolize (almost military) power of the torturer. Having considered the capacity of music to infiltrate the listener, sonic torture (via music) represents "the overwhelmingly diffuse Power that is outside one, but also is inside, and that operates by forcing one to comply against one's will, against one's interests, because there is no way, not even a retreat into interiority—to escape the pain".

Thus, 'sound versus silence' as an auditory duality seem to has rapidly accompanied the spatial dualities of 'visible versus invisible' as well as 'isolated versus un-isolated'. Therefore, it is of interest, at this stage, to 'Super-Max' prisons with extreme security measures and their 'Isolation-Cells' as extreme auditory environments with a peculiar soundscape.

4.3. Super-Max Prisons and Isolation Cells – Silent Soundscape

Super-max prisons, which emerged at the end of the last and the beginning of this century particularly in U.S., can be seen as a revival of long-term, large-scale solitary confinement of the preceding century. These large and high-tech facilities are specifically designed for convicts' strong and long-term isolation. Since these facilities were constructed as extensions to existing segregation units (rather than replacement of all former prisons) the number of isolation cells have increased dramatically in the U.S. (Shalev and Lloyd, 2008) [54] (Shalev, 2011).

The design of supermax units epitomizes the accentuation on control, security, and isolation (Shalev and Lloyd, 2008). The architectural and technological design of these institutions reduces the need for verbal

communication between prisoners and staff and between prisoners other than occasional shouting. Both the site arrangement and interiors of prisons are geared up with high-tech means of security and surveillance. "Small Pod" design is used in most of the super-max housing units. In this model, each housing unit is sub-divided into smaller sections (called pods) each of which contains 8-10 single cells. They are arranged in rows that are secured separately. Like panopticon, they are arranged in circular order with a central control booth that enables one guard to watch all units. The cells, which face the wall, have their own attached exercise area. This enables guards to allow convicts (without personal contact) to go out from their cells to exercise areas by using automated systems. Needless to say, cells have no view of each other, therefore, inmates could only communicate through shouting. The visual appearance and feeling of the units are stark, sterile and monotonous (Shalev and Lloyd, 2008) (Shalev, 2011).

Perforated metal is used in the doors of some of the cells for constant surveillance of prisoners in their cells. This, obviously, eliminates their sense of privacy to a large extent. Some of the cells are totally made of solid sound-proofed metal doors blocking out any view, sound or smell. The furniture of these (mostly) windowless units are usually made of poured concrete or metal. Not only walls but also plumbing is sound-proofed to keep inmates from communicating through them.

The necessary communication (which is usually not only limited in frequency and duration but also monitored and recorded) is provided via telephone receiver in the cell. Moreover, staff is discouraged to engage in dialoge with inmates not only through management policies, regime and ethos, but also through the overall design. The contact with them cannot be considered as a "meaningful" thing (Shalev, 2011) (Shalev and Lloyd, 2008).

Prisoners are barely given with the minimum required according to the legislation. It is merely about providing them as little meaningful human contact as possible. Although body might develop mechanisms to cope with physical torture, mind cannot manage this type of psychological torture. Besides, visitation is quite limited varying from one facility to another (National Institute of Corrections, 1997) (Riveland, 1999) [55]. In these occasions, however, inmates have only indirect contact with their visitors via video-communication that is through a monitor. Shalev criticizes architects as professionals who accomplice with authorities to maximize isolation of inmates and to minimize their sensory stimulation. Cells, which are provided with the minimum level of light determined by the law, are designed only to allow a view of the wall outside. It could be concluded that technically, soundproof isolation cells (even considering the plumbing) and the no-human contact policy of supermax prisons create a very 'silent soundscape' even more than the 19th century 'separate system' prisons.

Nevertheless, Shalev (2011) says physical conditions in these new facilities are relatively better when compared to old segregation units. This is because they were not designed according to the requirements of prolonged solitary confinement. However, Reyes (2007) argues the opposite; saying that, even in these sanitized units, confinement by itself can be traumatic. These conditions cause solitude as much as sensory deprivation (i.e. lack of voice, noise etc.) through ultimate silence or sensory hyper stimulation (e.g. amplification of footsteps in corridors etc.) as a manifestation of binary soundscapes. In that sense, Reyes (2007) argues that modern cells are more solitary than the old and dilapidated cells of the former prison types. Shalev (2011) also suggests that prison services should be provided in or at the front of the cell to enable opportunities for interaction between inmates and guards.

In fact, there are many factors that change effect of isolation at the scale of architectural detailing and materials. For instance, cells with barred doors have better ventilation and sound transmission as well as visual contact with outside, while the mesh-steel or solid-steel doors prevent all contact and stimulation (Grassian & Friedman, 1986) (Grassian, 2006). The materials inside the cells are mostly concrete and metal. Also, toughened cardboard and other tamper proofed furniture were fixed on the floor. Apart from the total aural isolation with the soundproof cells, plumbing and minimal verbal communication (only through intercom systems) it could also be predicted that without any soft furnishings the acoustics inside the cells would be very institutional in feeling given the fact that the prisoner spends almost 23 hours a day this aural sense is an important part of inmate's perception of their environment. Thus, it can be argued that the dynamics of domination, control, subordination are fundamentally different in supermax prisons through architectural design and management decisions where the silent soundscape is a very important part of it.

4.4. Binary Soundscape plus Soundscape of Sonic Torture

It can be concluded from the research on acoustical properties of maximum security and super-max prisons to min-medium security prisons; as Kirkpatrick (2013) argues, that the prison space creates a binary soundscape. It is either too silent as in maximum security and super-max prisons and creates a great contrast and exaggeration of any sound in the otherwise completely silent soundscape and creates an over-stimulation; or too loud/noisy which creates problems from hearing impairment to increase in stress levels, from behavioral problems to sleep deprivation. These binary character of the prison soundscape has consequences for both staff

and the inmates. Yet, obviously, staff has more control in changing the elements of these soundscapes which suggests that those in power manipulates the soundscape to exert their power.

The constant auditory surveillance is a common dominator in both soundscapes (Noisy and silent soundscapes). Use of new technologies to strengthen the auditory surveillance may worsen the complex hierarchical relationships between prisoners and prison staff, but also between staff and management (Hancock & Jewkes, 2011) as well as between management and what Sim (1994) [56] defines as 'technocrats who occupy powerful positions as governors, area managers and state bureaucrats in the Home Office'. Hancock and Jewkes (2011) argue that everyone in this hyper organizational space is constantly directed to manage their self-representation within institution's regulative framework. However, they are encouraged to watch further everyone else while knowing the fact that they are also watched. The lack of privacy operates as a new form of control for prison staff while inmates merely perceived it as a pain of imprisonment. In sum, soundscape reflects a binary nature because the power relations in prisons are asymmetrical.

V. CONCLUSION

It is discussed, in this paper, that any soundscape, similar to any physical landscape, directly reflects its substance in regard to the relation of this substance to the sources of power and the prevailing processes of the execution of that power in that specific societal context. As discussed throughout the paper, Thompson (2002) asserts that "any exploration of a soundscape should ultimately inform a more general understanding of the society and culture that produced it". Sterne (2012) [57] supports the same view by defining current sound studies as intellectual reactions to changes in culture and technology. In this regard, this paper reviews the history of acoustics in prisons from a socio-political standpoint and questions the role of soundscape to exert power by those who maintain its control over the 'others'. Particularly considering prisons from the viewpoint of the duality between the notions of crime and punishment as well as that between the actors who represent the rebel and the law, both the spatial landscape and soundscape seem to reflect this dual structure directly. As Kirkpatrick (2013) suggests, prison appears much more likely to be a binary soundscape: either too loud or, at times, inhumanly quiet. Indeed, the studies on the soundscape of prisons reveal two types of auditory environment which might be associated with different positions of people against the law, that is to say officials/guardians on the one hand and the convicts on the other. As the study confirms this view with various cases and with references to historical literature in regard to daily lives of prisons, there is a strict differentiation between soundscapes for those in power (officers and guardians) and for those under their control (convicts). Such duality manifests itself at every scale from spatial organisation to the smallest detail at material scale. In that context, the specific design features of any prison seems to have been always conditioned by various inputs such as its age, size, construction and operating budgets. Moreover, factors such as its mission statement, the prevailing penal policies and attitudes as well as managerial theories at the time plays a determining role. Despite these parameters of prison design, the binary nature of prison soundscape seems to have prevailed since the birth of prison because the nature of sound has an intrinsic capacity to accommodate, transmit power to inflict human perception and thus behaviour mostly in favor of those in power.

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