

Environmental Silence and its Renditions in a Movie Soundtrack

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Since the first projection of moving images by the Frères Lumière in 1895, the Seventh Art has never been silent. It resonates with voices, musical tones and technologically produced sounds. This paper is not concerned with the production and diffusion of 'silent movies' but rather with the socio-cultural effects brought about by the industrial development of cinema sound. In the 1920s, the real-time amalgam of recorded sounds and recorded images started to replace the screenings that were until then accompanied by singular and irreproducible live musical performances. From the 1930s, the optical soundtrack allows the physical coupling and synchronisation of recorded sound to moving images. Composer and film reviewer Béla Balázs, however, states that the use of asynchronicity between sounds and images enables cinema sound to better convey pathos and intimacy in audio-visual narratives (120). The development of sound film technology has allowed audio-visual products to give audiences numerous ways to experience similar cinematic events in different geographical locations. In this paper, I argue that cinema sound has the propensity to simultaneously reflect and nourish our individual and cultural relationships to the sonic worlds in which we live. Consequently, I am interested in exploring the socio-cultural modalities triggered by the interactions between humans and the sonic spaces in which they evolve.

Technological advances have expanded the creative possibilities of filmmakers and cinema sound designers to express sonic experiences. In parallel there has been an increase in everyday noise associated with commercial endeavors and their corresponding lifestyles. I argue that film soundtracks are fitting tools to explore the ways in which contemporary soundscapes are perceived as well as the ways silence is conceived. I concur with Harald Stadler that a phenomenological approach to film theory provides a 'mutually constitutive relationship' between non-filmic factors and filmic experiences as these influence each other inside and outside cinemas (41). To an audience, cinema sound designers are the mediators of a phenomenological world of sounds and silences that is in constant mutation.

To explore the cultural evolution of tonal landscapes and the language of contemporary silence, it is first necessary to provide an overview of some human faculties of perception as well as of the multi-sensory characteristics inherent to everyday soundscapes. Within the concept of acoustic ecology, I examine the auditory expectations of a cinematic audience as well as the notion and expressions of silences that are created by cinema sound designers. Soundscapes are defined by the relationships that individuals and societies have with their sonic environments. Soundscapes are made of all kinds of sonic fields, including abstract constructions such as musical compositions (Truax 2011). Each soundscape has its own meaning and language that speaks about our interaction with our surroundings (Westerkamp 2007). Composer and pedagogue R.M. Schafer, however, stipulates that a soundscape consists of 'events *heard* not objects *seen*' [emphasis in original] (*The Soundscape* 8).

On the one hand, the discipline of ‘Soundscape Ecology’ encompasses different branches of studies that examine sounds in relation to life’s systems and society. It implies a descriptive approach to sonic environments and to the origin of their components (Pijanowski et al. 2011). Along with other methods of enquiry such as spatial ecology, bioacoustics and urban environmental acoustics, ‘Acoustic Ecology’ is concerned with human perception, corporality, mental processes, understanding and construction of sounds as relational acoustic phenomena that generate a sense of place and affect social behaviour. Acoustic Ecology suggests that the sonic composition of our natural and created environments can be listened to perceptually, cognitively and musically. In his seminal book, *The Soundscape: Our Sonic Environment and the Tuning of the World* (1994), Schafer expands on the view that society at large is an organism responsible for the potential embellishment, as well as the physical degradation, of the soundscapes we inhabit and to which we listen.

For Michel Serres, three worlds of ‘audibility’ accompany our lives (106-08). His understanding provides a useful way to approach Acoustic Ecology from the perspective of the individual human body. A primary source of sound is within us as at a molecular level our bodies sound and resonate. Some internal sounds can be linked to spontaneous otoacoustic emissions that are produced by molecular elements of the autonomous auditory system and the cochlea then becomes an emitter and amplifier of internal vibrations (Kemp 2003). Other sounds such as heartbeats, blood streams, ringing ears and the buzz of our own electrical energy can become rich internal occurrences and audio feeds. Serres’ secondary source of sounds lies in the natural world and by extension comes from all means and matters that surround our bodies. His third world of audibility has the ability to cancel the above two emitters. The sound of the collective has, literally and figuratively, the power of ‘silencing the body, silencing the world’ (Serres 107).

Schafer affirms that natural sounds are not harmful to humans whereas human-made soundscapes may be detrimental to our functioning and behaviour (*Voices of Tyranny* 9). We can distinguish between two main sorts of soundscapes: the first includes the sounds of the natural elements, of animal life and rural settings and provides clear territorial demarcations. The causal sources of the sounds that are part of such ‘hi-fi’ environments can be easily differentiated (Schafer, *The Soundscape* 43). Other kinds of soundscapes, known as ‘lo-fi’, are mostly found in urban and post-industrial contexts (Schafer, *The Soundscape* 71). We often experience them as indistinguishable, invisible and ubiquitous. Since the industrial revolution, new vibrations have shifted the tonal centre on which all sounds may be measured (Schafer, *The Soundscape* 98). Traffic, electrical appliances and mechanical devices are the most common emitters of these unremarkable vibrations. They are usually droning sounds that are aligned to the local electrical network, 50 Hz in Europe and 60 Hz in North America. It has been noted that the harmonic qualities of a person’s spontaneous hum will often match the resonant frequency in use at the relevant location (Augoyard and Torgue 42).

The qualities and directionality of their localised quietness, as well as the distinctiveness of their silences in relation to our physicality, can also define the listening of soundscapes. Hearing can be felt as the lower frequencies vibrate and develop tactile qualities (Schafer, *The Soundscape* 11). Kraemer et al. have shown that events of auditory silence set in both familiar and unfamiliar environments provoke

distinctive auditory cortex activity (158). In a setting without auditory signals, similar activation of neurological responses is also present in anticipation of sound detection (Voisin et al. 277).

Our ears are far from passive receptors of the world around us and dispatch frequencies independently, as if each was specialised in certain tones. Low frequencies are captured by our ears despite their near inaudibility and the auditory system can discriminate between sound waves so to accept or reject some stimuli before any signals reach the cognitive system (Brynie 148). Despite these abilities, Michael Merzenich suggests that a conjunction of environmental factors, including continuous sound frequencies, may potentially affect an infant's brain plasticity and contribute to the rise of autism (Merzenich 2008). Experiments on rats exposed to constant white noise show that this sort of stimulus affects the ability to differentiate between clear and muddy auditory signals and impacts on learning abilities (Rubenstein and Merzenich 257). Effective communication depends on a qualitative differentiation of frequencies and is followed by an auditory scene analysis that is based on previous knowledge, expectations and contextual factors (Uimonen 42). Habituation to sonic environments can affect all species of living creatures. For example, birds living in some cities have to amplify the volume of their songs by 15% in order to communicate effectively with their mates (Pijanowski et al.). Sensory memory thus can be a learned and malleable tool that allows sound generated by habitats to become integral to modes of communication. The sensorial qualities of sound reach all parts of our vibrating envelope to indiscriminately infiltrate our consciousness and influence our perception of the world. Therefore, it would be limiting to consider auditory representation as the only valid demonstration of sonic experiences.

The characteristics of acoustic environments and the sensory stimuli they generate affect the modalities in use to describe the world around us. For example, in *Sounding Sensory Profile*, David Howes and Constance Classen point to the language of a tribe from the Andes—the Quechua—for whom each sensory organ is associated with a verb that expresses the subtle use of that sense. Equally important to this particular tribe is the space and parts in and between human sensory organs as they form an interactive perceptual web (Howes and Classen 263). Paul Rodaway refutes perception as a product of a 'hierarchical dichotomy' between sensations and cognitive functions (12). Instead, perception becomes an evolving relationship between the body as an interactive receptor of multi-sensorial information and the world at large. In this context, perception doesn't only relate to the incremental accumulation of sensory information and consequential cognitive processes. The sensory dynamics that manifest in the way human bodies perform in their environments also have to be considered. For ethnomusicologist Steven Feld, sonic activities give a sense of cultural space through a sensorium framed by the body's contour (34). Sounds activate inter-sensory processes that can ground individuals in space by absorption of sonic motions without a need for optical visualisation (Feld 99). A sense of cultural belonging and place is then achieved through a 'kinesthetic-sonesthetic bodily basis of knowing' (Feld 105).

Amy Coplan has also investigated bodily ways of knowing the world and suggests that 'emotional contagion' between individuals is based on non-cognitive affective response (120). This gives a social dimension to individual perceptions as ways to generate and propagate 'raw' emotions. Such a proposition could explain how members of the audience would have been adversely affected by the range of very low

frequencies used in the soundtrack of *Irreversible* (Dir. Gaspar No ). The pictorial violence portrayed in this particular film was not the sole factor causing 200 people to walk out of its 2002 Cannes Film Festival screening (Hope 75). The visceral sensations triggered by this sonic range transformed a movie viewing into a haptic experience in a vibrating space. This particular film provides an apt example of the ability of electroacoustic technology to change the nature of listening into a detailing of the rumble that cocoons us, whether clearly audible or ubiquitous. Such transformation of the original relationships between sound and receptors allows technology to tell us how to feel sonic vibrations but it can also impose on us ways to listen to sound.

Low frequencies have to be excessively amplified to be audible and loudness is the common default measure of the presence of sound. This is an obstacle to the listening education of an audience as it over-simplifies the quality of soundscapes to ‘loud’ and ‘silent’. In this regard, acoustic environments such as the lo-fi soundscapes of urban settings have a role, as it is the modes of perceptual attention and inattention to the ‘in between’ sounds that need to be examined. These tones might seem innocuous to some but our bodies in their entirety are able to absorb these monotonous and sometimes subtle sonic activities. They can have negative effects on the health and social participation of many individuals (Persson Wayne et al.; Kryter; Stansfeld and Matheson). There are others, however, who feel inspired by lo-fi soundscapes. Composer John Cage commented that a possible acoustic silence could for example be aligned to the existing sound of urban traffic. For Cage the ubiquity of its presence is always different and ‘... silence is not acoustic. It is a change of mind, a turning around’ (Cage 1989).

What is considered innocuous is revealing of the ways we choose to listen to sonic events and our environment at large. Cage’s and Schafer’s experiences turn the soundscapes of the world into ‘a huge musical composition’ that we simultaneously listen to, compose and perform (Schafer, *The Soundscape* 205). As suggested by Barry Truax, listening can be a process that filters sonic activities and retains those that are useful to the cognitive brain (11). To practice an ‘Everyday Listening’ entails an awareness of auditory events rather than simply accumulating individual sounds to gauge their proximity and qualities. Sonic information may become hierarchical, however, and oscillate between ‘listening-in-search’ for a sound pattern and ‘listening-in-readiness’ as a process of filtering background information (Droumeva 163). Semantic meaning and description then become largely contextual, as do the processes of erasing sonic perception or dismissing memory (Augoyard and Torgue 47). Although cinema audiences are permanently subjected to sounds in their everyday lives, they are generally unnerved by a lack of sonic activity on the soundtrack of a movie. There is an underlying expectation that sound should accompany the image track. At the movies, the accumulation of sounds that populate the soundtrack might be ‘exempt from any laws of realism’ (Chion 470). On the other hand in the 1930s Bal z affirmed that ‘It is the business of the sound film to reveal for us our acoustic environment and the acoustic landscape in which we live ...’ (116). In this context, it is the tonal nature of the soundtrack and its correlation with the physical perception of silences that needs to be examined.

As a receptor of a movie, an audience is a primarily made of bodily entities. To focus on sensorial apparatus and cognitive mechanisms is, however, insufficient as a mean to understand our involvement within soundscapes. Christian Metz notes that ‘Films

release a mechanism of affective and perceptual *participation* [emphasis in original] in the spectator' (Metz 4). To add a facet to the participative dimension of the medium, Laura Marks states, '... I am exploring sense experience in cinema not to seek a primordial state of sensory innocence, but to find culture within the body' (152). The above views expand the diverse and simultaneous realities of film experiences as embodiment and subjectivity become complementary and reciprocal (Sobchack 76). Nevertheless, the primary creation and reception of film sound have everything to do with the spatial presence and sensorial activity of our bodies in their entirety.

In film theorist Michel Chion's words a 'rendering' is a process that leads an audience to experience the knowledge of a scene, not because of the accuracy of its reproduction, but because of the multi sensory experience that it can convey (488). A successful sonic rendering does not depend on tonal reproduction, but on sensorial simulation made possible by technical manipulation. The sensory potential of sound reinforces the possibility and intentionality of cinema sound designers to channel sonic worlds towards our skin and in our ears. Silence becomes a transient product of auditory and tactile contrasts. Aside from the absence of voice and music, cinema sound designers develop a language of silences that affects an audience's non-cognitive affective responses and subjective listening. Other types of contextual silences are used aside from the non-utterance that relates to the narrative and its visual frame. A 'room tone', for instance, differs from the silence of a character who is 'tuned out' (Gorbman 451-52). As it is captured on location 'room tone' also differs from 'ambient sound' that can be artificially created to enhance a scene.

It is neither easy, nor necessary, to match an exact definition of silence with a narrative context. The famous 30 minutes of vocal and musical silence in the movie *Rififi chez les Hommes* (Dir. Jules Dassin 1955) was inherent to the roles of four thieves for whom sound was the enemy. The audience becomes kinetically involved as the protagonists quietly demolish a floor, move slowly around the space and communicate with their eyes. All sorts of silences could be emotional drivers but a possible imprint of soundlessness on the filmstrip speaks differently to an audience. It interrupts a physical participation in the narrative and also exposes the audience to the presence of its own sounds that were previously covered by the film soundtrack (Figgis 2). Shoma Chatterji notes that if a deliberate pure silence were inserted into the soundtrack of a mainstream movie screened in India, the lack of the permanence of sounds would depart from the acoustic habituation that audiences are exposed to in their daily lives (105). When it differs from physical habituation silence can then be heard and can disengage listeners from the visual spectacle. Chatterji adds that the audience would suspect an occurrence of a mechanical breakdown and would shout, demanding some sound (109). Esteemed cinema sound designer Randy Thom agrees that the absence of sound can leave audiences concerned with technical malfunctions in the theatre (Thom, 'What is the Sound of Nothing?').

Amongst professionals the term 'silence' is rarely used; stillness, quietness, softness, ambiance and atmosphere are more commonly employed expressions. What matters is that the produced piece should 'feel' silent. As well as giving a sense of emotional stillness, low frequency hums can bring physical sensations that match the narrative context. In the movie *The Bank* (Dir. Robert Connolly 20011) Australian sound designer Sam Petty mixed the sounds of different compressors to convey the coldness of a bank building and its heartless inhabitants (Murtagh, see Delmotte). This detailing

of sounds brings a new attention to the screen but also to our sensory envelope, its adaptability to soundwaves and our auditory expectations. An example of such an effect is the sudden audio interruption of a heart monitor (Théberge 52). As life ends the audience loses the protection of what was a realistic ambient noise. It becomes physically attentive to the space between distinguishable sounds, a space of subtlety that gives a voice to silence and strengthens the narrative.

As a film director with an educated ear, Gus van Sant masters sonic subtlety and is able to expand the sensorial presence of his protagonists. In one of the last scenes of the film *Gerry* (2002) the telling silence combines a varied range of absences of sounds linked to body sensations, physical location and emotional control. After days lost in the wilderness, Gerry (Matt Damon) and Gerry (Casey Affleck) lie motionless and speechless on a salt lake. For more than a minute, discreet flies and an extremely quiet rumble that almost sounds 'like' running water inhabit their common soundscape. The voice of Casey Affleck's Gerry breaks this textured silence and his arm scrapes the salt to reach Matt Damon's Gerry. His tentative gesture is followed by a few words that push Matt Damon's Gerry to kill his friend by strangulation. All along there is an extremely discreet undercurrent of sound that gives a haptic envelope, a tactile density, to the images. It is an almost methodical murder surrounded by soft whispers of winds and, as Casey Affleck's Gerry expires, images of passing clouds. The actions of Matt Damon's character bring a sense of relief and the subtle silence that cocooned the two bodies provides sensorial belief. Renowned sound designer Leslie Schatz went on location and spent time *in* the sounds of the story (Klinger 2006). Not many sound designers have this opportunity to picture sounds of silence where they might belong and texture the screen with them. Ground-breaking sound designer Walter Murch rightly suggests that viewing movies in a mediated environment might enable an audience to listen to the world differently (Jarrett) and by extension view it in new ways.

Chion labels 'synchresis' the simultaneous and instinctive impression of sonic and visual events as a single phenomenon (391). In the scene from the movie *Gerry* described above there is recognition of a soundless reality that could well exist and that lets us experience a synchresis of silence. A similar impression, but executed differently, permeates the movie *Elephant* (Dir. Van Sant 2003). This film is structured as a convergence of distinct events that lead to a deadly school rampage. *Elephant* takes us on the physical paths of the two shooters, Alex and Eric. We cross the different acoustic environments of a school day while simultaneously exploring Alex's mindset. In a scene in the noisy school canteen, we can audio-visually witness his physical pain and the emotional distress seemingly caused by the sounds around him. We then follow his mental disengagement from his surroundings as he leaves this particular environment. At any stage in the film, a 'pure' silence would have distracted us from the controlled quietness that envelops Alex as he kills. Sound designer, Leslie Schatz, inserted non-edited excerpts of acousmatic soundtracks previously created as an art piece by soundscape composer Hildegard Westerkamp. Sliding in and out of the murderers' deadly walk, Westerkamp's music immerses us in other worlds, other rhythms, other textures and sounding surfaces from those of the school's corridors. Regardless of the causality and manipulations of its acoustic components, the soundscape of the canteen scene enrobes Alex in a fluid and textured silence as he walks away. Randolph Jordan rightly describes Westerkamp's contribution as a way to 'flesh out Van Sant's portraits of young people adrift in worlds' but also as a

foundation for an alternative awareness to the soundscapes in which we evolve (Jordan).

For *Cast Away* (Dir. Robert Zemeckis 2000) Thom created another sort of audible silence to represent physical and mental isolation. The soundtrack was stripped of any sound that could have been emitted by living creatures such as birds and insects (Thom, 'On Sound Designing: *Cast Away*' 20). Adding to the fullness of this subtle 'silenced life' was the absence of music for the first hour of the film. A powerful emptiness was created out of the construction of an atmosphere devoid of site-specific sounds. Silence became the presence of a physical absence and the soundtrack delivered a ubiquitous hyper-reality.

To conclude, I maintain that filmic silence has become the dynamic product of 'a way of mixing sounds' that has kinetic repercussions on the audience through its distribution in the space of film projection (Bubaris 2010). In *Apocalypse Now* (Dir. Francis Ford Coppola 1979), Walter Murch demonstrates how subtlety can flesh the space so that 'It feels silent, but it isn't' ('Touch of Silence'). I argue that the kinaesthesia that contemporary cinema sound has developed is based on reciprocity: soundscapes evolve over time and so do their interrelationships with film experiencers. Although total silence is a near acoustic impossibility, soundscapes can morph into silences by virtue of listening practices. These same silences, however, are the core of perceptual territories that most of us consciously dismiss and 'un-listen' to outside cinema theatres. There is some truth in Murch's view that if no distinct sounds are perceptible by a cinematic audience, each individual spectator will create their own version of the meaning of their absence ('Womb Tone'). Through their work, cinema sound designers can educate us about the soundscapes that we perceive, create, think about and act upon. Ultimately, our cinematic experience depends on the awareness and sensorial memory of sound professionals, their life through sounds and their listening habits. A fuller understanding of our perpetually changing environments depends on our will to practice a sensorial listening and to lend an ear, and a body, to the fluctuations of sounds and silences, inside and outside movie theaters.

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