



Universiteit
Leiden
The Netherlands

Audible absence: searching for the site in sound production

Chattopadhyay, B.

Citation

Chattopadhyay, B. (2017, March 9). *Audible absence: searching for the site in sound production*. Retrieved from <https://hdl.handle.net/1887/47914>

Version: Not Applicable (or Unknown)

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/47914>

Note: To cite this publication please use the final published version (if applicable).

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/47914> holds various files of this Leiden University dissertation

Author: Chattopadhyay, B.

Title: Audible absence: searching for the site in sound production

Issue Date: 2017-03-09

Audible Absence: Searching for the Site in Sound Production

Proefschrift

ter verkrijging van

de graad van Doctor aan de Universiteit Leiden

op gezag van Rector Magnificus prof.mr. C.J.J.M. Stolker,

volgens besluit van het College voor Promoties

te verdedigen op donderdag 9 maart 2017

klokke 11.15 uur

door

Budhaditya Chattopadhyay

geboren te Rampurhat (IN)

in 1975

Promotores

Prof.dr. Marcel Cobussen	Promotor	Universiteit Leiden
--------------------------	----------	---------------------

Prof. Frans de Ruiter	Promotor	Universiteit Leiden
-----------------------	----------	---------------------

Promotiecommissie

Prof.dr. Joep Bor		Universiteit Leiden
-------------------	--	---------------------

Prof. Angus Carlyle		University of the Arts, London
---------------------	--	-----------------------------------

Dr. Yasco Horsman		Universiteit Leiden
-------------------	--	---------------------

Dr. Martine Huvenne		Hogeschool der Kunsten, Gent
---------------------	--	---------------------------------

Dr. Vincent Meelberg		Radboud Universiteit, Nijmegen / docARTES / Universiteit Leiden
----------------------	--	---

Table of Contents

Acknowledgments	3
Part I: Introduction	5
1. Preface	5
2. Research topic and research question	8
2.1 Ambient sound in films	11
2.2 Ambient sound in sound art	14
3. Context	16
3.1 The audio-visual relationship	19
3.2 Sound Studies	20
3.3 Film and sound art	21
4. Justification	22
4.1 The role of ambient sound	22
4.2 Ambient sound and digital technology	26
5. Key concepts	28
5.1 Diegetic sound	28
5.2 Mimesis	30
5.3 Presence	31
5.4 Artistic intervention and transformation	34
6. Research method	37
6.1 Historical overview	37
6.2 Interviews	38
6.3 My own field recordings	41
7. Structure of the dissertation	43
Part II: Articles	45
Article 1: Chattopadhyay, Budhaditya (2017). "The World Within the Home: Tracing the Sound in Satyajit Ray's Films." <i>Music, Sound, and the Moving Image</i> Autumn issue (Accepted).	47
Article 2: Chattopadhyay, Budhaditya (2015). "The Auditory Spectacle: designing sound for the 'dubbing era' of Indian cinema." <i>The New Soundtrack</i> 5/1: 55–68.	77
Article 3: Chattopadhyay, Budhaditya (2016). "Being There: Evocation of the Site in Contemporary Indian Cinema." <i>Journal of Sonic Studies</i> 12	99

Article 4: Chattopadhyay, Budhaditya (2012). “Sonic menageries: composing the sound of place”. <i>Organised Sound</i> 17/3: 223-229.	129
Article 5: Chattopadhyay, Budhaditya (2014). “Sonic drifting: sound, city and psychogeography”. <i>SoundEffects</i> 3/3: 138 – 152.	145
Article 6: Chattopadhyay, Budhaditya. “Decomposing Landscape: Hearing the Troubled Site.” <i>Journal of Artistic Research</i> (In peer review).	161
Part III: Conclusion	173
1. Summary.....	173
2. Findings.....	174
2.1 “The World Within the Home: Tracing the Sound in Satyajit Ray’s Films”	174
2.2 “The Auditory Spectacle: Designing Sound for the ‘Dubbing Era’ of Indian Cinema” ...	174
2.3 “Being There: Evocation of the Site in Contemporary Indian Cinema”	174
2.4 “Sonic Menageries: Composing the Sound of Place”	175
2.5 “Sonic Drifting: Sound, City and Psychogeography”	175
2.6 “Decomposing Landscape: Hearing the Troubled Site”	175
3. Critical observations	176
3.1 Historical mapping of film sound production leading up to the contemporary digital	176
3.2 Comparative analysis: film sound/sound art	180
3.3 Best practice in film sound production	182
3.4 Rethinking the concept of presence	185
4. Future directions	190
Part IV: Appendix – Interviews	194
Bibliography	195
Biography	211
Abstract.....	212
Samenvatting	213

Acknowledgments

My background as a sound practitioner has helped me to intervene with a novel perspective in the ongoing debates in sound studies, providing critical observation and reflection alongside an analytical approach to sound production. Hence, my research has been artistic, practice-based, and at places self-reflective, in order to capture the aesthetic, historical, and technological developments in film sound and sound art . First, I would like to acknowledge the inspiration drawn from fellow sound practitioners. Their vital contributions have enriched the development of sonic experience in film and media production. This project would not have been possible without the active participation of many eminent film sound practitioners in India. I wholeheartedly thank Shyam Benegal, Resool Pookutty, Jyoti Chatterjee, Anup Dev, Nakul Kamte, Anup Mukherjee and others who provided their valuable time for the interviews. Their work truly remains the impetus for embarking on this journey.

I warmly thank Prof. dr. Marcel Cobussen and Prof. Frans de Ruiter of the Academy of Creative and Performing Arts at Leiden University for their valuable comments and suggestions. I am particularly thankful to Marcel Cobussen for kindly accepting to become my supervisor and promoter at the final and crucial stages of this work, providing me with most helpful guidance. Thanks also to Sharon Stewart for carefully reading through parts of the dissertation and performing the necessary editing with many helpful comments.

I thank the Department of Media, Cognition and Communication at the University of Copenhagen for supporting and financing this research, in particular the head of department Maja Horst, Prof. Klaus Bruhn Jensen and Arild Fetveit, who remained supportive throughout the development of this project. I would like to thank Brandon LaBelle at the Bergen Academy of Art and Design for inviting me to the seminar series Dirty Ear Forum. Thanks also to Morten Michelsen of IKK for inviting me to hold a panel at the ESSA2014 Sound Studies conference, where I had the chance to discuss this project with fellow film sound scholars, such as Martine Huvenne, who read the thesis and gave helpful advice and comments. I sincerely thank Ulrik Schmidt for inviting me to work as a guest researcher at Roskilde University in order to further develop the project. Interaction with the students who took part in the two courses I taught at the University of Copenhagen has considerably enriched my research. I would like to thank BAR1 and the India Foundation for the Arts, Bangalore, for providing me with resources, funds, and infrastructure for the development of the sound artwork *Elegy for Bangalore*. My heartfelt thanks go to Prof. Andrew Lewis at the School of Music in Bangor University, North Wales, U.K., for providing hospitality during my residency to develop the piece while working at the Studio 4. I would also like to thank

Charles Wallace India Trust London for funding my travel and stay in Bangor. Thanks to Deutschlandradio, Berlin, for broadcasting the work and Gruenrekorder for publishing the work on CD. I would like to thank the Prince Claus Fund, Amsterdam, for providing financial support for the fieldwork conducted in India to develop the project *Decomposing Landscape*. I thank ICST, Zurich University of the Arts, for providing the resources, funds, and technical facilities for the development of the piece during the residency at their Computer Music Studio, equipped with an Ambisonics system. My heartfelt thanks go to composer Johannes Schütt for providing technical guidance and all the other support offered during this residency. I would also like to thank the label Touch for publishing the work. Finally, I would like to thank my mother Shipra Chattopadhyay as well as my sister Debika Chattopadhyay and her family. On this occasion, I heartily express my gratitude to all the close friends, associates, and well-wishers; without their continuing support this project could not have seen the light of the day.

Part I: Introduction

1. Preface

In the autumn of 2006 I was a final year student of audiography¹ at the prestigious SRFTI,² a premier institute for film education in India. I was invited to speak about my experience as an emerging sound art practitioner and my concerns regarding the use of sound in cinema at a conference titled *Sound Cultures in Indian Cinema*.³ The conference was held with the intention of launching an Indian film sound research program in the Department of Film Studies at Jadavpur University in Kolkata. I presented a student paper at the conference, and it was later published in the *Journal of the Moving Image*.⁴ The paper was my first critical intervention within the field of film sound research and, as such, allowed me to enter into the academic world as an active sound practitioner and artist.

This intervention was significant for two reasons. Firstly, as a sound art practitioner, I was able to offer novel insights into the ongoing academic debates in film sound research, which, up to that point, had been based on mostly non-concrete ideas about sound recording and design in films by seasoned academics who were not sound practitioners themselves. Secondly, the process of devising the paper also helped to advance my own development as an artistic researcher and thinker, allowing me to question the established standards of sound practices that I had come to know through my film school education. The technologically deterministic approach⁵ that I had to deal with in my own studies as a

¹ Audiography is a field of study in India concerned with the knowledge of sound recording and design, primarily in the context of film and music production, but enthusiastic students can push for artistic freedom to a certain extent in choosing their personal projects. Needless to say, there are no academic institutions in India for sound art studies. Film school graduates are given the impetus to experiment.

² See <http://srfti.ac.in/>

³ See <http://osdir.com/ml/culture.india.sarai.reader/2006-11/msg00001.html>

⁴ See http://www.jaduniv.edu.in/templates/newpages/ju_journals.html#mi

⁵ Film school education in India mainly revolves around cinema technology in order to train students in the skillful operation of the tools and machines necessary for sound recording and production. This overt emphasis on technology often ignores the aesthetic sensibilities of working with and thinking through the subtleties of sound and listening. A student who is sensitive to the artistic potential of sound may take distance from the educational system and

student of sound production was the area I chose to question and discuss in my student paper. I also confronted the lack of use of ambience or the sounds of the “actual site” in Indian films and intended to shed light on how ambience could contribute to the sense of place if given enough scope in filmmaking. I argued that imposed limitations practiced in standard film sound recording and design create lapses in the inclusion and recognition of site-specific sonic information in the “soundscape” of the films. By this time, in 2006, I was already engaged with an independent practice of field recording and composing with ambient sound in response to the screen-centric and visually dominated field of film production. My shift to artistic practice instead of aspiring to become one of the sound personnel or technicians in the film industry can be seen as an inclination and personal choice. The paper was an initiation into my ongoing efforts to articulate my own work within a growing interest in Sound Studies and academia in general, not only to voice my concerns on these issues, but also to situate my artistic practice within this conundrum and in the genealogy of sound practice in general. At a crucial stage these considerations were instrumental in the initiation and unfolding of this PhD project.

By describing my background, the case that I would like to articulate here is the potential contribution that I, actively involved in sound art practice, can make to existing research in film sound and how this contribution can be seen as novel and relevant to producing new knowledge. My inquiry also drives a search for a comprehensive positioning of my own artistic practice within a larger trajectory to locate the differences as well as the intersections between sound art production and sound production for film, being personally exposed to both practices.

If I look back on my aforementioned first academic paper, much has changed since its publication in 2007, and these changes are indeed instrumental in posing the pertinent questions I asked at that time, once again, within a new context – the context of a thorough digitalization of contemporary sound production and its ramifications for sonic experiences. Regarding the issue of handling the oft-ignored delicate relationship between sound and site in Indian films, I lamented, in the above-mentioned paper, that

Indian cinema has *generally* seemed to be hostile to [the] environmental sound spectrum as ambience on [a] married soundtrack even when a film is shot on location. On location,

create his or her own practices independent of the intervention of the film school mechanisms.

sound is usually controlled to enter film space and in a film set, sound is limited to mere voice and sync effects, making the construction of a soundtrack completely dependent on asynchronous means of sound sourcing such as available stock sound. In the process, film sound, instead of representing the established locale, drifts away from documenting the sound of an original space. Sound making goes closer to a synthetic design by a sound operator working under the specter of mechanical craftsmanship; the sound practitioner's religion of open hearing loses validity. (Chattopadhyay 2007: 107)

But this lamentation did not hold true for long. A revolution was already in progress in Indian cinema following the decision, after much deliberation, to shoot the movie *Lagaan* (*Land Tax*, Gowariker 2001) with the digital technology of "sync" sound. What this revolution brought was an awareness of how the direct recording of location sound and the live performance of actors are perceived by the filmgoers to be far more convincing and realistically believable than the techniques of dubbed films of the 1960s, 70s and 80s that were exemplifying the established industry standards (with a few exceptional independent filmmakers following a different practice). The awareness was significant in fundamentally shifting the spectator's experience of sound, namely in the proliferation of (an alleged) realism, exploring the "capacity not only to mirror but also to govern the human perceptual apparatus" (Rogers 2013: 32) towards an "embodied experience."⁶ This sense of realism and embodiment has been achieved, I assume, through the recognition of the specifics of the sites in the narration or, more generally, through a sensitivity to the "site of sound" (LaBelle 2011). If we look at Indian cinema of the period between 2001 and 2009, there were a number of films that embraced "sync" sound or location-specific digital multi-track recording in live synchronization before it gradually became the standard from 2009 on. The novel experience of the sync sound textures replete with evidence of the site led to a popular appreciation of a revived sense of realism. However, this development didn't make my earlier lamentation completely invalid. My previous concerns about the lack of "ambience" and the dearth of locational information in Indian cinema led to new questions: what do

⁶ An embodied experience of sound in the cinema is provided by site-specific sound recordings – including room tones, low frequency rumbles, and other bodily-perceptible ambient sounds – dispersed in a spatial organization following a multi-channel surround sound design. As argued by Mark Kerins (2006, 2011), these practices find prominence in the digital era of sound production. I am using the term in the context of discussing the digital era in Indian cinema to underscore the unique capacity of the surround design of sync sounds. I will thoroughly explain the term later in the dissertation.

these new developments signify, and how can they be understood from a historical perspective? Moreover, where can my own works as a sound art practitioner, stemming from sound training following traditional Indian cinematic practices, but working with site-specific field recordings, be situated within this development? This set of renewed inquiries has inspired me to take up the course of this research, and it is these broader questions that drive the project.

2. Research topic and research question

The central topic of this research is *ambience* or, more precisely, *ambient sounds*.⁷ Of course, academic attention for (locative background) sound in film studies is not new,

⁷ Ambient sound broadly denotes the background sounds that are present in a scene or location: wind, water, birds, room-tone, office rumbles, traffic, forest murmurs, waves from the seas shores, neighborhood mutters, etc. According to, for example, the online resources Media College (<http://www.mediacollege.com/audio/ambient/>), and the Oxford Dictionary, in the context of filmmaking, “*ambience*” consists of the sounds characteristic of a given location or space. This definition correlates *ambience* with other associated terms, such as *atmosphere*, *atmos*, or *background*. The resource-rich website www.FilmSound.org suggests: “*Ambience* pertains to the pervading atmosphere of a place.” *FilmSound.org* further claims that, “*ambience* is widely used as a synonym for ambient sound, which consists of noises present in the environment.” Drawing on these sources, I argue that these two terms belong to the same “family” of concepts in sound practice and theory and can be used interchangeably. However, etymologically, “*ambient sound*” underscores the material and functional aspects of the term, while “*ambience*” emphasizes the social and cultural connotations. In this sense it is, for example, understood and applied by researchers at CRESSON (Centre de Recherche sur l’Espace Sonore et l’Environnement Urbain / Research Center on Sonic Space and the Urban Environment). CRESSON reads *ambience* (or “*ambiance*” as they write it) as “a space-time qualified from a sensory point of view. It relates to the sensing and feeling of a place. Each *ambiance* involves a specific mood expressed in the material presence of things and embodied in the way of being of city dwellers” (Thibaud 2011: n.p.). This definition underlines multi-modal rather than solely sonic experiences. Furthermore, the emphasis is on sociological research of the city. While this usage creates a useful concept for cross-referencing within the field of urban sonic environments, my research inclines towards emphasizing the materiality and functionality of environmental sounds in art works rather than the role they play within urban social issues.

although never systematically investigated. Therefore I intend to examine how ambient sound is used in the process of sound production, both in films and in field recording-based sound artworks, especially in my home country India. The focus of the investigation is on the processes of (re)constructing the presence of a site by means of ambient sounds recorded from that site. In film it is the fictional site, while in sound artworks it is the site for making field recordings with the purpose of developing an artistic production. What can we learn from the developments in Indian cinema with regard to ambient sounds? And what can we learn by comparing the way ambient sounds are used in movies and sound art?

The mediated worlds within any work of sound production emerge through the narrative and descriptive accounts of a place or a site⁸ and through the recording and spatial organization of sounds. The audiences involve themselves with the site by recognizing its presence within this constructed world. The produced experience of presence may vary in degree and intensity, depending on the art and craft of the sound practitioners⁹ and sound artists' intentions to attend to the sonic details of the site. The mediated world appears convincing if the resonance of the site reverberates in the ears of the audience and triggers their sonic sensibilities long after these works of sound production are experienced. It is no surprise then that the fundamental element of establishing a site's presence through sound is of foremost importance when it comes to convincingly conveying the narrative and descriptive account of a particular site. My use of the term "site" thus denotes a source of actual sonic components, which are collected as materials during sited recordings and which, as art critic and curator Miwon Kwon argues, are "based in a phenomenological or experiential

⁸ "Place" refers to generic locations that are local and governed by interpersonal, ecological, or political relationships (cf. Castells in Demers 2010: 114). "Site," on the contrary, is more specific. Site denotes a location of an occurrence or event where something important happens; it suggests a particular place that is used for a certain activity. Hence, I will use the term "site" more often than "place" to specify the sonic depiction of the particular location. In short, site in relation to sound is understood as situated, inextricably bound to a particular spot. Therefore, in this dissertation I employ the term "site" to denote the specificity of a particular place where ambient sounds are recorded.

⁹ "Sound practice" is a broad term used throughout this dissertation; it encompasses sound recording, production mixing, dubbing, studio mixing, Foley, re-recording, and so forth. Likewise, the term "sound practitioner" accommodates all categories of sound professionals: location sound recordists, field recording experts, directors of audiography, Foley artists, sound designers, production mixers and mixing engineers, re-recording specialists, etc.

understanding of the site, defined primarily as an agglomeration of the actual physical attributes of a particular location" (Kwon 2002: 3). The broad, but often ambiguous use of the term "site-specificity" in the arts is problematic, as Kwon points out. Following her cautionary suggestions, I utilize the term "site-referenced," which refers the listener back to the site where the materials were originally collected, considering sound as a "signifier and the Site as that which is signified" (Alloway 1981: 42). In the context of film and (media) art production, Joanna Demers defines "site" more specifically in the context of sound art and field recording: "*Site* [...] entails not only the environments in which sound propagates but also those that listeners physically and metaphorically occupy" (Demers 2010: 113). As regards my usage, the term "site" connects to "physical conditions of a particular location as integral to the production, presentation, and reception of art" (Kwon 2002: 1).

This leads to the central research question of this dissertation: How is a site in films, as well as in sound artworks, (re)produced through ambient sound? There are certainly specific methods and creative strategies involved in constructing or evoking a relatively convincing presence of a site within the mediated environment by means of various forms and formats of sound recording and spatial organization of recorded sounds. However, to *what degree* can presence be achieved in sound practice? Or does the site remain elusive within the sonic experience?

This research project has been delimited by sound practices in Indian cinema. The reason is threefold. First, my own educational background is rooted in Indian cinema. Second, I have had access to a large repository of Indian films as well as to the experiential knowledge of acquaintances and contacts, established and eminent practitioners of sound in the Indian film industry. Third, and most importantly, Indian cinema is the world's largest producer of films, with a diverse set of practices and approaches in need of critical attention and that provides fertile ground for the production of new knowledge. The conceptual insights and findings derived from this research project can perhaps also be used for studies of (film) sound in other world cinemas. Besides, the study of ambient sound in Indian movies could be considered as a proper supplement to the field of Sound Studies.

It has been my aim to question the classical assumptions about sound in film (e.g. image-based relationships), and to shift the focus toward the notion of carefully constructing the

site's presence in the film's diegetic world¹⁰ as a vital narrative strategy. The emphasis on "site" will enable the study of the similarities and differences between location recording of ambient sounds made for the purpose of constructing the site within the interior world of the film production, and field recordings used in certain site-driven sound artworks and compositions. It is my belief that examining these similarities and differences can be considered essential in the production of novel and relevant new knowledge, a specific set of knowledge that can also contribute to the notion of "best practice"¹¹ in film sound production by questioning and reshaping this notion through sound art.

2.1 Ambient sound in films

Let us first consider the role of ambient sound in films. Since a substantial amount of sound production scholarship is based on the analysis of film sound, a clearer picture of the context of the project can be drawn by beginning with an exploration of ambient sound in film. It is my primary assumption that film sound practitioners choose to use certain layers of ambient sound among a multitude of other recorded sound components, incorporating them in the strategy of narration in such a way that they produce a spatial realization of presence of the site in the diegetic world. Veteran sound designer Anup Deb for example states that "ambience creates the location where you are [...] and with this ambience you create that location."¹² The absence or relative inclusion of ambient sound in the sound organization determines qualitative degrees and intensities of the site's presence.

Film sound scholars point toward the spatial, enveloping properties of ambient sound. Take for example David Sonnenschein, who suggests that ambient sound can "create a space within which the audience can be enveloped" (Sonnenschein 2001: 47). Film scholar Béla

¹⁰ In film, the term "diegetic" typically refers to the internal world created by the story that the characters themselves experience and encounter, the narrative "space" that includes all the components of the story-world, both those that are and those that are not actually depicted on the screen. I will explain the crucial term "diegesis" in a following sub-chapter.

¹¹ A best practice is a method, technique, or approach that is generally considered as better than its alternatives because it produces results that are allegedly or within a specific context superior to those achieved by other means of production, or because it has become a standard way of doing things in compliance with certain aesthetic references. Best practices are used as an alternative to mandatory legislated standards to maintain quality and can be based on self-assessment or benchmarking.

¹² See the interview with Anup Deb in the Appendix, page 24.

Balázs proclaimed that it is sound's business to reveal the acoustic environment, the landscape that we experience everyday as the "intimate whispering of the nature" (Balázs 1985: 116). Theories of spatial cognition also suggest that natural site-specific environmental sounds can reinforce spatial aspects of perception "focusing primarily on perception of sound-source direction" (Waller and Nadel 2013: 83). These varied perspectives inform us about how ambient sounds provide depth and a spatial dimension to a particular filmic sequence by establishing an environment conducive to eliciting a cognitive association between audience and site, reinforcing "the impression of reality" (Percherron 1980: 17). In film sound, the organization and design of ambient sound completes the perception of reality in terms of direction and localization, enabling the audience members to relate to the specifics of a site's sonic environment. As Anup Deb claims: "Basically ambience is very important as far as the film is concerned because it creates the locale."¹³

Film sound theorist Tomlinson Holman states that "ambience most typically consists of more or less continuous sound, often with a low-frequency emphasis we associate with background noise of spaces" (Holman 1997: 177). The advent of digital recording makes it possible to record these deep layers of low-frequency sounds (Kerins 2011). Earlier recording media – namely analogue optical recording and analogue magnetic recording, with their limited dynamic range – were less capable of capturing the full spectrum of ambient sounds, thus negatively affecting the way the fictional sites were narratively portrayed.

If we look at the trajectories of sound production within Indian cinema, we can observe shifts in the practices of recording sites, enabling us to loosely delineate various phases of production practices. In an interview I conducted with sound mixer Alope Dey, he refers to this chronological order of technological innovations: "Ultra stereo, they got it first before Dolby. And then so many films we did after that in that format. Then Dolby came to India with their SR unit, which is a noise reduction unit for music purpose. Then they introduced Dolby SR, then 5.1, 6.1, 7.1 and Atmos."¹⁴ There have been phases of sound production such as the dubbing era (1960s–1990s) that cared less about the site, giving more importance to typical narrative tropes such as song and dance sequences. However, there are also phases such as the digital era (2000s–) where a more "realistic" and concrete representation of sites can be observed. The dominant factors that have determined these shifts are rooted in technological developments (Kassabian 2013; Kerins 2011, 2006; Lastra

¹³ See the interview with Anup Deb in the Appendix, page 25.

¹⁴ See the interview with Alope Dey in the Appendix, page 5.

2000; Altman 1992), while certain aesthetic choices became available as a result of the historical evolution of sound production. This history needs to be studied in order to understand the various differing and concurrent practices, methods, and approaches as well as the shifts in the practices surrounding the recording and designing of ambient sounds for narrative purposes, whereby the presence of the site is (re)produced – during the transformation of the “pro-filmic space” (Lastra 2000) into the film space – through sound editing and organization.¹⁵

Based on these developments I will study the nature of ambient sound’s usage in various corresponding and intercepting phases of recording and sound production in India in sound practice. For methodological clarity, I will divide the history of Indian cinema in three separate periods: (1) analogue recording (direct optical), synchronized sound, monaural mixing (1931 – 1950s); (2) analogue recording (magnetic), dubbing, stereophonic mixing (1960s–1990s); and (3) digital sync recording and surround sound design (2000s–). Critical listening, informed reflections, and analyses of certain passages of sound from representative Indian films from these three phases of sound production qualify the evidential component of this study as following a top-down approach. The quality, texture, depth and other typical onsite characteristics of ambient sound recording, as well as the aesthetic choices of sound organization in the spatial settings of various post-production stages, have substantially changed along with technological shifts, corresponding to as well as intercepting periods of predominant modes of sound production. Hence, it is necessary to study the contemporary practice of digital tool use and techniques in the light of the

¹⁵ The term “film space” is defined as the space that the spectator encounters, a space that is organized through time, e.g. the temporal linking of shots through sound editing. According to, among others, David Sorfa (2014) and James Lastra (2000), the area in front of the camera’s recording field is known as the “pro-filmic space.” Film scholars Annette Kuhn and Guy Westwell define pro-filmic space in *A Dictionary of Film Studies, Oxford Reference* as “the slice of the world in front of the film camera; including protagonists and their actions, lighting, sets, props and costumes, as well as the setting itself, as opposed to what eventually appears on the cinema screen. In studio-made fiction films, the profilmic event is a set constructed for the purpose of being filmed. At the other extreme, in observational documentary forms like direct cinema, filmmakers seek, as a fundamental element of their practice, to preserve the integrity of the real-life space and time of the profilmic event. Many films occupy a middle ground in their organization of, or relationship with, the profilmic event: as for example in the case of location-shot” (Kuhn and Westwell 2015: n.p.).

previous production phases in order to address the main topic of this research in a historically comprehensive and scholarly manner.

As we know from film sound scholars, most commercial American cinema has consistently utilized clean layers of ambient sounds in order to “help to develop the atmosphere and to range the image on screen into space and time” (Ribrant 1999: 19). Technological developments in the digital era – the systematic use of ambient sounds and surround design (Holman 2002; Kerins 2011) – facilitated attaining “a thicker, more realistic, sound score [...] and help the audience in their spatial orientation” (Ribrant 1999: 20). However, Indian cinema is notorious for producing sonic experiences incorporating an overwhelming use of song and dance sequences where location-specific ambient sounds are generally given little attention and often ignored (Rajadhyaksha 2007; Gopalan 2002). There are indeed many examples from popular Indian films in which ambient sounds are kept at bay, mostly in the interest of a loud and colorful setting, providing a detached and imaginary cinematic landscape of auditory spectacle in which the site is predominantly absent in the narration, offering a transient moment of escape for the spectator. I will show that this general perception might be erroneous when historical trajectories are taken into consideration. Especially the advent of digital technology was successful in incorporating rich layers of ambient sound components within the production schemes of sound organization. A thorough study of the historical trajectories of sound production leading to the contemporary digital domain, specifically focusing on the use of ambient sounds, will help to contextualize my critical listening, inquiry, and analyses.

2.2 Ambient sound in sound art

This historical trajectory may also be significant and relevant while discussing and situating sound art developed from field recordings within a contemporary context. I will argue that in sound art the functional aspects of ambient sounds are often dissolved for the purpose of embracing artistic imagination and transformation. However, in the context of sound art, the word “ambient” relates to a rather obscure understanding of environment or atmosphere (Böhme 1993), leading to terms such as “environmental sound art.”¹⁶ No wonder sound artist and theorist Seth Kim-Cohen criticizes the art world’s recent fascination with an

¹⁶ The term “environmental sound art” has been coined by some sound artists and incorporates processes in which the artist actively engages with the environment; See: <https://global.oup.com/academic/product/environmental-sound-artists-9780190234614?cc=dk&lang=en&#>

ambient aesthetics in his book *Against Ambience* (2013). Here “ambience” is understood as the soothing atmospheres that prevail in contemporary sound art exhibition contexts. He identifies a non-critical attraction for immersive experiences that tend to “wash over the senses.” He argues that a strong emphasis on the ambience enhances an alleged perceptual immediacy at the expense of conceptual rigor. Kim-Cohen’s analysis thus heavily critiques what he calls the “ambient aesthetics” of contemporary sound art as “a move toward unmediated experience without concepts.”¹⁷ His views do not, however, allow revealing the deeper ramifications and implications of “ambience” in Sound Studies, as I will contend further.

Ambient music pioneer Brian Eno has defined ambience in the liner notes of *Music for Airports* (1978) “as an atmosphere, or a surrounding influence: a tint” (Eno 1978). This sense of subdued coloring indeed permeates the field of ambient music. However, Eno’s definition shows a tendency to make an easy association between ambient music and ambience. In opposition, I will argue that correlating ambient music readily to ambient sounds or ambience is debatable. As Joanna Demers has shown, ambient music “uses a slew of methods to make it sound as if it lacks a foreground and thus easily melts into its surroundings” (Demers 2010: 117), and thus, as David Toop suggests (1995), hints at an imaginary environment rather than imposing one. I will show that ambiances emerge from specific sites and that their site-specificity cannot be easily erased through artistic transformation.

Contributing to the discussion, Ulrik Schmidt (2012, 2013) has proposed the term “sonic environmentality” to denote an aggregation of the ways ambient sound can affect us. The concept of sonic environmentality further opens up the discourse by making a distinction between three major forms or dimensions: the ambient, the ecological, and the atmospheric. This threefold dissection of ambience helps to create a deeper engagement with the term in a comprehensive understanding. My project intervenes in the discourse by considering ambient sound as a material layer in the hands of sound practitioners and artists. Specifically, I inquire into the ways in which they sculpt the conditions of a relative presence (or absence) and embodiment (or deliberate abstraction) through the mediated processes of recording and spatial organization in the attempt to (re)produce a site’s specific atmosphere.

¹⁷ See: <https://earroom.wordpress.com/2013/12/04/seth-kim-cohen/>

3. Context

From the very advent of sound in cinema, ambient sound has been a practical concern in film sound production, firstly/negatively as unwanted “background noise” from the location and secondly/positively as site-specific information to be included in the diegesis. It is obvious that the latter explains the relevance and role of ambient sounds in sound production. Every site depicted in a story contains distinct and subtle sounds emanating from the environment. These sound sources can include wind, rain, running water, rustling leaves, distant traffic, aircraft and machinery noise, the sound of distant human movement and speech, creaks and pops from thermal contraction, air conditioners and plumbing, fan and motor noises, the hum of electrical machines, room tones, etc. Although film sound has received extensive academic interest, much of this attention has been invested in explaining the role of the voice and music in relation to the visual image (Chion 1994, 2009; Gorbman 1987). Natural, environmental, or atmospheric sounds have largely remained underexplored, although these specific layers of sound carry the primary spatial information for constructing a site’s “presence” (Doane 1985; Skalski and Whitbred 2010; Grimshaw 2011; Reiter 2011; Lombard and Ditton 1997) through an interplay between “diegesis” (Percheron 1980; Burch 1982) and “mimesis”¹⁸ (Kassabian 2013a; Weiss 2011). Therefore, ambient sound deserves careful attention and in-depth analysis.

In film sound research to date there is indeed little discussion about the practice and implications of using location-specific ambient sounds and the specific purposes they serve. Few early writings on film sound have mentioned the environmental or atmospheric potential of ambient sounds. If we take one such an exception, Béla Balázs proclaimed in his article “Theory of the Film: Sound” that:

It is the business of the sound film to reveal for us our acoustic environment, the acoustic landscape in which we live, the speech of things and the intimate whisperings of nature; all that has speech beyond human speech, and speaks to us with the vast conversational powers of life and incessantly influences and directs our thoughts and emotions, from the muttering of the sea to the din of a great city, from the roar of machinery to the gentle patter of autumn rain on a windowpane. (Balázs 1985: 116)

¹⁸ I will explain these crucial terms in the sub-chapter “Concepts.”

With such a passionate and ardent utterance regarding the roles played by natural environmental sounds in cinema and a prescription of what film sounds should be including and incorporating in order to (re)present nature, Balázs, already in the early years of sound films, suggests the strategy of incorporating location-specific environmental sounds or ambient sounds. His enthusiasm, however, is not reflected in ensuing studies on film sound.

In the works of Rick Altman (1980, 1985, 2001, 1992, 2012) the technological development of sound in cinema is articulated, and its ramifications in aesthetic choices are analyzed in the light of sound-image relationships. However, ambient sound's usage is hardly addressed in his analyses, and the sound-site relationship is not discussed at all. Michel Chion's influential writings (1994, 2009) on film sound do not show considerable interest in addressing the role of ambient sound in cinema either. The next generation of scholars addressing sound technology, sound practice, and sonic aesthetics in cinema – such as Mark Kerins (2006, 2011), Tomlinson Holman (1997, 2002) and David Sonnenschein (2001) – do mention ambient sound as a specific layer of sound design, but their writings do not consider the complex relationship between sound and site. A number of recent works do address various aspects of film sound, from synchronization to the Dolby digital era of surround sound. I make a preliminary literature review of these works below and attempt to posit my project within the current research on film sound, stressing its specific contribution.

In his book *Occult Aesthetics: Synchronization in Sound Film* (2014), film scholar Kevin Donnelly offers perhaps the first sustained theorization of synchronization in sound film. Donnelly addresses the manner in which the lock of the audio and the visual exerts a perceptible synergy, an aesthetic he dubs "occult": a secret and esoteric effect that can dissipate in the face of an awareness of its synergetic workings. The book investigates points of synchronization as something like repose, providing moments of comfort in a potentially threatening environment possibly fraught with sound and image stimuli. Correspondingly, a lack of synchrony between sound and image is characterized as potentially disturbing for an audience, a discomfort that signals moments of danger. From this perspective, the interplay between the two becomes more generally the central dynamic of audio-visual culture, which, as Donnelly argues, provides a starting point for a new understanding of audio-visual interactions. This fresh approach to the topic is discussed in theoretical and historical terms as well as elaborated through analyses of and references to a broad selection of films and their soundtracks. Nevertheless, ambient sound is hardly covered in the discussion.

Drawing upon works from the past two decades as well as a collection of interviews with sound designers, sound mixers, and editors, Mark Kerins in his book *Beyond Dolby (Stereo): Cinema in the Digital Sound Age* (2011) uncovers how digital surround sound has affected not just sound design, but cinematography and editing as well. The book includes detailed analyses of a number of American films and their soundtracks. Kerins does mention ambient sound as a specific layer of sound design in digital cinema systems, imparting more spatial information as compared to earlier eras (monaural and stereophonic) of sound production. But his discussion does not consider the complex relationships between sound and site.

Film sound scholar Andy Birtwistle's book *Cinesonica: Sounding Film and Video* (2010) explores previously neglected and under-theorized aspects of film and video sound, drawing on detailed case studies of Hollywood cinema, art cinema, animated cartoons, and avant-garde film and video. Adopting an interdisciplinary approach to the study of the soundtrack, and breaking away from the focus on narrativity and signification that has tended to dominate the study of film sound, the book examines the way in which sound's materiality figures within audiovisual experience. Through a close examination of sound-image relations in a range of film and video forms and genres, including cartoons and scratch video, the book recasts text as the meeting point of audio and visual materialities. Covering topics such as deconstructive film practice, the sound of old films, electronic sounds, and audiovisual synesthetic experience, the book draws on theoretical resources of Sound Studies, musicology, and post-structural theory to provide an alternative to established models of film analysis. Proposing that film and video sound cannot be examined in isolation from the image, the book discusses the temporal, historical, morphological, affective, and sensory dimensions of audiovisuality and asks how sound-image relations might be considered in political terms. Birtwistle's work acknowledges that contemporary sound practices derive the larger part of their impetus from experimental artists. Specific attention for site-specific sounds in films could, perhaps, be traced back to the experimental compositions of, for example, Luc Ferrari and Jean-Claude Risset as well as to the works of film director Walter Ruttmann. The interdisciplinary approach adopted by Birtwistle makes the discussion of sound of interest to those working in a range of disciplines, including film studies, Sound Studies, sonic arts, cultural studies, music, and art history. However, the book does not show specific interest in the exploration of ambient sound.

Kim-Cohen in his book *Against Ambience* (2013) diagnoses the art world's recent turn toward ambience. As explained earlier, Kim-Cohen understands "ambience" as the easy and comforting wash of environmental sounds that dominate recent sound art exhibitions. His

discussion does not expand towards film sound and does not consider the roles of "ambience" in cinema or sound art as an essentially site-specific element.

The books mentioned above use distinct points of entry in approaching the question of audio-visual relationships (Donnelly; Birtwistle), the digital/technological changes impacting aesthetic choices in film sound (Kerins), or the loose "ambient ethos" in the recent works of sound art (Kim-Cohen). They, however, do not read ambient sound as a potential source of site-specific evidence to be considered for in-depth analysis and further investigation. There is indeed no comparable work on ambient sound to date. From that vantage point, this dissertation tries to offer a comprehensive understanding of the underexplored field within film studies beyond the obvious studies in audio-visual relationships. The research is furthermore expected to contribute to a discourse in Sound Studies concerning the evolving relationship between site and sound approached from an artistic and practice-based perspective.

3.1 The audio-visual relationship

The past few decades have seen the establishment of specialized scholarship for the study of film sound. The early writings of Rick Altman and Tom Levin on the history of sound technology have been instrumental in this developing field, examining sound's relationship to the moving image. Chion's seminal works, *Audio Vision* (1994), for example, have also contributed to these canonical texts on film sound as a corpus of developing knowledge focused on understanding the audio-visual relationship operating on the screen. These writings have consistently studied sound in relation to the visual image, whereby sound has been regarded as an element predominantly enhancing the cinematic narrative, a reinforcement of the visual testimony on screen, and/or underlining the emotive potential of a scene. This scholarly stance considers the "soundtrack" as a secondary and one-dimensional accompaniment to the visual storytelling without enacting an autonomous impact on the multi-sensory cinematic experience. In recent works, however, an apparent shift seems to be emerging. Among contemporary scholars, Giorgio Biancorosso (2009) questions the overarching comparisons of sound with image and emphasizes the role of sound and the potential of listening by taking sound as a specific and separate area of research. The idea that sound can be studied separately from the moving image, and that sound in movies is more than the flat and screen-centric soundtrack following the visual narrative, has destabilized the notion of a "soundtrack." This term has retained its historical

relationship to an optical track on the filmstrip, mixed with music, thus retaining a sense of linearity and one-dimensionality.

Following Biancorosso, I will assert that “soundtrack” is a limiting term. This is particularly true for the production methods available in the digital realm, due to the fact that the effects of surround practices utilizing ambient sound transcend a linear representation of the soundtrack and develop into a spatially evocative sound environment that creates an elaborate and fluid cinematic space in which the epistemological grounding of the sounds (Branigan 1989), as related to their respective screen-centric visual referents, is reordered. The wider off-screen diegetic space available with digital cinema systems (Kerins 2006, 2011) appears to be immersive and expands toward providing an embodied experience for the listening audience; it also opens up the possibility of multiple interpretations of sound through subjective positioning. This new setting leads to an interactive sonic space (Dyson 2009) that often appears to unfold itself beyond the visual image and constraints of the screen. Ideas about this interactive, fluid, ambient, and flexible sonic space, seemingly unhinged from the constraints of the screen or an implied objectness of sound, can help the listener comprehend developments in the relatively independent and autonomous practice of sound art in India.

3.2 Sound Studies

Ambient sound as a concept gains currency in contemporary studies of sound, both in films and in field recording-based sound art, ever since digital technology made it possible to easily record sound with high fidelity and precision from the actual location and (re)construct it in various possible spatial organizations of sound. In contemporary media scholarship this is often called the “spatial turn.” Andrew J. Eisenberg notes that “the increasing recognition of the intimate links between sound and space may be attributed to a confluence of scientific and technological developments in the latter half of the twentieth century, including the development of travelling-wave models of auditory perception and the rise of multichannel audio recording and playback” (Eisenberg 2015: 195). I will show that in the digital realm of sound production, the capacity for multichannel audio recording, and playback helped to accelerate this shift toward a spatial sensibility in film sound. This shift is linked to the emergence of sound art in India and also related to an intellectual shift in the social sciences and the humanities, placing an emphasis on place, space, and site. I consider this spatial shift as the *raison d’être* of this research. The present time, with the emergence and rapid establishment of Sound Studies as a vibrant academic field, indeed seems felicitous for

these considerations. A critical listening, informed inquiry, and in-depth analysis of the generally ignored field of ambient sounds will engage with pertinent spatial discourses in Sound Studies. This context will be a useful framework for analyzing artistic production that uses ambient sound as its primary material. Drawing on the notions of ambient sound in the studies of film sound production, the discussion on sound art can focus on the more subjective means by which a site is addressed.

3.3 Film and sound art

The reason to choose both films and field recording-based sound artworks as my cases of inquiry is twofold. Firstly, as I have already mentioned, it is a personal trajectory that I am trying to trace. Secondly, and most importantly, both film and field recording-based sound art are developed through the recording of sounds from sites for the purpose of narration and/or providing a descriptive account of those sites. Besides field recording practices, it is the cinematic medium that provides the scope and incentive to “record sound from a landscape so extensively” (Chattopadhyay 2007: 110). Moreover, in the contemporary form of sound production, the art of producing and delivering spatially engaging and immersive sound experiences have been awakening increasing interest from not only film-goers but also enthusiastic audiences of contemporary sound art. What needs to be investigated is the way in which the technology has been developing, and thus changing, sound recording and production processes designed to handle the subtleties of site-specific and atmospheric potentials of ambient sounds. This project will look at what has not been yet discussed and will build on existing research to demonstrate how sound production has been developing before, as well as through, the advent of digital multi-track recording and surround sound mixing in cinema as well as how these technologies and tools have impacted sound art. Therefore, I believe that a study of the production processes geared toward narrating and describing a site and reconstructing its presence by means of ambient sounds should take into account both the fields of cinema as well as sound art for the research to be comprehensive and useful. Hence, it is of crucial importance that the study deals with the similarities and differences between sound artworks based on field recordings (not always providing a realistic [re]presentation of a site) and the layers of ambient sound in film (attempting to produce a realistic auditory setting – at least in the digital era – by [re]presenting a site). Therefore, these similarities and differences will be discussed to shed light on how sound art can influence and substantially inform the so-called best practices of film productions while concurrently taking a critical approach towards the notions of narration and presence.

4. Justification

4.1 The role of ambient sound

While changes in visual elements are related both to the diegetic world of film and its perceivers, changes in the aural elements are first and foremost related to activities in the film's interior physical or material world (Branigan 1997; Langkjær 2000, 2006). This is because sound in film is fundamentally linked to perceptual processes that reveal the physical aspects of the fiction. Even film theorist Siegfried Kracauer, who emphasizes that cinema is primarily a visual medium, notes that sound in films has "the quality of bringing the material aspects of reality into focus" (Kracauer 1960: 124). This reading makes sound a central provider of information about the material world unfolding in the filmic environment, and explains why sound, more than image, is able to give an embodied experience¹⁹ of a site recorded from the pro-filmic space and constructed carefully in the film space during the production process. Audiences are highly sensitive to the sounds included in the storytelling. Remove the sounds, and see how the entire filmic world collapses.

But first of all, let us evaluate this assumption: why is it that ambient sound is most effective when sculpting a spatial sensation and an embodied experience of site, more so than other layers of sound, such as voice, music, and sound effects? Among these layers, voice includes dialogues between characters, thus relaying the primary narrative information (Bordwell 1997). Amy Lawrence argues that in narrative cinema "the synchronization of image and voice is sacrosanct" (Lawrence 1992: 179), emphasizing the necessity of a stricter method of sound production when dealing with voice, which must be connected to a "body" on the screen. Mary Ann Doane affirms that dialogue or the use of the voice "engenders a network of metaphors whose nodal point appears to be the body." She further states that the sound of the character's voice is strictly "married to the image" (Doane 1985: 162-3). In view of these arguments, voice in cinema is simply less "spatial" in nature, making it more creatively limited as a sound component when compared to ambient sounds. The post-synchronized voice, produced by dubbing or similar practices, is "disengaged from

¹⁹ "Embodied experience" is defined by scholars of digital media as a state of "being surrounded by simulated sensorimotor information in mediated environments that create the sensation of personally undergoing the experience at that moment." (Ahn 2011: iv). I am using the term in the context of this discussion of the digital era of film sound production to underscore a unique capacity of sync sound and surround sound design.

its 'proper' space (the space conveyed by the visual image) and the credibility of that voice depends upon the technician's ability to return it to the site of its origin" (Doane 1985: 164). This return to the original site can be achieved by the technician's creative and innovative use of ambient sounds.

In films, music usually triggers feelings and emotions. Film music is used "largely to set mood or elicit a particular emotional response from the audience" (Kuhn and Westwell 2014). Film music tracks and sound effects "establish a particular mood" (Doane 1985: 55) instead of providing a sense of space. Sound effects are also important for the narration and for creating feelings of, for example, tension and horror. In the mixing stages, the hierarchy of different sound components usually follows specific conventions: "Sound effects and music are subservient to dialogue and it is, above all, the intelligibility of the dialogue which is at stake, together with its nuances of tone" (Doane 1985: 55). In this hierarchy of sonic elements, ambient sound remains fluid and malleable.

On the other hand, ambient sound can provide the specific atmosphere of a site in the production of a "reality" inside the film space. To sound practitioners,²⁰ ambient sound injects life and substance not only to what we see on the screen but also to the off-screen diegetic space. The practitioners use layers of ambient sound to construct the perceptual experience of reality by artistic means (Chaki 2017: 96).²¹ Ambient sound helps to ground the sense of a specific place (Subramanian 2017: 83) in a way no other layer of sound can.²² These practical considerations and the creative perspectives of sound practitioners underscore the spatial nature of ambient sound as compared to the other sound components.

The American film theorist and audio engineer Tomlinson Holman informs us that there are various kinds of ambient sounds used in film sound production: they can vary from the characteristic natural environmental sounds of a given outdoor site to the indoor "room tone."²³ Room tone is the low-frequency ambient sound of an indoor space that comes to the fore when all the actors are silent; it is the sonic layer that is significantly capable of

²⁰ See the Appendix for in-depth conversations with prominent Indian sound practitioners, speaking about the various ways they use ambient sounds in cinema.

²¹ See the interview with Dipankar Chaki in the Appendix.

²² See the interview with Dileep Subramanian in the Appendix.

²³ See: <http://filmsound.org/QA/vocabulary.htm>

transmitting the characteristic auditory details of a particular indoor location. In this respect, Holman suggests that “ambience most typically consists of more or less continuous sound, often with a low-frequency emphasis we associate with background noise of spaces” (Holman 1997: 177). The advent of digital recording makes it possible to record and (re)present a deep layer of low-frequency sounds (Kerins 2011). Earlier recording media, analogue optical recording and analogue magnetic recording, with their limited dynamic ranges, were less capable of capturing the full spectrum of locative ambient sounds, such as the elusive layer of a room tone. The low frequency content, such as rumbles and room tone in digitally recorded ambient sound layers, arguably contributes to a sense of embodiment. An embodied experience of sound in cinema is provided by a full-frequency multi-track digital recording of site-specific bodily-perceptible ambient sounds, later diffused through a multi-channel surround sound design. As rightly argued by Kerins (2006, 2011), this sense of embodiment through bodily-perceptible low frequency sounds finds prominence in the digital realm of sound production – an important aspect for sound design practices, where this capacity is termed “adding body to the sound.”²⁴ The concept of embodiment draws from the phenomenology of sonic perception. French philosopher Maurice Merleau-Ponty has argued that perception is the product of a multisensory relationship between the individual’s “body” and its surroundings as a whole (Merleau-Ponty 2005: 273). Don Ihde resonated with similar views, claiming: “I do not merely hear with my ears, I hear with my whole body” (Ihde 2007: 44), substantiating embodiment as a useful concept in discussing ambient sound.

Ambient sounds are not always directly anchored to the specific sources visible on the cinematic screen, unlike voice and effects, which usually emanate from the respective characters or objects onscreen (Kerins 2011; Holman 2010), the exception being certain non-diegetic usages, such as voice-overs. This particular attribute of ambient sound gives it relative freedom when compared to other sound components (Chatterjee 2017: 84), allowing it to be perceived as an autonomous element and heard outside the constraints of the visual image.²⁵ This creative autonomy also allows sound practitioners to use ambient sounds more freely and independently, exploring their spatial characteristics and site-specific associations. Therefore, the perspectives of Sound Studies, in which the spatial

²⁴ See the Appendix for interviews I conducted with various renowned sound designers, production mixing specialists, mixing engineers, sound editors, and location recordists.

²⁵ See the interview with Biswadeep Chatterjee in the Appendix, page 84-85.

characteristics of sound are investigated, are taken into account in this research as pertinent and useful.

As I have already discussed in the previous subchapter, Sound Studies has emerged and rapidly established itself as a vibrant and productive academic field, co-created through the recent flux of investigative scholarship. Two consecutive compendia, *The Routledge Sound Studies Reader* (2012) and *The Oxford Handbook of Sound Studies* (2013) have been followed by a number of peer-reviewed journals, such as *The Journal of Sonic Studies* and *Ear | Wave | Event*, that are entirely dedicated to the studies of sound. These examples demonstrate that Sound Studies is currently a rewarding area of research receiving wider academic attention. In this unfolding and intensified discourse on sound, in-depth studies as well as inspired and dedicated inquiries into the production of film sound and sound art should be welcome and well-accommodated. Jay Beck and Tony Grajeda quote Rick Altman in the introductory chapter “The Future of Film Sound Studies” to their edited anthology *Lowering the Boom: Critical Studies in Film Sound* to emphasize the appropriateness and legitimacy of specialized and in-depth investigations in film sound “within the growing field of Sound Studies” (Beck and Grajeda 2008: 1). In this context, my research can be seen to be in dialogue with an integral area of current discourse in Sound Studies.

Film scholars have already pointed out that technical advances in cinema have affected the spatial aspects of sound creation (Bordwell and Thompson 1985). I hypothesize that the evolving spatiality in cinema is primarily supplied by additional layers of ambient sounds, while other layers, such as voice and sound effects, have continued to remain largely screen-centric throughout the technological transitions from monaural and stereophonic to the contemporary digital surround environment. There are instances of voice carrying spatial information, particularly in the case of a digital multi-track sync sound practice, as Kerins shows (2011). Instead of dubbing inside an inert studio – a practice that was standardized in many national cinemas for the larger part of late 20th-century cinema history (1950s–2000) – the sync track would include some spatial information directly recorded from the location. This would add to the overall sense of a site-aware experience, but it is the layer of ambient sound that would carry the *primary* spatial information as well as being the basic tool in the hands of sound practitioners to (re)construct the site and to enhance the “ultrafield” of the

sonic environment (Holman 2001; Kerins 2011).²⁶ Following this argument, my dissertation extends beyond other research on voice and background music, focusing instead on the ramifications of the implementation of ambient sounds on and beyond cinema.

4.2 Ambient sound and digital technology

Historically, the sole reliance on voice to carry out the primary threads of a narrative has been decreasing ever since other channels of sound have been opened up to distribute the screen-centric appeal of films towards an expanded cinemascope and surround sound (Rogers 2013). This development can be seen as a shift away from the “vococentricity” of cinema (Chion 1994) to a more inclusive realm of digital systems. Since the 1990s, a large-scale conversion from analogue recording, analogue production practices, and optical film exhibition to digital technologies has taken place. Digital technology has been integrated into the production and post-production stages of filmmaking. The ramifications of these developments have been far-reaching; it is particularly evident in the way cinematic experience has changed through the use of sound, such as multi-track synchronized sound recording and surround sound design. In very recent times, digital multi-channel surround sound systems like Dolby Atmos or Auro 3D have altered the way in which the film “soundtrack” is rendered and organized. These newer environments have reconfigured the audience’s experience of the film space, diverging considerably from earlier predominantly screen-centric mono- and stereophonic settings, integrating and augmenting the desired aesthetics into the surround environment through a reordering of the spatial organization of film sound. Following these transitions, contemporary cinema facilitates specific practices involving ambient sound to create cinematic experiences that, as I will show here, are spatially wider, more elaborate, and relatively fluid compared to the screen-centric monaural soundtrack or the flat surface of a stereophonic composite soundtrack, slightly wider but still constrained to the two-dimensional frame of the screen. These earlier organizations of film sound offered an anchoring of the story-world narrated on the screen, altogether ignoring the site specificities in the diegesis and instead evoking sound’s emotive potential by using post-synchronized effects and background music. I will argue that digitalized sound practices have been incorporating the multi-channel surround design of ambient sounds that handle the site in spatially perceptible ways, rather than catering to a voice and screen-oriented audio-visual contract as postulated by Chion earlier.

²⁶ “Ultrafield” is an extension of the term “superfield” that Michel Chion used to describe Dolby Stereo and refers to a new form of sound-derived spatial configuration associated with digital sound systems.

Chion's views of film sound (1994, 2009) may appear outmoded in current analyses of sound practices that enable more layers of sound to be included in their spatial organization. Contrary to what Chion had envisioned, today's multi-channel universe of film sound builds surround environments, assuming that audiences will understand that sounds originating in the surround channels are part of the same diegetic space as those originating onscreen (Kerins 2011), expanded with elaborate details beyond the screen. Innovative practices with sound in the digital realm lead to new experiences in which audiences engage with cinematic sites through immersive listening, employing a spatial cognitive engagement with sound. These practices need new theoretical models and approaches to expand those already existing (e.g. Chion). These new approaches should include studies of sound that look and listen beyond the domination of the moving image, with its screen-centric tendencies. In this context, my project enables a novel framework for studying the increasingly important layers of sound included in the digital realm and explores sound's spatial capacity to enrich the cinematic experience. The "spatial turn" (Eisenberg 2015) in sound production, manifested by the use of ambient sound, will be studied in the light of its development from monaural synchronized sound recording and post-synchronous dubbing to the contemporary digital multi-track synchronized or "sync" recording, as well as from monaural and stereophonic mixing to digital surround sound design, thus putting the studies of ambient sound within a historical context. Because the knowledge pool of film sound research used here primarily refers to American cinema, a study of the use of sound in Indian cinema can be considered a useful addition. As the current relevant literature on sound in films almost always emerges from the perspective of commercial films, most often those produced in Hollywood, the frequent references to that specific literature constitute the project's epistemological grounding on which the examples from relevant Indian films can be theorized, contextualized, and critically analyzed.

Hence, in this dissertation, I will investigate the capacity of ambient sounds to sculpt the presence of the site, bringing in a much-needed focus on the complex relationship between sound and site beyond the predominantly image-centric studies in film. Instead of relying on the traditional theories of film sound, with its typical underscoring of the sound-image relationships, I intend to shift the emphasis toward the spatial aspects of sound production, partly by expanding the discourse towards field recording-based sound art. Exploring concepts like diegesis, mimesis, and presence from the growing theoretical corpus of Sound Studies, I will reformulate the Schaferean notion of the soundscape to include a discourse surrounding site-specificity of ambient sounds. In the second part of the dissertation, a few

field recording-based sound artworks produced in India will be discussed to illustrate the technologically-intersecting but aesthetically-different development of sound art dealing with site-specific issues. The discussion will enable informed comparisons between the specifics of film sound and contemporary sound art productions.

5. Key concepts

5.1 Diegetic sound

Often cited in film theory is the Greek notion of storytelling, *diegesis*, which denotes using a narrative²⁷ process to construct the “diegetic world,” which, as Mary Ann Doane has noted, is the internal space of the cinematic universe framed and constructed by the technical tools of filmmaking. Translated to sound, this term could be understood to relate to the environmental, incidental and other location-specific sounds that are made to emanate from the story space in which events occur (Doane 1985). Claudia Gorbman defines *diegesis* as “the narratively implied spatiotemporal world of the actions and characters” (Gorbman 1987: 21). Both Doane and Gorbman use the terms “space” and “world,” underscoring the constructed nature of the film space during narrative storytelling. The term “diegetic sound” helps us to consider the sounds that inhabit the constructed world and whose sources are visibly present within the space of filmic events. Likewise, any sound outside of the interior space of the filmic universe is called non-diegetic. The most common example of non-diegetic sound is background music, which the characters do not hear and which is not present in the space of filmic events; the music is not grounded in the filmic reality. As I have discussed before, the incorporation of location-recorded ambient sound contributes to a realistic sense in producing the presence of the site. Ambient sound can be regarded as the means of reinforcing a sense of realism by enhancing a site’s believability in the spatial environment. In other words, ambient “[S]ound is used to make the image (of the site) ‘credible’” (Wayne 1997: 176). Hence, examining the roles of ambient sound to construct

²⁷ Narrativity in film theory assumes a distinction between “the story that is represented and the actual representation of it” (Bordwell 1985: 49), a distinction between the narrative as it is constructed by the spectator or the audience (the auditor/listener) and the formal systems of representation employed in a film through the making or production processes of the film. “Diegesis” bridges this gap between the story and its construction by the audience, since in *diegesis* the narrator tells the story rather than showing it, thus involving the imagination and interpretation of audience.

the site's relative presence in the story-world must take into account the concept of diegesis.

In the historical account, diegesis is understood as the process of illustrating the story-world with all the narrative elements that are shown or inferred within the filmic content. The process allows for a certain mediated discernment of the phenomenal world within the story, including all the physical sites framed inside the film, be they indoor or outdoor, urban or rural, closed or open. These sites might be narrated with their auditory features, characteristics, atmospheres and "soundmarks"²⁸ (Schafer 1994) in order to establish their presence in the mind of the audience, who can construe a diegetic world from the recorded and (re)presented sonic materials as they take in tiny aural hints to interpret contours of the sites from the relative volumes and spatial matrixing of these ambient sounds. Noël Burch (1980) states that diegesis includes a description of the narrative action proper, including places, people, clothing and *sounds*. As Edward Branigan sees it, diegesis is the "implied spatial [...] system of a character – a collection of sense data which is represented as being at least potentially accessible to a character" (Branigan 1992: 35). Both scholars point out the necessity of the spatial component within a narrative sound practice (location-specific recording and spatial design of ambient sounds as the sense data) in the (re)creation and (re)construction of the pro-filmic space.

It is not new that shifting sound practices in cinema, impacting the diegesis, have been studied using the theoretical corpus about narration and storytelling. Writing on the specifics of narration in the digital realm of American cinema when using DSS (Digital sound systems), Kerins argues that,

[F]ilmmakers have taken advantage of DSS's expansion of the cinematic soundfield beyond the screen. To some degree this represents a simple acceleration of established narrative strategies – filmmakers have [...] relied on ambient sound in the 'surrounds' to set up diegetic spaces, and this trend has certainly continued with movies employing DSS. The difference here is that DSS has encouraged the construction of complex multichannel sound mixes, where the different sounds in each speaker channel together create a seemingly realistic and *complete* aural

²⁸ "Soundmark," inspired by the word "landmark," was coined by Schafer to refer to a site-specific sound that is unique or possesses location-related qualities that make it noteworthy.

environment in a way difficult (if not impossible) with monophonic or Dolby Stereo sound. (Kerins 2006: 44, emphasis mine)

Kerins writes here about the narrative strategy of the practitioner embracing digital systems. He, however, is less interested in exploring ambient sound as an important component in this strategy. Nevertheless, from his insights we get an idea about the concept of presence. As he writes, the apparent completeness of the constructed aural environment in cinema suggests the relatively high (or arguably highest) degree of presence in the rendering of the cinematic site as (re)presented in the story-world. This story-world would be considered diegetic if the elements that belong to the film's narrative universe are included in the storytelling.

There is a question of mediation in diegesis in relation to sound. This mediation allows the narrator to control how much is revealed in the narration – objects, situations, spaces and characters that inhabit the story-world. The process of mediation follows two stages of sound production: the recording of sounds from the site itself and the sound design in the studio to recreate and produce the site. Taking a moral and ideological stance against the mediation of sounds recorded from the sited environments, Schafer stated that “we have split the sound from the maker of the sound” (Schafer 1994: 90). I will show how these “torn” and “ruptured” sound recordings can go through further mediation in the practice of sound art whereby sonic materials are processed and organized spatially to create new diegetic worlds that are often minimally abstracted from their site of recording. In this strategy, ambient sounds contribute to the construction of the auditory setting undergoing artistic transformation.

5.2 Mimesis

Theorists of early cinema have argued that, “since film is always framed by the camera (and sound recorder), it is therefore a diegetic form and not a mimetic one” (Prince, as cited in Kassabian 2013a). Opposed to the basic tenets of diegesis, i.e. narration and depiction, “mimesis” as a concept suggests imitation or representation (Weiss 2011; Dumouchel 2015). While diegesis *narrates* the action, mimesis *shows* the action (Kassabian 2013a). Kassabian suggests that narration through sound in cinema combines both strategies to a certain degree: “Surely all realist film forms are both diegetic and mimetic in significant proportions, and it might be more interesting to consider how, when, and why those proportions shift in one direction or another” (Kassabian 2013a: n.p.). I intend to discuss

how these proportions shift in the context of the move from analogue to digital production frameworks. I will show that with contemporary digital sound techniques the sites appear more *present*, being spatially wider, more elaborate and fluid compared to the screen-centric monaural soundtrack or the flat surface of the stereophonic composite soundtrack. The digital realm's sound practice has incorporated the multi-track synchronized sound recording and surround spatialization of ambient sounds in a more mimetic process of representation, *showing* the sites with intricate details, instead of employing other overly controlled ways of *narrating*, as if "holding a mirror to the nature" (Dumouchel 2015: 51). It is no surprise that the sites appear mimetically more present in the digital era than in previous eras of sound production, as it has become possible to render "sounds with an increased exactness" (Beck 2008: 72). In other words, I see a shift occurring from the diegetic to the mimetic as we move from the analogue to the digital era of cinematic sound production.

5.3 Presence

The conceptualization of "presence" concerns the degree to which a medium can generate a seemingly accurate reproduction of objects, events, and space – representations that look, sound, and/or feel like the "real" thing. In the domain of film sound studies, Doane claimed that, "concomitant with the demand for a lifelike representation is the desire for 'presence', a concept which is not specific to the cinematic soundtrack but acts as a standard to measure quality in the sound recording industry as a whole. The term 'presence' offers a certain legitimacy to the wish for pure reproduction" (Doane 1985: 163). I would like to underline the word "pure" used by Doane – the word denotes a striving for a natural and complete registering of sound in the recording. Doane made this reflection on presence before the arrival of digital technology in sound recording. Her conceptualization of presence was drawn from analogue optical or magnetic sound recording practices. In the digital realm, presence gains currency in the digital sound system's capacity to produce the "complete sonic environment" (Kerins 2006), presenting detailed sonic information from the location and surrounding the audience member in a spatially richer perspective, creating an "immersion in the filmic environment – audiences are, [...] aurally, literally placed in the middle of the action" (Kerins 2006: 44). In contemporary scholarship on sound, presence is defined as the "feeling of being present" (Reiter 2011: 174) even in an artificially constructed environment, or, in broader terms, as the "perceptual illusion of nonmediation" (Lombard and Ditton 2006: 9). These definitions and conceptualizations of presence suggest a tendency towards mimetic representation of sound; in the digitalized production of cinematic environment, the pro-filmic space appears with an intensified "sensation of reality"

and “completeness.” This notion of presence helps to explain how audiences experience a feeling of bodily “being there.” In Part 2 of this dissertation, in an article on digital sound practice (Article 3), I will demonstrate how an aesthetic of “spatial fidelity” (Kerins 2011) pervades within the digital realm. This notion of spatial fidelity operates closer to “spatial realism” (Altman 1994) than the term “sound fidelity” that Jonathan Sterne discusses in *The Audible Past* (2003).²⁹

While Sterne is primarily concerned with the “social circulation” of digital audio reproduction, I am more interested in the inherent technical characteristics of digital audio recordings, such as a higher definition, wider headroom, broader dynamic range, an improved signal-to-noise ratio, and multi-channel spatialization – aspects that enable digital audio to produce reality in a spatially plausible way. Drawing attention to the spatial fidelity of the recording capabilities inherent in the technologies of digital systems – as do Kerins, Sergi, and Holman – I emphasize the spatial faithfulness and ambient lifelikeness that digital sound production provides.³⁰ This sense of spatial realism, as David Neumeyer suggests, works as a system of

²⁹ For Sterne, the question of sound fidelity is more of a social construct and social choice. While Sterne questions whether “the old vacuum-tube equipment sounds better,” he also affirms that “nobody disputes the clarity of digital reproduction” (Sterne 2003: 277). The preference for a “better” sound here hinges on the predominantly social and cultural aspects of sound reproduction. In a later article, “The death and life of digital audio” (2006), he questions the “metaphysical assumptions” about digital audio recording to be lacking in life and naturalness, arguing that “digital recordings have as legitimate a claim on sonic experience as their analogue counterparts;” based on their social lives, “digital recordings are at least as lively as analogue recordings ever were” (Sterne 2006: 338).

³⁰ In Part 2, Article 3, of this dissertation, entitled “Being There: Evocation of the Site in Contemporary Indian Cinema,” I show and discuss in detail that digital sound recording and production frameworks have introduced a number of creative possibilities, including a significantly larger dynamic range, which is a fourfold improvement over the monophonic and almost double that of the stereophonic format; a larger headroom – a major improvement over both the monophonic and stereophonic formats; discreet channels for multi-channel systems, like Atmos; wider panning for sound spatialization; and full-frequency channels with a consistently flatter response than any analogue counterparts. These technical improvements, I argue, contribute to faithful recordings made on location and faithful-to-original sound design deployed in the studio.

narrative processes that draws upon plausibility in the physical worlds, accomplished through digital recording and design (Neumeyer 1997: 16).

However, even within the conducive creative environment of digital sound production in Indian cinema, the question remains as to whether all the subtler aspects of the acoustic worlds of the urban and rural sites of India are narrated truthfully, “mimetically,” and faithfully. In many occasions, the noisy parts of the ambient sound recordings are controlled and sanitized by editing and advanced noise reduction to provide “cleaner” sonic environments.³¹ The typically syncretic, chaotic, and inchoate structure of Indian cities are reflected in the multiple layers of sounds from pre-industrial, industrial, and post-industrial eras, simultaneously active in juxtapositions or in contrapuntal relationships with one another. The urban sound environment is thus sonically overwhelming and potentially disorienting for the listening subject (Chattopadhyay 2014: 140). This is not always fully manifest(ed) in the augmented sonic environment of Indian films, where more “aestheticized” accounts of these sites are heard. This spatial atmosphere, however, can no longer be understood as a linear and one-dimensional “soundtrack,” rather, it might be called a “cinematic soundscape” (see Part 2, Article 3). Here I explicitly refer to R. Murray Schafer’s original formulation of the term “soundscape,” indicative of “an acoustic environment as a field of study just as we can study the characteristics of a given landscape” (Schafer 1994: 7). This formulation “seems to offer a way of describing the relationship between sound and place. It evokes the sonic counterpart of the landscape” (Kelman 2010: 215). However, at the same time, the Schaferean soundscape’s particular aim is “to draw attention to imbalances which may have unhealthy or inimical effects” (Schafer 1994: 271). This “moralizing” (LaBelle 2006: 203) tendency applied to controlling the incoming ambience by means of “acoustic design” has a strong correspondence with the “sound design” deployed in contemporary Indian cinema, involving editing and advanced noise reduction. The underlying intention is to transform the “lo-fi” sounds into “hi-fi” sounds, removing “noise” contents while prioritizing the potential entertainment and enjoyment of the audience members. According to Schafer, “lo-fi” sounds are “overcrowded, resulting in masking or lack of clarity” (Schafer 1994: 272); they have a lower signal to noise ratio and tend to impose “an increased level of disturbance upon the body, society and the environment” (LaBelle 2006: 202). “Hi-fi” sounds, on the contrary, are defined as “the quiet ambience” (Schafer 1994: 43), having “a low ambient noise level and discrete sounds

³¹ For an elaboration of this statement, please refer to the interviews with sound editors such as Bobby John in the Appendix.

emerge with clarity" (Rodaway, as cited in LaBelle 2006: 202). This compulsion of achieving clarity in the cinematic soundscape leads the sound practitioner to often use "soundmarks"³² instead of accurately capturing the complete ambience of the sites. This tendency to underline a particular sound, often at the expense of many other ambient sounds emanating from a specific site, intends to sonically compensate for the noise reduction and the editing of many sync sound layers in the post-production phase.³³ These "industrial" norms, practical rules, and creative regulations embedded in the essentially "functional" aspects of film sound production often tend to thwart the artistic potential of the sound practitioner, keeping it from flourishing and further enriching the film's auditory spatial experience.

5.4 Artistic intervention and transformation

On the other hand, in sound art, the mimetic representation of a site in the form of field recordings tends to develop more into unrestrained, idiosyncratic, playful, and often subjective, constructs. These constructs, as I will show in the three articles discussing my own artworks (see Part 2), are typically a result of intricate interplays between a recognition of the site and its abstraction in the compositional stages, utilizing the ambient sounds extensively recorded on the field as compositional ingredients or raw materials. Field recording-based sound artworks often transcend the Schaferean notion of the soundscape. These works neither give substantial importance to underscoring stereotypical "soundmarks" of the site, nor do they intend to enhance the "ecological" discourse of differentiating between "lo-fi" and "hi-fi" environments. These works, in my assumption, encourage a rather subjective interaction with the site. As Brandon LaBelle articulates, "artistic production is but a mirror of the artist's own image: mimesis depicting interior states, psychological anxieties, euphoric hopes, and ecstatic dreams. Art represents life at its most poignant, its most dramatic, and its most memorable" (LaBelle 2006: 212). The artist's own image of the site as derived from the interaction with the site while doing field recording frames the selfhood to be inscribed in these sound artworks. The artist's subjectivity also reflects in the way these works are "composed." The interviews with field recording artists in the book *In the Field: The Art of Field Recording* (2013) reveal the current discourse on field

³² According to Schafer, a soundmark is "a community sound which is unique or possesses qualities which make it specially regarded or noticed by the people of that community" (Schafer 1994: 10).

³³ Post-production is work done on a film (or recording) after filming or recording has taken place. In post-production stages the editing, processing, designing, spatial organization, and mixing of sound are performed.

recording as an artistic practice. The discourse reveals and contributes to a larger debate between a "realistic presentation" and an artistic intervention, transformation, mediation and manipulation of sound. This tension often challenges and dictates the artistic decision as to whether field recording in its presentation as a composition should be processed or presented in its raw form, that is, with as little post-production editing as possible. This decision largely depends on the artist's intentions in approaching a specific site as a subject of artistic intervention and aesthetic transformation.

Many listeners and artists alike tend to appreciate works that are unprocessed. Likewise, the deliberate choice of medium and methodology for particular recordings may contribute to a perceived compositional structure without the need for artistic transformation. Needless to say, this choice of preserving the rawness of sound materials for the potential listener's interpretation essentially arises from a preference for "purity" in the artist's sonic sensibility. Taking part in this debate, I will argue that the choice of method largely depends on the desired intervention of the artist to produce a certain narrative of the site. In most cases, the site-specificity of the recorded sounds are deliberately altered by further compositional mediations, be they entirely based on recording or involving studio processing. However, I will show that sound artworks that go through artistic transformation via compositional mediations using sound recording and spatialization techniques might appeal to a wider range of listeners than a purely documentary approach of field recording. Through artistic interventions and transformations, sites are rendered in nuanced ways.

I will show how the discourse of "acoustic ecology" becomes reconfigured in the shift from ambient sounds recorded at the site to the production of what is termed "soundscape composition," taking a point of departure from Schaferean terminology (Kelman 2010) and underscoring artistic freedom and aesthetic sensibilities.³⁴ Using this particular term to

³⁴ I am aware of other criticisms of the first generation proponents and practitioners of acoustic ecology, notably those of Jean-François Augoyard and his fellow researchers at CRESSON. In his work *Sonic Experience: A Guide to Everyday Sounds*, Augoyard comments on the limitations of the conceptualization of "acoustic ecology" and "soundscape" as developed at Simon Fraser University by Murray Schafer et. al. in the late 1970s. As Augoyard writes: "The application of the criteria of clarity and precision discredits a number of everyday urban situations impregnated with blurred and hazy (not to say uproarious) sound environments, which would then belong to the 'lo-fi' category. We must therefore question whether, other than for the fields of aesthetic analysis, creation, and conservation,

denote compositions developed from field recordings, Sound Studies scholar Joanna Demers argues that field recordings as “audio footage ties a soundscape composition to the ecological, social, historical, or cultural dynamics of a specific location, which both personalizes and politicizes the act of listening” (Demers 2010: 120). What she means is that the material layers of ambient sound collected through field recording from a particular site always also carry some documentary evidence. The composition also allows the listener to co-create the way the site is perceived. To give the listener a fertile space or open-ended situation in which to listen in an engaged, embodied, and subjective way, the artist might choose to intervene in and artistically transform the field recordings in such a way that they would be considered sound art rather than pure documentary.

This capacity of ambient sounds to provide site-specific evidence in sound art does not differ from that of ambient sounds in film production, but what is unique is a distancing from an ontologically-driven approach to a site, weaving it, rather, into an ambivalent reproduction that is open to multiple contingent interpretations “by bringing place out of place and toward another” (LaBelle 2006: 213). It is no surprise that Demers finds sound in an artistic context “a tantalizing phenomenon that simultaneously discloses and hides a great deal about its origin” (Demers 2010: 115). To substantiate my explanation of why I believe artists prefer to avoid presenting field recordings as purely documentary works, I refer here to John Drever’s essay “Soundscape Composition: The Convergence of Ethnography and Acousmatic Music” (2002). In this essay, Drever describes “soundscape composition” as the juxtaposition of site-specific ethnography and musical composition, incorporating ambient

the use of the term soundscape remains useful and pertinent” (Augoyard 2014: 7). In my project I take his, and particularly Kelman’s, criticism as important points of departure to argue for the artistic intervention and transformation of the locative soundscape through a sound artwork.

Granted, several of these early-generation acoustic ecologists were also composers themselves. However, my ensuing discussion will show how the transformation and artistic mediation of locative soundscape into a work of composition, such as *Kits Beach Soundwalk* by Hildegard Westerkamp, remains underexplained by the theories of acoustic ecology provided by these early proponents of the term. While discussing *Kits Beach* in the Conclusion, I notice a tension between acoustic ecology and sound art based on field recordings: whereas acoustic ecology seems to aim for recording “reality” (e.g. in order to preserve site-specific soundscapes which would otherwise disappear, for example due to rapid urbanization), sound art based on field recordings often puts aesthetic qualities first.

sound as its key ingredient.³⁵ This articulation takes into account the aspects of convergence between the site-based evidence embedded in the field recording and the sonic abstraction brought about in the artistic practice of recording and/or composing. Both Demers and Drever's formulations depart from the Schaferean notion of the "soundscape," embedded within environmental and ecological perspectives of rural and urban sites, in order to embrace the artistic and compositional possibilities of field recording.

6. Research method

The dissertation is developed as a dialogical approach investigating how ambient sound as specific material contributes to the production of the experience of particular sites: first, in a number of Indian films and, second, in a few sound artworks developed from field recordings made at particular sites in India. Methodologically I have followed three tracks: historical research, interviews, and artistic research. It is specifically the cross-pollination of these three parallel tracks which generates the methodology of this dissertation. While the interviews have provided me with insights and the raw materials needed to build my arguments with regard to the historical developments, the artistic projects have, in turn, drawn from the historical analysis. Without my education in film sound, I could not have made these specific sound artworks, and, conversely, my sound art practice has been a response to the ways ambient sound was historically used or ignored within the larger schemes of Indian cinema. In other words, the apparently exclusive and disparate realms of theory and practice are merged here.

6.1 Historical overview

As explained above, ambient sounds used in the cinematic narration directly relate to the sites portrayed on the screen. The relationship between site and sound is constructed according to the narrative strategy undertaken by the filmmakers/directors but also depends largely on the craft of the sound practitioners. It is therefore necessary to understand how

³⁵ Ethnography has its own tradition of field recording, as do other disciplines, such as ornithology, anthropology, and archival research. Although I am aware of these and other disciplines in which field recordings are used, here I concentrate on the context of a sonic ethnography which champions so-called "location study," that is, the gathering of extensive information from a specific site through ethnographic means before and while the actual recordings take place (see <http://nemeton.org.uk/other/soundscape-composition/> and also the interview with sound recordist Lasse-Marc Riek in Lane and Carlyle 2013: 171-179).

ambient sound is conceptualized before we embark on an inquiry into its capacity to provide site-specific evidence. Drawing on the notions of atmosphere and ambiance as spatial elements intrinsic to the diegetic universe and following the processes that transform the “pro-filmic space” into “film space” via recording and sound organization, it can be argued that the choice and arrangement of sound substantially effects the spatial dynamics of the sonorous space of the *mise-en-scène*.

I introduce the neologism “*mise-en-sonore*” here to describe an *auditory setting* that in effect influences the verisimilitude or believability of a filmic work in the ears of the audience. As the sonic equivalent of *mise-en-scène*, the term “*mise-en-sonore*” can be understood as the mediated atmosphere designed to provide a specific sensation of the site through ambient sound use. This invention and loose formulation of the term expands upon film theorist James Lastra’s conceptualization of the terms “film space” and “pro-filmic space” and draws upon the definition of the same terms by film historians Annette Kuhn and Guy Westwell, who declare that a role of ambient sound in the process of narration and description is “to preserve the integrity of the real-life space” (Kuhn and Westwell 2012: 333). For instance, the soaring sound of wind arising in the mid-shot of a room can suggest the presence of a nearby sea or the arrival of a stormy upheaval; a dense sound of traffic in a similar shot may suggest the presence of a mundane urban milieu. The aesthetic choices of the quality, volume, texture, design and spatialization of these layers of ambient sounds will determine the presence of the specific sites in the cinematic story-world. Hence, I will examine the nature of ambient sound usage in various corresponding and intercepting phases of sound production in India: (1) analogue recording (direct optical), synchronized sound, monaural mixing; (2) analogue recording (magnetic), dubbing, stereophonic mixing; (3) digital sync recording and surround sound design, in three respective chapters. The critical listening and reflective analyses in these chapters will develop the top-down approach of this study.

6.2 Interviews

Correspondingly, learning about the nitty-gritty of sound production through in-depth conversations with established sound practitioners as first-hand documentation of what has historically transpired in the use of sound is a prerequisite in understanding how the *mise-en-sonore* or auditory setting is produced in cinema. A discussion of current practice and the claim that sound production with digital technology has impacted the cinematic experience

need complementary empirical evidence. The interviews with the sound practitioners can be considered to be the bottom-up approach of my research.

The interviews are based on a specific set of semi-structured and open-ended questions about the handling of the ambient tracks from recording to design and how technology impacts these processes.³⁶ According to scholars of qualitative research in the social sciences Jody Miller and Barry Glassner, semi-structured and open-ended interviews may solicit “authentic accounts of subjective experience” (Miller and Glassner 2011: 131). The interviews that I have conducted for empirical evidence helped the sound practitioners “to speak in their own voices about their art and craft” (LoBrutto 1994: 1). Sound Studies scholar Mark Grimshaw asserts that a questionnaire-based qualitative approach involving semi-structured interviews “allows the interviewer a certain level of control which directs the interviewee down particular paths. Equally it allows the interviewee to expand on themes outside the limits of the questions, which can reveal unexpected information” (Grimshaw 2011: 54). The dialectics between the top-down approach of reflective analyses and the bottom-up approach of interviewing thus form the backbone of this research, ensuring that “even the more abstract notions about filmmaking and cinema remain grounded in real-world practices” (Kerins 2011: 10).

The interview with well-known sound re-recordist Alope Dey focuses on various modifications and alterations within re-recording and mixing practices during the shift from the analogue to the digital era. The interview with the on-location production mixing engineer Anil Radhakrishnan, one of the younger generation of sound practitioners primarily working with digital technology, focuses on the nitty-gritty of location recording with multi-track digital sync technology, involving innovative methods and approaches. The interview with veteran sound and music mixing engineer Anup Deb explores the practical differences between the analogue and digital domains of sound recording and mixing. Anup Mukherjee, another veteran sound mixing engineer and sound designer working primarily in the Bengali film industry of Kolkata in Eastern India, talks about the arrival of digital sound in Indian cinema and its impact on filmmaking: the way sound technicians have been upgrading their skills, approaches, and methods. Other veteran sound practitioners, such as Hitendra Ghosh, provide insights into this change through personal anecdotes. Octogenarian Jyoti Chatterjee, sound mixer for many of Satyajit Ray’s films, talks about early sound recording and mixing in the pre-dubbing era and the introduction of dubbing in Indian cinema. His interview

³⁶ See the basic format of the questionnaire in the Appendix.

provides valuable insights into Ray's use of monaural mixing. Shyam Benegal, one of the pioneers of independent Indian cinema, talks at length about the necessity of ambience in films.

The younger generation of sound designers, such as Biswadeep Chatterjee, Dileep Subramanian, Dipankar Chaki, Manas Choudhury, Bobby John, P. M. Satheesh, Promod Thomas, Vinod Subramanian and Kunal Sharma, talk of various methods of working with sound in cinema after the introduction of digital technology. They also talk about the role of ambient sound and sound design in creating site-specific atmospheres. They also speak about the introduction of digital synchronized sound in Indian cinema – technically known as “sync” sound. The conversation with two of the pioneers of “sync” sound in Indian cinema, Nakul Kamte (*Lagaan*, 2001) and Subhas Sahoo (*Kaminey*, 2009), are particularly insightful as they discuss real world mechanisms and professional ploys of recording sound on location in the quest to (re)produce an authentic and realistic tone and texture of the site. In a longer conversation, Oscar-winning sound designer Resul Pookutty (*Slumdog Millionaire*, 2008) talks about the various practical struggles in sustaining a sync sound practice, working with surround sound formats like Dolby Atmos, and ensuing changes in the philosophy of sound production practices. My contemporaries – such as Pritam Das, Sukanta Majumdar, Hitesh Chaurasia and Jayadevan Chakkadath – are particularly assiduous in talking about the role of ambient sound in transforming the experience of sound towards an embodied experience. They inform us about multi-channel sound systems like Dolby Atmos and Auro 3D and the enormous possibilities these systems open up for narrating the story with intricate details about the site.

These sound practitioners inject the project with practical insights based on the rudimentary aspects of the real world of sound production. The interviews shed light on India's normative modes of cinematic sound practice. For example, according to one of the sound practitioners,³⁷ one reason for not using sync sound earlier has been the working structure within the Indian film industry, which has been based on certain stardoms and inflexible hierarchies.³⁸ Sync sound requires the glorified actor's complete participation on the film set,

³⁷ See the interview with Anup Dev in the Appendix.

³⁸ Within this hierarchy, several other crew members, among them the music director, receive more acknowledgement, attention, as well as time than the director of audiography or other sound technicians. Aloke Dey claims that “the music director who is doing the background score – he is completing it on the first of the month. So you will have only nine

on a par with the location sound technician, who has long held a lower status in the hierarchy of the film crew. According to the interviews, the introduction of digital technology has opened up scope for a more creative sound practice that not only has substantially changed the sonic experience but also realigned the hierarchy of the film crews, making the role of the sound practitioners more significant.

6.3 My own field recordings

In Part 2 of the dissertation, three of my field recording-based sound artworks are discussed in three respective articles. In India there are numerous urban as well as rural areas that are home to ingrained site-specific cultural traditions. In my work, some of these landscapes are exposed as the sites for sound recording. In the artworks developed through the recordings, these sites tend to be artistically mediated and transformed via the creative process of sound production. This process needs to be examined in order to better understand the nature of (re)presenting environmental and onsite actualities in sound art. My own artistic practice forms a response to these pertinent issues. However, having been trained in filmmaking before shifting to sound art, as is the case with some of the other emerging sound artists from India,³⁹ I will first establish the (historical) context of film sound production as mentioned above. From there, the discussion of my own practice will depart towards a deeper understanding of the tendencies with which specific sites are addressed within the artistic transformation. This understanding will help to posit my own artistic practice within the historical trajectories of mediated portrayal of Indian sites. It will be easier then to take a critical look at my own artworks as representative of sound art practices emerging in India and help construct new knowledge that should prove useful for film sound practitioners in developing a better understanding of the contexts not only for an innovative and cutting-edge creative sound practice, but also for implementing a more

to ten days to complete the film" (see the interview with Dey in the Appendix, page 6). Likewise, the typical power structure in the film crew often does not allow sound practitioners to take autonomous creative decisions. The advent of digital technology post-2000 granted relatively more respect and autonomy for the sound technicians due to an increased acknowledgment of the complex and intricate processes they pursue.

³⁹ I refer here to Indian sound artists like Navin Thomas and Sukanta Majumdar who work with recorded sound. Most of them directly or indirectly draw inspiration from Indian cinema, and many of them are trained in film, since it is the cinematic medium that provides the impetus to "record sound from a landscape so extensively" (Chattopadhyay 2007: 110).

mindful practice with location-recorded sounds. The following sound artworks will be discussed:

Landscape in Metamorphoses (2008) is a soundscape composition in stereo, developed from field recordings made at an area called Tumbani in India between February and April, 2007. Published by Gruenrekorder (Germany) on a limited edition CD-R, the piece captures the transformation of Tumbani from a tribal-dominated pastoral landscape into an industrial zone, with the auditory setting slowly changing from a rich natural environment into a monolithic industrial soundscape. As an audio essay, the work studies the trajectory of metamorphoses in unprocessed field recordings. Issuing from a motivation to return and revisit, having spent my childhood there, I realized while undertaking the recording experience that the topography of my childhood was already disappearing into nostalgia. Not merely a sonic representation of a transforming landscape, this work is also a lamentation over my own personal loss of memories.

Elegy for Bangalore (2013) is a soundscape composition for stereo and multi-channel format, premiered at Klangkunst, Deutschlandradio, Berlin and released by Gruenrekorder on CD. Stemming from the sound/video installation-project "Eye Contact with the City," the result of an artists' residency in Bangalore between 2010 and 2011, the primary materials used in the installation are extensive field recordings made at various construction sites of Bangalore and retrieved sounds from archival reel-to-reel tapes found at the city's flea markets. The repository of field recordings and other audio materials eventually took the form of this elegiac composition during a subsequent artist residency at the School of Music, Bangor University, in the summer and autumn of 2011.

Decomposing Landscape (2015) is an award-winning sound work that offers in-depth listening to the transfiguration of rural landscapes in India, undergoing environmental decay and destruction. Using field recordings made on the site, and diffusing sound in a third-order Ambisonics B-format, the work is an exclusively multi-channel sound composition. The work has been developed through a meticulous collection of ambient sounds from an SEZ (Special Economic Zone) in India during extensive fieldworks over several years. The collection has been forming a digital archive that was instrumental in realizing the work, which was composed, mixed and produced at ICST, Zurich University of the Arts, during an artist residency in 2014. The work has been released in 2015 by Touch (UK) as both Binaural and Ambisonics mixes.

7. Structure of the dissertation

The dissertation is divided into four parts, each organized to accommodate a specific area of the research. Part 1 introduces the project. Part 2 consists of six peer-reviewed and mostly already published articles of which the first three articles are dedicated to three primary phases of sound production in Indian cinema, namely: direct or synchronized recording and monaural mixing, dubbing, and digital sync recording and surround sound design. In the other three articles I discuss three of my own field recording-based sound artworks. Although each of the articles in Part 2 is autonomous in subject matter and scope, they are interconnected by my main research question and woven together by the central threads of argumentation. Part 3 contains a reflection on how sound art can best inform practice in film sound production. Part 4, the Appendix, consists of 23 interviews with Indian sound practitioners.

Part II: Articles

The following 6 articles are published in this dissertation in their original form (i.e. as they were published, accepted or submitted in peer-reviewed journals). I have chosen to insert short postscripts or comments on the first page of each article and besides added some comments here and there inside the articles on the basis of new insights gained throughout my research process, serving as clarification or to critically comment on them and connect them to each other as well as to the topics discussed in the Introduction and Conclusion. These blue and green-colored postscripts establish the context in which the articles can be considered part of the main body of research for this dissertation.

Article 1: Chattopadhyay, Budhaditya (2017). "The World Within the Home: Tracing the Sound in Satyajit Ray's Films." *Music, Sound, and the Moving Image* Autumn issue (Accepted).

This article deals with the first historical phase of sound production in India, as explained in the Introduction, namely: analogue recording, synchronized sound, and monaural mixing (1931–1950s). Satyajit Ray emerged during this period and made full use of these techniques; hence, his work with sound is used as a benchmark here when studying this specific period of sound production. The article examines the use of ambient sound in the early years of film sound production, highlighting two differing attitudes, the first markedly vococentric and music-oriented, the second applying a more direct sound aesthetics to create a mode of realism. Ray spearheaded the second attitude through his careful attention to the sonic details of a site and demonstration of the possibilities of situated listening in cinema.

Abstract

This article examines the use of sound in Satyajit Ray's films to retrace his position in Indian cinema as a reference point in the practice of synchronized sound with monaural aesthetics of sound organization. Ray is traditionally considered to be an auteur and a cultural icon—his legacy being on the fringes of popular mainstream Indian cinema, while the specifics of sound practice and the nature of sonic experience in his films remain largely under-explored. In this context, I argue that Ray's treatment of sound in his films highlights recognition of listening to place by means of a keen observation and recording of the site in the monaural synchronized sound practice, which has created a precedence for realistic auditory settings later championed by Indian filmmakers in the contemporary digital era. Investigating Ray's use of ambient sounds that contributes to giving a sense of reality in his films, this article suggests that Ray initiated a tradition of audiographic realism in Indian cinema, which has been predominately vococentric in nature since coming of sound in the 1930s. By intending to situate Ray's work with sound within the trajectories of sound practice in Indian cinema, this article contributes to a larger investigation of historical developments in cinematic sound production, with a particular focus on the monaural synchronized practice of ambient sounds to evoke narrative presence of the site.

Prologue

One wonders about the ramifications of the disruptive intrusion precipitated by a jarring sound of an electric generator in renowned Indian filmmaker Satyajit Ray's (1921 – 1992) award-winning⁴⁰ film *Jalsaghar* (*The Music Room*, 1958)⁴¹ in an otherwise lyrical and nostalgic auditory setting. In this sequence, the landowner-protagonist Biswambhar Roy is enjoying Hindustani classical *Vina* recital by a musician in his music room, while the faint sound of a motor enters into the room and gradually takes prominence. The landowner asks his porter, 'What is the sound I hear?' with a slight furrowing of his eyebrows. He is certainly disturbed. The porter replies that it is the sound of a generator from the neighboring house, as the *nouveau riche* neighbor Mahim Ganguly newly got electricity. The music is paused, the landowner comes to the rooftop and the new-fangled sound of the generator engulfs the landscape around his dark and desolate palace. Symptoms of modernity thus appear at the expense of disturbing and destabilizing the archaic ecology of sound at the protagonist's home, and suggest a new sonic reordering. Henceforth, we hear the recurring sound of the generator in a number of sequences, and with each occurrence, the contemporary and modern world of rapid and tumultuous change casts a darker specter over the traditional coziness of the home. However, it is not only a question of conflict between tradition and modernity that Satyajit Ray is compelled to articulate—as most of the Ray scholars argue (Ganguly 2001; Cooper 2000), but from the specific use of ambient sound in the narrative strategy, one can infer that Ray is concerned with creating a detailed observation and inclusive framing of the worldly elements that are reflecting societal change in his contemporaneous India. Further, these sonic elements are put forward in the narration to depict the diegetic story-world as a way to establish the presence of the sites⁴² in film space and expand the awareness of the existence of an eventful and transforming outside universe

⁴⁰ All India Certificate of Merit for the Second Best Feature Film (1959) and National Film Award for Second Best Feature Film in Bengali (1959), see:

<https://en.wikipedia.org/wiki/Jalsaghar>

⁴¹ An excerpt from the film: <https://www.youtube.com/watch?v=jbxqVjIFZBo>

⁴² Here, the term 'site' relates to the specific associations of sound to a place through particular acoustic properties of the source origin. 'Location' denotes to the sheer physical placement of listeners and sound objects. Considering these, I mostly use the term 'site' to be as close to the specificity of a particular place from where ambient sounds are recorded, and which is reconstructed in narrative depiction appearing to be the source origin. In short, 'site' in relation to sound is understood as conceptually associated with a particular spot.

within the constraints of the traditionally cozy setting of an affluent home that we observe on the screen.

In this article I will show that, in the use of sound in his films, Ray is interested to carry out a detailed observation of the locations depicted in the narration providing documentary evidence of the presence of corporeal sites, people and the realistic social condition of his times throughout his entire oeuvre of films from *Pather Panchali* (1955) to *Agantuk* (1992) with a distinct commitment to realism. He achieves this through practice of analogue synchronized recording of detailed ambient sounds as sonic information available on the site in the monophonic era of Indian cinema. This article will examine such use of sounds in some of Ray's representative films to trace out significant tendencies and predilections that suggest an important benchmark, which works as a reference point to study sound practice in Indian cinema through its early developments, and relocates his contribution to the evolution of cinematic sound in India leading towards the contemporary digital realm.

The Context

Ray's treatment of sound in most of his films is made primarily with direct recording and analogue single-channel synchronized sound rendered for monophonic mixing, as well as mono reproduction.⁴³ It is my contention that his use of sound generally highlights a distinct recognition of and attention to the location depicted on screen with the synchronized sound strategy, but still endeavors to expand the pro-filmic space. This is done through a keen observation of the site to create a realistic *mise-en-sonore*⁴⁴ or auditory setting by meticulously providing detailed sonic information available on the site in terms of the ambient sounds recorded

In Ray's films the monaural recordings of ambient sound from the location and their synchronized monophonic organization contribute to the viewer's perception of reality in terms of direction and localization. (See the subchapter "Ambient sound in films" (2.1) in the Introduction.)

⁴³See: Ray's filmography as director:

<http://www.imdb.com/name/nm0006249/#director>; for further information refer to a personal interview conducted with Ray's sound mixing engineer Jyoti Chatterjee (2016: 179) in the Appendix of my doctoral dissertation *Audible Absence* (2016).

⁴⁴ The term "film space" is defined as the space that the spectator encounters, a space that is organized and constructed, e.g. the linking of shots through sound editing and sound design. On the other hand, the area in front of the camera and sound device's recording field is known as the "pro-filmic space," as discussed earlier in this article. Combining these two

from the location. This approach has been a departure from the practice of sound in Indian cinema of his period, which relies heavily on the dialogue of characters, background music and intermittent song sequences to carry out a somewhat site-unaware narration while ignoring the site-specific sonic elements, such as ambient sound. In this context, Ray's authorial position in Indian cinema can be understood as prominent but influential in drawing attention to the sitely details in sound for the future filmmakers.

It is no surprise that, in contemporary Indian cinema of the digital milieu Ray's sonic sensibilities find a sort of revival. Much of today's films incorporate detailed layer of digital synchronized sound recordings with multi-track capabilities and multi-channel surround mixing. This mode of production illustrates an emergent interest in representing real locations and spatially faithful auditory settings. Consequently, these sonic layers suggest the presence of the cinematic sites in the narration to create believable pro-filmic spaces using ambient sounds in spatially more realistic manner. Ray's sound practice has intended to delineate such presence of site by the use of the limited technical measures of monophony available to him. The detailed use of ambient sounds in contemporary Indian films hints at a rediscovery of cinema's realistic origins that dates back to Ray's film oeuvre. Therefore, tracing Ray's position makes it possible to use his practice of sound as a lens or reference marker through which developments in film sound can be investigated. It is important to revisit Ray's works with awareness about his ethos in cinematic sound production, particularly his use of ambient sounds, in order to initiate an attempt to relocate his works in contemporary milieu of Indian cinema celebrating its complete digitalization.

We need to consider that Ray worked within the constraints of the monaural sound organization of Indian cinema. Although stereophonic design, mixing, and reproduction

definitions, it can be argued that the choice and arrangement of pro-filmic space substantially affect the spatial dynamics of the mise-en-scène of sound or, if I may take liberty of using an unofficial but useful coinage, "mise-en-sonore" or the auditory setting – the actual sonorous environment, spatial organization of ambient sounds, that the listener experiences – a setting that in turn influences the verisimilitude or believability of a film in the ears of the audience member. I have thoroughly discussed the term in my doctoral dissertation *Audible Absence* (2016).

started to be used during his lifetime (precisely in the late 1980s and early 1990s⁴⁵), Ray preferred to work with the mixing for monaural soundtrack in all of his films.⁴⁶ As we know, he had to contend with budget limitations—most of the stereophonic films made during this time were big budget, and Ray depended mostly on local producers with small budgets. However, it is questionable whether Ray was at all interested in exploring the new medium and the new technology of stereophony, given the kind of sound aesthetics with vivid synchronized sonic details observed in his films that exemplify the monophonic rendering of sound at its best; perhaps if they were made with the technology of stereophonic mixing, his films would sound less comprehensive in terms of delineating realistic situations and the framing of real sites in cinema. Such contentions are explained in my reflections on the discourse of analogue synchronized sound practice and monaural aesthetics in Indian cinema. The trajectory of sound production in these early developments is understood using Ray's work as a reference marker. The use of ambient sound in this time is studied in the light of narrative strategies of 'diegesis' (Percheron 1980; Burch 1982) and considering the notions of 'presence' drawn from Sound Studies (Lombard 2006; Grimshaw et al, 2011) with a historical understanding of synchronized sound in the studies of film sound (Balázs 1985; Lastra 2000; Chion 1994; Bloom 2014) informed by the studies in sound production (Kerins 2011; Sergi 2004; Holman 2002).

Synchronized Sound and Monaural Aesthetics

Since the introduction of synchronized sound in the cinema during the late 1920s, sound practice was monaural from recording to mixing stages and to reproduction, meaning that, 'a single channel of sound was played from a loudspeaker placed behind the screen, creating the illusion that the sound of the film was emanating from the projected images' (Kuhn & Westwell 2014). As early as 1928, Rudolf Arnheim recognized the problems of the single-source and screen-centric practice of synchronized sound for doing away with the significant interplay between the division of the picture and three-dimensional movement within space (Bloom 2014). Arnheim meant that 'synchronized sound distracts from the significant play of visual interpretation among all the elements of the image and instead locks the viewer into the space' (Bloom 2014: 431). Such criticism arises perhaps due to the overarching

⁴⁵ I have discussed the stereophonic framework of Indian cinema in the article (2015) "The Auditory Spectacle: designing sound for the 'dubbing era' of Indian cinema", *The New Soundtrack* 5.1, pp. 55–68, Edinburgh University Press.

⁴⁶ See: interview with Jyoti Chatterjee in *Audible Absence* (2016: 179), and see Ray's filmography as director: <http://www.imdb.com/name/nm0006249/#director>

emphasis on the 'marriage'⁴⁷ of moving image and sound source in one speaker placed behind the screen that occurred according to standards of the monaural aesthetic in sound production. Today's surround sound environment would allow the source more freedom of movement outside the screen-centric coupling between sound and image as Arnheim wished. The free-floating three-dimensional sensibility he looked for in cinema would perhaps be realized today in the spatial environment of Dolby Atmos⁴⁸, but was limited in scope with synchronized sound recording and monophonic mixing due to their screen-centric rendering of sound and image. Arnheim's resistance to synchronized and monaural aesthetics emphasizes 'the differences between film and reality as a key artistic quality of film form' (Arnheim quoted in Bloom 2014: 431). Clearly, Arnheim was concerned about the synchronized sound practice, considering that it would reduce the three-dimensional objects onto a two-dimensional screen disturbing film's relationship to reality.

As Peter J. Bloom (2014) points out, Béla Balázs's ideas on sound film stands strongly in contrast with his contemporary Arnheim. His defense of synchronized sound and monaural aesthetics is based on an extension of cinema's narrative capacities since the experience of sound become more spatially defined. Bloom refers to Balázs:

By contrast with a two-dimensional image, the temporal nature of sound becomes related to the hearing subject's own location in any given space. The potentially spatial characteristics of sound, which Altman (1992) has further described as the 'material heterogeneity' of sound, may then be better guided, Balázs insists, through a visual representation. The image assists in disentangling the location of voices speaking, for example, as attached to different speakers appearing on screen with their own distinct qualities and physiognomies of expression (2014: 433).

James Lastra interprets these two different viewpoints as represented by Arnheim and Balázs describing two corresponding 'models' operating within Hollywood classical narrative in the following manner: 'The first, heir to metaphors of human simulation and described in terms of perceptual fidelity, emphasizes the literal duplication of a real and embodied (but invisible) auditor's experience of an acoustic event. Its watch-words are presence and immediacy [...] Aesthetic perfection entails the absolute re-presentation of the original',

⁴⁷ "Married print" has been a standard term in the film industry to denote the combining of sound and image on a single irreversible optical print.

⁴⁸ See Dolby Atmos specifications: <http://www.dolby.com/us/en/brands/dolby-atmos.html>

while the other model 'emphasizes the mediacy, constructedness, and derived character of representation' (Lastra 2000: 181).

These two opposing stances frame a similar tension operating in Indian cinema, i.e. between providing narrative pleasure in storytelling by a purely musical and vococentric (Chion 1994) representation of sound (exemplified by the many religious and devotional films of early 1940s and late 1950s Indian films), and the realistic re-presentation of actual sites, actors, and social situations in direct recording and synchronized sound practice demonstrated by some social realist films of the 1950s, such as *Neecha Nagar*⁴⁹ (*Lowly City*, Chetan Anand 1946) and *Do Bigha Zamin*⁵⁰ (*Two Thirds of an Acre of Land*, Bimal Roy 1953). These two polarities defined Indian cinema at the time when Satyajit Ray emerged, and Ray, by his authorial choice, embraced and advocated the later model.

Such reading of Ray helps us to understand the use of the auditory details his films offer in terms of the specific sound practice with the primacy of direct recording and synchronized sound. The result is a sonic experience that relies on perceptual fidelity and aesthetic perfection entailing a faithful re-presentation of the pro-filmic space in terms of a screen-centric use of location-specific ambient sound with a monaural aesthetic (Lastra 2000). With this context in mind, I observe how Ray's treatment of sound in his films highlights a distinct recognition for the presence of the site in the diegesis by means of keen observation of a location in the primarily synchronized 'direct' sound recording and monophonic organization

Ray's approach – paying careful attention to the specificities of a site's ambience – reflects the way his films create modes of situated listening. In the fourth article I will argue how in sound art situated listening becomes even more nuanced, rather than simply functional, through the subjective associations and interventions of the artist in the development of an artwork.

of ambient sound—a practice which has been creating the precedence for a realistic auditory setting later championed by some Indian independent filmmakers like Shyam Benegal and Adoor Gopalakrishnan whose methods and narrative strategies of direct location recording and detailed use of ambient sound are recognized, embraced, and revived in the so

⁴⁹ A full version of the film: <https://www.youtube.com/watch?v=Zi4vJQC-QJU>

⁵⁰ A full version of the film: <https://www.youtube.com/watch?v=TTuZOyQH14s>

called 'digital era' from 2000s onwards as digital multi-track 'sync'⁵¹ recording.

What follows now, is an investigation into Ray's use of actual site-specific ambient sound recordings to create a sense of site's presence in the portrayal and construction of pro-filmic space. Central here is the question of framing the site in cinema through spatial organization of ambient sound in monophony to create a screen-centric *mise-en-sonore* or auditory setting in order 'to place the auditor as literally as possible in the pro-filmic space' (Lastra 2000: 182). Using the synchronized sound techniques and employing the monophonic mixing inclined toward the direct sound methodology (Burch 1985; Birtwistle 2010), Ray allows the auditor to experience each of the sites with vivid sonic information. This adds to the sense of believability in the story-world as expected from familiarity with the places, so that the auditor is informed about the embodied presence of the site in the narration of the diegetic story-world by 'letting the camera be the eye, and the microphone the ear of an imaginary person viewing the scene' (Maxfield quoted in Lastra 2000: 183). Following this, Ray's films 'simulate the perceptions of an observer located on the film set, whose eyes and ears (camera and microphone) are joined as inseparably as those of a real head' (Maxfield quoted in Lastra 2000: 183). These are the essential tenets of synchronized recording and monophonic production aesthetics. I intend to examine how in Ray's films 'we perceive the sound not only in temporal sync, but also in correct spatial placement, as our brains create the bridge to reestablish a normality to the situation' (Sonnenschein 2001:47) adding to the realistic framework of filmmaking and film sound production in Indian cinema. It is my contention that Ray chooses to use the specific layers of ambient sound among multitude of other recorded sound components incorporating them in the strategy of storytelling in order to produce spatial sensation and presence of the site in the pro-filmic space constructed for the cinematic experience.

Let us evaluate this assumption: why does primarily the very layers of ambient sound component sculpts the spatial sensation of site in cinema, instead of other layers of cinematic sound, namely voice, music and sound effects? As I have discussed in the introduction of my doctoral dissertation⁵², among these layers, voice includes dialogue of or between characters carrying the primary information of the narrative (Bordwell & Thompson 1997). Amy Lawrence argues that in narrative cinema 'the synchronization of image and

⁵¹ I have discussed the digital era in the article (2016) "Being There: Evocation of the Site in Contemporary Indian Cinema", *Journal of Sonic Studies* 12.

⁵² Audible Absence: Searching for the Site in Sound Production (2016)

voice is sacrosanct' (1992: 179) emphasizing on the necessity of the stricter method of sound production in regards to the voice, which must be connected with a 'body' on the screen. Mary Ann Doane affirms that sound of the character's speech is strictly 'married to the image' (1985: 163) making it creatively rigid as a sound component for spatial maneuver unlike ambient sounds.

In the above-mentioned doctoral dissertation I have also shown that music creates situational feelings and emotions in films. Film music is used 'largely to set mood or elicit a particular emotional response from the audience' (Kuhn and Westwell 2014). Film music tracks and sound effect tracks 'establish a particular mood' (Doane 1985: 55) instead of providing a sense of space. In the mixing stages, hierarchy of different sound components follows certain conventions: 'Sound effects and music are subservient to dialogue and it is, above all, the intelligibility of the dialogue which is at stake, together with its nuances of tone' (Doane 1985: 55). In this hierarchy ambient sound remains fluid and malleable. Therefore, it is the very component of ambient sound that can provide with information about a site in the construction of the pro-filmic space. Ambient sound injects life and substance not only to what we see on the screen but also to the off-screen diegetic world of the cinema. In the investigation of Ray's use of sound in the synchronized mono era of Indian cinema to create a convincing, believable and realistic diegetic world, the practice of ambient sound needs to be emphasized over other sound components, i.e. voice, and music.

Synchronized sound and its predecessor, the 'direct sound'

In a well-known sequence of the legendary Indian film *Devdas*⁵³ (P. C. Barua 1935/1936), the eponymous protagonist Devdas is languishing over his initial arrival at a brothel in Calcutta following his recent breakup with Paro, a childhood sweetheart from his native village. Devdas' fateful interaction with the prostitute Chandra leaves him in a state of perpetual melancholia, claustrophobia and remorse from which he can never recover. The mise-en-scène indicates that the story is taking place in an indoor location within a closed building. But the incidental sound of a birdcall appears and continues throughout the sequence alongside the actors' directly recorded voices and an abundance of background musical score.

⁵³ The film is available online: <https://www.youtube.com/watch?v=QeW2fpyob-A>

In typical Indian film shootings from this time, the camera establishes a shot, and the sound recording device follows it in order to capture a limited sound field within the visual frame, displaying attention to the available sound-producing objects in accordance with the *mise-en-scène* and the story-world. In most cases, the director and the cameraperson determine the microphone placements. Within the given space and time of shot-taking, there is a scattering of different sources of sound, and most of these, which are not related to the sound script, are considered unwanted noise. As I have mentioned before, in a vococentric script the freedom of a microphone is reduced, as its directionality is forced to focus on recording 'almost always the voice' (Chion 1994: 5). Within the limited scope of recording, available sound sources are narrowed to a minimum on the recording media. In spite of the limitation and suppression of the dynamic range, some stray sound elements intrude onto the film's predetermined soundtrack and may turn out to be capable of carrying meaning about the nature of the locale. The off-screen sound of a birdcall in *Devdas* holds distinct documentary evidence of the cinematic site in the pro-filmic space by direct sound recording re-presented on the film's soundtrack as aurally 'realistic' (Kania 2009: 244) in perception, even if the sound is incidental and off-screen, and not a deliberate usage. Indian film scholar Madhuja Mukherjee terms this the 'here and now' effect:

In early talkies, where sound is in sync, on screen, and mostly diegetic, the resonances and meanings are somewhat different from the theories of 'disembodied' sound and music destroying the 'aura' of performances [...]. Certainly, these are mechanically recorded images and sound, which have been recorded from multiple positions and camera angles, in multiple spaces, and thereafter have been edited and restructured. Moreover, as we listen (and see) we first hear a mechanical sound, then a voice, words, rendition, and the sound of music. Nevertheless, it can recreate the 'aura of performance' in its own terms as the star /actor (who is also a singer) sings in a time which is real, where the real and reel time become one. In many cases the mechanical rendition of the song is a continuous take, and has a strong 'here and now' effect. (2007: 52-53)

Even with a predominant mode of control and musical masking of a natural auditory setting, Indian films of this time exemplify occasional recording of incidental sounds because of the direct recoding technique used on the location and the actors performing in front of the camera. Later, in the works of Satyajit Ray this 'here and now' effect is made evident and explored in the narrative strategy of a 'direct mono sound' aesthetics whereby the presence

of the fictional site becomes prominent in the deliberate use of ambient sounds recorded from the respective locations.

Listening to the Site in Monaural Cinema

I will show how the *ethos* or the philosophy behind Ray's stylistic features involving detailed sonic observation of site manifest in the presence of the site as 'situated listening' (Lastra 2000) in Ray's early works. These films make the aesthetic choice of an inclusive and layered design of synchronized sound in the diegesis. Ray's debut film *Pather Panchali*⁵⁴ (*Song of the Little Road*, 1955) allows for seemingly accurate representations of different locations from the village Boral in West Bengal, where the film was shot. This is done by creating situations of listening-in-place in the use of synchronized sound centered behind the screen within a monaural framework. The screen-centric single-channel controls the '[s]ound's movements in and through the specifics of location' (LaBelle 2011: viii) in a more temporal but less spatial fashion using site-specific ambient sounds, such as the wind through the grasslands, the drone of electrical poles beside the railroad, the friction of tree branches in a gentle breeze in the forest, etc. There are ample examples of such practices of situated listening and narrative strategy of attending to the diegetic universe in the three corresponding films from Ray's *The Apu Trilogy* (1955-59) and other films that follow. In *Aparajito*⁵⁵ (*The Unvanquished*, 1956), we distinctly hear different zones of Benares (or the ancient Indian city of Varanasi, where most of the story takes place) through the ears of protagonist Apu, following his exploration of the city. The respective cinematic passages are built with mostly ambient sounds that make use of the depth of field and perspective available on location as detailed site-specific sonic information. In *Charulata*⁵⁶ (1964), the elaborate use of ambient sounds from the streets of hawkers, vendors, and their aural antics inform the audience about the secluded and idle neighborhood in a reconstructed 1870s Calcutta, given that it is a period piece. Perhaps the most poignant example of synchronized sound from Ray's films is the sound of the electric tram's sliding shoe on the trolley pole each time it hits the pantograph with a flash in the title sequence of *Mahanagar*⁵⁷ (*The Big City*, 1963). To my knowledge, no other Indian filmmaker of his time would think of incorporating such an intimate detail in the use of ambient sound. Such use of synchronized sound in monaural films in relation to the screen-image could be explained by Michel Chion's

⁵⁴ A sequence from the film: <https://www.youtube.com/watch?v=sohAteJynhc>

⁵⁵ A sequence from the film: <https://www.youtube.com/watch?v=hbPg8wCj-yM>

⁵⁶ Link to the film: <https://www.youtube.com/watch?v=4ML1l09v914>

⁵⁷ The film is available online: <https://www.youtube.com/watch?v=a6x0lhbLA2U>

well-used terminology, 'audiovisual illusion of redundancy' (Chion 1994: 5-7), but in Ray's case, the sounds don't merely synchronize with the image; rather, they accentuate the visible objects on the screen by expanding the diegetic space of their situation whereby an 'off-screen space is obviously frequently brought to life' (Burch 1985: 201). This off-screen space suggests the presence of an eventful outside world within which the narration evolves, being aware of the larger social issues of contemporaneous India, including poverty, famine, unemployment and erosion of moral values. The manifestation of such sound practice makes Ray standing apart: Indian cinema of his time illustrates a screen-oriented narrative strategy as indicative of the vococentric practice of sound production using typical narrative tropes of cleaner dialogues interrupted by songs within a 'protected sonic space' (Birtwistle 2010: 57). In this controlled space incidental ambient sounds are thought of as noise.

In his review of *Jalsaghar*, Douglas Messerli writes about the inclusion of ambient sound or 'noise'—a sound element typically considered unwanted in films (Lastra 2000). Ray's inclusion of ambient sound as incidental noise intensifies a 'sense of emplacement' (LaBelle 2011). Messerli writes:

Another kind of noise is heard in the distance, a kind of rhythmic beating that one might almost call music (certainly Cage might have described it as such). When Roy asks his servant about it, he is told that it is the generator atop his neighbor's house, and from that instant on, except for the moments of musical performances, we hear the generator pumping away in the distance, a symbol of the end of a quiet and placid world in a time of movement and dust, as new goods are transported to the neighbor's house along a dirt road (Messerli 2011)

As I have already argued in the beginning of this article, the ambient sound of a generator, albeit off-screen, provides an elaborate spatial detail that expands the sonic depth of the site as well as the narrative scope of the scene. As regards to this perceived depth in monaural films, Michel Chion highlights the 'mental' synchronization of the off-screen sounds providing an 'outside' of the field of vision: 'Traditional monaural film presents a strange sensory experience in this regard [...] If the character is off-screen, we perceive the footsteps as if they are outside the field of vision—an "outside" that's more mental than physical' (Chion 1994: 69). Ray's frequent use of off-screen ambient sounds suggests the presence of the unseen but mentally felt outside world in the diegesis. This observation resonates with the reading of film scholar Richard Allen when he underscores the dynamic relationship between onscreen and off-screen ambient sounds in Ray's films: 'Ray uses diegetic, off-screen sound

as an integrated component of the compositional technique of camera movement and staging in depth [...] that broadens the physical space of the represented scene and may carry expressive importance [...] keeping with his realist aesthetics' (Allen 2009: 93). The broadening of physical space is enriched by inclusive off-screen incorporation of ambient sounds enhancing mental resonance of site. Ray explains in an interview with Pierre Andre Boutang: 'I can use actual sounds creatively to serve the purpose of music' and to allow a certain change in mood to be perceptible to the audience (Ray, 1989).⁵⁸ In another interview on Kolkata TV he maintained that 'one can use actual sounds to suggest moods' (Ray, 1980).⁵⁹ Ray's such perspectives on the use of sound: replacing music by actual ambient sounds to suggest certain mood-situations strongly defied the typical tried and tested strategy of utilizing abundance of non-diegetic musical score in the then Indian films.

Apart from considering ambient sounds to be noise, Indian cinema during this period believed in the clean recording of the voice as the primary narrative strategy at the expense of other layers of sound. The absence of spatial detail was compensated with loud background musical score as explained above, and was periodically interrupted by song and dance performances (Gopalan 2002). The easily attainable method of using the non-diegetic background musical score in every possible situation of emotive engagement has been a normative practice in Indian cinema for the narrative purpose of elucidating various archetypical, popularly accessible and implicit moods, namely romantic, violent, sad and so on. Conversely, Ray's use of music, however sparse, tended to be diegetic, underlining the contours of a mood-situation rather than obviously pinpointing it. Further, his use of ambient sound provided elaborate evidence of the site where such a situation is based. In the interview with Boutang, Ray states:

In the contemporary films, I use less, less and less music; I can do without music (...). After all, ideally one should do without music completely. I think, as, because one has an audience in mind, and one is always afraid, that a certain change in mood will not be perceptible unless it is underlined by music, you use music. Ideally, a film ought to be able to do without music. (1989)⁶⁰

⁵⁸ A clip from the interview: <https://www.youtube.com/watch?v=RWS5dlxwZDc>

⁵⁹ The interview is available online: <https://www.youtube.com/watch?v=VfZjx0YSRHQ>

⁶⁰ The statement was made in the interview with Pierre Andre Boutang (1989) to be found on YouTube: <http://www.youtube.com/watch?v=RWS5dlxwZDc>

Ray's use of even the sparsest musical score therefore was a compromise; ideally he would use ambient sounds – actual sounds recorded from the location to serve the purpose of storytelling. We can ask: from where did this influence come from? Concerning his cinematic influences, Ray would usually mention American films of the 50s and 60s. However, in an interview with filmmaker Shyam Benegal, who asked him about his use of ambient sounds, Ray cited influences from European cinema that adhered to a sound aesthetic of perceptual fidelity with synchronized sound recorded on the location. Shyam Benegal asked:

Before you came on the scene, in the Indian cinema certainly there never used to be what one might called an ambient sound, you know, effects outside of the synchronized effect. Now, you started it. Why did you do that? I mean, what led you to use sound like that?

Ray answered:

I think that in the use of sound, we were not very original, we were doing what the best European cinema⁶¹ had done, which we admired very much. We didn't really learn from the Indian cinema, we learnt in fact what not to do rather than what to do. So, we had the examples of the best cinema of the West in mind. And with *Pather Panchali* as well as *Aparajito*, there was the question of filling long stretches of silence, because both films have very little dialogue. Naturally, we had to think what to do there, and all sorts of sound effects were used in order basically to fill those long stretches of silence and also at the same time for them to work [...] creatively, in the sense that they add to the atmosphere; they also suggest things, which are not suggested by the dialogue or by the images.⁶²

Here, Ray talks of adding to the atmosphere of the site while constructing the pro-filmic space. For example, *Nayak*⁶³ (*The Hero*, 1966) is one of Ray's most remarkable stylistic experiments, one that demonstrates his ability to create atmospheres in depicting the

⁶¹ Ray was deeply influenced by European filmmakers like Jean Renoir, whose film 'The River' (1951) was directly shot on various locations in Calcutta. Ray volunteered as a film enthusiast on these sites. Later Renoir personally inspired him to make films. See the biography of Ray: http://www.satyajitray.org/bio/renoir_meet.htm

⁶² The interview is released by Film Division, see: <http://filmsdivision.org/shop/satyajit-ray-2>

⁶³ The film is available online: <https://www.youtube.com/watch?v=pK5hvo8xws0>

specific zones inside a train by synchronized use of sound within a monophonic mix. Each of the cubicles of the train within which the threads of narratives and the various intermingling stories of the personas unfold—the berth where the hero sleeps, the dining car, the toilet, and the corridor—appears with thorough, specific, and consistent ambient sounds, such as the cubicle’s vibration and subtle resonance that help to differentiate the spatial identities of these sites. The sounds come from behind the screen and are synchronized with the images. This auditory setting establishes and expands the diegetic space by realistic means, perhaps in the way Brandon LaBelle describes sound’s potential to demarcate sites ‘toward a greater understanding of the interconnectedness of space’ (LaBelle 2011: viii).

In a conversation with Samik Bandyopadhyay for India’s national television channel *Doordarshan*, Kolkata, Ray elaborates on this issue:

And now more and more I use less and less music, because I can use the improved mixing facilities (sic), and I can use [a] more creative soundtrack, whereby one can use actual sounds almost as you use music to suggest moods and things like that [...] For instance, in a city [-based] story the city itself provides the noise of traffic, and it provides the mood building soundtrack you know [...] In *Asani Sanket* one could well have used folk music in abundance, but I preferred to use bird noises; I preferred to use the sound on *Dheki*, you know, that sort of thing, and I preferred to use wind sound, [...] I used one particular bird—the woodpecker, which I recorded, I was lucky to be able to record one. And it comes at a very crucial point when Moti dies [...] one can hear the woodpecker, which is a very shrill and rather alarming kind of, rather eerie sort of sound. I felt the use of music would sentimentalize the scene. So I decided to use this, which was also a realistic sound.⁶⁴

As Ray explains, the extraneous noises and the ‘realistic’ sounds—or ambiances—in his films replace non-diegetic music with its emotive-escapist overtones (exploited by his predecessor Indian filmmakers), and serve to anchor the spectator in the real world. This methodology also works to capture, frame, and depict the essence of different layers of a location in a filmic narrative. In *Kanchenjunga*⁶⁵ (1962), different zones around the Darjeeling mall are represented with certain recurring observational sonic details. When the characters are moving in or out from one zone into another, the ‘realistic’ ambient sounds are changed

⁶⁴ Excerpts from the interview: <https://www.youtube.com/watch?v=VfZjx0YSRHQ>

⁶⁵ The film is available online: <https://www.youtube.com/watch?v=8DOEibylJhQ>

accordingly. For instance, the central meeting place of the characters in the middle of the town has a complex soundscape with layers of multiple man-made ambient sounds, such as murmurs of speech, footsteps, a cycle's bell, and so forth. While the characters are moving toward the territory of the town, up or down the hill, some sounds stand out, such as a birdcall. Likewise, the sound of crickets stands out while Bannerjee and Manisha take their afternoon stroll along the hills. As they move from the mall to the central part of the town, the sound of a barking dog fades in, replacing the distant birdsong and cricket sounds. These ambient sound motifs are heard across multiple places, overlapping each other, and in the process, they connect the places to help envelop the narrative of the temporal encounters and evolving relationships among the characters.

Furthermore, several sonic details accentuate the presence of the sites, such as the sound of horses riding past the characters, the bells from the cattle procession passing by, and the prominent sound of the church bell suggesting a reconciliation between Anima, the elder daughter, and her husband Sankar. These sounds intersect with the perpetual meanderings of the characters unifying their multiplicity of narratives in zonal separation while putting in place the sense of presence of Darjeeling's various locations at the background of the gorgeous Himalayan peak of Kanchenjunga. Taking another example, in *Mahanagar*, the middle-class neighborhood comes alive with a rich depth of sounds, from children shouting on the street, temple bells, bicycles, rickshaws, and radio. All of these sounds are off-screen, creating an expanded diegetic space around the North Kolkata neighborhood making the auditor feel situated at the site, being aware of an expanded universe larking around.

However, Ray's later films appeared relatively verbose relying on the dialogue between characters as forming the narrative. These films lacked the realistic treatment of sound invoking the sense of site or situatedness his earlier films would demonstrate. Some Ray scholars (Sengupta, 2007) have argued that his realist paradigm was going through some shifts at later stages. This shift was prominent in his so-called 'Calcutta Trilogy' i.e. *Pratidwandi* (*The Adversary*, 1970), *Seemabaddha* (*Company Limited*, 1971), *Jana Aranya* (*The Middleman*, 1976). Apart from the conscious manipulation of imagery, Ray started to process sounds to serve impressionist purposes, such as creating situations that were emotionally bleak, nightmarish or non-lyrical. Take, for example, the flashback sequences of childhood in *Pratidwandi*⁶⁶; the voice and the birdcall in this sequence are processed with added *reverb* to evoke the loss of time and the association of memory that is distant and

⁶⁶ The film is available online: <https://www.youtube.com/watch?v=-inaeJjndRg>

decaying in the present. In the last sequence of *Seemabadha*⁶⁷ protagonist Shyamal paces up the stairs and the sound of children playing on the small playground slowly disappears while his own footsteps increase to dominate, until finally at the door of his tenth-floor flat, we hear only his *filtered* breathing. However, there are sequences where ambient sound takes on a crucial role to suggest an urbane mood of alienation and miscommunication. Take, for example, thick layers of sound from the city of Kolkata intruding into the silence as the characters meander on the terrace of a big building in *Pratidwandi*. In one sequence in *Jana Aranya*, Somnath and Sukumar are sitting near the Maidan area of Kolkata, and the sound of traffic dominates their conversation, isolating the characters within a troubled friendship. Few of the Ray's populist films from this period showed hints of commercial inclinations with a mainstream storytelling strategy using stars, instead of creating perceptually realistic atmospheres by the use of sound. For example, in *Chiriyakhana* (*The Zoo*, 1967) the multitude of traffic and city sounds of the opening credits succumb to the narrative pressure. However, even these weaker films sharply contrast with the predominantly vococentric films produced during Ray's contemporary time in Indian cinema.

Listening Out of Place

Let us have a glimpse of what the mainstream Indian cinema sounded like before and during Ray's active presence. If we pick a few pertinent examples from the 1930s, 1940s and 1950s - popular romantic comedies in Bengali starring Uttam Kumar and Suchitra Sen, or in Hindi starring Raj Kapoor et al., - we hear mostly vococentric representations of sound that provoke a mode of listening that is primarily 'out-of-place'. By coining 'out-of-place' here, I mean the lack of spatial information in the diegesis, marking a relative absence of the site depicted in the narration. The monophonic arrangement of sounds mainly comprise of actors' voices and a few synchronized sound effects that remain suspended in the abundance of music, while we hardly relate to the sites in the construction of the pro-filmic space. Ambient sounds are absent in this sound strategy rendering the urban locations in these films sound implausibly silent and appear relatively disembodied within a primacy of dialogue. All we hear is the continuous talk of characters accompanied by background music, sporadically punctuated by unintelligibly arranged song sequences. How do we posit Ray within such sound practices that became quite standardized in Hindi, as well as with regional film industry

In the second article I will show how this mode of "listening out of place" became standardized during the era when dubbing practices dominated Indian cinema (1960s–1990s).

⁶⁷ The film is available online: <https://www.youtube.com/watch?v=ghM7e2QIdaY>

giants like the Bengali cinema of Kolkata where Ray worked? Indian film scholar Sharmistha Gooptu sheds light on Ray's positioning in this context and his larger contributions to develop a realistic sensibility in sound practice that becomes manifest in the way location becomes important:

Bengali film practice was no longer the same post-Ray. While there were earlier films like *Chhinnamul*, which was shot on location and was starkly realist, or directors like Bimal Roy who had worked with rank newcomers, it was with Ray that such practices became more purposefully institutionalized within the Bengali film industry. As Marie Seton notes, 'Between the release of *Pather Panchali* and *Apur Sansar*, Ray's films exerted one notable influence upon Bengali films, and to a lesser degree on Hindi films. Other directors were made aware of the value of location recording.' (2011: 165)

Likewise, we hear the incorporation of ambience in some of the sequences in popular classics like *Suno Baranari* (*Listen O Lady*, Ajoy Kar, 1960) and *Chaowa Pawa* (*To Want and to Receive*, Yatrik, 1959). The long passage of railway transfers in *Suno Baranari*⁶⁸ and the elaborate platform sequences of *Chaowa Pawa*⁶⁹ are adequate evidence of a realistic portrayal of place incorporating location-specific ambience in the monophonic organization of sound in cinema—where Ray's influence is audible. But, on the other hand, there are many examples of popular mainstream films where cinematic locations remain unattended sonically, and ambience is not considered an important layer of the monaural soundtrack. Most of the urban sites in *Chowringhee*⁷⁰ (Pinaki Mukherjee 1968) are rendered silent with a marked absence of ambient sounds. In the opening sequence of this popular film, the protagonist Shankar meets an old friend in the busy crossing of the Esplanade (*Chowringhee* area of central Calcutta). Much traffic activity is visible on the screen, but what we hear is only the dialogue of the actors; there is no ambience of the site provided and this is representative of numerous other film sequences of that time. However, coming back to Ray's work, we find the same busy crossing of Esplanade present in elaborate sonic details in *Mahanagar*, creating an immediate, direct, and real sense of presence of the specific neighborhood from downtown Calcutta in the narrative process of diegesis.

⁶⁸ The film is available online: <https://www.youtube.com/watch?v=PKwkX27dahA>

⁶⁹ The film is available online: <https://www.youtube.com/watch?v=t6n8-OOC9Jg>

⁷⁰ Excerpts from the film: https://www.youtube.com/watch?v=O3BaXbCT_h0

Ray's legacy of using actual ambient sounds to create realistic auditory settings portraying the sites that were depicted in the story has been avidly followed by a few young independent social realist filmmakers like Shyam Benegal in North India and Adoor Gopalakrishnan in the South. They have continued the tradition of direct or synchronized recording and monaural mixing, making subtle and naturalistic use of ambient sound. In contrast, however, Ray's younger contemporaries, filmmakers like Mrinal Sen, initiated a New Indian Independent Cinema that assimilated wider influences. As I have already discussed in my article (2015) 'The Auditory Spectacle'⁷¹ in details, use of sound in these New Independent Indian films were a clear departure from Ray's legacy in the sense that sound would now be produced using the magnetic tape-based analogue sound technology. We learn from the interviews taken with Indian sound practitioners⁷² that this was the time when sound production was evolving in its early period of technical advances. For example, studio processing such as reverb, EQ, compression, limiting and echo were developed during this time. Eventually came 'looping', the technique that would quickly become a standard industry practice.⁷³ It was at this time when a number of films embraced the possibilities of the emerging techniques to innovate with newer sonic textures, tone and other features for the purpose of narration. For instance, Mrinal Sen's *Bhuvan Shome* (1969) illustrates a non-naturalistic and processed use of sound mixed in multiple layers to create comical and satirical situations. Rittwik Ghatak's emotional use of sound alongside intricate background music and songs, as in *Meghe Dhaka Tara* (Rittwik Ghatak, 1960), enhanced the melodramatic quotient of Indian cinema. In the hand of these younger filmmakers the trend of synchronized realism in Indian cinematic sound took a serious bend toward non-naturalistic, processed and modulated use of sound, which was already introduced by Ritwik Ghatak in his elaborate use of edited sound effects to create epic and melodramatic environments. Ghatak's experiments with sound and music arguably contributed to the shaping of the mainstream Indian cinema with its strongly emotive overtones. One example of this is the looped sound of whipping, with a clear reverb effect at the end of a song

⁷¹ "The Auditory Spectacle: designing sound for the 'dubbing era' of Indian cinema", *The New Soundtrack* 5.1, pp. 55–68, Edinburgh University Press.

⁷² The interviews can be found in the Appendix of doctoral dissertation 'Audible Absence' (2016)

⁷³ I refer to the interview with sound designer Anup Mukherjee in the Appendix of doctoral dissertation 'Audible Absence' (2016)

sequence in *Meghe Dhaka Tara*⁷⁴ (The Cloud-Capped Star, Ghatak, 1960) cited regularly in the mainstream Indian cinematic idiom.

Much of the mainstream standardization of sound production has been marked by the practice of close-miking and sound-proofing to altogether block ambient sounds as 'noise,' therefore, not to respect the acoustics of the space of production - a norm popularly followed in American cinema of the 1930s. James Lastra discusses:

The emerging hierarchy between essential sounds and mere noise grew in authority throughout the 1930s. Concurrently, it became the norm not to match visual and acoustic 'scale,' not to locate the microphone with the camera, not to respect the acoustics of the space of production, and not to offer a perceptually based 'coherent point of audition' with which the spectator could identify. Instead, technicians developed a flexible set of norms that sought to enhance intelligibility through close miking and sound-proofing. (2000: 188)

These standards and normative structures of sound production providing the narrative strategy of a mode of listening-out-of-place were avidly followed by Indian cinema of the 40s, 50s and 60s. They were loosely and inadequately disturbed by Ray's oeuvre, but his influences were only felt much later, with the coming of surrounds sound in the digital era—a cinematic sound environment where some of the locative sonic details have been given careful attention with considerations for a realistic auditory setting of the sites, establishing and expanding the socially realistic situations.

The Presence of the Site as a Mode of Realism

As I have shown above, Ray's film-works generally highlight a distinct recognition for and a keen observation of the fictional site narrated in the story-world by providing detailed locational information in the use of ambient sounds. This narrative strategy operates within the apparent limitation of the synchronized sound and monaural framework used from recording to reproduction in Indian cinema of his times. Film theorist Noël Burch argued about similar limitations in American cinema:

[In monaural synchronized set up, BC] microphone recording [...] would jumble them (sounds recorded from the location) all together; and the sounds emerging from the

⁷⁴ Excerpts from the film: <https://www.youtube.com/watch?v=N3gKQ1xd40s>

single source of the loudspeaker in the theatre would all be equally 'present', much as a camera reduces the three-dimensionality of real space to the two-dimensionality of screen space (Burch 1985: 201)

Working within these limitations in Indian cinema, and exploiting the synchronized sound and monaural aesthetics to their fuller extent in narrating his reality-based stories, Ray has constantly strived for giving due attention to the specifics and particularities of the site while constructing pro-filmic spaces in the diegesis. Ambient sounds have been the primary elements that carried significance of the site in this narrative strategy with realist sensibilities. His attention has been to use the site as a character in the narration in many of his works. We learn from the recent memoirs of Ray's wife Bijoya (2011), as well as from his biography by Marie Seton (2003) about Ray's fascination with the sites he chose to shoot and his willingness to shoot on location for all of his films. As I have discussed earlier, Ray's frequent use of off-screen ambient sounds does suggest the expanded presence of the site as an effort to overcome the above-mentioned limitations of monaural synchronized sound recording and monophonic mixing. The practice has been a departure from the classical conventions of a largely vococentric Indian cinema of the 40s and 50's. Andy Birtwistle writes similarly of American cinema of this time: 'Sound is always marshalled so as not to interfere with dialogue, which as one of the central supports of narrative has a higher status than other elements of the soundtrack. In contrast, background sounds, ambient sounds, and sounds without an obvious visual source located within the frame all find a place' (2010: 57). This applies to Ray's films as well.

Ray's strong belief in the ability of ambient sounds to carry the narrative creates the premise of what can be loosely called 'audiographic realism' in Indian cinema. By audiographic realism, I mean the synchronized use of sound without significant sound synthesis, retaining the materiality or the object-hood of the documented sound with perceptual fidelity and the representation of the original site and situation in a monaural screen-centric use of location-specific sound. This is analogous to photographic realism's determination not to affect the appearance of a

In the third article I will show how Ray's "audiographic realism" has inspired Indian independent and art-house cinema during the digital era of sync sound.

photographic object (Kania 2009: 240). Keeping a realist paradigm in cinema as an authorial choice, Ray used sound as a synchronized documentation of reality as his cinematic ethos: 'the main contribution of sound was an enormous advance towards realism, and a consequent enrichment of the medium as an expression of the ethos' (Ray 2011: 5). Here

the definition of 'realism' refers back to the tradition of observational cinema, which represents reality by recording vision and sound that come 'from within the world of the film' (Kania 2009: 244). Satyajit Ray, one of the most influential filmmakers from the Indian subcontinent, for whom the realist paradigm was an authorial choice, continued to use ambient sound as a site-specific element to the documentation of reality as part of his cinematic signature – one that expands the practice of his predecessors to a higher degree of precision, putting a benchmark in Indian cinema. Film scholar Anindya Sengupta comments on Ray's practice with naturalistic sound:

Ray not only imbibed formal ideas from the dominant and emerging practices of realist cinema, but was also informed by other kinds of cinemas. He can certainly be credited for creating a model of narrative realism, which will be loosely followed by the succeeding art-cinema movements in India; [...] the soundtrack in Ray's cinema became naturalistic (particularly in his use of 'voice', 'speech' and incidental 'noise'), reticent (in his famous use of silences or suspension of speech, variations in set themes and motifs of non-diegetic music) and auteuristic (i.e. it became eminently recognizable), compared to the more ornamental, generic and over-wrought instances of the mainstream melodramas. (2007: 86-87)

As we have seen above, his is a sound practice that provides a detailed depiction of site, and creates a mode of situated listening, where the auditor finds ample information to relate to the places framed within the narrative. In *Pather Panchali*, a girl asks her brother to 'listen' standing by the side of a large field, and a layer of diegetic sounds follow—sounds that emanate from various objects within the site of the landscape, and that are visible on the screen: the electrical pole, the rain falling on the field, the passing of the train, the night cricket, the various insects, forest murmurs and so on. These sounds not only re-present these objects, but they also establish their very presence and their interplay with the characters by perceptual fidelity in listening to the ambience depicting the filmic world in verisimilitude with the lived experience. Film scholar Ravi Vasudevan speaks of such sense of presence and verisimilitude while discussing Ray in the context of his contemporary cinematic practice:

The differences appear to emerge from evaluating the status of the narrative form through which the real would be articulated, through what means of representation, styles of acting, [and] aesthetic strategies the real would be invoked. Here, the popular compendium—studio shooting, melodramatic, externalized forms for the

representation of character psychology, non- or intermittently continuous forms of cutting, diversionary story lines, performance sequences—was not acceptable within the emergent artistic canon, for they undermined plausibility and a desirable regime of verisimilitude. (Vasudevan 2003)

Such intent of providing spatial verisimilitude manifests not only in the elaborate use of site-specific ambient sounds, but also in the recording and re-presentation of voices. In an interview⁷⁵, Ray's sound mixer Jyoti Chatterjee speaks about Ray's use of 'straight or direct dubbing' to avoid some of the camera and production noises. It is a method to capture the actor's voice immediately after the shot is taken—unlike the standard loop dubbing used in Indian cinema from the 1960s on. 'Direct or straight dubbing' is done in the same place and under similar circumstances as to retain the spatial authenticity of the site as well as the sited performance of the actors, something that could not be recreated in the studio in front of the looped reference of visual images. We find evidence of such innovative dubbing in *Nayak* and *Aranyer Din Ratri* (*Days and Nights in the Forest*, 1970). This practice of random dubbing on location (to retain the sitely details and ambiances when direct synchronized recording confronts logistic hindrance) shows Ray's commitment to create a presence of the site in the diegesis, expanding the possibilities in Indian cinema.

Epilogue: Relocating Ray

Ray began writing film reviews from very early in his career, and in 1948 he published a short but perceptive commentary entitled 'What is Wrong with Indian Films'. The essay criticized the predominance of saccharine sweet musicals and religious mysticism in the Indian cinema of his times: 'The raw material of the cinema is life itself. It is incredible that a country which has inspired so much painting and music and poetry should fail to move the moviemaker. He has only to keep his eyes open, and his ears. Let him do so' (Ray 1948/1976: 24). The essay expressed his views on cinema that is far from life. By asking readers to keep their eyes and ears open, he suggests what I have explained, as the way films 'simulate the perceptions of an observer located on the film set, whose eyes and ears (camera and microphone) are joined as inseparably as those of a real head' (Maxfield quoted by Lastra 2000: 183) - an essential tenet of synchronized sound and monaural aesthetics.

⁷⁵ See: personal interview with Jyoti Chatterjee in the Appendix of doctoral dissertation *Audible Absence* (2016: 156).

However, this technological framework was also practiced by Indian cinema since the advent of sound in *Alam Ara* (Irani 1931) until the early 1990s, when many films turned to stereophonic mixing and when analogue quadrophonic/surround have already been invented and applied in path-breaking films like *Sholay* (Sippy 1975). Why then is Ray significant, referential, and exemplary in this context? What I have tried to show earlier in this article is that Ray is a reference point in studying the trajectory of synchronized sound and monaural aesthetics in the way his work exploits the territories of the technique and pushes the boundaries of the aesthetic choices. Following this, the kind of sound experience his films produce are benchmarks in practicing 'audiographic realism' by giving thorough consideration of the site and deep respect for the pro-filmic space triggering a locative embodied sonic experience derived from the reality of life, not in any way escapist or fantasy-like— a tendency that was common with his contemporaries in Indian cinema. In 1951, Ray wrote: 'For a popular medium, the best kind of inspiration should derive from life and have its roots in it. No amount of technical polish can make up for artificiality of theme and dishonesty of treatment. The Indian filmmaker must turn to life, to reality' (Ray 1976: 127). This statement aptly frames Ray's realist aesthetics from which most of his contemporary Indian filmmakers of the popular mainstream escaped. They, however, used the same monophonic system as a standard format that remained in their hands primarily vococentric and dominated by the rhetoric of narrative pleasure with the normative structure of the song and dance sequences celebrating the non-diegetic fantasy spaces in cinema. Barry Blesser and Linda Salter in their book *Spaces Speak—Are You Listening* (2007) underline the window-like opening of the singular speaker behind the screen as the monophonic architecture in cinema:

The first systems for broadcasting, recording, and cinema all used a single channel connected to a single loudspeaker, which amounted to listening to an aural environment through a window. Even at the beginning, the inadequacies of a monophonic presentation were apparent. (2009: 205)

Satyajit Ray expanded this vision, and used the monophonic system like a window of the world formed within the home. Such a window-like vision makes the audience-members sonically sensible by learning to develop an 'enormous curiosity about the world' (Ganguly 2001: 63). This curiosity leads to experiencing an opening to an 'outside' within the mental synchronization of sound in the monaural films as pointed out by Chion (1994: 69). Indian film scholar Supriya Chaudhuri argued that Ray did 'provide us with a cinematic staging of interiority that might compensate for the hollowness of the house. Such interiority can only

be located in the exterior, in the open, empty world, in a mental rather than a physical place' (Chaudhuri 2007). In this process, Ray allows the audience to respect the worldly sites from where the stories of the real people unfold, and takes these sites as point of departure for producing a richer extended cinematic experience based on the reality of life. This particular sensibility makes Ray's authorial positioning clearer. In an interview Shyam Benegal mentioned Ray's position or 'status' within Indian cinema, terming it as a 'splendid isolation' and adding that 'I locate Indian cinema as before Ray and after Ray.'⁷⁶

Satyajit Ray's directorial debut with *Pather Panchali* (1955) broke away from conventional cinema of the 1940s and 1950s and guided the audience-member into the real world, where poverty, empathy, tragedy, and comedy are sensitively combined without depending on sentimentalism prevalent in the Indian cinema of his time. Ray's worldly realistic sensibility replaced the popular domestic melodramas embedded in highlighting the theatricality of dialogue between the characters, ignoring sitely evidence of sound. Ray also challenged the perpetual intervention of the non-diegetic musical score, song and dance sequences that had been the dominant mode of narration. In expanding and creating diegetic presence of the real world, Ray's use of sound, particularly in the treatment of the ambience, rendered respect for and recognition of the cinematic site to take prominence in the narration and reveal beauty in the quotidian. Going back to the proclamation of Béla Balázs (1985) that sound's role is 'to reveal for us our acoustic environment, the acoustic landscape in which we live' (a statement that is at the core of my project) Ray's works delineate the possibilities of narrating and revealing the intricate details of lived environments and natural settings for the future generations of Indian filmmakers and practitioners.

Emerging from the synchronized sound tradition of Indian films after coming of sound in the 1930s, but having very few followers during his time, Ray's sonic sensibility finds a sort of revival in the digital realm of Indian cinema, such as location sync sound recording. The digital sound practice facilitates realistic auditory settings to create immersive experiences

⁷⁶ See: personal interview with Shyam Benegal in the Appendix of doctoral dissertation *Audible Absence* (2016: 323).

informed by a spatial awareness. This is the context within which Satyajit Ray's film-works find considerable resonance.

References

Allen, Richard (2009) 'Pather Panchali' in Lalitha Gopalan (ed) *The Cinema of India*, (24 frames series) London: Wallflower Press, pp. 86 – 95.

Balázs, Béla (1985) 'Theory of the film: Sound' in E. Weis and J. Belton (eds) *Film sound: Theory and practice*, New York: Columbia University Press, pp. 116 – 125.

Birtwistle, Andy (2010) *Cinesonica: Sounding Film and Video*, Manchester: Manchester University Press.

Bordwell, David and Thompson, Kristin (1997) *Film Art. An Introduction*, New York: McGraw-Hill Publishing Company.

Blessner, Barry and Salter, Linda-Ruth (2009) *Spaces speak, are you listening?: Experiencing aural architecture*, London: The MIT press.

Bloom, Peter J. (2014) 'Sound Theory' in Edward Branigan and Warren Buckland (eds) *The Routledge Encyclopedia of Film Theory*, London and New York: Routledge.

Burch, Noël (1985) 'On the Structural Use of Sound' in E. Weis and J. Belton (eds) *Film sound: Theory and practice*, New York: Columbia University Press.

Chaudhuri, Supriya (2007) 'Space, Interiority and Affect in Charulata and Ghare Baire', *Journal of the Moving Image* 6, Kolkata: Jadavpur University Press.

Chion, Michel (1994) *Audio-Vision: Sound on Screen*, translated and edited by Claudia Gorbman, New York: Columbia University Press.

Chattopadhyay, Budhaditya (2016) 'Appendix' in *Audible Absence: Searching for the Site in Sound Production* (doctoral dissertation), Leiden University, pp. 1 – 649.

Chattopadhyay, Budhaditya (2015) 'The Auditory Spectacle: Designing Sound for the "Dubbing Era" of Indian Cinema', *The New Soundtrack*, 5 (1): 55–68.

Chattopadhyay, Budhaditya (2013) 'The Cinematic Soundscape: conceptualising the use of sound in Indian films', *SoundEffects*, 2 (2): 66-78.

Chattopadhyay, Budhaditya (2012) 'Sonification of Cinema: studying the use of location sound in Indian films', *Music & The Moving Image conference*, NYU.

Chattopadhyay, Budhaditya (2007) 'Sound memories: In search of lost sounds in Indian cinema', *Journal of the Moving Image* 6: 102-111.

Cooper, Darius (2000) *The Cinema of Satyajit Ray: Between Tradition and Modernity*, London: Cambridge University Press.

Doane, Mary Ann (1985) 'The Voice in the Cinema: The Articulation of Body and Space' in E. Weis and J. Belton (eds) *Film sound: Theory and practice*, New York: Columbia University Press.

Doane, Mary Ann (1985) 'Ideology and the Practice of Sound Editing and Mixing' in E. Weis and J. Belton (eds) *Film sound: Theory and practice*, New York: Columbia University Press.

Ganguly, Suranjan (2001) *Satyajit Ray: in search of the modern*, New Delhi: Indialog.

Gooptu, Sharmistha (2011) *Bengali Cinema: An other nation*, London and New York: Routledge.

Gopalan, Lalitha (2002) *Cinema of Interruptions: Action Genres in Contemporary Indian Cinema*, London: British Film Institute.

Grimshaw, Mark (2011) *Game Sound Technology and Player Interaction: Concepts and Developments*, Hershey and New York: Information Science Reference.

Ihde, Don (2007) *Listening and Voice: Phenomenologies of Sound*, Sunny Press.

Kania, Andrew (2009) 'Realism' in P. Livingston and C. Plantinga (eds), *The Routledge Companion to Philosophy and Film*, London and New York: Routledge, pp. 237 – 247.

Kuhn, Annette and Westwell, Guy (2014) *A Dictionary of Film Studies*, in Oxford Reference Online, Accessed from:

<http://www.oxfordreference.com/view/10.1093/acref/9780199587261.001.0001/acref-9780199587261-e-0659#>

LaBelle, Brandon and Martinho, Claudia (eds) (2011) *Site of Sound: Of Architecture and the Ear: Vol 2*, Berlin: Errant Bodies Press.

Lastra, James (2000) *Sound Technology and the American Cinema: Perception, Representation, Modernity*, New York: Columbia University Press.

Lawrence, Amy (1992) 'Women's Voices in Third World Cinema' in Rick Altman (ed), *Sound theory/Sound practice*, New York: Routledge, pp. 178 – 190.

Lombard, Matthew and Ditton, Theresa (2006) *At the Heart of It All: The Concept of Presence*, *Journal of Computer-Mediated Communication* 3 (2).

Messerli, Douglas (2011) 'Trapped in the past' in *International Cinema Review*, December 2011, Accessed from:
<http://internationalcinemareview.blogspot.dk/2011/12/trapped-in-past-by-douglas-messerli.html>

Percheron, Daniel (1980) 'Sound in cinema and its relationship to image and diegesis' in Rick Altman (ed), *Yale French Studies Number 60: Cinema/Sound*, pp. 16 – 23.

Ray, Bijoya (2011) *Amader Katha*, Calcutta: Ananda Publishers.

Ray, Satyajit (1976) *Our films their films*, Delhi: Orient Blackswan.

Ray, Satyajit (2011) *Satyajit Ray on cinema*, edited by Sandip Ray, New York: Columbia University press.

Sengupta, Anindya (2007) 'Seeing through the sound: Certain Tendencies of the Soundtrack in Satyajit Ray's Films of the 1970s', *Journal of the Moving Image*, 6: 86-101.

Sonnenschein, David (2001) *Sound Design: The Expressive Power of Music, Voice, and Sound Effects in Cinema*, Michigan: Michael Wiese Productions.

Seton, Marie (2003) *Portrait of a Director: Satyajit Ray*, New Delhi: Penguin Books India.

Vasudevan, Ravi (2001) 'Nationhood, Authenticity and Realism in Indian Cinema: The Double Take of Modernism in the Work of Satyajit Ray', *Journal of the Moving Image*, 2: 52-76.

Article 2: Chattopadhyay, Budhaditya (2015). "The Auditory Spectacle: designing sound for the 'dubbing era' of Indian cinema." *The New Soundtrack* 5/1: 55–68.

This article examines the second major historical phase of sound production in Indian cinema, namely analogue recording (magnetic), dubbing, and stereophonic mixing (1960s–1990s) and addresses a widespread lack of ambient sound use. The article is a slightly revised version of the published copy, with minor language revisions, and updated information based on research and insights gathered since its publication. These changes facilitate a contextual reading, situating the piece within the vocabulary used in this dissertation.

Abstract

This article emerges out of my ongoing research into the historical developments of cinematic sound from the analogue eras to the digital realm, and conceptualizes the specific practices of designing ambient sounds (or a lack thereof) in the 'dubbing era' of Indian cinema (1960s to 1990s). The basic argument that I will develop is that the creative practice of designing sound in Indian films of this period inculcated a technologically informed approach using analogue sound processing with expressionistic and melodramatic overtones that led the spectator to imagine the pro-filmic space instead of bodily experiencing it in cinematic sound. In this article, following film analysis and finding actual evidence in the interviews of sound practitioners, I will demonstrate that magnetic recording and dubbing rendered the cinematic imagination of this period as something spectacular, with extravagant songs and dances in foreign locations and actions packed with studio-manipulated and synthetic sound effects. Add to this a deliberate lack of ambience, and this practice triggered a cinematic experience of emotive tension and affective stimulation.

Introduction

Starting from the 1950s, sound in Indian cinema was rarely recorded on location. Dubbing and re-recording gained momentum as the specific mode of sound practice in the popular films from this time, while the film soundtrack was mostly created (or re-created) in the

studio. The actors would recite and re-record their lines as their images appeared on the studio screen in a process known as 'looping'⁷⁷ or ADR (Automatic Dialogue Replacement). Background music, along with lavish song and dance sequences at regular intervals followed this, and various sound effects, known as Foley⁷⁸, entirely made in post-synchronization within the close confines of a studio, were added later as the secondary or tertiary layers of sound organization.

The typical practice of post-synchronization in any popular mainstream cinema of the time created several aesthetic problems, however. Most relevant to my analysis here is the lack of actual spatial information in the recorded and designed sounds rendered in this technique, as well as the inability of this style of sound organization to provide evidence of the cinematic site in the 'pro-filmic space' (Lastra 2000).⁷⁹ The actors had to perform twice: once on location in front of the camera, and once more in the studio in front of the studio microphone, where real situations on location would be impossible to re-create. Most of the actual location sound recordings were replaced in the studio and to mask the shortcomings of the technique highly processed Foley and sound effects were used. These effects ended up sounding inordinately loud and high-pitched, while ambient sounds as a significant element were often neglected.

The use of ADR in Indian cinema became a regular practice from the 1960s on with the arrival of the Arriflex 2C and Arriflex 3 cameras, which required a blimp (a soundproof cover) to shield its notorious motor noise⁸⁰ during the location shooting. This distracting

⁷⁷ See personal interview with Anup Mukherjee (2016: 38) in the Appendix of doctoral dissertation 'Audible Absence: Searching for the Site in Sound Production' (2016).

⁷⁸ 'Foley' is a technique used in the sound post-production stages of film-making to recreate sound effects of a scene for post-synchronisation with the image. It allows for the clean recording of the effects synthetically made inside a studio since the production mikes would include the unwanted locational noises, which are, of course, almost entirely absent in the studio. Foley is traditionally used to provide the actor's footsteps, movements and other 'personal' sounds, all made post-synchronously.

⁷⁹ As thoroughly explained in my doctoral dissertation *Audible Absence* (2016), 'Pro-filmic space' is defined by film sound scholar James Lastra (2000) as the space of the fictitious site in front of the camera, a space that is reconstructed in the film space for producing the cinematic experience by recording, layering, and designing of sound.

⁸⁰ See the paragraph sync sound in Asia: https://en.wikipedia.org/wiki/Sync_sound

camera noise required that everything had to be re-created in the studio. Eventually, this became the standard in Indian films. As dubbing emerged alongside the standardization of analogue magnetic recording and mixing it was facilitated by multi-track re-recording in the studio. The following phase of sound production in Indian cinema was shaped toward what is known as the 'dubbing era' (roughly between the 1960s and 1990s). This was a long stretch of time that illustrated a growing interest in the controlled deployment of a few sound elements as design materials in films, keeping the primacy of the voice along with a prominent usage of background music, song, and dance sequences, and processed sound effects. However, in this hierarchy of sound organization, there was a substantial lack of ambient sounds. This practice was a result of the standardized methods of studio-centric film sound production with a particular aesthetics of post-synchronization using dubbing and Foley as explained above. In this context, the present chapter addresses the following questions: Why was it that ambient sounds were scarcely used in this era of sound production? What was the nature of diegesis as the narrative process undertaken in this specific practice of ambient sounds (or a lack thereof), and how was the presence of cinematic site produced in this phase of Indian cinema? To address these questions I will examine the specific sound practice of 'dubbing' as a narrative strategy embraced in this period by the sound practitioners.

'Dubbing', according to writer Jorge Luis Borges, is 'a perverse artifice' contributing to 'ingenious audio-visual deformation' (Borges 1945/1999: 262). His wrath with regard to dubbing is perhaps based on the voice replacement practices by foreign exhibitors in which American films were converted from English to respective regional languages. But in India, the replacement was only spatial and temporal, and generally not linguistic, since the same actors would eventually dub their own in-sync voices in the same language. The question, then, was not only what film scholar Nataša Ďurovičová terms as 'voice-body duplication in post-synchronicity' (Ďurovičová 2003)⁸¹; rather, it was of a more asynchronous nature, having little or no audible information about the cinematic site narrated in the story, because the actors were divided in space and time while performing their lines of speech twice – on location and again inside the studio. This process of voice replacement 'privileges one aspect of speech, namely comprehension, at the expense of all of its other aspects' (Ďurovičová 2003). To compensate for this, and to counter Borges' 'perverse artifice' and 'audio-visual deformation', voice, music, and sound effects were mixed loudly and in an overly expressionistic style using the analogue audio processing techniques and methods,

⁸¹ See: <http://epa.oszk.hu/00300/00375/00001/durovicova.htm>

alongside frequent interruptions (Gopalan 2002) of song and dance sequences. This aesthetic strategy maintained a primarily non-diegetic cinematic space where site-specific ambient sounds would not fit in.

Commercial Indian films of this time were indeed known for their poor quality of sound design embedded with a lack of ambient sounds. As such, there was an apparent deficiency in the industry personnel's sonic sensibility to create an aurally perceivable pro-filmic space and convincing cinematic sites, perhaps symptomatic of the 'peculiar inability of Indian cinema to produce a persuasive relationship with live location sound, the only proper sound resource actually available to the cinema' (Rajadhyaksha 2007: 14). Indeed, it will be crucial to study this peculiar trend in sound practice creating a lack in the presence of the site in the diegesis maintained as the narrative strategy if we intend to trace the developments following a historical understanding of sound production within Indian cinema towards the digital realm.

By examining the experience rendered when ambient sound is absent from the mediated environment of Indian films produced during the "dubbing era," this article substantiates my general argument about the establishing of a relationship between site and sound in media productions through the use of ambient sound.

The Sonic Backdrop

The 1950s and 1960s are considered to be the Golden Age of Indian cinema, when film auteurs such as Satyajit Ray emerged and placed Indian cinema on the international stage as I have shown in the previous article. At the same time, younger generations of filmmakers were initiating a New Indian Independent Cinema that assimilated wider influences including, but not limited to Indian folk culture, and myth. Use of sound in these New Independent Indian films were a clear departure from their Golden Age predecessors in the sense that sound would now be produced using the magnetic tape-based analogue sound technology. As we learn from the interviews taken with Indian sound practitioners⁸², this was the time when sound production was evolving in its early period of technical advances. For example, audio effects such as reverb, EQ, compression, limiting, and echo were developed during this time. Eventually came 'looping', the technique that would quickly

⁸² I have interviewed a number of prominent sound practitioners working in the Indian film industry to explore and understand their methods. These personal interviews can be found in the Appendix of doctoral dissertation 'Audible Absence' (2016).

become a standard industry practice.⁸³ It was at this time that a number of films embraced the possibilities of the emerging techniques to innovate with newer sonic textures, tone, and other features for the purpose of narration. For instance, Mrinal Sen's *Bhuvan Shome* (1969) illustrates a non-naturalistic and processed use of sound mixed in multiple layers to create comical and satirical situations. On the use of processed sound and image in *Bhuvan Shome*⁸⁴, film scholar Megan Carrigy states:

The approach to storytelling in *Bhuvan Shome* offers up a dizzying array of interrelated non-naturalistic devices. Disjunctive, shock-producing storytelling techniques keep the audience in a state of anticipation. Techniques include merging voice-over narration and central character's internal dialogue, stark freeze frames, [...] rapid editing techniques such as jump cuts, abrupt changes in tone and tempo; and a complex soundtrack of railway sound effects. (Carrigy 2009a: 142)

In an interview for a documentary on Indian cinema made for DR K, a channel under the Danish Broadcasting Corporation, Mrinal Sen says that he exhaustively used the latest analogue technology available in India during the 1960s and incorporated studio techniques to their fullest during the making of *Bhuvan Shome*.⁸⁵ Likewise, in *Bhuvan Shome*, the earlier trend of synchronized realism in Indian cinematic sound took a serious bend toward non-naturalistic, processed, and modulated sound, which was already introduced by Ritwik Ghatak (1925 – 1976) in his elaborate use of edited sound effects to create epic and melodramatic environments. Ghatak's experiments with sound and music arguably contributed to the shape of the emerging Indian cinema with its strong emotive overtones. One example of this is the looped sound of whipping, with a clear reverb effect at the end of a song sequence in *Meghe Dhaka Tara*⁸⁶ (*The Cloud-Capped Star*, 1960). In this sequence, the protagonist and female lead Neeta, who will later die of fatal tuberculosis following a long battle against her ill-fated social condition, is learning to sing a love song for a marriage ceremony within a modulated auditory setting of high wind. This marriage ceremony refers to another tragic twist of Neeta's fate, as her fiancé decides to marry her sister. The love song ends with the sound effect of repetitive whipping with extended reverb. The sound

⁸³ See personal interview with sound designer Anup Mukherjee (2016: 38 - 39) in the Appendix of doctoral dissertation 'Audible Absence' (2016).

⁸⁴ The film is available online: <https://www.youtube.com/watch?v=4MQuuSmpg-Y>

⁸⁵ Aired on DR K (2012)

⁸⁶ The film is available online: <https://www.youtube.com/watch?v=L0JPxFQUVW4>

effect directs the audience's sympathy towards the woman protagonist, while the sympathetic emotion takes the character as its intentional object (Plantinga 2009: 90). The auditory setting created by processed sounds with the reverb and loop effects involves the audience in ways that generate pity and compassion for the protagonist. A technologically simulated approach to represent reality in overly expressionistic and melodramatic overtones thereafter became prevalent in analogue magnetic tape-based and studio-centric film sound design, aimed at creating emotional responses in the spectator and gradually giving rise to the studio's control over cinematic sound. This approach to use sound as a design material worked as a major influence on the dominant melodramatic styles in the popular Bombay-based Hindi cinema as well as on regional cinemas. Film scholar Erin O'Donnell elaborates on the technical details of Ghatak's melodramatic style operating within melodrama of Indian cinema:

The technical details of Ghatak's melodramatic style include the following stylistic traits: frequent use of a wide angle lens, placement of the camera at very high, low and irregular angles, dramatic lighting composition, expressionistic acting style and experimentation with songs and sound effects. (O'Donnell 2004)⁸⁷

Later, in the works of Mani Kaul (1944 – 2011), a student of Ghatak, the temporal and geographical dislocations of cinematic space were justified by extending the above-mentioned styles of his predecessors into the use of over-dubbed voice, at times out of sync with the speaking lips. These techniques worked parallel to the convention of creating a mode of experimentation that expanded the scope of dubbing and the aesthetics of post-synchronization. In popular mainstream cinema, however, through a gradual conversion to more convenient, portable and robust magnetic recording and mixing (re-recording), the Golden Age as well as the New Indian Independent Cinema gradually dissolved into a technologically informed and studio-centric sound production following the marketing of popular Indian cinema with colorful antics, half-known/unknown foreign locations and spectacular song-and-dance sequences in the stereophonic mixes of 1980s. This trend continued until the 1990s when digital technology introduced major shifts, gradually replacing dubbing with 'sync sound' or location recording and the intricately complex and elaborate design of surround-sound. But the dubbing era remains a major cornerstone and a typical phase in the trajectory of sound production in Indian cinema with its specific stylistic features, production aesthetics, and a particular kind of sound experience.

⁸⁷ See: <http://www.ejumpcut.org/archive/jc47.2005/ghatak/>

The narrative strategy of practicing sound in Indian films of the dubbing era needs to be understood from the specific aesthetics of analogue (magnetic) sound technology applied in cinema (Lastra 2000; Sonnenschein 2001) and stereophonic mixing/re-recording available to the filmmakers of this time drawing from studies in (film) sound production (Buhler, Neumeyer, and Deemer 2010; Sergi 2004) and its influence on stylistic features in cinematic sound (Biancorosso 2009; Lastra 2000). The representation of sound in overly expressionistic, spectacular, and melodramatic overtones that distanced cinematic sound's actuality away from its site - and in the process creating emotive and affective responses in the *mise-en-sonore* or auditory setting - has been understood from the theories of emotion and affect in films (Tan 2011; Plantinga 2009). Besides, the typical lack in the use of ambient sound in this time, creating a sense of escape from or absence of the site in the narration, has been studied in the light of narrative strategies of 'diegesis' (Percheron 1980; Burch 1982) and considered the notions of 'presence' drawn from sound studies (Lombard 2006; Skalski and Whitbred 2010; Grimshaw 2011). Although this body of research was developed keeping primary examples of the American cinema in mind, these references nonetheless create epistemological grounding of cinematic sound studies where the examples from the Indian cinema can also be contextualized, historicized, and theorized. Therefore, through an exploration of a few significant examples of Indian films of this time and taking evidence from the conversations with Indian film sound practitioners, I will trace in the following paragraphs specific factors that informed sound practice in the dubbing era, leading to a minimal use of ambience, and an auditory setting of absence in the depiction of the site in Indian cinema.

Analogue Magnetic Recording: Sound as Raw Material

During the 1960s, magnetic recording began to be extensively used in Indian cinema. With the arrival of magnetic tapes, sound recording appeared to be easier and of a relatively better quality. The magnetic tape-based recording machines became portable making it possible to copy, store, and erase tracks of recorded sounds whenever required, even at the expense of asynchronous modes⁸⁸ since magnetic tapes were not coupled with the camera. Unlike the previous direct optical recording system, this situation created scope for mixing and re-recording outside of the location. James Buhler, David Neumeyer, and Rob Deemer comment on the advantages of analogue magnetic sound recording in films: 'The introduction of magnetic tape likewise allowed an efficient and relatively inexpensive way to

⁸⁸ Separately recording various film sound components almost entirely inside a studio.

record and mix sound into a number of channels. This also provided an efficient way to provide a variety of mixes' (Buhler, Neumeyer, and Deemer 2010: 338). Likewise, in Indian cinema, the advent of magnetic tape made a better quality of recording possible, with a higher dynamic range than that of the previous practice of direct optical recording.⁸⁹ Indian film writer Gautam Pemmaraju observed that 'magnetic tape revolutionized sound recording and production, and it had a significant impact on films. Sound captured analogously on tape with magnetic emulsion on it was of far better quality (and dynamics) than that on optical film' (Pemmaraju 2013: 80).

Following the emergence of magnetic recording, in-house sound studios became popular for doing post-production instead of a direct recording on location. As a result, film sound became increasingly distanced from its real site narrated on the screen. Gradually, an analogue studio-centric technique of film sound design emerged as the dominant mode of practice. Dubbing and Foley followed technological advancements with the introduction of the Nagra⁹⁰ portable recorder (utilizing quarter-inch magnetic tape) and the MagnaTech Rock-and-Roll mixing console.⁹¹ The studio system invited more investment in sound post-production. Tools and techniques like looping, multi-track mixing, and track-laying opened up possibilities of parallel resourcing of sound reconstruction, making a dependence on direct location recording obsolete. Stock sounds were shared or became commercially available as a bank of 'sound objects' from which one could pick up raw materials for ambience and sync sound effects, although, in most cases, ambience was a minor concern in sound organization. With the rise of new technologies, such as analogue magnetic recording, the sound objects recorded on magnetic tape were no longer referred to as a site-specific sound source (Demers 2009). In Indian cinema, the practice of recording sound on tape enhanced sound's materiality so as to make it possible to decouple

I will discuss in the next article and in the Conclusion how digital recordings behave more directly when compared to magnetic tape-based analogue recording. They often behave in "object-unspecific" ways.

⁸⁹ See personal interview with Anup Mukherjee (2016: 35 – 39) in 'Audible Absence'

⁹⁰ Mostly battery-operated and 'phantom' (48v) powered, portable, professional audio tape recorders produced by Kudelski SA, based in Switzerland. The Nagra II model has been the most popular of the series for use in the Indian film industry.

⁹¹ Sound designer Dipankar Chaki speaks of the early years of the MagnaTech Rock-and-Roll mixing console in the Bengali film industry and how that improved the sound quality. See personal interview in the Appendix of 'Audible Absence' (2016).

sound from the site as a raw material. At this point, one could bring these raw materials into the studio to follow processes of analogue post-synchronization to re-couple it with the image. Following this method, films were increasingly shot on a pre-designed set inside studios instead of on real locations, and film sound was becoming a mere dialogue-background score-sync effect scheme.

Thus, a practice was carried out by industry-dependent and technologically informed sound technicians to design a soundtrack for a film out of asynchronous sound sources, using pre-recorded sound materials. In most cases, those technicians did not give much attention to the ambience, which would otherwise demand closer attention to the location or the source of sound in its recording and design stages. Song and dance sequences and loud background music were used, merely to mask these shortcomings as veteran sound mixer Anup Dev informs us.⁹² Many of the sound practitioners admitted that the use of a loud mix in the background score limited the possibility of including any substantial layers of ambient sound in the soundtrack. The lack of ambient sounds meant a lack of information about the pro-filmic space in the narration (Burch 1982). This trend of analogue studio-centric sound production in the dubbing era thus approached relative abstraction of the film's story-world.

Dubbing: Sound without Perspectives

In order to avoid camera noise emanating from the popular and affordable Arriflex 3 cameras, along with other incidental background noises from the location of shooting, 'dubbing' was introduced in Indian cinema and became a norm. Dubbing, like 'looping', used techniques inside sound studios. As mentioned earlier, this process became known as ADR, which required that the actors had to perform twice: once on location in front of the camera, and again in the studio in front of a microphone as explained above. Such sound practices in the dubbing era with emphasis on post-synchronization effectively destroyed perspective in cinema (Pemmaraju 2013), in the sense that the physical reality of the sites with their spatial details and natural auditory situations from the location could not be re-created inside the sound studio.

A critical landmark in the history of cinema is the separation of the production of the sound from the image. In India, this led to the 'playback' and later, the 'dubbing' era. [...] the production of the dialogue also came to be separated from the filming on a set or a location. This was driven by a technological imperative: the noise made by

⁹² See personal interview with Dev in the Appendix of 'Audible Absence' (2016).

the moving parts of the camera. (Pemmaraju 2013: 80)

If we follow the dialogue delivery in some of the representative films of the 1970s, such as *Dharmatma* (*Dharmatma*, Khan, 1975), *Johny Mera Naam* (*Johny My Name*, Anand, 1970), *Deewaar* (*The Wall*, Chopra, 1975) and *Lahu Ke Do Rang* (*Blood Has Two Colours*, Bhatt, 1979), we hear the actors' voices processed with studio reverb even in natural outdoor settings. In a particular sequence of *Dharmatma*⁹³, the tribal woman Reshma and the main protagonist Ranbir, who has fallen in love with her, speaks in an open clearing in the middle of a forest (according to the storyline, the site is in the distant land of Afghanistan).⁹⁴ We hear the actors' voices processed clean, polished, and crisp using a sound compressor to accentuate the intelligibility, but neither do we hear the ambience of the forest, nor do we perceive the sound perspectives of their respective standing positions as they face each other on either side of a tree. Further, when the villain, Jankura, arrives, envious of their amorous proximity, he shouts in anger, and his voice emerges treated with the acoustic processing of a reverberant room rather than the openness of a forest. Similarly, in an earlier sequence from the film *Deewaar*⁹⁵, someone makes a speech in an exterior courtyard in front of a number of factory workers; but his voice appears cleanly recorded by a method of close miking with applied interior studio reverb, without the slightest sign of the sound perspective his position on an open field should create.

James Lastra has shown that in American cinema, the sound dubbing stages' use of the 'close frontal miking of actors, which minimizes reflected and indirect sound, became the norm for dialogue' (Lastra 2000: 142). He acknowledges the lack of sound perspective this specific practice creates: 'Despite changes in shot scale, the sound recordist has maintained "close-up" sounds in order to ensure intelligibility, thereby violating the presumed norms of "sound perspective"' (Lastra 2000: 143). It is no surprise that these Hollywood norms would influence popular Indian cinema, exporting similar production aesthetics into the Indian context.

⁹³ The film is available online: https://www.youtube.com/watch?v=Upc4w_WDy_k

⁹⁴ See the Wikipedia entry on the film: <https://en.wikipedia.org/wiki/Dharmatma>

⁹⁵ A sequence from the film: <https://www.youtube.com/watch?v=KW8-JVLC0qU>

Hyper-real Sound Effects: Sound's Emotive Potential

The car-chase sequence in *Deewaar* (1975) and the fight sequence in *Dharmatma* (1975) exemplify the use of sound effects in an overly enhanced and dramatically modulated style, and rendered with hyper-real textures. When the car of the protagonist, Bijay, reaches the end of its fateful journey at the top of the temple stairs, the tires make a loud and unnaturalistic sound of screeching that would not occur in a real situation, since the car has stopped running up the concrete stairs leaving the road. The fighting actors' punches and the gunshots coming from the actors' pistols are processed with extra reverb, time-stretching⁹⁶ and compression⁹⁷ to render the sounds histrionic. They do not sound 'real' at all. What we hear is a hyper-real environment of suspended disbelief and emotive tension that is not realistically relating the sound to the sitely source depicted in the cinematic universe. Narration in these films 'creates a specific emotional tension' (Tan 2011: 35) via studio manipulation, and abstraction and modulation of recorded sound materials as processed audio effects, producing a suspended and 'unsitely' reality.

It would be interesting to see how parallel practices were operating in music production at this time, and if there was any link between the film sound and music industries. Rajiv Vijayakar, in his book *The History of Indian Film Music* (2009), has pointed out how such hyper-processed sonic modulations were commonplace in the production of soundtracks in Indian cinema parallel to the music production:

The foremost changes that came in this decade were probably the advent of consciousness in sound and the beginning of change in the old order, and both these factors were also interconnected. [...] As a kind of compensation, echo or reverb was added to [...] film soundtracks. (Vijayakar 2009: 53)

Thus, in the dubbing era of Indian cinema, the processing of sound effects (that is, echo or reverb) used also in film music production were the result of consciously working with sound to control and compensate for the lack of realistic sonic representations. This can be understood as the film's asynchronous tendencies, separating sound from its real site-specific sources added to enhance its dramatic and spectacular qualities. This perspective on

⁹⁶ See personal interviews with Anup Dev and Hitendra Ghosh in the Appendix of doctoral dissertation 'Audible Absence' (2016).

⁹⁷ Time-stretching is used to make sounds effects appear dramatic and temporally intriguing, while compression is employed to smooth out sound's rough edges.

consciously processing sounds seems comparable to what Emily Thompson has articulated in the context of American cinema as 'a fundamental compulsion to control the behavior of sound' (2004: 2).

It is no surprise that the gradual standardization of sound production during the dubbing era of Indian cinema has led to the formation of popular and syncretic forms like 'Bollywood', instigating dramatization in sound design to enhance sound's emotional and affective qualities, playing on the fringes of audiences' imagination. The intention has been to create popular mass appeal by exploiting melodramatic overtones through over-processing of villains' voices and modulating a character's bodily sound effects etc. The specific sonic representation of a villain's character was constructed using vocal manipulation tools like compressors, as well as extending the reverb of footsteps and other bodily gestures affecting visceral responses in the audience by affective mimicry—physically affecting the spectator as 'auditory entrainment' (Plantinga 2009: 94). These production aesthetics became accepted styles so as to develop the scope of the cinematic spectacle in the following stages of sound production practices, transitioning from monaural to stereophonic mixing.

Stereophonic Mixing: Sound as Spectacle

In Indian cinema, stereophonic mixing was introduced a few years later than in American cinema, where it was feasible as early as the 1940s, as Buhler, Neumeyer, and Deemer state: 'Although stereo sound was commercially feasible by 1940 [...] it would not be systematically exploited by the industry until the introduction of Cinemascope in the early 1950s' (Buhler, Neumeyer, and Deemer 2010: 336).

It is widely recognized that Cinemascope was first used in India for *Kaagaz Ke Phool* (*Paper Flowers*, Guru Dutt 1959), but the sound mix of the film was mono.⁹⁸ Indian filmmakers indeed took much time to expand their sound palette. Raj Kapoor's *Around the World* (1967) would be India's first film using the stereophonic sound experiment, however the late 1970s was the time when the stereophonic sound experience was recognized and popularized in a series of films starting with *Sholay* (*Embers*, Ramesh Sippy 1975), which is considered a cult film largely because of introducing such technical innovations.

⁹⁸ See: http://www.imdb.com/title/tt0052954/technical?ref=tt_dt_spec

In the early 1970s, a few filmmakers did use stereophonic sound technology, but the trend came into full force in the late 1970s when mainstream filmmakers like Prakash Mehra, Manmohan Desai and Feroz Khan began using it in their work. What was the ramification of the advent of stereophonic technology in cinema? According to film sound scholar Gianluca Sergi, stereophonic mixing made it possible to create an extra off-screen space in which part of the focus is left for the viewer. Stereo sound also made it possible for the viewer to engage with the directionality of the sound. This enhanced the audience's spatial orientation toward the fictional space over its monophonic counterparts. It also created the possibility of a dynamic sonic experience in which the sound could move around and beyond the screen (Sergi 2004). Thus, unlike monophonic sound, it became possible to make use of the off-screen space without having to link it to something on the screen. Both Sergi and other film sound scholars have pointed out the specific nature of early stereophonic sound production: 'Over the course of the 1950s, however, more and more films emphasized spectacle and grandeur, and the introduction of the widescreen format and stereo sound furthered this goal' (Buhler, Neumeyer, and Deemer 2010: 339).

In Indian cinema, the relatively higher dynamic range available to magnetic sound recording and wider headroom in stereophonic mixing expanded the possibilities of studio-centric sound production through the practice of placing music and sound effects on separate channels to spread the sound across the screen. This practice created the spectacular effects for an expanded fantasy-like experience, augmented with lavish songs and dances in foreign locations. The action sequences were packed with sound effects like echo and reverb, dislocating the sounds further away from their realistic sources. *Sholay*, released in 1975, was India's first film with a 4-track stereophonic sound with spectacular effects.⁹⁹ As mentioned earlier, *Sholay*¹⁰⁰ achieved the cult status, and remains a reference point for both Hindi-language cinema audiences and the Indian film industry as a whole, not only because of its technological achievements but also because of its substantial emotional and affective appeal to the mass audience. This mass appeal was exemplified in repeating the lines, copying the tone and texture of voices, and buying records of dialogues from the film's villain Gabbar Singh by general Indian audiences even today (Shankar 2009: 168). I have mentioned the way the specific sonic representation of the villain's character was constructed using vocal manipulation as well as extended reverb of his footsteps and other

⁹⁹ See personal interview with the film's sound mixer Hitendra Ghosh in the Appendix of doctoral dissertation 'Audible Absence' (2016).

¹⁰⁰ A trailer of the film: https://www.youtube.com/watch?v=hLhzpe3_V_g

bodily postures and gestures. This narrative strategy was directed in affecting visceral responses of the audience (Plantinga 2009) to trigger the mass appeal. The technically synthesized cinematic hyper-reality through studio processing of sound and the practice of stereophonic mixing was centered on manipulating the emotional engagement of the audience in the form of a spatially expanded cinematic spectacle (Sergi 2004). The narrative strategy, by which *Sholay* constructed the fictional site in the spectacularly colorful and eventful pro-filmic space, was adopted throughout Indian cinema during the 1980s. Dissanayake and Sahai observe that

Sholay clearly is not a realistic film, there is very little social specificity inscribed in the filmic text. The narrative codes employed in the film serve to construct a metaphoric view of Indian society and its manifold problems. A metaphoric representation displaces accuracy (...) (Shankar 2009: 165)

The synthetically reconstructed fictitious location - the village Ramgarh in *Sholay* as well as the highly processed sound effects of the brutal scenes of violence, elaborate fight sequences, and deliberately arranged folk-rhythmic song sequences intricately contributed to the film's affective intensity and emotional appeal (Shankar 2009: 168), by offering to the audience members the filmic world of a spectacular fantasy – as served by the metaphoric representation and displaced accuracy of Indian society.

The following phase saw the popular demands of stereophonic sound in cinema made all the more intense because of the technological rivalry among a number of companies. According to Vijayakar 'Polydor, the rival company that made a mark in 1970, began Stereophonic sound with *Sholay*—since the film was also in Stereo—with *Julie*, *Chalte Chalte* and *Shalimar* to follow' (Vijayakar 2009: 53). In this technologically stimulated environment of sound production, more films embraced stereophonic sound with the intention of putting on a show for the demanding populace. During the late 1970s and 1980s, the films that used stereophonic sound were *Disco Dancer* (Subhash 1982), *Gandhi* (Attenborough 1982), *Mard* (Macho, Desai

The article shows how a deliberate lack of ambient sound in films can create a sensation of an "unsitely" and imaginary spectacle, triggering a suspension of disbelief and an experience that might be described by the viewer as hyper-real or unreal. The article thus contributes to the argumentation presented throughout this dissertation, relating specifically to the notions of a site's presence in sound production: demonstrating how ambient sound is crucial to the creation of a sense of presence and reality. I will elaborate upon this last point in the next article.

1985), *Saagar* (*The Sea*, Sipky 1985), *Mr India* (Kapur 1987), *Waqt ki Awaz* (*The Sound of Time*, Bapayya 1988) and *Maine Pyar Kiya* (*I Have Loved*, Barjatya 1989). The wider popularity of these films was linked to the use of stereophonic sound that 'foregrounded the spectacular experience' (Kerin 2011: 28) which was apparent in the lavish reviews some of these films received in the popular media.¹⁰¹

Relative Absence of Ambience: The Imaginary Site

If we study any of these films, the common threads would include a relative absence of ambient sound components in their sound organizations. In *Disco Dancer* (1982), the protagonist boy is caught with a stolen guitar in a park but we do not hear any ambient sound that should be present in the wide-open public space. In *Maine Pyar Kiya* (1989), Karan's daughter, Suman, comes from the village to stay in a big city. Apart from a sound transition of a train, there is no ambient sound layer testifying to the presence of a noisy Indian city. Sound mixing specialist Promod Thomas sheds light on the prescriptive practices for creating stereo sound mixes in Indian films during the dubbing era avidly followed by the sound practitioners. The convention dictated that the voice occupied the center of the screen while sound effects and background music were placed in the side speakers of the stereo soundtrack. In this standardized scheme of sound organization there was no place for the ambient sound layers.¹⁰² Referring to the statement by Béla Balázs that film sound's role is 'to reveal for us our acoustic environment, the acoustic landscape in which we live' (1985: 116) I conclude that the relative absence of ambient sound denies the very revelation of the acoustic environment, the sonic landscape in which these stories take place.

As I have thoroughly discussed in the introduction of my doctoral dissertation *Audible Absence* (2016), ambient sound provides the depth of a shot by establishing the association between the viewer and the site, reinforcing 'the impression of reality' (Percherron 1980: 17) in the diegesis. This is achieved by providing the testimony of the site in the perception of direction and localization; the spectator can relate to the sonic environment or the auditory situation of the pro-filmic space. Mark Grimshaw also showed that adding ambient

¹⁰¹ See a review of *Sholay* in *Hindustan Times*:

<http://www.hindustantimes.com/bollywood/35-years-on-the-sholay-fire-still-burns/story-mcY7jLPKbKvYCwfrC9h4JP.html>

¹⁰² Sound mixer Promod Thomas stresses that in mono as well as in stereo track-laying, the adequate space is not there for fuller inclusion of ambience materials. See personal interview with Thomas in the Appendix of 'Audible Absence' (2016).

sounds in the narration 'can create an immediate experience of presence and reality' (Grimshaw 2011: 32). If included, ambient sounds could supply sonic layers of realistic depth replacing the one-dimensional, flat surface of the soundtracks associated with Indian cinema of the dubbing era. It was no surprise that voice and processed sound effects dominated the sound mixing during the dubbing era and merely served the visual authority of the film narrative instead of a multi-modal sensorial experience. In other words, the method of dubbing offered what film scholar Giorgio Biancorosso articulated as:

[...] the illusion of a sumptuous, perceptually vivid impression of a causal relation which is known to be purely imaginary—one that is forced down our throats, in fact. As such, dubbing stands in spectacular contrast to our everyday experience of a great many causal relations that, though known to be scientifically true, cannot be grasped through our senses. (2009: 267)

Alternatively, according to theories of presence (Lombard and Ditton 2006; Skalski and Whitbred 2010), ambient sounds can affect spatial presence by instigating the sense of 'being there' in the embodied experience of cinematic sound environments. This is achieved by the presentation of vivid and elaborate information about a site that places the audience within the film space and contributes to the narrative process of diegesis with a sensation of reality (Skalski and Whitbred 2010). The absence of ambience, therefore, renders the cinematic site imaginary—audiences cannot bodily relate to the site they encounter in the story. The dubbing era of sound production provides such an experience - keeping ambience at bay, Indian films of this period primarily create a remote and imaginary cinematic landscape, a spectacular experience of a momentary escape from the burden of locative presence.

Conclusion

The methodology of designing sound for Indian films of the 'dubbing era' inculcated a technologically informed approach that used analogue processing with expressionistic and melodramatic overtones. The typical studio practices in this specific era of Indian cinema led the audiences to imagine the pro-filmic space or the site of film sound. This was facilitated by a minimal use of ambient sound, but relied heavily on the voice and background musical score, song, and dance sequences along with highly processed sound effects to carry out the visual narrative. Analogue magnetic recording, dubbing and re-recording rendered this imagination as something spectacular - an expanded fantasy-like experience with extravagant songs and dances in foreign locations and action packed with studio-

manipulated and synthetic sound effects along with a deliberate lack of ambience. This is a practice that triggered a cinematic experience of hyper-reality that enhanced the emotive tension and affective stimulation for the audiences.

References

- Anand, Vijay (1970), *Johny Mera Naam*, film, India: Mehboob Studios.
- Attenborough, Richard (1982), *Gandhi*, film, India: Goldcrest Films and National Film Development Corporation of India.
- Balazs, Bela (1985), 'Theory of the Film: Sound', in E. Weis and J. Belton (eds), *Film Sound: Theory and Practice*, New York: Columbia University Press.
- Bapayya, Kovelamudi (1988), *Waqt ki Awaz*, film, India: Vijayalakshmi Art Pictures.
- Barjatya, Sooraj R. (1989), *Maine Pyar Kiya*, film, India: Rajshri Productions.
- Bhatt, Mahesh (1979), *Lahu Ke Do Rang*, film, India: Delux Productions India and N.N. Investment Corporation.
- Biancorosso, G. (2009), 'Sound', in P. Livingston and C. Plantinga (eds.), *The Routledge Companion to Philosophy and Film*, London and New York: Routledge, pp. 260–267.
- Borges, J. L. (1999), *The total library: Non-fiction 1922–1986*, London: Penguin Publishers.
- Buhler, J., D. Neumeyer and R. Deemer (2010), *Hearing the Movies: Music and Sound in Film History*, New York and Oxford: Oxford University Press.
- Carrigy, M. (2009), 'Bhuvan Shome', in Lalitha Gopalan (ed.), *The cinema of India*. London: Wallflower Press, pp. 138–147.
- Chattopadhyay, Budhaditya (2016), Appendix in *Audible Absence: Searching for the Site in Sound Production* (doctoral dissertation), Leiden University.
- Chopra, Yash (1975), *Deewaar*, film, India: Trimurti Films Pvt. Ltd.
- Dar, Sunder (1976), *Chalte Chalte*, film, India: Kailashpati Pictures.
- Demers, J. (2009), 'Field recording, sound art and objecthood', *Organised Sound* 14.1, pp. 39–45.

Desai, Manmohan (1985), *Mard*, film, India: MKD Films.

Dutt, Guru (1959), *Kaagaz Ke Phool*, film, India: Ajanta Pictures and Guru Dutt Films Pvt. Ltd.

Đurovičová, N. (2003), 'Local ghosts: Dubbing bodies in early sound cinema', *moveast*, issue 9, accessed March 2014 from:
http://www.filmintezet.hu/uj/kiadvanyok/moveast/moveast_9/durovicova.htm

Gopalan, L. (2002), *Cinema of Interruptions: Action Genres in Contemporary Indian Cinema*, London: British Film Institute.

Grimshaw, M. (2011), *Game Sound Technology and Player Interaction: Concepts and Developments*, Hershey and New York: Information Science Reference.

Kapoor, Raj (1967), *Around the World*, film, India: P.S. Pictures.

Kapur, Shekhar (1987), *Mr. India*, film, India: Narsimha Enterprises.

Khan, Feroz (1975), *Dharmatma*, film, India: F.K. International.

Lastra, J. (2000), *Sound Technology and the American Cinema: Perception, Representation, Modernity*, New York: Columbia University Press.

O'Donnell, E. (2004), "'Woman" and "Homeland" in Ritwik Ghatak's films: Constructing post-Independence Bengali cultural identity', *Jump Cut: A Review of Contemporary Media* No. 47, accessed March 2014 from:
<http://www.ejumpcut.org/archive/jc47.2005/ghatak/text.html>

Pemmaraju, G. (2013), 'Soundbaazi: The sound of more than music', *ArtConnect: The IFA Magazine*, Volume 7, Number 1.

Percheron, D. (1980), 'Sound in cinema and its relationship to image and diegesis', in R. Altman (ed.), *Yale French Studies Number 60: Cinema/Sound*.

Plantinga, C. (2009), 'Emotion and affect', in P. Livingston and C. Plantinga (eds.), *The Routledge Companion to Philosophy and Film*, London and New York: Routledge, pp. 356–365.

Rajadhyaksha, A. (2007), 'An aesthetic for film sound in India?', in *Journal of the Moving Image*, number 6, December, Department of Film Studies, Jadavpur University, accessed March 2014 from:

http://www.jmionline.org/film_journal/jmi_06/article_01.php

Sen, Mrinal (1969), *Bhuvan Shome*, film, India: Mrinal Sen Productions.

Sergi, G. (2004), *The Dolby Era: Film Sound in Contemporary Hollywood*, New York: Manchester University Press.

Sethumadhavan, K. S. (1975), *Julie*, film, India: Vijaya Productions Pvt. Ltd.

Shah, Krishna (1978), *Shalimar*, film, India: Judson Productions.

Sippy, Ramesh (1975), *Sholay*, film, India: Sippy Films and United Producers.

Sippy, Ramesh (1985), *Saagar*, film, India: Sippy Films and United Producers.

Sonnenschein, D. (2001), *Sound Design: The Expressive Power of Music, Voice, And Sound Effects in Cinema*, Michigan: Michael Wiese Productions.

Skalski, P. and R. Whitbred (2010), 'Image versus Sound: A Comparison of Formal Feature Effects on Presence and Video Game Enjoyment', *PsychNology Journal*, Volume 8, Number 1, pp. 67–84, accessed March 2014 from:

[http://www.psychnology.org/File/PNJ8\(1\)/PSYCHNOLOGY_JOURNAL_8_1_SKALSKI.pdf](http://www.psychnology.org/File/PNJ8(1)/PSYCHNOLOGY_JOURNAL_8_1_SKALSKI.pdf)

Subhash, Babbar (1982), *Disco Dancer*, film, India: B. Subhash Movie Unit.

Tan, E. S. (2011), *Emotion and the Structure of Narrative Film: Film as an Emotion Machine*, New York and London: Routledge.

Thompson, E. (2004), *The Soundscape of Modernity: Architectural Acoustics and the Culture of Listening in America, 1900–1933*, London: The MIT Press.

Vaughan, Hunter (2013), *Where Film Meets Philosophy: Godard, Resnais, and Experiments in Cinematic Thinking*, New York: Columbia University Press.

Vijayakar, R. (2009), *The History of Indian Film Music: A Showcase of the Very Best in Hindi Cinema*, New Delhi: Times Group Books.

Waller, David and Lynn Nadel (eds.) (2013), *Handbook of Spatial Cognition*, Washington, DC: American Psychological Association.

Article 3: Chattopadhyay, Budhaditya (2016). "Being There: Evocation of the Site in Contemporary Indian Cinema." *Journal of Sonic Studies* 12.

This article investigates the third major phase of sound production in Indian cinema, namely digital sync recording and surround sound design (2000s–). (See the Introduction for an overview of all three phases as well as the first two articles for phase one and two respectively).

Abstract

Contemporary Indian films, in their essentially digitalised realms, incorporate techniques such as the location-based multitrack "sync" recording, and surround sound design that reorder the organization of cinematic sound. These practices contrast with the earlier mono- or stereo formats by reconfiguring the linear construct of a soundtrack to produce a spatially evocative sonic environment that offers the listener a more life-like auditory experience of the fictional site. Using significant examples from post-2000 Indian films, this article shows how earlier practices are being replaced by "sync" sound elements and surround sound mixing with a richly spatial arrangement of site-specific ambience. The article argues that these layers of ambient sounds lead to audiences establishing their embodied experience of presence with the fictional site via auditory spatial cognition and immersion in a cinematic soundscape. By situating contemporary sound production practices within the various trajectories of Indian cinema, this article contributes to the broader field of research examining the key developments and emergent aesthetics in constructing spatial environments for cinema.

Introduction

The first talkie¹⁰³ made in India was *Alam Ara* (Ardeshir Irani 1931), which used optical sound recording. The following period from the 1940s to the late 1950s was an era in which cinema adapted to the technicalities of direct synchronized-sound in films that were largely music-oriented and/or devotional in nature. The directly-recorded sound in these films

¹⁰³ After the advent of sound in the cinema, early films that incorporated synchronized dialogue were known as "talkies."

provided for some evidence of the fictional sites represented in the monophonic narration. The synchronized monaural practice of sound production continued during the 1950s and 1960s, a period termed the Golden Age of Indian cinema, when film auteurs such as Satyajit Ray, Chetan Anand and Guru Dutt emerged and placed Indian cinema on the world stage. Through a gradual conversion to more convenient, portable and robust magnetic recording and stereo mixing (re-recording), the Golden Age gradually dissolved into studio-centric production practices, following the commercialization of popular mainstream Indian films, with the colourful antics, half-known foreign locations and spectacular song-and-dance sequences of the 1980s. During the early 2000s, a major upgrade followed in the form of the emergent digital technology, which introduced “sync”¹⁰⁴ sound recording techniques and surround sound formats to Indian cinema, accelerating the process of globalization and corporatization of the Indian film industry. It was at this time that there was a significant shift in focus to redefine aesthetics within sound production and for sophisticated terms like “sound design” to emerge.

In the Introduction I have established the notion of presence as a key concept. In this article I will elaborate on its implications by discussing several examples.

Since the late 1990s a large-scale conversion from analogue recording and analogue production practices to digital technologies was taking place in Indian cinema.¹⁰⁵ Digital technology was integrated into the production and post-production stages of filmmaking as well as the reproduction and projection formats. The ramifications of this, cinema adapting to a new technology, have been far-reaching, particularly evident in the way filmmaking changed through the novel practices with digital sound (Kerins 2011; Holman 2002) in cinema. Production practices and techniques such as location-based multi-track sync recording and surround sound spatialization altered the notion of the film soundtrack¹⁰⁶ in

¹⁰⁴ Abbreviation of synchronized sound recording made on the location, revived from an earlier practice of direct sound in Indian cinema into contemporary practice. See: Wikipedia entry on sync sound.

¹⁰⁵ See interview with Alope Dey (2016: 4) and Anup Mukherjee (2016: 46) in the Appendix of doctoral thesis “Audible Absence: Searching for the Site in Sound Production” (forthcoming).

¹⁰⁶ The term “soundtrack” is widely debated in cinematic sound studies largely due to its usage, denoting a linear optical track on the filmstrip mixed with an accompanying music track, thus transmitting a sense of linearity and one-dimensionality. I have argued elsewhere

the imminently digital realm of cinema. This process of digitalization has had a substantial impact on the narrative strategies and aesthetic choices made with cinematic sound production, informing the creation of the presence of the site¹⁰⁷ in the pro-filmic space¹⁰⁸ by novel modes of diegesis.¹⁰⁹ Likewise, the *Mise-en-sonore* or the auditory setting¹¹⁰ has also been reconfigured, contrasting considerably with earlier cinematic experiences with their monaural and stereophonic frameworks of sound production. Therefore, it is necessary to consider these transformations in light of the aesthetic choices, strategies and novel spatial experiences they have triggered in order to reach a thorough understanding of the implications of digital technologies on modes of sound production that alter the sound–site relationships of Indian cinema. Given the complex and multi-layered sound environments of urban and rural sites in India, the desire to evolve in terms of sound production and reproduction is seen in how the sites are recorded and represented in the sonic practices of its national cinema.

(Chattopadhyay 2013, 2015, 2016) that “soundtrack” can be a limiting term in cinematic sound studies; shaped by the methodologies of the digital realm, sound in cinema transcends the linear representation of a fixed “track” and moves towards an elaborate and fluid spatial environment.

¹⁰⁷ “Place” is a generic term, “site” is more specific. In this article I will use “site” more often than “place” to specify the narrative depiction of specific locations in Indian cinema.

¹⁰⁸ “Pro-filmic space” is defined by film sound scholar James Lastra (2000) as the fictional space, the area in front of the camera and sound device’s recording field, which is reconstructed later in the cinematic experience through the recording and designing of sound.

¹⁰⁹ Claudia Gorbman defines diegesis as “the narratively implied spatiotemporal world of the actions and characters” (Gorbman 1987).

¹¹⁰ The term “film space” is defined as the space that the spectator encounters, a space that is organized and constructed, e.g. the linking of shots through sound editing and sound design. On the other hand, the area in front of the camera and sound device’s recording field is known as the “pro-filmic space,” as discussed earlier in this article. Combining these two definitions, it can be argued that the choice and arrangement of pro-filmic space substantially affect the spatial dynamics of the *Mise-en-scène* of sound or, if I may take liberty of using an unofficial but useful coinage, “*Mise-en-sonore*” or the *auditory setting* – the actual sonorous environment, spatial organization of ambient sounds, that the listener experiences – a setting that in turn influences the verisimilitude or believability of a film in the ears of the audience member.

For these terms, I refer also to the Introduction, especially the subchapter "Research topic and research question."

In this article, I will consider Indian cinema's intrinsic changes following the digital revolution and the transformations in the narrative strategies and auditory settings that took place in the quest to creatively construct the presence of the site within the cinematic experience. The study will help reveal the implications of digital technology on sound production in the light of previous eras within a broader historical trajectory. The

particular focus on these new sets of approaches helps to reveal how the site is constructed as spatially *present* within the diegetic story-world, evoked by site-specific digital recording and surround sound design.

Contemporary Indian cinema in the digital realm facilitates deliberate sound practices to create cinematic experiences that, I will show in this paper, are spatially *present* (Lombard and Ditton 1997; Skalski and Whitbred 2010; Grimshaw 2011). This mode of sound production differs considerably from earlier production practices.¹¹¹ I have discussed concerning the previous production eras in my other writings.¹¹² In this article, I will examine how digital sound practices, such as multi-track sync recording and surround sound design, impact the organization of ambient sound to produce novel cinematic experiences. I will use significant examples from post-2000 Indian cinema, which is not only the world's largest producer of films¹¹³ but also a vibrant market for digital film technologies, such as Dolby Digital, DTS and Dolby Atmos.¹¹⁴ Drawing on existing works in film sound production (Kerins 2011; Sergi 2004; Holman 2002; Sonnenschein 2001), the contemporary practice of ambient sound in Indian cinema will be studied in the light of the narrative strategies of "diegesis" (Percheron 1980; Burch 1982). Considering the notions of "presence" (Lombard and Ditton 1997; Grimshaw 2011), I will argue that the current practice tends to construct spatially evocative sonic environments as opposed to the spectacular "song and dance" sequences typically found in Indian cinema (Gopalan 2002; Rajadhyaksha 2009). I will show

¹¹¹ The analogue monophonic sound production era conveyed some observed and recorded evidences of the fictional site through synchronized means with an aesthetic of realism, and later the dubbing era induced the somewhat remote and site-unspecific conditions in the auditory setting via dubbing and sound processing, as well as the non-inclusion of ambient sounds into the scheme of sound organization.

¹¹² See: project "Audible Absence" and in particular the article "The Cinematic Soundscape".

¹¹³ See: "Tamil leads as India tops film production", Times of India, 22 August 2013.

¹¹⁴ See: Dolby website

that the creative and innovative ambient sound practices of the digital era are leading to a new realm in which the audiences can increasingly connect with the presence of the site through spatial perception (Waller and Nadel 2013) and auditory cognition (McAdams and Bigand 1993). Crafted with sync recording and surround sound design of multiple ambient sound layers recorded from the actual locations, these layers can provide audiences with an embodied experience of sound, which can be termed “cinematic soundscape” if we consider the notion of soundscape (Drever 2002; Schafer 1994) as a point of departure for studying a site-loyal evocation of sound in cinema as a shift away from the linear and spatially-limiting notion of the film soundtrack. These significant shifts in production practices emphasize the need for a coherent approach when studying the role of ambient sound in contemporary Indian cinema.

The state of the digital

Digital multi-track “sync”¹¹⁵ recording and multichannel surround sound mixing offer a wider palette of sound materials for designing a spatially elaborate *Mise-en-sonore* in cinema. With the advent of digital technology, widely available and easy-to-handle recording devices, applications and facilities have made various options and formats available to sound practitioners.¹¹⁶ Scholars of sound production Tomlinson Holman (2002) and Mark Kerins (2006, 2011) inform us that digital sound systems (DSS) have introduced a number of possibilities, including significantly larger dynamic ranges of over 100 dB (a fourfold improvement over its monophonic predecessor and almost double that of stereophonic format¹¹⁷), a larger headroom¹¹⁸ of 20 dB (a major improvement to the 6 and 12 dB headroom of monophonic sound), six discrete channels (5.1 surround sound) and more channels in other multi-channel formats, such as Atmos, wider panning for sound spatialization, and full-frequency channels (20 Hz – 20 KHz) with a flatter response. These capacities have made possible new production practices – a wider range of dynamics in sound as well as increased complexity in mixing and spatial fidelity (Kerins 2011) – while

¹¹⁵ Throughout this article I will be using this widely used term in film industry, “sync,” which, as explained earlier, is an abbreviation of synchronized sound recording made at the location of shooting.

¹¹⁶ See the interview with Anup Deb (2016: 15) in the Appendix of the project “Audible Absence.”

¹¹⁷ Holman 2002; Kerins 2011.

¹¹⁸ “Headroom” means the amplitude above a designated reference level that a sound signal can handle before it distorts or clips.

recording and processing the available depth, perspective and width¹¹⁹ of ambient sounds collected on location.

In Indian cinema, on-location sync sound recording technique has been a direct result of this trend of digital innovation in sound production, which means that sounds are recorded on location in synchronization with the image during shooting. In this widely used term in the industry – “sync” – the emphasis is on the “synchronization” aspect of recording sound, pointing to the fact that the practice qualitatively differs from earlier post-synchronized dubbing, therefore triggering a completely different set of narrative methodologies in approaching the pro-filmic space and creating the presence of site in the cinematic story-world. The interviews¹²⁰ with prominent Indian film sound practitioners also give insights into these inherent transformations and their ramifications in the narrative diegesis. In this practice, multiple options for organizing numerous tracks for ambient sounds, sync effects, dialogue and background musical scores open up possibilities for recording a larger number of sound elements in multi-track formats. The increased storage space of digital formats also allows for recording and mixing additional ambient sounds after the shooting in order to capture the intricate details of a location. These extensive recordings are incorporated in post-production stages without the need to reuse sparse archival content from stock sounds and pre-recorded ambiences. In the studio there are a variety of digital applications to manipulate recorded sounds in order to restructure their site-based characteristics to fit the cinematic narrative. As the new trend of sync sound and surround design became widely accepted in the contemporary Indian films, sound production incorporated newly available digital technological innovations over the existing set-up. Post-production techniques – editing, designing and mixing in the studio – became faster and the projection of sound in theatres and multiplexes moved toward systems such as Dolby 7.1, Auro 3D and Dolby Atmos.¹²¹

What is aesthetically different in this new trend as compared to the earlier production practices of optical synchronous recording, mono-aural mixing, magnetic recording, dubbing

¹¹⁹ See interview with Alope Dey (2016: 6) in the Appendix.

¹²⁰ The interviews are available in the Appendix of the project “Audible Absence” (2016).

¹²¹ The first Indian film to be released in the Dolby Atmos format was *Sivaji 3D* (Shankar 2012). However, Dolby is set to face an opponent in Auro 3D, which enters the Indian cinemas with *Vishwaroopam* (Kamal Hasan 2013). Both companies develop and offer audio technologies that digitalize, split and route sounds into multiple, surrounding speakers.

and stereophonic mixing? Gianluca Sergi (2004) asserted that the early digital surround sound mixing practice relied on "the same screen-centric notion of cinema sound as their mono and Dolby stereo predecessors" (Kerins 2011: 5). But he also pointed out "a reassessment of the relationship between screen sound and surround sound" (Kerins 2011: 5) in the later technological innovations in surround sound. These statements suggest that surround sound technology shifted the preconceived idea of screen-centric sound (mono as well as stereo) towards a wider area of diffused sounds surrounding the cinema screen. Film scholar Vivian Sobchack expresses this as "shifts of emphasis and attention in both sound technology and our sensorium" (Sobchack 2005: 2), leading towards what Rick Altman has termed as "greater realism" (Altman 1992: 159), predicting the future of sound production in cinema in terms of technological innovations that support realistic representations of place in the sensorium.

As a matter of course, the emergence of any new technology in cinema generates a great deal of discussion and deliberation about its potential use or abuse. The question of how "stereo" should sound has been much debated since the advent of stereophonic sound in the 1950s, when cinematic sound was already standardized in accordance with the monophonic recording-production-reproduction chain, from direct sound recording to its projection in mono-aural theaters in most parts of the globe. Gianluca Sergi has described this transition as a change from a low-quality optical mono-aural soundtrack to a relatively cleaner (via tape-based magnetic recording) and better-quality Dolby stereo soundtrack with higher dynamic range, wider depth, and signal-to-noise ratio, but with problems in sound localization still at the fore, raising serious questions about the contribution of stereo to cinema. He states:

This design (i.e. early Dolby stereo) follows the principle that audiences should be offered directional sound (i.e. sound whose direction could easily be identifiable) only from one wall of the auditorium, namely that where the screen is placed. The notion at the core of this thinking is that sound emanating from somewhere other than an onscreen source would cause the audience to get distracted in an attempt to locate the origin of that sound, hence disrupting the narrative flow. Thus, the implied suggestion is that the surround channel be employed only in a diffuse, non-directional manner so as not to 'disturb' the narrative. Despite implicitly suggesting that primary information ought to originate from the screen, the one-wall principle did away with the need to deal with complicated alternatives, like additional surround

channels, that would have meant a serious rethink of the meaning of stereo in the cinema. (Sergi 2004: 20-21)

From what Sergi writes, it is evident that more channels meant a rethinking and reordering of the existing set-up in order to achieve a new spatial organization of sound in cinema. If we refer explicitly to practical and experiential accounts in this regard, noted sound designer David Sonnenschein wrote from his own practices in the book *Sound Design* about the addition of channels to the existing normative structures of routing and mixing sounds in order to design different elements of the soundtrack for the emerging surround sound design:

In the LCRS¹²² (Dolby SR and Ultra-stereo) system, the dialogue normally projects from the center with effects and music coming from the left, right, and surround speakers. Ambiance and music can take advantage of the multiple sources to create a space within which the audience can be enveloped. [...] With the addition of other speakers beyond the basic four LCRS, the variables increase and more discrete placement can be made with the sounds. (Sonnenschein 2001: 47)

Sonnenschein suggests that stereophonic cinema makes it possible to create an extra off-screen space allowing the audience to engage with the directionality of sound. This capacity opens up a new spatial orientation towards the fictional space, creating the possibility of a dynamic sonic experience in which the sound can move around and beyond the screen (Sergi 2004). Mark Kerins claims that stereophonic system also had its own limitations in off-screen diffusion of sound (2006: 43). However, the "off-screen space" has now been expanded with added channels in the digital surround sound system, which emphasizes a spatially-evocative sound environment instead of offering a linear one-dimensional "soundtrack", with voice, effects and background music mixed into a single track. Mark Kerins has argued that in comparison to the screen-centric mono-aural and stereophonic soundtrack, digital surround systems "spread out into the theatres as their makers see fit" (2006: 43), granting the sound practitioner more creative freedom in the narrative strategy. Kerins has also argued for the "spatial fidelity" that is provided by digital surround system. The sound practitioner uses the digital systems to put forward "more perceptible sounds" in the surround channels "to build multi-channel environments. They assume that audiences will understand sounds originating in the surround channels to be part of the same diegetic

¹²² Abbreviation for Left, Center, Right and Surround channels.

space as those originating onscreen” (Kerins 2011: 70), spatially expanding and substantially enriching the sound environment.

Film sound scholar Giorgio Biancorosso also placed emphasis on the spatial reordering of sound in order to create diegetic space in cinema, with the shift from mono to stereo and to digital surround:

After all, sounds whose sources remain unseen not only reach us at all times, but are also crucial in guiding our sense of inhabiting a certain kind of space, specifying its properties and suggesting the kinds of activities taking place therein. It is fair to assume that we bring this ability to perceive the space around us through sound to bear on the construction of a diegetic space. Digital Surround Sound depends on it. (Biancorosso 2009: 263)

The growing digitalization of post-1990 filmmaking allows for the appreciation and construction of a diegetic space to which previous sound practices, in mono and stereophonic frameworks, paid lesser attention. The increased importance of authenticity in diegesis led to more site-specific spatial details in an embodied experience of sound. The spatial organization makes the audience convinced of the presence of the site within the narrative construction of the story world, which, as I demonstrate in this article, is achieved through the use of ambient sounds in the multi-channel sonic environment of contemporary Indian cinema.

Apart from adding more audio channels in the digital surround realm, an emergent fascination with real locations over sets and more detailed and accurate evidence – noticeable in production practices such as sync sound in films – suggests a rediscovery of cinema’s origins in cinematic realism.¹²³ For example, in recent mainstream Indian films, the preceding practices of dubbing, stock sound effects, and studio Foley are gradually being replaced by authentic, site-specific sync sounds.¹²⁴ These sound layers incorporate a wider dissemination of naturalistic and site-specific auditory artefacts into the creation of pro-filmic space, adding depth, texture, and perspective. This reordering of pro-filmic space has been

¹²³ Referring to the direct sound recordings made in Indian cinema between 1930s and 1950s.

¹²⁴ See: “Certain Observations on the Evolution of Sound in Indian Cinema”, CPH PIX catalogue.

gaining momentum with the increasing amount of direct participation of sound technicians in the filmmaking process through their involvement in location-based sync recording, production mixing, and surround sound design. Digital multi-track sync sound has been accepted as a highly-precise, artistically-demanding and skilled recording technique practiced by sound technicians, involving the use of actors' original dialogue, thereby eliminating tedious post-production processes such as dubbing and Foley in contemporary Indian films.

The auditory setting of Indian cinema in the contemporary digital era

The scholarly perspectives on sound production as discussed above (Kerins 2011, 2006; Sergi 2004; Sonnenschein 2001) and the aesthetic impacts of production practices on the cinematic experience – described as “real” (Altman 1992), “sensorial” (Sobchack 2005) or “authentic” (Biancorosso 2009) – cannot however be evenly applied to Indian cinema in the context of its historical trajectory. It is not difficult to maintain that the site in Indian films has been inconstantly rendered and produced due to evolving phases of production practices, affected by technological innovations and shifts. There have been phases of sound practice, such as the entire period of “dubbing era” (1960s – 1990s), that cared less about the site, giving more importance to the typical narrative tropes such as “song and dance” sequences. However, there are also phases such as the “digital era” (2000-) where a concrete representation of site is observed. In this light, I consider the advent of sync sound and digital surround sound in Indian cinema to be significant, at least in the context of cinematic sound's developments through its earlier phases of production practices (i.e. mono-aural and stereophonic frameworks). In my other writings I have discussed mainstream Indian film's general tendency to ignore subtleties of the site while constructing the pro-filmic space. These observations resonate with Indian film scholar Asish Rajadhyaksha when he points out the “peculiar inability of Indian cinema to produce a persuasive relationship with live location sound” (2007: 1). He elaborates:

To point to the inability of music to become sound, thus providing one context, and even a key explanation, for the peculiar inability of Indian cinema to produce a persuasive relationship with live location sound, the only proper sound resource actually available to the cinema [...] this in fact echoes the lament of all location recordists at the Indian cinema's curious resistance to live sound: both in the end questioning the dubious antecedents of the content of a film's soundtrack. (Rajadhyaksha 2007: 1)

The lament of the location sound recordist, however, tends to fade away with contemporary digital tools and techniques, allowing for the capture of multiple layers of sound, particularly ambient sounds, directly from the location of shooting and the incorporation of these layers into the multi-channel environment of surround design. The result is significant presence of the site in the spatiotemporally constructed story-world, using ambience as the primary element. In an interview, a practitioner clarifies, "I think the ambience (becomes) an extremely artistic aspect of the film sound, where it is probably one of the most behind-the-scene things which is constantly coloring up¹²⁵ the whole aspect of the whole treatment of the film."¹²⁶ How is the construction of the pro-filmic space in Indian cinema "colored" or affected by the use of ambient sound in the narrative process of diegesis? Rajadhyaksha points out the overwhelming desire of the (Indian) audience to believe in the filmic reality, which leads to a convergence in the mind of the audience with a delineated narrative based on the conventional protocols of verisimilitude. He quotes Chion to support his point:

The convergence – in which 'ambient sounds, which are often the product of multiple specific and local sources' do not recognize the hierarchy between a 'space inhabited by the sound' and its multisource origin – hinges on a confusion that is 'at the very heart of our experience itself, like an unsettled knot of problems'. This confusion has had significant technical consequences where the desire to read in the sound its origin has run counter to the conventional protocols of verisimilitude. (Rajadhyaksha 2009: 10)

The convergence thus expects the audience to delineate a story world and make sense of the presence of the site narrated in the story using the conventional protocols of verisimilitude. This sense of verisimilitude is provided by the qualitative attributes of sounds, namely textural richness, depth, perspective, volume, dynamic range and spatialization of on-location recordings of ambient sounds incorporated in the sound production. These qualities help the audience to relate to the site as lived experience as part of the phenomenal world (Bordwell 2009). I have discussed in an article¹²⁷ how ambient sounds

¹²⁵ This perspective on "coloring up" with ambience resonates with Brian Eno's conceptualization of ambience as "a tint." See Music for Airports liner notes.

¹²⁶ Interview with Dipankar Chaki (2016: 54) in the Appendix of of the project "Audible Absence" (2016).

¹²⁷ "The World Within the Home: Tracing the Sound in Satyajit Ray's Films." *Music, Sound, and the Moving Image*. Liverpool University Press (forthcoming).

recorded from the controlled environment of direct or locational synchronized sound recording and mono-aural production-reproduction chain gave rise to a construction of reality in terms of a strictly screen-centric projection of sonic information about the site. The following phase of magnetic recording, dubbing and re-recording instigated a distancing and abstraction from the filmmaking location, the audio process thus escaping the site altogether. Stereophonic sound design, mixing and reproduction rendered this abstraction as something spectacular (Sergi 2004; Kerins 2011), like an expanded fantasy-like experience located far away from the reality of the site. I have shown in another article¹²⁸ that in this period of sound production it was mainly studio-centric technicians who tended to construct the pro-filmic space by synthetic means, typically paying little attention to any site-specific sounds and using song sequences and music as aural masking.

The advent of the digital in sound production has opened up previous limitations, offering a wider and more flexible milieu of sound recording and design practice and more freedom for the sound practitioner. Kerins writes of the American cinema (which is also valid for Indian cinema to a certain degree):

When 5.1-channel digital surround sound (DSS) first appeared in the early 1990s, it offered filmmakers better dynamic range, more channels, and greater flexibility for placement of sounds within the multichannel environment. (Kerins 2011: 53)

The 35mm filmstrip had a dynamic range of 78 dB (Kerins 2011: 54) limiting the signal-to-noise ratio in optical sound recording. Within this narrower dynamic range, monaural synchronized recording was restricted in the amount of ambient sound content that would be optimal for a film soundtrack, putting an emphasis on the voice. In the magnetic recording era, the dynamic range of sound recording was around 98 dB, depending on the quality of tape material. The digital format, on the other hand, offers over 100 dB of dynamic range, which means that sounds can include more breadth and depth of recording, i.e., retaining high volume capabilities alongside the transmission of very soft and minute sounds, as explained earlier. This wider headroom¹²⁹ allows for an inclusive capacity for recording, layering, designing, and mixing sounds that gradually replaced previous practices of dubbing, Foley and stock ambient sounds, to include more of the actor's live performance,

¹²⁸ "The Auditory Spectacle: designing sound for the 'dubbing era' of Indian cinema." *The New Soundtrack* 5/1: 55–68. Edinburgh University Press.

¹²⁹ See interview with Biswadeep Chatterjee (2016: 63) in the Appendix.

sync sound effects and location-based ambient sounds in digital recording. When these “actual” sounds are experienced by the audience – through a spatially wider, digitally cleaned multi-channel surround design by film-school-educated sound designers – they can trigger a subjective sense of presence of the site in the auditory perception and cognition of the listener, exploring the immersive and embodied potential of the ambient sounds. This mode of production inherently engages with ambient sound’s corporeally immersive potential. As Mark Grimshaw argues, ambient sounds “can create a sense of physical presence” (Grimshaw 2011: 38). This immersive sense of presence of the site in the cinematic universe is constructed with the surround spatialization of site-specific recordings of ambience, enveloping the audience outside of the screen but diegetically connected to the story world, producing a perception of *being there*. This process of diegesis brings into play a “coherent representation of the sound world” (McAdams and Bigand 1993) in the spatially-organized cinematic experience.

The nature of the site in digital multi-track sync sound

The first Indian film that was shot mainly with digital multi-track sync sound was *Lagaan* (*Taxation*, Ashutosh Gowariker 2001). In this film, location sync recording and Dolby digital sound technology were implemented, following a major debate in the Indian film industry,¹³⁰ and since then, most of today’s filmmakers have gradually embraced the digital revolution. This is why *Lagaan* represented an important benchmark in the history of Indian cinema: shot entirely on a difficult yet quintessentially typical Indian location using sync sound recording,¹³¹ this film prompted a recognition of the site as a significant actor in the development of the story. *Lagaan* was a trendsetter in its celebration of the sync sound technique as well as the sound technician’s, Nakul Kamte, artistry and recording skills. This qualitative shift has become evident in the way the film industry’s crews, actors and directors have adapted to the changing circumstances and how these changes have been reflected in their work, with consideration for commercial viability and functionality. Some of the relevant comments from prominent industry personnel¹³² may shed more light on this shift:

¹³⁰ This debate inspired a number of forums, including an issue titled “Sync Sound and Indian Cinema” published in UpperStall Magazine.

¹³¹ See the interview with the film’s sound designer Nakul Kamte (2016: 215) in the Appendix of project “Audible Absence”.

¹³² Retrieved from a collection of statements from industry personnel published in an issue titled “Sync Sound and Indian Cinema” in UpperStall Magazine.

Well-known producer and star Aamir Khan, who was the lead actor and producer of *Lagaan*, comments on the advantages of sync sounds over dubbed sound as transmitting a more natural performance of the actors that otherwise cannot be recreated inside the studio:

I believe it is most favourable for an artist, as it enhances their performance and they can successfully record both emotions: sound and mime, and also avoid unattainable repeating of sentiment in a vacuumed dubbing studio. Certainly 'sync' sound will become a preferred way of working especially amongst artists, as it directly results in an enhanced performance.¹³³

Veteran actor Om Puri echoes Amir Khan's endorsements of sync sound recording, adding comments concerning the tediousness of dubbing, which can be replaced by the natural presentation of sync sound:

from an actor's perspective, dubbing is tedious and un-attached to their performance on the screen. Sync Sound helps sustain a coherent and natural presentation.¹³⁴

Noted filmmaker Nagesh Kukunoor, who utilized sync sound in his debut film *Hyderabad Blues* (1998), supports the use of sync sound in Indian cinema in order to bring increased professionalism and discipline in the set, alongside better sound quality:

Sync Sound is not at all limiting. In fact quite the contrary: it liberates the performance of the artist. Definitely, it helps promote increased professionalism and discipline on the sets, which is usually absent in our Film Industry. Had I my way I would prefer using Sync Sound in all my films. This technique can certainly be promoted if the Director and Producer make a call to understand that Sync Sound is as good as, if not better than dubbed sound.¹³⁵

¹³³ From a collection of statements from industry personnel published in the issue titled "Sync Sound and Indian Cinema" in UpperStall Magazine.

¹³⁴ Ibid.

¹³⁵ Ibid.

Independent filmmaker Dev Benegal comments on the “lifelikeness” of sync sound and reiterates that the practice can actually facilitate the smooth functioning of the filmmaking process:

Sync Sound breathes life into a film. [...] Sync Sound unites the cast and crew and facilitates smooth functioning. I would urge all filmmakers to begin using this method, which is actually an untapped gold mine.¹³⁶

These sound technicians and practitioners, who have been embracing the shift and appreciating the flexibility and creative freedom involved with sync sound more intensively than other film crews, express their enthusiasm by fully implementing the technique within their practice. Renowned sound recording and mixing engineer Manas Choudhury¹³⁷ mentions the hierarchical relationship between sound and camera personnel in Indian cinema and sheds light on the larger debate concerning the domination of the visual over sonic elements. However, he stresses that the creativity involved in sound practice following the advent of digital sync recording and surround sound design upsets this hierarchy to situate sound in a more creative and innovative context.¹³⁸ Another well-known sound recordist Ashwin Balsavar shares a similar view: digital technology, with its higher quality recording and audio workstations provides more efficient techniques and facilitates skills as well as creative practices of sound.¹³⁹ Moreover, sound recordists within digital sync sound film production acquire equal importance to the cameramen and other technical stakeholders, leading to more appropriate cooperation and equality within the film crew. Balsavar further comments:

Sync Sound texture is very realistic and cannot be reproduced in a Dubbing Studio and the actor's performances can never be repeated while dubbing either. Dubbing anyway never gives 100 percent Lip Sync. Dolby Digital, Non-linear editing, better microphones and Audio Workstations provide efficient technology and facilitate better

¹³⁶ Ibid.

¹³⁷ From a collection of statements from industry personnel in *UpperStall Magazine*.

¹³⁸ This perspective aligns with the interviews I have personally conducted during fieldwork for my PhD project. The interviews can be found in Appendix I of the dissertation.

¹³⁹ The emergence of the creative skillset includes the specialization of certain production processes, such as “sound editing,” “production mixing,” “sound design,” and “location recording.” These practices were previously taken up generally by one or two technicians.

Post Production. In a Sync Sound film, a recordist holds just as much importance as the cameraman and hence there is appropriate co-operation within the crew. The final output in the theatre makes the film look and feel real. (...) Dubbing is time consuming, patience testing and is an exercise in futility. Sync sound saves time and sounds better and gives due respect to the sound people. Big banners should adopt the use of 'sync' sound and make it a norm.¹⁴⁰

Balsavar's comments focus on the quality of digital multi-track sync sound. According to him, sync sound texture is recognizably "authentic" and cannot be reproduced in a dubbing studio. Furthermore, the actor's specific expressive articulation can never be repeated in dubbing. In his opinion, dubbing has never provided complete lip-sync, while in sync sound this is achievable.

Likewise, *Lagaan*¹⁴¹ offers authentic sound layers and spatial textures that were previously unheard-of in analogue mono- or analogue stereophonic rendering of sound components in Indian cinema. The opening sequence in particular draws the audience into the universe of the historic region of *Champaner* in 1890 via a "real" or "lifelike" sonic experience and perspective. Set in the ancient village of *Kanuria*, located a few miles away from *Bhuj* in Gujarat's *Kutch* district, the sound crew placed the actors in the dry, empty and hilly landscape of the village to record most of the effects, voices and ambiances in sync.¹⁴² This landscape comes alive with hitherto unheard plausibility in the use of sync sound.

In the same year, another film primarily using sync sound was released: *Dil Chahta Hai* (*The Heart Desires*, Farhan Akhtar 2001), which enjoys cult status now thanks to its refreshing attitude, embracing the "here and now" approach provided largely by the practice of shooting on location with sync recording, followed by surround sound design. Right from the beginning of the film, which is set in the contemporary city of Mumbai, the accurate sound portrayal of the traffic was in such contrast to audience expectations and experiences with studio-recorded sound that it placed them immediately "on the streets." A major portion of the ambient sounds used in the indoor sequences consists of room tone, a noise-like "hum" (Holman 2002) coming from different electrical, electronic and other indoor machineries. The incorporation of such room tones in the ambience was a novel approach at the time. Each

¹⁴⁰ From a collection of statements from industry personnel in *UpperStall Magazine*.

¹⁴¹ Official trailer of the film

¹⁴² See the Wikipedia article on the film for further reference.

indoor sequence, thus, affords not only the right perspective and placement of the characters within the *Mise-en-sonore*, which is heard not only through the reflection of the voices on the walls, but also through the room tone surrounding the audience. In the last major sequence of the film¹⁴³ the synchronized sound perspective is manifested in the diegetic use of wedding songs. This sequence was noteworthy for its novel use of diegetic music, sans studio processing, unlike preceding Indian films. By using sync sound at the location of the story-world, the sequence offers ample information to the audience about the specific site, which is sonically reconstructed to the point that they feel immersed in the embodied experience of its presence.¹⁴⁴

The use of sync sound and surround design reaches a high point in the acclaimed film *Slumdog Millionaire* (Danny Boyle 2008), an essentially Indian production due to the number of actors, writers, locations and technicians from the Indian film industry. The production sound mixer and location sound recordist of the film, Resul Pookutty, won an academy award for his work with sound. He later became one of the promoters of and a campaigner for sync sound in Indian cinema. In this film, several sequences¹⁴⁵ are shot on location at the slum area of Mumbai.¹⁴⁶ These sequences portray the complex depth of acoustical environment that Indian urban sites offer. Right from the opening sequence in the police station, with its rich multi-layered rendering of environmental sound in Mumbai coming from the surround channels – front, rear and the center, the audience is provided with the bodily sensation of the spatial presence (Skalski and Whitbred 2010) of the site. For example, the sync recordings of the actor's voice carry the dense ambience and detailed reflections of the room and the site that they occupy. Add to this the respective room tones and noises in the spatially elaborate sound environment. Outdoor sequences in the slum areas come to life with the immersive quality of the ambient sound recorded and shot at the very locations they capture.

In the following phase of Indian cinema, the practice and use of sync sound gained momentum, and more films employed this production practice. The so-called "independent" filmmakers, who preferred to stand apart from mainstream Indian film production in order to establish auteuristic signatures and voices of their own, were the ones who picked up sync

¹⁴³ The film is available online.

¹⁴⁴ See: interview with Nakul Kamte, Sound Designer of *Dil Chahta Hai*, in the Appendix.

¹⁴⁵ Excerpt from *Slumdog Millionaire*.

¹⁴⁶ See the interview with Resul Pookutty (2016: 294-295) in the Appendix.

sound as a stylistic feature in their emerging film work. Dibakar Banerjee, among others from this new breed of Indian filmmaker, used location sync sound to its fullest potential. In *Shanghai* (Dibakar Banerjee 2012), the raw, rustic *soundscape*¹⁴⁷ of an Indian city and its familiar phenomenal world is represented “true to life”¹⁴⁸ through sync sound and surround design.¹⁴⁹ Let us go through some of the substantial reviews of the film to illustrate the point I am making. Raja Sen of *Rediff.com* points out, in his review of *Shanghai*, the sense of familiarity evoked by the sound strategy: “The time is now, the location pointedly fictional and decidedly familiar.”¹⁵⁰ Saibal Chatterjee of *NDTV Movies.com* stresses the sense of place provided by sound: “Lensed with great sense of place and occasion [...] *Shanghai* projects the dark, dank, redolent-with-danger innards of small-town India to absolute perfection [...] The most striking aspect of *Shanghai* is its marvelous use of sound, both ambient and otherwise, to build up dramatic tension.”¹⁵¹ Chatterjee, in another review on *The Sunday Indian* emphasizes the atmospheric and convincing use of ambience, “They embrace the ambience of *Shanghai* with complete conviction, aiding and abetting the build-up of tension and atmosphere.”¹⁵²

The sound practitioner’s experiential accounts only reaffirm these claims. The re-recorder of *Shanghai* Hitendra Ghosh speaks¹⁵³ of the sound design – how surround sound has been used to create “a very real experience and immers[e] the audience into the director’s narrative.” He points to the novelty of the approach and the potential shift in contemporary Indian cinema: “for the first time you will notice throughout the film that we have not used much of the foley [sic] sounds recorded in the studio. We have tried to use sound from the location. That’s why the feature sounds very real and authentic”.¹⁵⁴

¹⁴⁷ The notion of soundscape (Drever 2002; Schafer 1994) is a point of departure for studying the evocation of site in the sound of Indian cinema as a shift away from the linear film “soundtrack.”

¹⁴⁸ Theatrical trailer of the film.

¹⁴⁹ See the interview with the film’s sound designer Pritam Das (2016: 266) in the Appendix.

¹⁵⁰ Rediff.com, 8 June 2012.

¹⁵¹ NDTV Movies.com, 7 June 2012.

¹⁵² The Sunday Indian, 8 June 2012.

¹⁵³ Source: Hitendra Ghosh’s notes on the use of sound in *Shanghai* on FutureWork’s page.

¹⁵⁴ Ibid.

Being situated: The site-orientation of surround sound

As it stands, contemporary Indian cinema in the digital realm holds 1) multichannel recording capabilities, 2) an enormous dynamic range from the softest sound to the loudest, 3) discrete full-frequency channels and their complex routing options, 4) the ability of the digital multi-track digital recorder to capture sounds from all corners of the location in synchronization with the image-gathering synchronized recording of actors' live performances, movements and effects, rich layers of ambient sounds – all separately captured on multiple tracks simultaneously with the camera, 5) extra storage for recording stray ambiances like environmental sound marks, room tones and other characteristic sounds from the location after the shooting, and, finally, 6) the capacity of the digital sound studio to employ surround sound design, with the numerous tracks holding the possibility of layering location-specific ambient sounds in most creative ways. How do these new capabilities influence the construction of the site in pro-filmic space, and how is this new practice reflected in the audience's experience of sound? The expressions used earlier in the reviews, such as "real," "familiar," "authentic," "immersive" and "great sense of place," etc. indicate shifts within sound experience of Indian cinema, the proliferation of a new trend, with audiences increasingly feeling the need to relate to the convincingly real and sonically-believable sites in the constructed pro-filmic space within the diegetic universe.

Concerning the spatiality of surround sound, Mark Kerins states that the digital sound system "is engineered to model a 'true' 360-degree multichannel environment where the focal point of the soundscape can be anywhere in the theater" (2006: 43). In this statement one may notice the use of the bracketed word "true", which underlines the "lifelikeness" (Rogers 2013: 56) of the acoustic environment created by a narrative strategy for which ambient sounds are organized and spatially rendered so that they "construct for us a sense of the material world which the characters inhabit" (Fischer 1985: 239). To Kerins this practice engenders "expansion of the cinematic soundfield beyond the screen." (2006: 43). He adds:

To some degree this represents a simple acceleration of established narrative strategies – filmmakers have long relied on ambient sound in the "surrounds" to set up diegetic spaces, and this trend has certainly continued with movies employing DSS. The difference here is that DSS has encouraged the construction of complex multichannel sound mixes, where the different sounds in each speaker channel together create a seemingly realistic and *complete* aural environment in a way

difficult (if not impossible) with monophonic or Dolby stereo sound. (Kerins 2006: 44, italics mine)

How do audiences relate to the site and further orient themselves in the sonic environment? As Kerins shows, DSS's use of ambience might be considered as an expansion of established practice in the sense that it "centers on a strategy of immersion in the filmic environment – audiences are, visually and aurally, literally placed in the middle of the action [...] in which the narrative processes of cinema [...] communicate complex perspectives, and dependence on a complex interplay between sound and image to orient audiences" (2006: 44). To understand how audiences orient themselves in this surround sound environment by "being there," I refer to the processes of spatial perception and cognition. Betty J. Mohler, Massimiliano Di Luca and Heinrich H. Bulthoff theorize spatial perception and cognition in terms of careful navigation through multiple modalities, including audition:

When an observer moves, the sensory systems capture multiple signals: The retinal projections of the environment change, the vestibular organs sense acceleration, environmental sounds move with respect to the body, and so forth [...] Information from multiple sense modalities is often necessary to navigate successfully. Vision, touch, and audition can provide contextual information to vestibular signals for a more robust and stable representation of perceived head orientation and movement. (Mohler, Luca and Bulthoff 2013: 90)

If we consider the observer to be stationary and the environment around her/him as moving, as in the case of a DSS experience, the same orienting process leads to the perceptual and cognitive appeal of cinematic sound. Audiences are invited to orient themselves within the narrative world depicted in the film, and the process essentially involves capturing sensory signals from the environment and performing an internal mental computation that can be divided into early or low-level perception and advanced or higher-level mental processing or cognition. The sense modalities provide sensory information (Bordwell 2009) – for example, ambient sounds from any given environment of a film – and process them accordingly for the perception of spatial properties such as distance, direction, depth, etc. In the case of audition, as one of the sense modalities, air vibration in the cinematic environment provides for vibratory information that human ears, due to their slight but perceptually significant difference of position on the right and left sides of the head, can capture interaural time differences and interaural intensity differences (Waller and Nadel 2013). Spatial information is recovered from ambient sounds that come from the

cinematic environment, and audiences locate themselves within it as lived experience (Bordwell 2009). Ontological questions such as “where I am?” and epistemological questions such as “what do I hear?” relate directly to the *site* of the story-world via the spatially constructed soundfield that the audience interprets (McAdams and Bigand 1993; Mohler, Luca and Bulthoff 2013). I refer to a key statement by Béla Balázs on sound in cinema: The careful inclusion and spatial organization of ambient sounds in contemporary Indian cinema reveal to the audiences the “acoustic environment, the acoustic landscape in which we live” (1985: 116), adding to the site’s presence in the pro-filmic space.

It is no surprise that in many post-2000 Indian films, such as *Delhi-6* (Rakeysh Omprakash Mehra 2009), *Love Sex aur Dhokha* (*Love Sex and Betrayal*, Dibakar Banerjee 2010), *Dhobi Ghat* (*Mumbai Diaries*, Kiran Rao 2011), and *Kahani* (*The Story*, Sujoy Ghosh 2012), spatial arrangements of ambient sounds trigger cognitive associations with the site, facilitated by the creative and inventive strategies of sync recording and surround design. The multi-layered and richly evocative audio information play out in the minds of the audience a spatial topography of the locations where they were shot, creating a sonic association with the sites in the story-world. Referring to believability and cognition in cinema, Bordwell has described the audience as an active information seeker (2009: 360) in the way they extract information from the phenomena of the natural environment (Bordwell 2009: 363). In contemporary Indian films, the site-specific ambient sound brings a wider diffusion of auditory information into the pro-filmic space, adding depth, texture, and auditory perspective, so the audience can develop a spatially oriented, enveloping and expanded sound environment beyond the screen. These possibilities motivated film scholar Ranjani Mazumdar to claim that in contemporary Indian films even “The city’s wastelands saturate the *mise-en-scène*” (2009: 238). The practice of digital sound in contemporary Indian cinema manifests in paying due attention to the sound atmospheres of India’s urban as well as rural sites and landscapes.

Ihde's ideas about bodily involvement with sound can be complemented by those of film sound (Kerins 2006, 2011) and digital media (Ahn 2011; Grimshaw 2011 et al) scholars. While Kerins advocates digital sound systems as enhancing a sense of embodiment in digital cinema, Ahn and Grimshaw develop the notion of simulated sensorimotor information in digitally mediated environments as a basis for embodied experiences.

The Cinematic Soundscape: Critical observations

The emerging spatial sensibility in the digital realm's sound production becomes apparent in the way contemporary Indian cinema incorporates the proliferation of ambient sounds that play out in the mind of the audience a believable topography relatively closer to the lived experience of place. The use of ambient sound via the intricate digital surround spatialization¹⁵⁵ of these sonic layers produces an enhanced sited experience of sound. It is no surprise that the current breed of Indian films, made with digital technologies, compels the audience to utilize their sensorial and ambient or environmental faculties of listening. This new realm of sound production supports the emergence of an embodied experience of the site.

Don Ihde has articulated embodied experience in this way: "Sound permeates and penetrates my bodily being. [...] Its bodily involvement comprises the range from soothing pleasure to the point of insanity in the continuum of possible sound in music and noise. Listening begins by being bodily global in its effects." (Ihde 2007: 45). The pleasure derived from bodily relating to the constructed film and media environment is based on how convincing and realistic they sound to the ear. Likewise, the convincingly realistic portrayal of the fictional sites in Indian cinema of the digital era leads to popular appreciation and a sense of euphoria. In the user reviews of the film *Jab We Met* (*When We Met*, Imtiaz Ali 2007), shot with sync sound, two amateur reviewers underscored the distinct experience of recognizing the site, calling it "real, natural, and believable."

The scenes have been mostly shot at outdoor spots like Chandigarh, Kulu, Manali and Shimla, and this entertains us as if we are experiencing a real tour ourselves. Again and again, seeing daily studio scenes made the eyes wounded and fed up the mind [*sic*].¹⁵⁶

¹⁵⁵ In multichannel experimental soundscape composition and electro-acoustic music creation, production and performance, the term "spatialization" is increasingly used to denote diffusion of sound in space. The origin of the term can be found in the English translation of the French term "l'espace," introduced by Henri Lefebvre (1974) with reference to sociocultural perception and cognition of geographical space.

¹⁵⁶ See: user reviews on IMDB.

[...] the execution is so [...] realistic that no situation in the movie looks out of place. [...] absolute[ly] real, natural and believable.¹⁵⁷

This euphoria reflects new developments in the cinematic experience, acknowledging a renewed sense of realism in the narration of fictional sites created by the spatial ordering of ambient sounds to "produce a space for the film to exist in" (Holman 1997: 177). A number of recent Indian films such as *Asha Jaoar Majhe* (*Labour of Love*, Aditya Vikram Sengupta 2014), *Court* (Chaitanya Tamhane, 2014), *Masaan* (*Fly Away Solo*, Neeraj Ghaywan 2015), and *Killa* (*The Fort*, Avinash Arun 2015) do not rely on the musical score, or practically do away with it, using instead a reduced amount of dialogue (or no dialogue, as with films like *Asha Jaoar Majhe*) in the narration. These films are packed with rich layers of ambient sounds: street noises, car horns, tram bells, voices of street hawkers, cats meowing and crows cawing, background radio's news announcement, and other recognizable mundane ambiances that are present in the everyday life of India. Due to this careful inclusion and elaborate spatial organization of ambient sounds, these films have a "gritty documentary feel" to them, marked by an immersive immediate realism that stands in contrast to the typical song-and-dance films from the conventional *Bollywood*. These independent films represent a renewed sense of situated-ness in everyday life, meticulously portraying ordinary sites known through a lived experience in contemporary India. Due to their narrative strategies, these sites become another character within the narrative, contributing a resounding presence in the pro-filmic space.

However, even in the conducive creative environment of digital sound production framework, it is of course a question as to whether all the subtler aspects of the phenomenal worlds from the urban and rural sites of India are narrated truthfully and faithfully in the experience of cinematic sound. On many occasions, the noisy parts of the ambient sound recordings are controlled and sanitized by editing and noise reduction to provide "cleaner" sonic

In the Introduction I have briefly mentioned these claims of truthfulness and faithfulness. In this article I substantiate these claims, using several examples of Indian films from the digital era.

¹⁵⁷ See: user reviews on IMDB.

environments in cinema.¹⁵⁸ The typically syncretic, chaotic, and inchoate structure of Indian cities reflected in the general manifestation of the urban environment, particularly in the complex character of the everyday urban ambience – with multiple layers of sounds from pre-industrial, industrial, and post-industrial eras – are simultaneously active in juxtapositions or in contrapuntal relationships with one another (Chattopadhyay 2014: 140). The urban sound environment is thus sonically overwhelming and potentially disorienting for the listening subject (2014: 140). The complex and multi-layered sound environments of urban as well as rural sites from India do not always appear completely in the augmented sonic environment of Indian films, where more “aestheticized” accounts of these sites are delivered in the spatial atmosphere of cinema. This spatial atmosphere, however, can no longer be understood as a linear and one-dimensional “soundtrack,” but instead might be termed the “cinematic soundscape.” Here I am explicitly referring to R. Murray Schafer’s original (1994) proposal of the term “soundscape,” which “seems to offer a way of describing the relationship between sound and place. It evokes the sonic counterpart of the landscape” (Kelman 2010: 215). However, at the same time the Schaferean soundscape’s “particular aim is to draw attention to imbalances which may have unhealthy or inimical effects” (Schafer 1994: 271). These “moralizing” (LaBelle 2006: 203) tendencies toward controlling the incoming ambience in terms of “acoustic design” are strongly tied to the “sound design” deployed in contemporary Indian cinema, involving editing and advanced noise reduction in the digital platform. The underlying intention of these aspects of sound practice is to transform the “lo-fi” sounds into “hi-fi” sounds, while in the process removing their “noise” contents in order to ensure the potential entertainment and pleasure of the audience members. Within this paradigm, some of the ambient sound frequencies recorded at the site are judged to be “noise,” and more often than not “referred to in the negative” (LaBelle 2006: 203). According to Schafer, “lo-fi” sounds have a lower signal to noise ratio, tending to impose “an increased level of disturbance upon the body, society and the environment” (LaBelle 2006: 202), while “hi-fi” sounds “have a low ambient noise level and discrete sounds emerge with clarity” (Rodaway quoted in LaBelle 2006: 202). This compulsion to achieve clarity in the cinematic soundscape leads the sound practitioner to use selected “soundmarks” instead of capturing faithfully the complete ambience of the sites. A “soundmark” is, according to Schafer, a “community sound, which is unique or possesses qualities which make it specially regarded or noticed by the people of that

¹⁵⁸ Referring to the personal interviews conducted by me with the Indian sound editors, such as Bobby John, within the context of doctoral project “Audible Absence” (Chattopadhyay 2016).

community” (Schafer, quoted in LaBelle 2006: 216). In the popular Indian road-movie *Highway* (Imtiaz Ali 2014),¹⁵⁹ the two protagonists (the abducted girl and her fugitive captor) travel through north India in a truck, staying in hidden places for a few days before running away. Every place is established with a certain “soundmark” specific to the site. A place in the state of Rajasthan, in north India, for example, is narrated through the distant and proximate calls of the Peacock, since Rajasthan is well known home for a wide variety of Peacocks. This tendency to underline a particular sound, often at the expense of many other ambient sounds emanating from the specific sites, serves as a kind of sonic “compensation” for the noise reduction and editing of digital multi-track sync sounds in the post-production.¹⁶⁰ These “industrial” norms, rules and regulations embedded in the film industry’s sound production practices hinders the sound practitioner in applying a more artistic approach that might further enrich the sound experience offered by the film.

Despite these apparent drawbacks, the pervasive digital technologies endow contemporary Indian cinema with a scenario for “best practice,” incorporating an augmented and impressive amount of ambient sounds in the recording and design methodology. This realm of sound production renders the narration of the site far more believable than the previous eras of production frameworks, with an enhanced and intensified sense of the site’s presence in the film’s augmented universe, crafted by multi-track sync recording and surround sound design.

Concluding remarks

After the advent of the digital innovations during the late 1990s, a more aware practice of incorporating ambient sounds allows the audience to more effortlessly and directly relate to the sites narrated in the story-worlds of Indian cinema. This newer mode of sound production reconfigures the linear construct of a soundtrack into a spatially evocative sound environment. Through this emphasis on the location-based synchronized recording and including a substantial amount of

Intensification of believability during the shift of sound production from the analogue to the digital era does not align with the ideas of Jonathan Sterne, who questions the general idea of progress when it comes to fidelity. As I explain in the Introduction, believability stems from a sense of “spatial fidelity:” the term is closer to “spatial realism” (Altman 1994) than the notion of “sound fidelity” that Sterne uses in *The Audible Past* (2003).

¹⁵⁹ An excerpt from the film

¹⁶⁰ Production work done on a film (or recording) after filming or recording has taken place.

ambient sounds in the surround design, the film-industrial practice of sound production – regardless of being controlled, having undergone noise reduction and editing – develops an inextricable relationship with the site. The practice of sound in contemporary Indian cinema provides an intensified sense of presence, giving ample evidence of the site in the spatial experience and anchoring the diegetic story-world in an apparently sonically-realistic universe. This capacity strengthens as practice of ambient sounds shifts from analogue eras to the digital, becoming more detailed in recorded textures as well as *present* in the spatial organizations, to produce a believable *Mise-en-sonore* as simulated environment of the site.

References

- Altman, Rick (ed.) (1992). *Sound Theory/Sound Practice*. New York: Routledge.
- Balázs, Béla (1985). "Theory of the film: Sound." In Elisabeth Weis and John Belton (eds.), *Film Sound: Theory and Practice* (pp. 116 - 125). New York: Columbia University Press.
- Bordwell, David (2009). "Cognitive Theory." In Paisley Livingston and Carl Plantinga (eds.), *The Routledge Companion to Philosophy and Film* (pp. 356-365). London: Routledge.
- Biancorosso, Giorgio (2009). "Sound." In Paisley Livingston and Carl Plantinga (eds.), *The Routledge Companion to Philosophy and Film* (pp. 260-267). London: Routledge.
- Burch, Noël (1982). "Narrative/Diegesis—Thresholds, Limits." *Screen* 23/2: 16-33.
- Chattopadhyay, Budhaditya (2016). "Audible Absence: Searching for the Site in Sound Production" (Doctoral dissertation). Forthcoming.
- Chattopadhyay, Budhaditya (2015). "The Auditory Spectacle: Designing Sound for the 'Dubbing Era' of Indian Cinema." *The New Soundtrack* 5/1: 55-68.
- Chattopadhyay, Budhaditya (2014). "Sonic drifting: sound, city and psychogeography." *SoundEffects* 3/3: 138-152.
- Chattopadhyay, Budhaditya (2013). "The Cinematic Soundscape: Conceptualising the Use of Sound in Indian films." *SoundEffects* 2/2: 66-78.
- Chattopadhyay, Budhaditya (2012). *Sonification of Cinema: Studying the Use of Location Sound in Indian Films*. Paper presented at the Music & The Moving Image Conference Proceedings, June, NYU, New York.
- Drever, John Levack (2002). "Soundscape Composition: The Convergence of Ethnography and Acousmatic Music." *Organised Sound* 7/1: 21-27.
- Dyson, Frances (2009). *Sounding New Media: Immersion and Embodiment in the Arts and Culture*. London: University of California Press.

Fischer, Lucy (1985). "Applause: The visual and acoustic landscape." In Elisabeth Weis and John Belton (eds.), *Film Sound: Theory and Practice* (pp. 233-250). New York: Columbia University Press.

Gopalan, Lalitha (2002). *Cinema of Interruptions: Action Genres in Contemporary Indian Cinema*. London: British Film Institute.

Gorbman, Claudia (1987). *Unheard Melodies: Narrative Film Music*. Bloomington: Indiana University Press.

Grimshaw, Mark (2011). *Game Sound Technology and Player Interaction: Concepts and Developments*. Hershey: Information Science Reference.

Holman, Tomlinson (2002). *Sound for Film and Television*. Boston: Focal Press.

Ihde, Don (2007). *Listening and Voice: Phenomenologies of Sound*. New York: Sunny Press.

Kelman, Ari Y. (2010). "Rethinking the Soundscape: A Critical Genealogy of a Key Term in Sound Studies." *Senses and Society* 5/2: 212-234.

Kerins, Mark (2011). *Beyond Dolby (Stereo): Cinema in the Digital Sound Age*. Bloomington: Indiana University Press.

Kerins, Mark (2006). "Narration in the Cinema of Digital Sound." *The Velvet Light Trap* 58: 41-54.

LaBelle, Brandon (2006). *Background Noise: Perspectives on Sound Art*. New York: Bloomsbury Academic.

Lastra, James (2000). *Sound Technology and the American Cinema: Perception, Representation, Modernity*. New York: Columbia University Press.

Lefebvre, Henri (1974). *La production de l'espace*. Paris: Éditions Anthropos.

Lombard, Matthew and Theresa Ditton (1997). "At the Heart of It All: The Concept of Presence." *Journal of Computer-Mediated Communication* 3/2. [No page numbers?]

Mazumdar, Ranjani (2009). "Satya." In Lalitha Gopalan (ed.), *The Cinema of India* (pp. 236-245). London: Wallflower Press.

McAdams, Stephen and Emmanuel Bigand (1993). *Thinking in Sound: The Cognitive Psychology of Human Audition*. New York: Oxford University Press.

Mohler, Betty J., Massimiliano Di Luca and Heinrich H. Bülthoff (2013). "Multisensory Contributions to Spatial Perception." In David Waller and Lynn Nadel (eds.), *Handbook of Spatial Cognition* (pp. 81-97). Washington DC: American Psychological Association.

Percheron, Daniel (1980). "Sound in cinema and its relationship to image and diegesis." In Rick Altman (ed.), *Yale French Studies Number 60: Cinema/Sound* (pp. 16-23). New Haven: Yale University Press.

Rajadhyaksha, Asish (2009). *Indian Cinema in the Time of Celluloid: From Bollywood to the Emergency*. New Delhi: Indiana University Press.

Rajadhyaksha, Asish (2007). "An Aesthetic for Film Sound in India?" *Journal of the Moving Image* 6: 13-28.

Rogers, Ariel (2013). *Cinematic Appeals: The Experience of New Movie Technologies*. New York: Columbia University Press.

Schafer, R. Murray (1994). *The Soundscape: Our Sonic Environment and the Tuning of the World*. Rochester: Destiny Books.

Sergi, Gianluca (2004). *The Dolby Era: Film Sound in Contemporary Hollywood*. New York: Manchester University Press.

Sobchack, Vivian (2005). "When the ear dreams: Dolby digital and the imagination of sound." *Film Quarterly* 58/4: 2-15.

Skalski, Paul and Robert Whitbred (2010). "Image versus Sound: A Comparison of Formal Feature Effects on Presence and Video Game Enjoyment." *PsychNology Journal* 8/1: 67-84.

Sonnenschein, David (2001). *Sound Design: The Expressive Power of Music, Voice, and Sound Effects in Cinema*. Michigan: Michael Wiese Productions.

Waller, David and Lynn Nadel (eds.) (2013). *Handbook of Spatial Cognition*. Washington DC: American Psychological Association.

Article 4: Chattopadhyay, Budhaditya (2012). "Sonic menageries: composing the sound of place". *Organised Sound* 17/3: 223-229.

This article shifts the discussion from film studies to sound art and investigates the connection between site and sound, mediated by the field recordings and the subsequent creation of an artwork. Two revisions are made in comparison to the originally published version: 1) "audio art" is changed to "sound art," and 2) in a few instances "place" is changed to "site." I explain in the Introduction why "site" is a more appropriate term for denoting particularities of a specific location whereas "place" is more generic. These changes are made primarily to better align with the vocabulary used in other parts of this dissertation.

Abstract

This article investigates the essential association between site and sound, mediated and represented by the process of recording and the subsequent creation of an artwork. The basic argument this article would like to develop is that location-specific sound recording, as practiced by artists and phonographers, is basically an exercise in disembodiment of sound from environment, whether it is observational or immersive in approach; if the purpose of this mediation by recording is artistically reconstructive, the location-specificity of the recorded sound is displaced by the further mediation of the creative process. By developing the argument from an experiential perspective, in relation to a sound art project *Landscape in Metamorphoses*, this article will try to examine how the discourse of acoustic ecology becomes reconfigured in the shift from environmental sound content recorded at location to production of soundscape composition as sound artwork. Today, the application of digital media to artistic practice has become integral, in the case of sound art via creation of soundscape compositions (for both spatial diffusion and live interaction); this can bring about a reconfiguration of environmental aesthetics. The article will find relevance in redesigning the ecological discourse in the digital realm of 'soundscaping' through the practice of artistic mediation, as composing the sound of location, or 'site' into the sound artwork.

1: Recording the actual sound at location

I will begin the article with an experiential account of *Landscape in Metamorphoses* (Chattopadhyay 2008), a sound art project drawing on recordings made in Tumbani, an area situated in the tribal-dominated Bengal-Jharkhand border of North-east India. In recent times, the area has been rapidly developing into an industrial zone, transforming its picturesque landscape, historically grounded in its rich natural habitat and the community livelihood of indigenous people. *Landscape in Metamorphoses* records and reconstructs the location concerned, with comparable auditory transformations of 'reality' within a soundscape composition, combining phonographic recordings of the area and subsequent sound design into more 'musically' constructed ambient sound layers and samples. An extensive collection of phonographic material, collected at several fieldwork visits, forms a digital archive that was used as the source of material in the composed work. The work is primarily based on the hypothesis of the auditory mediation of place in sound art production, considering this in the context of transformation from the original acoustic to the electroacoustic environment. The work will be used throughout this article to develop and support this hypothesis.

Historically, Tumbani is an area whose landscape has undergone gradual transition. After the Second World War, the area was affected by several changes: India's emerging urbanizing periphery and the establishment of inter-state road transport; a residential school; the construction of an airbase, and a slow industrialization process as a consequence of the natural resources of granite stone in the area. Since then this small region has been designated a Special Economic Zone (SEZ), producing a large amount of stone chips for the concrete industry and employing both the landscape and the local people in the industrialization and development process. In transforming from verdant pastures into an SEZ, as with many other similar locales in developing India, Tumbani is representative — slowly succumbing to its inevitable contact with a fast-changing and globalizing world. In doing so it has displaced its cultural roots and traditions, instead developing the homogenized appearance of the typical industrial zone. In the process, socio-economic development has affected the life and landscape of indigenous habitation through its intervention in the environment and ecosystem at large. Tumbani is an interesting case of cross-fertilization

As discussed in the Introduction, "place" refers to generic locations that are local and governed by interpersonal, ecological, or political relationships. "Site," on the contrary, is more specific. Site denotes a location of an occurrence or event where something important happens; it suggests a particular place that is used for a certain activity. Hence, in this article I prefer to use the term "site" rather than the term "place" when denoting the sonic depiction of a particular location.

between multiple development processes. In one way, industrial change has brought development of the land, and in another, improvement in the livelihood of the population, who according to Raymond Dasmann can be called 'ecosystem people' (Dasmann 2002), traditionally relying on the natural environment of their locality for everyday sustenance and material needs. But the holistic idea of development of land and livelihood is debatable; questions can be raised about how and in what ways the landscape and indigenous people are adapting to industrializing processes, and what could be the probable consequences.

Moreover, the effect of development in the area of Tumbani is not homogeneous: marks of change are not evenly distributed and evident throughout the region; and in addition the evidence of change from earlier times and more recent transformations are simultaneously apparent. For example: traditional cultural practices of the tribal community gradually fade away under pressure of changes in livelihood, but some fragmented parts of the community still perform ritual chants, even if within the overwhelming soundscape of popular film songs from radio and soap operas in their television sets. School buildings still remain empty on most days, but a thriving marketplace is an indication of a developing transaction-based culture. These incongruities in cultural dynamics present Tumbani as a fertile site for observation, investigation and experiencing, and a significant location for making phonographic recordings, to feed into soundscape composition as sound artwork. *Landscape in Metamorphoses* as a sound art project forms an artistic investigation into the external, imposed transformation of landscape, people and natural acoustic environment, within composition — as a reconstruction of the embodied trajectory of the location, through the medium of sound. Through the practice of sound

art, contemporary and memory associations in relation to the location are represented in the composition, developed from the collected field recordings. The process of composing environmental sounds sculpts the archaeology of recollection, grounded in recordings as actuality of the location — collected and archived field recordings forming 'sonic menageries' on which to draw. Because this project has not only been a sonic representation of a transfiguring landscape; it has also become a commentary on the decomposition of location-based personal memory-associations. I, the author of this article,

I use the terms "representation" and "re-presentation" throughout the dissertation as two separate words. The hyphen denotes this difference. According to Oxford Advanced Learner's Dictionary, "representation" means the depiction, description or portrayal of someone or something in a work of art. While "representation" is a heavily loaded term in the arts and the humanities, the word "re-presentation" here simply denotes the processes of presentation of sound in media after it has been recorded: presenting again.

grew up in Tumbani as a boy, being part of the group of 'outsiders' in the area (myself representative of urban influence) who might be termed 'biosphere people' (Dasmann 2002)

— exploring and exploiting natural resources for growth. This gamut of people finds its own place in the landscape, in a shaky but warm, sincere but futile interaction with the aboriginal community. The outcome of this interaction has turned out to be the slow process of urbanization of the landscape, leaving its own residue of sonic objects on the transitory place.

Throughout my growing up years I experienced a comparable slow and intrinsic transformation within my personal association with the location. Now, as an outsider to the land and ecosystem, I have observed how the audiovisual environment of the place is continuously reshaping under industrial, urban and global influences. At the same time I have also experienced my own role shifting, from participation to performance. These experiences have been qualitative rather than quantitative, and in this manner they have catalysed my development as a sound practitioner, phonographer and field recording artist. Starting from my motivation to return, revisit and rediscover the area, especially via the auditory domain, I undertook a phonographic expedition to the area, from 2007 to 2008. Doing this, I was affected by a sense of nostalgia, for example noticing that tribal workers, on their way to work, were not performing the songs I knew from my childhood days, or noticing the earth-grinding machine of a nearby stone factory reverberating in the 'background' of the landscape, engulfing the breathing sound of endangered insects. From the very moment I started to make the field recordings I felt it was my artistic responsibility to recreate the 'experienced location' I remembered, nostalgically, from childhood. The phonographic expedition and the process of its reproduction as performance have thus sought to investigate also how the topographic environment of my childhood has been transfigured into a different ecosystem, in the process questioning the actuality of the landscape in terms of memory.

In my earliest childhood, there was an old short wave radio in our house with a prominent mark on the BBC World Service channel frequency, indicating just how frequently we tuned to this radio station. I remember my evenings, when the sound from this radio, in the form of classical music and news, occupied a specific acoustic space around our everyday living. My house was situated in a rather remote quarter on the outskirts of a tribal habitation, being relatively distant from the nearby township, and close to tribal villages. So the BBC symphony orchestra and news from an unseen but imagined locale intruded on the evening quiet of this location. The radio-mediated sound of a full orchestra and speeches with a distinctly British accent gradually became a familiar sound experience for me. In fact, unlike the local sonic elements, such as the sound of traditional drums and string instruments, workers' songs and everyday ambience, the sound from BBC became identified (for me) as the soundscape of my location. Socially, the BBC World Service had been seen as an

authentic news service providing a particular orientation for art and culture in English-educated Bengali middle-class families since the First World War. Although the one-way traffic of radio suggested the strangeness of an acoustic space questioning locative reality, it could also establish a hearing experience of 'site', by creating a trans-local scheme of sound through which the globally dispersed media became associated with the site by the listener. According to Hadley Cantril and other radio researchers, radio represents a unique psychological phenomenon where listening becomes suggestive of place-based sonic activities. But, at the same time, 'these primarily developmental accounts posit the existence of a history of listening and at the same time close it down; radio, and sound recording become the agents of acoustic (urbanity) modernity' (Sterne 2003).

So, what the apparently surreal 'sonic presence' for my actual location was actually a fragmented sound of European classical music broadcast from BBC — a specific reception of mediated sound that was subjectively chosen from the more generalized presence of sound of short wave radio, whereby the trans-local sounds have been supplied by a medium beyond the location, providing associations ostensibly 'free of place' to the listener's ears. But, from a different perspective, those sounds could be localised to somebody situated in a place where, as a typical listening example, the compositions of Peter Maxwell Davies might normally be performed and recorded live; sounds broadcast are mediated in one way and received in the ear biased by a certain cultural upbringing rather than a natural choice. The ability to accept such broadcast materials of course depended mostly on the exposure, awareness and access in the pre-globalised Bengali speaking society. For my tribal counterpart from the village even some of my vocabularies were 'unreal' sounds; only an area seen around his eyes and heard since his birth existed for him, the idea of a global world didn't as yet exist. As a result, sound from the BBC would be an alien sonic context for his ears; his known sound events were quite constrained within his locality, as he normally had very limited media access.

What was the sonic actuality of the tribal boy? An active inhabitant of his environment, the world immediately surrounding his ears offered a rich, diverse and wide range of aural imagery, starting from the manmade sounds of everyday ambience to the sound of cattle and animals; natural elements like wind from northern grasslands; water of handmade wells and small water-bodies; sound from the creaking of branches while they move in a mild breeze; the rhythmic sound of insects and birds, and the minute sounds of falling leaves; sounds from the performance of the traditional musical instruments such as *dhak* and *banshi*; the oral repertory of the primordial tribal language, a legacy of speech and vocabulary that is threatened by the influence of a pervasive Bengali idiom; the sound of raindrops and the residual audio-spectacle of the absorption of water in red soil; the sound

of distance within the perspective of an open landscape — he evidently grew up with all these sounds, that naturally became unobtrusively ‘actual’ to his ecosystem.

On the other hand, my mediatised ears couldn’t accommodate the very first hearing of tribal ritual drum within my own biosphere, even though it was part of the local soundscape. Through a diet of regular traditional performances my hearing became accustomed to the sound of indigenous rhythms, but otherwise my own familiar soundscape would be the classical music played back in a domestic compact stereo cassette player, disc changer or broadcast from the radio set, in a typical Bengali household.

However, the repeated broadcast of popular Hindi film songs from one or two newly-bought radio sets in the village were gradually accepted as ‘actual’ sound events for my tribal friend, blurring the boundary between ‘us’ and ‘them’. Again, the process of acceptance of new sound events was primarily dependent on the conditions of aural exposure and awareness. And, in the process the actuality or rather the ‘realness’ of a sound event was derived by listeners’ subjective acceptance, based on its mediation through place associations. The trajectory — how sound out-of-place becomes sound-of-place — is itself an example of the recontextualization of sound events, in terms of the association of the site with sound, which is consequently the subject of investigations into the sources of sound production and transmission. R. Murray Schafer writes in his seminal work *The Soundscape*:

Originally all sounds were original (actual). They occurred at one time and in one place only. Sounds were then indissolubly tied to the mechanisms, which produced them. The human voice travelled only as far as could shout. Every sound was un-counterfeitable, unique. Sounds bore resemblances to one another, such as the phonemes which go to make up the repetition of a word, but they were not identical. Tests have shown that it is physically impossible for nature’s most rational and calculating being to reproduce a single phoneme in his name twice in exactly the same manner. Since the invention of electro-acoustical equipments for the transmission and storage of sound, any sound, no matter how tiny, can be blown up and shot around the world, or packaged on tape or record for the generations of the future. We have split the sound from the maker of the sound; sounds have been torn from their natural sockets and given an amplified and independent existence. (Schafer 1994: 90)

A tribal ritual drum is essentially producing sound from the location of its ‘actual’ habitation, and its cultural association with locative tradition supplies the particular characteristic of that sound event. In this definition, the phenomenon of displacement of sound from source is not

relevant; every sound object is place-based and local. When the sound is recorded and subsequently transmitted through a communication medium, mediated in the creative process of field recording and received by the audience in the form of a soundscape composition (by means of both sound design and 'musical' processes), sound transcends its place association through its reproduction. In this process sound finds mobility of a trans-local order if the media is dispersed out-of-place: for example, represented as a CD release or diffused in concert, the same or similar in each performance. Murray Schafer comments:

A record collection may contain items from widely diverse cultures and historical periods what would seem to a person from any century but our own, as unnatural and surrealistic juxtaposition. The desire to dislocate sounds in time and space had been evident for some time in the history of music. (Schafer 1994: 90)

In the discussion of phonographic sound recording, discourse on the displacement of the 'actuality' of sound from its location-specificity is further intensified in the context of sonic mediation in artistic production, where both the equivalence and the apparent shifts between locative sonic actuality and recorded sound content are questioned, destabilized and re-established through the practice of field recording itself, and further mediated by the composition process — here in the sound art project *Landscape in Metamorphoses*.

Brandon LaBelle has a more open attitude than Schafer on the site-associations of recorded sound. I have discussed the differences between them in the subsection "Artistic intervention and transformation" of the Introduction as well as in the Conclusion.

While recording the sounds of the location of Tumbani, the first thing that strikes me, as a listener, is the juxtaposition and superimposition of sound elements of various timbres, somehow within an elusive silence. If the place is crowded with people, I hear certain voices that stand out; if the area of recording is in a village setting, I hear a bird call beside a distant car horn; in a busy urbanising environment, I hear traffic merged with sound from a muddy loudspeaker dispersing slogans. It is a un-mediatised hearing that puts the ears into a mode of recording infinite sound events occurring at a location (Altman 1992). A sensitive omnidirectional microphone positioned within the location can replace the ears, recording the multi-layered acoustic field but representing it within the single time-line of that recorded sound. The recording will transmit the sonic actuality of the location if multiple recording techniques are employed to capture the fuller spectrum of frequency content within the location that needs detailed mapping in aural terms. The field recording during the project *Landscape in Metamorphoses* was a practice of mapping and documenting the sound of Tumbani in an authentically location-specific manner, with a multi-channel

recording used to translate the process of listening to the place to the recording media. In this intention to document an in-depth and comprehensive actuality of sound, in order to capture detailed aural information from the location, a combination of digital field recording techniques have been considered. A binaural microphone was used to record the surrounding space, while a shotgun was used to record directional sounds that characterized the locative sound environment; additionally, a sensitive contact microphone captured minute vibrations offered by the place while a mid-stereo rig was used to record an authentic stereo image of the location. Each variation of microphone positioning, used to pick up and collect the locative sound content as 'sonic menageries', approached Tumbani as itself a place that provides a live repository of sound events — or the building blocks of the composition in question.

2. Composition as mediation of recorded sound

The practice and production of sound art by means of recorded environmental sound redefines space and time, focusing our attention and changing our perception of place; this can be accomplished through the mediation of location via soundscape composition, using field recording as the strategy to gather basic musical materials. Soundscape composition can be termed a form of 'electro-acoustic music characterized by a presence of recognizable environmental sounds and contexts, the purpose being to invoke listener's associations, memories and imagination related to place; the exercise of framing environmental sound by taking it out of context, and directing listener's attention to it as a representation, by means of a compositional technique that is minimal, involving mostly selection, inclusive editing, cross-fading, sampling, looping, synthesizing' (Truax 2001: 4) — and I would add spatialising the recorded sound by digital means, where the idea behind the process of field recording has been to capture random sound events from the location while incorporating selection and elimination. In soundscape composition a given place can be selected as the location of recording sound elements simply by reason of the variety of sonic activities in the chosen place, but in general electroacoustic processing of recorded sound samples within a programming environment remains the basic strategy to mediate listening within the compositional domain. Soundscape composition is, thus, a juxtaposition of ethnography and electroacoustic music/sound artwork, as John Drever points out in *Organised Sound* (2002).

However, any human auditory interaction with the individual's ethno-environment initiates a dynamic mediation of the auditory space as a sonic construct. In the field of communication theory, this interaction is regarded as medially locative and grounded on an acoustic-communicatory perspective (Truax 2001); that is how the interaction can be studied, using an auditory approach to represent the environment in terms of its locative sound content. According to theories of sound media, the auditory environment of a location consists of an

infinite number of sound events (Altman 1992); a listener concentrates on certain events, and information extracted is essentially a partial image of the environment, and the cognitive process of selection and elimination largely depend on the context of the listener. As a result, sonic interaction with a locative environment cannot limit itself to registering aural information, but responds by giving shape to the information as a sonic construct (in the form of a soundscape) that provides the aural perception of the location. I will explore further the manner in which this process of construction can be simulated in a work of soundscape composition by first the methodologies of the field recording itself, and then by audio processing in terms of mediating the ecology of ethno-environmental sounds in the electroacoustic domain.

In the artistic mediation of sound environment through sound art production, as in soundscape composition, the aural perception of the everyday auditory environment is communicated within the realm of experimental music by location-specific sound recording and audio processing that itself transcends environmental actuality, relocating recorded sound in the domain of electro-acoustic composition/digital music. The work is essentially drawn from a repository of sonic events recorded from the auditory space, these sonic 'artefacts' further disembodied from the location, and composed using such tools as digital processing and computer-based spatialisation techniques. This repository of recorded sonic events is thus itself a construct of the auditory interaction of the listener. And this construct can be further simulated into artistic production, so being perceived as an electroacoustically mediated representation of the listener's association with their environment and the ecosystem or biosphere at large. Composing proceeds by means of the electroacoustic processing of audio material recorded from the environment that the listener belongs to, the 'sonic menageries' of collected disembodied sounds becoming analogous to the colours on an artist's working palette. The process sheds light on how the artistic abstraction of recorded sound in producing sound art is a mediation of the listening to the location. In this hypothesis, soundscape composition can be considered as a sound art form that stems from both location-specific sound recording and subsequent studio processing of the 'artistic material' of recorded and disembodied environmental sound (Truax 2007).

Seth Kim-Cohen's formulation of a "non-cochlear sonic art" (2009) stands as a critique of López's ideas concerning pure and blind listening. Kim-Cohen considers López's practice as "essentialist to the extreme" (Kim-Cohen 2009: 127).

Based on this hypothesis, the compositional processes for *Landscape in Metamorphoses* involved using samples of field-recorded sound manipulated in programming environments

such as Cubase, using an array of typical plugins such as multi-band compressor, looping, reverb and audio effects like time-stretching and dynamic EQ, and editing and mixing techniques to mix a stereo composition. The work, in a musically narrative structure, reconstructs the artist's particular interaction with the locative auditory environment by mixing the fragmented audio clips —recordings of both environmental and industrial sound events from the location. Each clip has been derived by a sequential process: first recorded by listening to the acoustic actuality of the location, then re-contextualised into the electroacoustic domain of soundscape composition, where the original ecological discourse between the multitude of recorded sound events has now been reconstructed in a different context, and with different socio-political connotations.

3. Electroacoustic ecology: dislocating landscape

Listening to *Landscape in Metamorphoses* is a separate experience than listening to the location of Tumbani itself, although 'actual' sound events have been recorded and used in the composition. At the original location, the listener/artist registers place-related auditory information as temporal events extracted from his experience. The recording process formulates how the listener/artist reacts to the sonic interaction in a pure, blind listening of sound (Francisco López, *Buildings*, 2001) from a particular location. Musical exploration of the location by field recording and subsequent soundscaping exercises abstraction by artistic mediation of the location, with the intention of building knowledge concerning the role played by recorded and disembodied sound, respectively, in a composition when mediating the ecology of location-specific acoustic environment in the electroacoustic domain.

The work begins with unprocessed cross-fades of natural environmental sounds of birds chirping; the landscape of Tumbani is introduced with sounds from the rural habitat, human-made sounds like speech, and sounds from cattle. From the overtures of a busy marketplace the work gradually unfolds a narrative structure which is abruptly interrupted by the closely recorded sound of tree branches in a breeze; the placing of this abstracted sound texture in the work incorporates a musical treatment of environmental sound, a methodology that is further used in the later part of the work as a representation of the metamorphoses the location undergoes, in a transformation from a natural environment to an industrial zone. The gradual intensification of the audio processing of field-recorded ambient sound gradually abstracts the sense of location, as observed by a reviewer in *Textura* magazine:

the rich tapestry of village life heard at the beginning—voices of adults and children, the caw of roosters and snort of pigs—is slowly supplanted by an impersonal industrial ambiance—sounds of building and hammering and rapidly churning machinery—that reduces the bustle of the original community life to a mere memory.

During the closing minutes, the community's multitude of voices and chanting returns (in an audio loop of processed voices), indicative perhaps of a community spirit that can't be obliterated by industrial 'progress.' In this case, [the] work distinguishes itself from a hypothetically 'pure' field recording by its strongly delineated narrative trajectory. (Schepper 2008)

During the work's trajectory, as described, the earlier section cross-fading unprocessed natural environmental sound recordings undergoes transformation by a gradual intensification and incorporation of processed industrial-sounding materials, through equalisation, looping, compression and other electroacoustic methods. The intention is to authentically represent the historical transition experienced in Tumbani, and the affect on its soundscape — from a rich hi-fi (high fidelity) acoustic environment with more perspective in foreground and background (Schafer 1994) to a lo-fi (low fidelity) soundscape with a reduced 'aural space', gradually mutating sound information into an industrial noisescape, where the rhythms of daily routine are, significantly eroded (Schafer 1994). The work simulates this transformation of the location, over time, here as a journey from the landscape itself as source, to production of sound art through the processes of recording and composition — what Schafer, in an earlier quotation (1994: 6) refers to as 'original' (actual) sound and its subsequent transmission. It is the compositional process itself that captures that journey whereby sound gets 'dislocated' from the auditory source of the acoustic environment of the landscape of Tumbani to the electroacoustic environment of soundscape composition *Landscape in Metamorphoses*. Field-recorded sounds are freed from the ecological discourse of locative/ethnographic acoustic environment of Tumbani, once they exist as disembodied sonic menageries, and when further electro-acoustically treated in the composition. Although recognisability of the source material is maintained for the listener, even after undergoing artistic transformation (Truax 2007), the work in its reproduction as a stereo acousmatic piece creates a parallel listening experience to the original time and place — one of different temporality, spatiality and perspective, with a different ecosystem of sound altogether.

By means of its origination and its subsequent artistic mediation, a sound event is dislocated, while recording/mediating its localness/origin if not its identity. That is, the sound of a bird recorded remains the sound of a bird, but the art of field recording transmits the sound in a different perspective. Theoreticians like Michel Chion indeed suggest that sound recording changes the trajectory of its event, and subsequently its identity (Chion 1994); accordingly, field recording and the subsequent artistic mediation of sound recorded from a landscape create a different sound-landscape.

4. Soundscape and location-specific identity: observation without conclusion

It is never easy to judge field recordings, but things might be more difficult if the place that is subject is unknown to the reviewer. Such is the case with a place called Tumbani, a landscape in change; from a greener pasture transforming into one of the busiest industrial belts of Bengal-Bihar border in India, so says Budhaditya Chattopadhyay on the cover of his piece *Landscape In Metamorphoses*. Had we not known this, could we have told after hearing this? Always a though question, since simply we know now and yes, we can tell now. It starts with what we could agrarian surround sounds, with animal sounds, people talking but over the course of the piece some mechanical, motor like sounds come in. That may be the industrial belts at work, but could be the engine of a motorboat. It is never easy, is it? I must say however that I quite enjoyed this release, simply for the story like way of putting the piece together and the excellent quality of the recordings, simply pass the political implications that this release also has. (De Waard 2009)

The problem of identity and source recognition of a sound (or in the case of the discussion in this article, a location) on a globally dispersed media map is evident in the way a reviewer writes about the CD release of *Landscape in Metamorphoses*. The issue of the recognition of a 'local sound identity' in a post-global context has in fact received ample attention in the theoretical platforms of media convergence, difference and hybridisation. Ann Cvetkovich and Douglas Kellner write in *Articulating the Global and the Local*:

The problem of identity has come to the forefront of attention in recent times...the intersection of the global and the local is producing new matrixes to legitimize the production of hybrid identities, thus expanding the realm of self-definition. And so although global forces can be oppressive and erode cultural traditions and identities they can also provide new material to rework one's identity and can empower people to revolt against traditional forms and styles to create new, more emancipatory ones. (Cvetkovich and Kellner 1996: 9 - 10)

How will these emancipatory forms appear? In the arena of sound/media art and electroacoustic/digital music, forms such as soundscape composition might possibly be able to answer this question. In the discourse of hybrid identities, soundscape composition as a musical form does not demand identification in the context of post-global media, being location-specific rather than culture-specific. There might be some place-based, or geographically biased sonic identities, but soundscape composition as a sound-based media art form always suggests an abstract sense of identity; it wants to transcend its mere origin

by dispersing towards abstraction of the source material. So, post-global media space is a perfect playground for local sounds that aspire to universal recognition and appreciation. How are local sounds posited in this transitory landscape of homelessness, a landscape of nomads who celebrate mobility over everything? In this flexible and itinerant coordination of things, the domain of sound is rather taken for granted; it is sound where the abstraction of identity is practised to greater success and the sense of community and location embedded in a piece of soundscape composition is eradicated as it moves in the post-global 'location-free' space because of sound medium's necessity to dissociate from its source as an event in order to be perceived and understood (Altman 1992).

We can observe, if not conclude, that ecosystems and biospheres are merging with each other in the post-global sound map, blurring identities. I would not be surprised to find my tribal counterpart from my early childhood in Tumbani, now in a metropolis with a laptop on his shoulder or computer tablet in his pocket. Maybe we would speak in the same English, with the same mediated accent, and maybe we would hear the same music – perhaps even the digital release of *Landscape in Metamorphoses* through our earplugs coming from a portable media device. Local, regional and national identities could provide the only truly hybrid amalgam of local identities and culture. The media could cater to the demands of providing new materials to 'rework' one's identity, and could empower people to evolve from creating traditional forms and styles to the creation of new, more emancipatory forms. Field-recorded sounds are relieved of the burden of identity (as are placeless musical forms such as experimental soundscapes), having originated from 'local', but lost their place-association over the course of being composed into an artwork. They remain in the arena of post-global sound, in the ever-evaporating localness of being.

In the last section of the Conclusion, "Future directions," I come back to this idea of a post-global sound while discussing issues of place, localness, and identity in a post-digital condition.

References

Altman, Rick. 1992. *Sound Theory/Sound Practice*. New York: Routledge.

Chattopadhyay, Budhaditya. 2008. *Landscape in Metamorphoses*. Frankfurt am Main: Gruenrekorder (Gr 057/ LC 09488).

Chion, Michel. 1994. *Audio Vision: Sound on Screen*. New York: Columbia University Press.

Cvetkovich, Ann and Kellner, Douglas. 1996 eds. *Articulating the global and the local: Globalisation and cultural studies*. Boulder: Westview Press.

Dasmann, Raymond F. 2002. *Called by the Wild: The Autobiography of a Conservationist*. Berkeley: University of California Press.

Drever, J. 2002. Soundscape Composition: The Convergence of Ethnography and Acousmatic Music. *Organised Sound* 7(1): 21–7.

López, Francisco. 2001. *Buildings (New York)*. V2 Archief (V2 32).

Schafer, R. Murray. 1994. *The Soundscape. Our Sonic Environment and the Tuning of the World*. Rochester, VT: Destiny Books.

Schepper, Ron. 2008. *Budhaditya Chattopadhyay: Landscape in Metamorphoses*. Gruenrekorder. Textura, November.

http://www.textura.org/archives/c/chattopadhyay_feufollet.htm

Sterne, Jonathan. 2003. *The Audible Past: Cultural Origins of Sound Reproduction*. Durham, NC: Duke University Press.

Truax, Barry. 2001. *Acoustic Communication*. Westport, CT: Greenwood Publishing Group.

Truax, Barry. 2007. *Sound in Context: Acoustic Communication and Soundscape Research at Simon Fraser University*.

http://interact.uoregon.edu/medialit/wfae/library/articles/truax_sf university.pdf.

Waard, Frans de. 2009. Budhaditya Chattopadhyay: Landscape in Metamorphoses (CD-R by Gruenrekorder). *Vital Weekly* 640. <http://www.vitalweekly.net/640.html>.

Article 5: Chattopadhyay, Budhaditya (2014). "Sonic drifting: sound, city and psychogeography". *SoundEffects* 3/3: 138 – 152.

In this article I continue the discussion on sound art by examining one of my artworks developed around a typical Indian urban site. The article is a slightly revised version from the published copy. The minimal editing and few changes made are primarily minor language modifications.

Abstract

Studying and perceiving an emerging city by listening to its sounds might be phenomenologically reductive in approach, but it can lead to a framework for understanding the fabric of the urban environment through artistic practice. This paper describes a sound work, *Elegy for Bangalore*, and examines its artistic processes in order to shed light on the methodologies for listening to an expanding city by engaging with multilayered urban contexts and, subsequently, evoking the psychogeography of the city through sound-based artistic practice. The paper further investigates the project's approach, development and method to speculate on present urban conditions in countries like India experiencing rapid growth. Devising the unfolding auditory situation of an Indian city in corresponding acts of drifting, listening, recording and composing, this paper examines the processes of perceiving an apparently chaotic and disorganised urban environment with its multisensory complexity.

Introduction

The evolving vision of a developed India has been one in which a majority of people will move from the countryside to settle in the cities. The potentially hyper-modernising effects of an imminent urban life open up debates on the status of the city's atmosphere, ambience, and general appearance, particularly over the spatial dynamics that have contributed to a much larger set of concerns about the India's urban planning since its independence in 1947. Burgeoning between the rural hinterland and an emerging urban landscape, the design of Indian cities undermines aesthetic choices by keeping its predominant interest in overwhelming growth and expansion. But, at the same time, the spatial dynamics of these emerging cities are severely affected by phenomena such as globalisation, hybridisation, and

digital convergence in which the old and the new are constantly shifting contexts and meanings.

In the present scenario of rampant and sporadic urban development, the active and intense interplay between tradition and current trends makes one's perception of a typical Indian city incomplete and lacking– though experientially overwhelming, urban planners and theorists associate these emergent urban spaces with words and expressions such as 'unintended', 'continuously thwarted', 'hopelessly inadequate', 'chaotic', and so forth (Bhan, 2013, p. 58, quoting Sen, 1976; Patel, 1997; Verma, 2002). As urban planner Bhan further comments, '[Indian] cities [...] do not look like their plans' (Bhan 2012)¹⁶¹, perhaps shedding some light on the urban physiognomy of emerging Indian cities. According to veteran urban planners such as Raj Liberhan, who is also the director of the India Habitat Centre in New Delhi, this disparity between the conceived scheme and the perceived appearance of an Indian city is largely due to urban design being kept on the margins. Urban planners have come to rely heavily on rapid development and growth while ignoring the fundamental realities of the citizens' well-being. However, basic tenets of urban design prescribe the creation of spaces that nurture a healthy relationship between people and the city via the creative processes that emerge from a subjective understanding of an urban environment (Wall & Waterman, 2010). Liberhan comments that 'design was never a conscious primary consideration in the way the [Indian] cities were being planned. It was always a by-product, landing second or third on the [planners'] list.'¹⁶²

This disparity explains the generally syncretic, chaotic, and inchoate structure of Indian cities. The effect is evident in the general disposition of the urban environment, particularly in the complex character of the everyday soundscape of the city, with multiple layers of sound from pre-industrial, industrial, and post-industrial eras simultaneously active in juxtapositions or in contrapuntal relationships with one another. The sound environment is thus evolving in a spatio-temporal fashion, but it is also sonically overwhelming and potentially disorienting for the listening subject. It might be argued that critically observing

¹⁶¹ Gautam Bhan made this comment in 2012 questioning the relevance of urban planning in Indian cities in a draft version of this paper, which was previously published as a working paper at the Indian Institute for Human Settlements, entitled 'Is urban planning relevant for Indian cities?'

¹⁶² Liberhan made this comment at the Urban Habitats Forum Roundtable called 'Re-imagining Indian cities – Design for urban spaces' in Gurgaon, 2008.

the nature of the sound environment of a typical Indian city by relying on the lived experience of listening to everyday sounds could be considered a phenomenologically reductive exercise (Cogan, 2006). Following this argument, the goal of the present investigation will be to discover if this method is capable of producing a comprehensive understanding of the structure and dynamics of the sound environment in question through sound art practice.

Contemporary India's urban soundscapes indeed suggest an amalgamation of overwhelming sensory interactions with the city's shifting landscapes, and encompassing the flux of people and life, all of which are part of the ongoing narrative of multilayered auditory experiences. Many of these experiences are dominated by an interaction with urban 'noise'. Noise may be considered as layered in tone-color, texture, and depth along a broad spectrum of frequencies supplied by traffic, machines, household sounds, and general architectural vibrations. There are varied sounds from people's speech and daily activities, media practices, and other kinds of sonic events; the noise content of a city thus offers a cacophony of different sounds scattered over various sites within the urban landscape.

According to traditional sound theorists such as R. Murray Schafer, sound abatement is necessary for a balanced soundscape (Schafer, 1994). I argue that Schafer's method is non-inclusive in nature and unnecessarily burdened with the idea of urban pollution (Thompson, 2004). I maintain that it is important for us to hear the fuller spectrum of sounds, and incorporating it into our personal experiences by 'adaptive perception', a term I use here for the specific purpose of articulating an approach that suggests that sound pollution or an imbalance in the acoustic ecology of any given urban landscape can be considered as a lack of playful design and aesthetical mediation between sound sources and the human ear. A comprehensive and inclusive understanding of the urban sound environment involving the listener's subjectivity is a necessary prerequisite to this approach in order to gather knowledge about the sonic character and the ambience of an Indian city.

While the previous article specifically dealt with a rural Indian site, this one explicitly describes the conditions for recording and producing an artwork developed from an Indian urban site. In the Conclusion I explain how in Indian cinema the same urban site is recorded and (re-)constructed, and how that (re-)construction differs in terms of ambient sound use.

Tracing the ambience: the premise

Given the specifically chaotic and disorganised nature of Indian cities, it is challenging for a city dweller to envisage the city before appreciating the 'soft ambience' (Sadler, 1999, p. 70), such as the sound environment, in order to mentally speculate on the 'hard ambiances', such as the outlines of the architectural and the urban landscape. We can think of a city as being a circular urban constellation with inner and outer peripheries. A mental and subjective aural mapping of the city would then involve a journey from the inner to the outer, delving intensely into spatio-temporal experiences and conjuring up sonic imagery by interacting with and reflecting upon the specific ambiances and 'auditory situations' (Chattopadhyay, 2013) of the city.

In a similar fashion, the Situationists, who were active in Europe in the 1950s and 1960s and whose ideas have attracted the deep interest of urban theorists and artists, employed the concept of 'psychogeography' to describe the subversive and experimental practice of the subjective and mindful exploration of urban terrain by means of playfully walking or 'drifting' (called *dérive*) across the city (Bassett, 2004; Coverley, 2010, p. 12). While to some the term psychogeography might encompass the personality of the place itself, to others it describes the 'minutely detailed, multi-level examinations of select locales that impact upon the writer's (or artist's) own microscopic inner-eye' (Self, 2007, p. 11-12) following various mental as well as bodily encounters. Some profound differences notwithstanding, the *dérive* is generally considered to be a method of choice for the psychogeographic exploration of a place, in a manner 'in which the contemporary world warps the relationship between psyche and place' (Self, 2007, p. 11).

In this sense, by listening and drifting through an unfamiliar place, one indulges in a subjective analysis or mental journey through the urban sound environment as a psychogeographic exploration of the city in 'an attempt to transform the urban experience for aesthetic purposes' (Coverley, 2010, p. 10). One can take in and excavate a part of the acoustic geography without affecting it by 'nomadic listening'¹⁶³ or by drifting through the realm of sounds, altering the perspectives of the unfamiliar city into something creative or imaginative, which, according to Guy Debord, entails a 'playful-constructive behavior' (Sadler, 1999, p. 77). It is my contention that finding an urban imagery and speculating on the 'hard ambience' through sound and listening can be achieved by exploring the specific

¹⁶³ My own term used in my article 'Auditory situations: Notes from nowhere.' *Journal of Sonic Studies* 4.

artistic potential of psychogeography. The primary methodology of examining the ambience of a typical Indian city may therefore include the practice of psychogeography by playfully drifting through the sound environment – an experimental approach that can be complemented by a sound-based artistic research. This process may involve various methods of listening and field recording, followed by studio work of composing and sound production. I applied this trajectory of artistic processes following my 'lived experience' (Cogan, 2006) of Bangalore and a personified sonic interaction with the shifting urban environment of the city, which I could not have approached in a cartographic sense. Instead of mapping the unfathomable and indiscernible city to specify its acoustic terrains, I preferred to act as what I am calling a 'sonic drifter' – an auditory equivalent of enacting the *dérive* in a psychogeographic practice. In this connection, I find Simon Sadler's articulation of psychogeography pertinent:

As its name implied, psychogeography attempted to combine subjective and objective modes of study. On the one hand, it recognized that the self cannot be divorced from the urban environment; on the other hand, it had to pertain to more than just the psyche of the individual if it was to be useful in the collective rethinking of the city. (Sadler, 1999, p. 77)

Following these sets of arguments and keeping in mind the nebulous, unplanned, overly noisy and chaotic structure of an Indian city that demands an inclusive and adaptive perceptual mode (as explained above), I embarked on an artist's residency in Bangalore¹⁶⁴ in the summer of 2010. The project that I developed during the residency proved to be an engaging as well as a definitive contribution to my artistic practice. In *Elegy for Bangalore*¹⁶⁵, an electro-acoustic composition stemming from the residency, I explored the emerging urban environments of Bangalore. The work is based on everyday lived experiences through listening. Infusing spatial perception with psychogeographic drifting, *Elegy for Bangalore* is intended to create a premise for in-depth observation and critical reflection on emergent urban sites in India. As one of the outcomes of a large-scale ongoing project with varied forms of dissemination (from site-specific installations to sound

¹⁶⁴The BAR1 residency:

<http://www.indiaifa.org/bengaluru-artists%E2%80%99-residency.html-0>

¹⁶⁵ The release can be found on the label page:

http://www.gruenrekorder.de/?page_id=9517. A broadcast version is available on SoundCloud: <https://soundcloud.com/budhaditya/elegy-for-a-city-1>

compositions), the composition was released on the German sound art label Gruenrekorder in 2013.

In this article, I describe the development of the piece primarily through an engaged fieldwork, involving the artistic processes of sonic drifting and field recording. These methodologies led to the composition of the sound artwork as an investigation into the sonic fabric of the urban sites outlining their conditions in a transforming India, examining how these sites are perceived in subjective listening, recorded on the field as ambient sounds, subsequently mediated and represented in a sound art production.

In the city

In order to locate the specific ambiance of the city, to limn the spatial span, and to frame the essential shape of an evolving urban landscape, I needed an effective approach and a methodology. Bangalore was undergoing dynamic metamorphoses at that moment and was still recuperating from the debris caused by the large-scale metro-rail constructions. The city had been affected by the metro alignments in various areas of its urban span, leaving major obtrusions such as construction sites here and there. The catchment areas of these sites scattered throughout the city ceaselessly upset the urban constellation, disturbing not only its natural landscapes and historic bodies of water, but also the city's collective memory, which was intruded by sounds from the rapid and rampant urban development. These disruptions were received, however, with a sense of languid idleness by the city dwellers, as is quite typical of Bangalore. If we follow the urban chronicles, in an anthology entitled *Multiple City: Writings on Bangalore*, many of the contributors talk about the 'laid-back nature' (De, 2008, p. xvi), 'indolence', 'doesn't matter attitude' or 'leisurely pace' (Deshpande, 2008, p. 96) as a typical ambiance of the city. These writings frame Bangalore as a city that prefers an idyllic pace. This indolent approach is reflected in my encounters with the city and in the development of the sound work.

To understand the spatial dynamics and to explore what was to me a somewhat unknown city, I devised the project as the gradual development of a work of sound-based art through listening, drifting, and field recording, followed by the compositional phase of working in the studio. The point of departure for this process was knowledge of how various modes of my listening responded to the sound environments I encountered and the ways in which the experience was mediated artistically. Thus, the sites of the city provided the formation of sonic imagery comprehended by listening and artistically mediated by field recordings and composing. At the outset, these phenomena have introduced the intrusion of complex

elements such as the transitory ringtones of itinerant mobile phones and phone-mediated voice into the otherwise laid-back character of Bangalore's sonic landscape.

Listening

In his seminal work *Listening*, Jean-Luc Nancy has argued that the act of listening operates on the edge of meaning or understanding acoustic phenomena:

To be listening is always to be on the edge of meaning, or in an edgy meaning of extremity, and as if the sound were precisely nothing else than this edge, this fringe, this margin. (Nancy, 2007, p. 7)

My first sonic encounters with the urban constellation of Bangalore surfaced somewhat at this margin of understanding and edge of orientation when my flight landed at Bangalore Airport. In the increasing air pressure that was clouding my earholes, there was a cry of a child passenger that sounded like it was coming from an unfathomable distance. This perception of distance in the sound perspective dominated when I got out at the new airport terminal, built with large panels of soundproof glass and metal frames, leaving no space for noise and sonic discomfort. The sound world changed, however, when I was on my way to the city centre. When I opened the car window, a multitude of sounds entered the closed space of the car, one being very prominent: the sound of metal bells from the hand-cranked revolving pots that produce roadside candy juice; these devices were located on street corners, and they made me aware of the rural, pre-industrial past of the city juxtaposed with the contemporary urban to develop 'layered identities' (De, 2008, p. xiv) as sonic elements from the past converge with the present ones making them difficult to grasp at once.

This experience of the city remained at the fringe of knowledge when, in the evening, the sound of temple bells reverberated in handmade loops within the small alleys of the middle-class neighborhood near where I was staying. In the immediate audibility, I could hear the apparently silent room tone of my empty apartment as having the presence of a deep and diverse frequency spectrum as well as numerous sound elements at the margin of hearing. While listening to the city, the first thing that struck me was the juxtaposition

In comparison to sound art that re-presents an urban Indian site, in Indian films an urban site is not sonically reproduced with such a deep and diverse frequency spectrum, but is largely subordinated to the sonic aspects that serve to support the plot.

of sound elements within an elusive silence. The act of listening was situated on the surface of the urban constellation in which infinite numbers of sound events were taking place, enveloping and immersing the city dwellers into the sheer volume of sonic environment to take away their capacity to listen mindfully. Therefore, I maintained my position as a *nomadic listener* to remain at the margin of the sonic environment with an observational-contemplative distance throughout the development of the artwork. This was a strategy I employed, being aware of the problem in outlining the ambience of the overwhelmingly chaotic and nebulous urban sites in India - a strategy that was well reflected in the artwork.

During the first three weeks of my stay, I spent time listening to the city from my residence, taking imaginary journeys to the streets of this unknown city as a sonic drifter. From the early morning onwards, the everyday environment of the neighborhood offered an overwhelming number of sound elements. I observed that the morning sounds were clearer, more distinct, and with finite beginnings and endings. I quote from the brief accounts of ethnographic notes that have previously appeared in the magazine *Field Notes*:

Like an emerging sun, the sound events reflected over people and spaces without leaving any residue. As the day progressed, sounds began to elongate themselves, as if an event was stretching into mid-day when people lose their enthusiasm; and, as a consequence, indolence took its toll, and the lazy afternoon began to enter through the windowpane. As the sun passed overhead and made things conscious of their presence, the tone of the afternoon traffic inclined towards minor chords: the horn of a lone auto-rickshaw, the bells of a busy bicycle, the repetition of an impatient door-bell, a traversing crow, and an unwanted male cat all seemed to my drifting ears to be emitting minor chords at the peak hour of the working day. (Chattopadhyay, 2012)

My imaginary but mindful travels through the sound environment of the city reached the late afternoons:

It was time for lonely housewives to switch off the TV and black crows to appear on the terrace while the domestic parrots were excited about the coming of evening. A few unemployed youths were getting together on street corners and their motorbikes were waiting with their engines on. Exactly at this time, a street hawker was passing by to sell his handmade soap with melodious chants. This was the transition to a much-anticipated evening, an evening when most people would come back to their respective homes and prepare themselves for another working day. As evening was

falling over the city like dispersing smoke, the absence of the sun was heard in the drone of traffic, sounds were stretched out in time, merging into one another; the whole city was emanating industrial music, which intercepted handmade loops of temple bells.

Standing at the large window of my sixth floor apartment, I could see the city landscape at evening and hear the indistinct sounds of people coming home on the main street with their discreet moans of fatigue. The car horns in metallic chorus seemed to melt into halogen light, and the insignificant residue was drifting toward darker corners of the city, windowpanes, and eventually to underground basements. The evening was merging with the night-time in the way television sets engaged with shouts and claps from reality shows. Alleys of the city were becoming emptier; windows and doors were shut; stray dogs were moving around and fighting each other over food. Drunkards were searching for their homes and involuntarily faltering. As the sound events grew thicker, the broadband frequencies could be located. A large-scale urban drone emerged from machines and electrical devices, which were hiding within predominantly man-made sounds. In this late-night drone, subtle sounds were emerging from here and there: a mosquito moved around; a drop of water fell into the empty bucket in my bathroom; the creak of the window was becoming distinct and overly clear. This was when I became conscious of my own bodily presence in this unknown urban constellation. (Chattopadhyay, 2012)

It is evident in these notes that I employed a mode of listening, which was not only subjective but also nomadic in nature from a psychogeographic perspective.

Drifting

Listening in this way led me to the margin of the circle of the nebulous urban environment of Bangalore; and, subsequently, I found the entryway into the circle. It was a process what Nancy calls participation of the self (Nancy, 2007, p. 14). In due course during this participation process, I indulged in random drifting through the city to encounter various urban locations. While drifting, I tried to understand people's association with various sonic territories. I learned about the urbanism of Bangalore evolving from its colonial past, and certain sound marks unique to the specific locale directed me to a number of zones where the colonial history of the city was preserved in its particular sound environment. These zones offered sounds that belonged to a distant pre-industrial past, unchanged, undamaged by time and, in their purity, untouched by the hand of development. The zones were in the

uncharted peripheries and the forgotten corners of the city, unattended by the crowds in their euphoria over a better urban living. These discreet zones allowed me to comprehend a pre-industrial environment of the city by listening to sounds that were no longer contemporary, but, rather, the echoes, resonances, or relics of nostalgia exemplified by the ambiances of temple bells, archaic overtones of voices from the ancient ceremonies surrounding bits of memory, that were cultivated by earlier generations of city dwellers.

In one of these drifting sessions, I walked through my neighborhood following the clanging of a temple bell, and this led me to the door of a temple beside a large pond. There, while listening to the water lapping on the stones, I heard the splashing of older women taking a ritual bath, something that was mentioned in the urban chronicles and which has been performed at every sunrise perhaps since the advent of Bangalore circa 1537. The rhythmic sound of someone else washing clothes on the stairs led me to a collective laughter. I followed the laughter to a teashop where older generations of city dwellers gathered. Through their talk, I came to know about the Sunday market on the busiest street, where used and discarded reel-to-reel spools and audiotapes were sold by the roadside. Starting very early in the morning, the selling faded with the rising sun, as if it was an event in the twilight of a semi-darkened corner of urban subconscious, disappearing into memory. I started to collect a large number of spools and tapes from vendors with blurry faces, who seemed to come from the forgotten corners of the city. These spools had hazy handwritten scripts on them, informing about a mediated history of personal recording expeditions. By playing back these spools, I found samples of home recordings, radio broadcasts, speeches and half-erased tracks of sundry room tones, overdubs, and clichéd silences.

Earlier, in search of a playback machine for reel-to-reel spools, I visited the lone curio shop with an audio section in the older part of the city. The section was a museum in itself, focusing on the heydays of the analogue audio revolution with the likes of Akai, Philips, and Grundig's semi-professional home audio equipment, ranging from secondhand reel-to-reel players, turntables, and disk changers to used stereo tape decks and home speaker systems. It was evidently an environment alienated from the emerging global city of Bangalore. As an extension of my visit to the curio shop located in a dark alley, I finally ended up in a radio repair store to renovate a newly purchased spool player. The store housed junk radios, valves and transistor parts from the First World War in organised racks. Right beside rambling traffic, the constant clattering of mobile phone ringtones and everyday sounds of the city, the junk radios provided a stark relief, an urban refuge for indolent reflections. To Jonathan Sterne, 'radio, film, and sound recordings become the agents of

acoustic modernity' (Sterne, 2003). My attempts to listen to, and record the ambience of the hyper-modernising city, considered these once active talking machines as the auditory legacy of the city, since they enhanced their sonic 'objecthood' involving memory and nostalgia.

Recording

In an interview published in the book *In the Field*, I discuss my specific approach to field recording. I engage in recording a project as a phenomenological development of listening. This involves my own intervention with a particular concern for the site and its historical transition over time (Lane and Carlyle, 2013, p. 54-55). As a psychogeographic exercise, sometimes the site itself directs me to find specific sources of sound that stand out; in other words, the sources seem to choose me to receive my attention. As I have already mentioned above, I do not approach a site in a cartographic sense, and my work does not try to 'map' or portray a place. Rather, my interests lie in formulating the psychogeography in which 'I' am the starting point of the methodology. Sometimes, I do not record at all: perceiving begins and expands over the process of listening and develops into an intuitive structure that I later use as a point of departure for further listening, formulating an acoustic geography of the city as a process of subjective or 'adaptive perception' as explained above.

For the first couple of months of being an artist-in-residence in Bangalore, I mostly listened to the city, waiting for it to unwrap through my ears as described above. My recording machine (a Sound Devices 702) and two microphones (MKH 60 and MKH 30 as an MS stereo combination), along with a Rycote windshield, were mostly unused, left in the corner of my residence during those intense and compulsive listening sessions and directionless drifting through the streets of Bangalore. These soundwalks eventually motivated me to unwrap the surface of immediate actuality of the essentially indolent nature and idyllic character of Bangalore, guiding me towards peripheries of the city – e.g. metro construction sites – for field recording to keep chronicles of my interactions with these hyperactive zones. From the very first day I went out with my recording gear to explore these parts of the city, my auditory senses became dominated by the imagery of rapid growth. The enormous metro constructions were ceaselessly striking like a whip on a large part of the metropolis. As a straightforward approach, the first thing that prompted me to record was the industrial drone with a repetitive rhythm of machines at one of the busiest construction sites.

Traditionally, in sound scholarship, the recording of sound is discussed in terms of dislocating sounds from their respective sources. Both Rick Altman and R. Murray Schafer

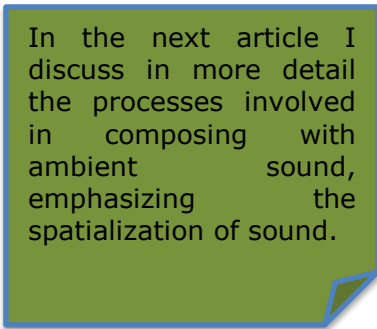
have spoken about the ways in which recording displaces sounds in time and/or space (Schafer, 1994; Altman, 1992). Field recording helped develop a repository of sonic events recorded from the site into the creative realm of composition. The rationale behind field recording was to search for the layered aural juxtapositions as well as the documentation of disappearing and newly found sounds. The act of field recording became more instinctive in its execution and the microphone increasingly became an extension of myself (McLuhan, 2003).

Once started, the process of field recording continued to evolve towards saturation: the sonic phenomena became repetitive. Recording transcended the mere effort of documentation to develop into the self-engaged impressions, participatory reflections, and musings of a field recordist. The city of Bangalore turned into a character appearing as many faces in the layers of impromptu recordings of everyday traffic, rumbles, and vibrations. The periphery of construction sites at night particularly offered exclusive sounds of crickets, the wind's reflection on tin sheets, fleeting sirens, and train whistles – all of these materials helped develop the composition.

Composing

Following the arguments of composer and sound theorist Barry Truax, we can consider soundscape composition as an audio art form that stems from both location-specific sound recording and subsequent studio processing of the 'artistic material' of recorded and disembodied environmental sound (Truax, 2007). The field recordings gathered during my residency at different locations in Bangalore exemplified my interactions with the city as I experienced urban growth in terms of the enormous metro-rail constructions that were forcing the city to reorganise its spatial character.

Informed by these experiential accounts and tracing the notion of composing with field recordings, *Elegy for Bangalore* represents an indolent mood prevalent within the urban constellation of the city reflected in the recorded sounds from the sites. As artistic materials, these recordings shaped the composition to enable meditative and in-depth observations of the chaotic and 'noisy exterior of the city.' Further, they facilitated the finding of an entry into the city's multilayered



In the next article I discuss in more detail the processes involved in composing with ambient sound, emphasizing the spatialization of sound.

interiors to allow a perception of the transformative and complex sound environment as a whole. The sounds restored from the collected tapes found at the flea market provided further insights into the city's auditory legacy thereby forming another sonic layer for *Elegy*.

Stemming from this myriad of phenomenological experiences of the emerging Bangalore and its complex sound world, the work expresses the multilayered listening attitudes to a city that is undergoing a dynamic metamorphosis. Working on the assumption that the passing of time in a once inhabited but rapidly emergent city could be captured by employing a contemplative and elegiac pace in the listening methodology, *Elegy* explores the mood of indolence and the pace of idleness to facilitate meditative and in-depth observation to the site. The piece also reshapes memory associations disconnected from and erased through the process of listening and subsequent phase of composing in the two-year time span of its development.¹⁶⁶ The strategy of composition has been a digital-acoustic mediation (Chattopadhyay, 2012, p. 226), the aim being to evoke a listener's association, cognition, and imagination of the city. As mentioned above, in this piece, the keen sense of passing time works as a mode of observation. Observation opens up the scope for examining the urban environment and studying the city's spatial dynamics in current flux. The method also helps to develop an understanding of the inchoate and rapid urban expansion by using the subjective intervention of the listener. The slow pacing and the indolent mood compositionally explored in the piece provide the premise for the evocation of an urban psychogeography, a premise from which the processes of knowing the sound environment of the Indian city evolve into adaptive perception and take a specific shape within the mind of the listener. This knowledge helps comprehending the nature of Indian urban sites as well as the methodologies and approaches undertaken by the artist/listener trying to record and sonically mediate the urban site in sound artworks.

Conclusions

The sound work *Elegy* for Bangalore was based on field recordings made at various metro construction sites in Bangalore. Materials also included retrieved audio from old reel-to-reel tapes found at the city's flea markets. This extensive repository of field recordings and other audio materials eventually took the form of an elegiac composition, infusing spatial perception gathered through sonic drifting, reflecting on the perceived longing of the past prevalent in the rapidly modernising urban experience. The work created a conceptual, practical, and methodological premise for in-depth observation of the corresponding

¹⁶⁶ See: Gruenrekorder website: http://www.gruenrekorder.de/?page_id=9517

historicity and passage of time, and psychogeographic reflection on emergent urban sites in India with their chaotic, noisy and hybridised sonic environments. This premise can be considered as a prototype for reading other emerging cities in developing countries. Starting with a mental journey through the acoustic geography of the city, the artistic methodology involving psychogeographic drifting helped to give shape to the general outer appearances of the city that were registered in the mind of the listener as a personified construct within the subjective and adaptive auditory perception of a nomadic listener. The sound piece and its artistic process proposes an appropriate methodology for listening to an emerging Indian city by engaging with the multilayered urban contexts and, subsequently, composing the essential disposition of the city by way of exploring the interplay between various modes of listening, drifting, field recording and composing. The work encourages speculation on the present urban conditions in rapidly developing countries like India by examining the processes of perceiving an apparently chaotic and disorganised urban site with its multisensory complexity.

References

- Altman, Rick (ed.) (1992). *Sound Theory/Sound Practice*. New York: Routledge.
- Basset, K. (2004). Walking as an aesthetic practice and a critical tool: Some psychogeographic experiments. *Journal of Geography in Higher Education*, 28(3), 397-410.
- Bhan, Gautam (2013). Planned illegalities: Housing and the 'failure' of planning in Delhi: 1947-2010. *Economic and Political Weekly*, 48(24).
- Chattopadhyay, Budhaditya (2013a). Auditory situations: Notes from nowhere. *Journal of Sonic Studies. Special Issue, Sonic Epistemologies*, 4.
- Chattopadhyay, Budhaditya (2013b). *Elegy for Bangalore*. Frankfurt am Main: Gruenrekorder.
- Chattopadhyay, Budhaditya (2013c). Interview in *In the Field: The Art of Field Recording*. Lane, Cathy, & Carlyle, Angus (eds.). London: Uniformbooks.
- Chattopadhyay, Budhaditya (2012a). Soundhunting in a city: Chronicles of an urban field recording expedition. *Field Notes* (3). Frankfurt am Main: Gruenrekorder.
- Chattopadhyay, Budhaditya (2012b). Sonic menageries: Composing the sound of place. *Organised Sound*, 17(3), 223-229.
- Chion, Michel (1994). *Audio-vision: Sound on screen*. Gorbman, C. (ed.). New York: Columbia University Press.
- Cogan, John (2006). The phenomenological reduction in Internet Encyclopedia of Philosophy. <http://www.iep.utm.edu/phen-red/>
- Coverley, Merlin (2010). *Psychogeography*. Herts: Pocket Essentials.
- Cox, Christoph, & Warner, Daniel (2004). *Audio Culture: Readings in Modern Music*. New York and London: Bloomsbury.
- De, Aditi (ed.) (2008). *Multiple City: Writings on Bangalore*. New Delhi: Penguin Books India.
- McLuhan, Marshall (2003). *Understanding media: The extensions of man*. Berkeley: Gingko Press.

Nancy, Jean-Luc (2007). *Listening*. Translated by C. Mandell. New York: Fordham University Press.

Sadler, Simon (1999). *The Situationist City*. London: The MIT press.

Self, Will (2007). *Psychogeography*. London: Bloomsbury.

Schafer, R. Murray (1994). *The soundscape: Our sonic environment and the tuning of the world*. Rochester: Destiny Books.

Sterne, Jonathan (2003). *The audible past: Cultural origins of sound reproduction*. Durham and London: Duke University Press.

Thompson, Emily (2004). *The soundscape of modernity*. London: The MIT Press.

Truax, Barry (2007). Sound in Context: Acoustic Communication and Soundscape Research at Simon Fraser University.

http://wfae.proscenia.net/library/articles/truax_SFUniversity.pdf.

Wall, Ed, & Waterman, Tim (2010). *Basics of landscape architecture 01: Urban design*. Switzerland: AVA Publishing. 14-84.

Article 6: Chattopadhyay, Budhaditya. "Decomposing Landscape: Hearing the Troubled Site." *Journal of Artistic Research* (In peer review).

In the Introduction and the first three articles of Part 2, I discussed the narrative constraints within which location recording of ambient sounds operate when contributing to the sense of place in cinema as well as how digital technology makes it easier to include more layers of ambient sounds in the cinematic environment as site-based evidence, creating an enhanced sense of presence. Regarding the differences between sound art and film sound, this essay pays attention to how in sound art a sense of presence is created, although at the same time amplifying a tension between the site-based material and a playful artistic mediation that often works to make site-specificity more abstract. Additionally, it addresses how this tension might engage the audience with an actual narrative of a site.

Abstract

The article examines my recent multi-channel sound composition: *Decomposing Landscape* (2015), inquiring into the complex, nebulous and evolving relationship between sound and site that is thoroughly challenged in the practice of phonography or field recording-based sound artworks dealing with environmentally-troubled sites. Phonography-based compositions and sound artworks are developed through location-aware listening and field recordings made at specific sites and landscapes. The compositional strategy in these works relies on artistic interventions through the intricate processes of field recording and processing of recognizable environmental sounds using multi-channel spatialization techniques. The artistic transformation renders these sounds into a blurry area between compositional abstraction and portrayal of their site-based origins. The question is: how much spatial information is retained and how much abstraction is deployed in these sound artworks? A discussion of this work sheds light on some approaches and a methodology of handling site-specific evidence in sound art production.

The Premise

As a practitioner of sound art I am involved with "field recording," a practice that embraces the methodology of recording site-specific ambient sounds outside of the studio. The practice is also known as "phonography" – a term used to signify its similarity to

photography. Field recording was originally developed as part of a documentary approach in anthropological field research; it also stands analogous to location recording in filmmaking, albeit being largely controlled by the predominant narrative strategies of cinema. With the introduction of high-quality portable recording technologies after the digital revolution in the nineties, it has subsequently become an independent and evocative art form in itself within the realm of sound art and new music. The current avatar of field recording often involves capturing environmental sounds, which might range from animal sounds from the remote corners of the wilderness to everyday urban sounds, subliminal in apprehension and low frequency in content; therefore, the sonic material tends to be complex in texture, tone and characteristics. In response, artists have often pushed the technical capabilities of sound recording, demanding low noise and extended frequency response in portable, easy-to-use recording equipment, ranging from high-resolution multi-track recording kits to the DIY technologies of contact microphones, for example. The arrival of digital technology actually made such recording techniques and methods possible. Hence, we can observe that the digital era has turned out to be an ideal situation for the emergence of field recording-based sound art, enabling diverse approaches to documenting sound from a site. Parallel developments also occurred within sound production practices in the context of fiction films; however, in the scope of this article I focus on examining non-fiction phonographic sound artworks due to their unique contribution to the issues of spatial evidence and site-based presence. Drawing on a few more recent scholarly works on field recording (Demers 2010; Gallagher 2015), I intend to discuss one of my recent multi-channel sound compositions: *Decomposing Landscape* (Chattopadhyay 2015), in order to underscore the complex and evolving relationship between sound and site that is thoroughly challenged in the practice of field recording or phonography-based sound artworks and digital music compositions created with site-specific recordings of ambient sound.

The Discourse

In a recent essay, Australian sound artist Lawrence English enquired into the current flux of field recording practice: "Why has it become a substantial presence in the contemporary sound ecologies? Merely two decades ago it was a somewhat uncharted realm lacking vigorous and pluralistic investigations" (English 2014). To answer this question, I draw attention to the condition of contemporary media art since the dust of the digital era has settled. I argue that, following the advent of digital technology in the late 90s, widely available and easy-to-handle digital sound recording devices, applications and facilities made various options and formats available to contemporary sound practitioners. Field recording-based sound technologies, as a sprawling field in the realm of contemporary art practices,

facilitate the recording of sound on location with greater detail, deeper depth of field, and wider dynamic range of frequency, resulting in more precise, controlled and accurate documentary evidence of the site. These recording capabilities allow for a closer listening to and more accurate sonic documentation of uncharted territories, including underwater and underground locations, in the Amazonian forests, arctic landscapes, and even in outer space. Contemporary sound practice is marked by conditions where the digital saturates itself to give birth to a new context of “post-digital” (Cascone 2002; Chattopadhyay 2014; Cramer 2014 et al) practices, intensifying technological convergence, aesthetic inclusivity, a sense of democratization, and artistic freedom. In this post-digital era, field recording is amply supported by the development of kits with multi-track recording options, offering greater flexibility, access to the farthest corners of the location, and applications with precise control over each recorded audio clip. Multiple options for saving numerous tracks open up possibilities for recording a larger number of sound elements and working with multiple layers of sound captured from a location. In the studio scenario, there are ample choices for processing sounds (digitally or with retro-aesthetic means, e.g. analogue synthesizers) for spatialization and multi-channel composition. But it is not the availability of the tools of music technologies and the way in which this has impacted the proliferation of field recording in sound-based artistic production that I focus on in this article. My interest here lies in examining the nature of the site-specific sound contents that are recorded and used in field recording-based sound artworks and the ramifications of the post-digital approach on the handling of audible evidence derived from sites or landscapes that are environmentally and climatically endangered within rapidly emerging economies, such as that of India, landscapes that are underrepresented in popular mainstream film and media productions.

The Context

We have arguably entered the Anthropocene epoch, a new geologic era defined by unprecedented manmade disturbances over earth’s ecologies (Morton 2013). In this era, the ecological integrity of natural, pastoral landscapes in emerging economies like India are endangered due to governmental pressure for rapid growth. Under the specter of the contemporary conditions of anthropogenic climate change in these developing economies, the actual environments of the various rural sites and pastoral landscapes are undergoing massive environmental transformation. Contemporary India is going through an intensifying process of land development to facilitate rapid urbanization (McKinsey 2010). As a result of this speedy manmade growth, many of the greener pastures in the rural hinterlands are developing into post-industrial zones, deeply impacting the integrity of the environmental as well as socio-cultural climate. Consequently, these scenic landscapes are transmuting to

become homogenized wastelands, with complex transitions unfolding within their traditionally rich culture and history. In India there are numerous such sites that are going through an intense cross-fertilization between multi-layered development processes within traditionally integrated rural areas, impacting the natural landscapes suffused with their own unique site-specific character. Some of these transitory landscapes are exposed to phonographic fieldwork as sites for investigation through the development of diegetic narratives in sound art and compositions.

The Work

In this context, multi-channel sound composition *Decomposing Landscape* (Chattopadhyay 2015) developed through extensive field recordings made at specific sites situated at the eastern part of India, close to the city of Kolkata. The work creates a discursive auditory setting to facilitate a contemplative and in-depth observation of transitive landscapes. The final outcome of the project includes an Ambisonics sound composition – site-specific field recordings arranged and diffused through multi-channel spatialization – as well as a multi-channel sound/video installation. The works have been developed through a meticulous collection of materials from various locations of India during extensive phonographic fieldworks. This collection formed a digital archive used to realize the work. The project aims to share an aesthetic interpretation of the gradual transfiguration of the developing societies to the wider public, employing post-digital music technology with a hybrid methodology, marked by a technological convergence between old and new applications; aesthetic inclusivity, combining retro and current techniques of sound processing; and artistic freedom in arranging sound through the wider spatial environment of an Ambisonics system. The multi-channel sound composition was developed during an artist residency at ICST, Zurich University of the Arts¹⁶⁷ and, upon completion, received first prize in the Computer and Electronic Music category of Computer Space festival, Sofia, Bulgaria in 2014¹⁶⁸ and was subsequently released by Touch, London, in 2015.¹⁶⁹ In this

I have chosen here for a multi-channel composition primarily because of the nature of the ambient sound materials gathered during the field recordings. These were made in multiple layers, and the material required large-scale spatial diffusion in the compositional and performance stages.

¹⁶⁷ See: https://www.zhdk.ch/index.php?id=icst_budhadityachattopadhyay

¹⁶⁸

See: http://www.scas.acad.bg/cs2014/index.php?option=com_content&view=article&id=146%3Acomputer-space-2014-awarded-projects&catid=1%3Alatest-news&Itemid=67&lang=en

work the sonic representation of the specific sites tends to aestheticize the actual environment of the landscape in the creative process of spatial composition developed while listening and gathering field recordings of site-specific ambient sounds. The compositional strategy consists of artistic interventions: taking intricate location-based multi-track digital field recordings and transforming these recognizable environmental sounds through studio processing. These artistic mediations diffuse these sounds spatially into a blurry area between musical abstraction and recognizable sonic evidence of the site. The question is, how much spatial information, in terms of the recorded ambient sounds, is retained and how much artistic abstraction is deployed during production practice? This artistic process needs to be examined in order to better understand the nature of representation in field recording-based sound artworks that intend to diegetically narrate sites endangered by anthropogenic interferences.

The Analysis

As it develops, the 35-minute long piece deliberately turns from the recognizable textures and tones of ambient sounds in the first 15 minutes to become steadily more abstract.¹⁷⁰ As I have mentioned, the work draws on field recordings collected from a specific environmentally-troubled site in eastern India as its primary material. The field recordings are already “composed” on site, as Sound Studies scholar Joanna Demers has shown. Phonography-based sound works are developed from documentary field recordings, which are collected from certain sites and landscapes, employing the act of recording as the primary compositional process (Demers 2010). Sound artist Yan Jun addresses this purer approach of field recording in the phonography-based sound art production by stating that: “There is no divide between documenting and creating. The point is that, I do not build dreams, neither by field recording nor by playing my electronic instruments or digital audio workstation at the laptop computer. To choose the right equipment, to choose the right recording position and to push the record button are the acts of composing. A recording of tiny meaningless noises can be a beautiful composition” (Jun quoted in English 2015). However, there are works that use digital mediation as their primary compositional strategy: using musical techniques such as signal synthesis, looping, and so on. This strategy relies heavily on the processing of recognizable environmental sounds recorded from the sites,

¹⁶⁹ See: label

homepage: http://touchshop.org/product_info.php?cPath=113&products_id=693

¹⁷⁰ Excerpts from the composition: <https://soundcloud.com/budhaditya/decomposing-landscape-excerpts>

using effects like delay and modulation, a methodology that follows the example of composer Barry Truax (2007). When analyzing the methodology employed, “Decomposing Landscape” falls into the latter category of sound artworks, however, at places I choose to re-produce recurring motifs in the form of unprocessed, site-based field recordings. My intent with this deliberate interplay between audible site-specific evidence that is recognizable or made abstract should be justified, since the ecologically-disturbed and polluted sites, as the subject of the work, might be viewed as asking for a more truthful (i.e. less manipulated) documentation of the anthropogenic interference in the landscape, as demanded by the notions of acoustic ecology and soundscape (Novak and Sakakeeny 2015), marked by an environmental concern.

Earlier scholars writing on sound recording have discussed the process of recording in terms of dislocating sounds from their respective sources and the sites of their origin. Both Rick Altman and R. Murray Schafer have spoken about the ways in which recording displaces sounds in time (Schafer 1994; Altman 2012). Field recording of site-specific ambient sound, therefore, can be considered as a process that develops a repository of sonic events recorded from the site that can be brought into the realm of composition as sound objects (Demers 2010; Metz 1985). Following this, it can be argued that phonography-based composition stems from both site-specific sound recording – “field recording” – and the subsequent studio processing of the gathered artistic material: recorded and disembodied ambient sounds. It remains to be seen as to what degree sound becomes disembodied during the recording process as well as how much abstraction is further imposed on this sound due to the compositional method applied during the production of the sound art. Does the strategy of musical and artistic mediation that is applied distort the audible evidence of the field recordings collected from ecologically-disturbed sites?

The work begins with unprocessed ambient sounds of birds, insects and traffic from a distant landscape within a spatial perspective of a wide expanse.¹⁷¹ This shorter passage is invaded by the

The political and the aesthetical aspects related to sound and site influence one another from the act of field recording to the creation of a final product, and the site’s ecological complexities are artistically negotiated and transformed during the production of the artwork (see also the fourth article).

¹⁷¹ Excerpts from the composition: <https://soundcloud.com/budhaditya/decomposing-landscape-excerpts>

unedited sounds of flying bees in spatial diffusion with intensifying proximity and volume, creating a dramatic auditory setting. A slow intrusion of the sounds of cattle bells follows, bringing in subtle musical textures that gradually grow incessantly rhythmic and spatially enveloping. Unprocessed sounds of machineries appear from distant corners and take over the environment. The sound of machineries is intercepted by the rhythms of the ritual drums played at this tribal-dominated site. The machineries dissolve into a ritual chant, which gradually morphs into an “echoing chamber where all is erased and [...] left (with) dark brushes of sound enveloping the landscape.”¹⁷² This last part of the composition becomes heavily processed as time passes, employing tools such as delay, compression, and time-stretching with multiple audio applications, simulating varied sonic textures using styles from the most recent digital to earlier analogue eras. The piece continues with increasingly modulated abstract textures and ends with the climactic sound of an actual blast occurring at the center of the landscape, opening up the earth and extensively destroying the nature, as suggested through the development of the piece.

The work’s compositional strategy of presenting the unprocessed ambient sounds in the beginning and then gradually turning them into processed sonic textures of ambient electronic music (Demers 2010) essentially blurs the boundaries between the documentary actualities of the site and the subsequent artistic mediation, turning this process into a musical composition. The strategy of this deliberate but gradual transformation problematizes the nature of representation in a field recording-based sound art production, underscoring the work’s precarious relationship to the site. Particularly when the site in question is environmentally-endangered, and thus perhaps seeming to demand an accurate documentation, the question arises: why would such a compositional strategy be undertaken?

Many field recording-based sound artworks such as “soundscape compositions” are, according to sound art historian Alan Licht, “a variant of *musique concrète* in which field recordings were electronically processed to some degree but fundamentally left recognisable” (Licht 2009: 8). These works therefore tend not to obscure site-specific information “through a superimposition of sound that interpenetrates preexisting spaces, effecting a layering or doubling, which can produce hybrid spaces” (Gallagher 2015: 574). In such artistic processes, the auditory evidence is kept in an ambivalent state, leaving

¹⁷² Review of the piece by sound artist and writer Maria Papadomanolaki in a personal email (2015).

questions concerning the degree of abstraction that the production of sound art generates. Based on the chosen compositional methods in sound artworks developed from field recordings, it can be contended that, in general, the work exists in a state of tension between the abstract and the evidential, subsequently suggesting a manipulation of recorded sonic “facts” within its speculative form of composition. The ways in which this distinction is maintained traces the nebulous line between abstraction and recognition. The processes of abstraction achieved through musical mediation (manipulations achieved digitally or with retro-aesthetic means, e.g. analogue processing of sound) and multi-channel composition collide with the evidential accounts of the field recording.

The diegetic world within the composition appears by means of the sites and their respective actual environments as represented within the sonically augmented environment of the piece. From the production end, if I link my art practice to the reception of the work through speculating on the expectations of the audience or, more precisely, by placing myself as the first audience member of my artwork, I can contend that the audience members might involve themselves with the work by recognizing a sort of presence of the site within the contested diegetic narrative captured within this constructed world. The embodied experience of presence may vary in degree, depending on the intention of the artist in terms of which ambient sonic details of the sites are recorded and represented during the compositional process. The audience members would believe in and associate with the diegetic world (Percheron 1980; Burch 1982) when a resonance of the sites reverberates while experiencing the works. The representation of the site within the composed environments of phonography-based sound artworks are of significance when it comes to convincingly conveying the narratives of the actual sites and the landscapes to the audience: “Truax has noted that soundscape composition simulates a journey, or motion, through a landscape” (Licht 2009: 8). The spatial organization of field recordings of ambient sounds in higher order Ambisonics format intends to create a spatially augmented environment realized through the narrative progression of the composition. The aesthetic experience of perceiving a landscape in this sound work is crafted by recorded materials assembled with a narrative musical structure in mind. The strategic combination of recognizable unedited ambient sounds and processed phonographic materials is designed to

There are many Indian films developed from similar rural sites, troubled by ecological concerns, and using similar digital technology. However, in contrast to sound art, these Indian films often include a controlled layer of ambient sound in their spatial organization. I have briefly discussed this difference between film and sound art in the third article and have included further commentary in the Conclusion.

suggest the development of a fertile interaction between the relative presence and absence of documentary evidence of this troubled site, which, within this constructed interplay, engages the audience's interest and attention over time. Perhaps a mere factual representation of the site in unedited field recordings would not appeal to the audience's contemplative associations. The extent to which audiences associate with the sites and how engaged they become while following the artistic transformation of field recordings, both in terms of compositional techniques as well as the Ambisonics spatialization of the ambient sounds, depends on the framing of this constructive interplay between absence and presence or between abstraction and recognition of the site-specific evidence during the temporal development of the composition. In the work *Decomposing Landscape* I have aimed at amplifying the imaginary outlines of the landscape by shifting attention between the concrete and the abstract.

Conclusion

The process of artistic transformation using multi-channel compositional techniques reproduces the field recordings from the troubled site within an augmented environment, formulating its narrative diegesis by operating between an abstraction from and reproduction of their sited source. The degree of artistic transformation depends on the amount of spatial information retained from the unedited field recordings as well as the processing that is deployed. The resulting tension, as explained above, may help engage the audience members, who might not otherwise lend their ears to a purely documentary representation of the site. I would like to underscore this tension between offering an evidential account, through the use of unedited and relatively unprocessed field recordings, and an abstraction of ambient sounds, brought in through technology-based artistic interventions and transformation. In my assessment as a sound artist and researcher, this inherent tension makes the work more engaging.

References

Altman, R. (2012). "Four and a Half Film Fallacies". In Jonathan S. (ed.), *The Sound Studies Reader* (pp. 225–233). London: Routledge.

Burch, N. (1982). Narrative/Diegesis—Thresholds, limits. *Screen* 23/2: 16–33.

Burch, N. (1985). "On the Structural Use of Sound". In Weis, E., & Belton, J. (eds.), *Film Sound: Theory and Practice*. New York: Columbia University Press.

Chattopadhyay, B. (2015). *Decomposing Landscape*. Digital Download (binaural and Ambisonics b-format files). London: Touch.

Chattopadhyay, B. (2014). "Object-Disoriented Sound: Listening in the Post-Digital Condition". *A Peer-reviewed Journal About* 3/1.

Chattopadhyay, B. (2012). "Sonic Menageries: Composing the sound of place". *Organised Sound* 17/3: 223–229

Chattopadhyay, B. (2016). *Audible Absence*. Doctoral dissertation (forthcoming).

Cascone, K. (2002). "The Aesthetics Of Failure: 'Post-Digital' Tendencies in Contemporary Computer Music." *Computer Music Journal* 24.4

Cramer, F. (2014). "What is 'Post-digital'?". *A Peer-reviewed Journal About* 3.1

Demers, J. (2010). *Listening through the Noise: The Aesthetics of Experimental Electronic Music* (pp. 113–134). New York: Oxford University Press.

Demers, J. (2009). "Field recording, sound art and objecthood". *Organised Sound* 14/1: 39–45.

English, L. (2014). "A Beginner's Guide To...Field Recording". *FACT Magazine* November issue.

Gallagher, M. (2015). "Field recording and the sounding of spaces". *Environment and Planning D: Society and Space* 33: 560 – 576

Licht, A. (2009). Sound Art: Origins, development and ambiguities. *Organised Sound* 14/1: 3–10.

Metz, C. (1980). "Aural Objects". Translated by Georgia Gurrieri. In Rick Altman (ed.), *Yale French Studies Number 60: Cinema/Sound* (pp. 24–32). New Haven: Yale University Press.

McKinsey (2010). "India's urbanization: A closer look". *McKinsey Quarterly* July issue.

Morton, T. (2013). *Hyperobjects: Philosophy and Ecology after the End of the World*. Minneapolis: University Of Minnesota Press.

Novak, D., & Sakakeeny, M. (eds.) (2015). *Keywords in Sound* (pp. 197–198). Padstow, Cornwall: Duke University Press.

Percheron, D. (1980). "Sound in cinema and its relationship to image and diegesis". In Rick Altman (ed.), *Yale French Studies Number 60: Cinema/Sound* (pp. 16–23). New Haven: Yale University Press.

Schafer, R. M. (1994). *The soundscape: Our sonic environment and the tuning of the world*. Rochester: Destiny Books.

Truax, B. (2007). "Sound in Context: Acoustic Communication and Soundscape Research at Simon Fraser University". SFU website.
http://wfae.net/library/articles/truax_SFUniversity.pdf

Part III: Conclusion

1. Summary

In this project I set out to consolidate a number of pertinent questions into one: the question of *how* ambient sound is used as a site-specific element to create spatial awareness in Indian films and field recording-based sound artworks. Taking a critical attitude towards the notions of diegetic sound, mimesis, presence, artistic transformations of soundscapes, and technological innovations, the project highlights the inherent similarities and differences between the ways ambient sounds are used in film and sound art; the aim was to know how the latter practice can inform the former.

Part 1 of the dissertation, the introductory chapter, outlines the premise for understanding the basic concerns of my research. Part 2 includes six articles of which the first three deal with three primary phases of sound production in Indian cinema and the last three discuss my own field recording-based sound artworks.

The first article, "The World Within the Home: Tracing the Sound in Satyajit Ray's Films," examines the use of sound in the early films of Indian cinema and considers the work of Satyajit Ray as exemplary of the monaural and synchronized framework of sound production. "The Auditory Spectacle: Designing Sound for the 'Dubbing Era' of Indian Cinema," the second article, conceptualizes the specific practices of designing ambient sounds (or a lack thereof) in the dubbing era of Indian cinema, roughly between 1960 and 1990. The third article, entitled "Being There: Evocation of the Site in Contemporary Indian Cinema," examines contemporary cinematic works in the digital realm that incorporate techniques such as multi-track sync recording and multichannel surround sound mixing, reordering and substantially expanding the spatial organization of ambient sound. "Sonic Menageries: Composing the Sound of Place," article four, shifts the discussion to sound art and investigates the connection between site and sound, mediated and (re)presented by field recordings, and the creation of an artwork entitled *Landscape in Metamorphoses* (2008). Continuing the discussion of sound art practice vis-à-vis film sound production in India, the fifth article, "Sonic Drifting: Sound, City and Psychogeography" investigates one of my more recent sound artworks, *Elegy for Bangalore* (2013), examining its artistic processes. The sixth article, a shorter essay called "Decomposing Landscape: Hearing the Troubled Site," examines another of my recent field recording-based multi-channel sound

compositions, *Decomposing Landscape* (2015), through which I inquire into the complex and evolving relationship between sound and site.

2. Findings

2.1 “The World Within the Home: Tracing the Sound in Satyajit Ray’s Films”

In this article I disclose how early Indian cinema was primarily *vococentric* in nature, whereby ambient sound received little attention in the scheme of sound production. However, there were authors like Satyajit Ray whose treatment of sound reveals the recognition of a situated listening by means of attending to the details of the sites. This specific realistic sensibility tended to overcome the limitations of, and expand beyond the creative possibilities of direct or synchronized sound recording and monaural mixing practiced in Indian cinema at the time. Ray explored the synchronized or “direct sound” practiced by his predecessors following the introduction of sound in Indian cinema during the 1930s and 1940s. Investigating Ray’s use of a relatively rich layer of ambient sounds to carry out a convincing portrayal of the sites in the narration, I suggest that Ray initiated a tradition of audiographic realism, which was later resurrected by independent Indian filmmakers in the digital era.

2.2 “The Auditory Spectacle: Designing Sound for the ‘Dubbing Era’ of Indian Cinema”

The basic finding in “The Auditory Spectacle” is that the methodology of designing sound in Indian films in the period between 1960 and 1990 involved a technologically-informed approach through the use of dubbing and studio-centric analogue processing. The expressionistic and melodramatic overtones of these processes led to a remote imagining of the site within the auditory setting. I show that magnetic recording, dubbing, and re-recording rendered this imagining as something spectacular, with extravagant songs and dances in foreign locations and actions imbued with studio-manipulated and synthetic sound effects. This practice produced a cinematic experience charged with emotive tension and affective stimulation by excluding ambient sounds in production schemes, stimulating a sense of escape from the site.

2.3 “Being There: Evocation of the Site in Contemporary Indian Cinema”

In this article I show that production practices involving digitally recorded and organized sounds are employed in novel modes of cinematic expression, thereby evolving in contrast with earlier practices by reconfiguring the linear construct of a soundtrack towards a

spatially-evocative surround sound environment. Using significant examples from post-1990 Indian films, this article explains how previous practices are replaced by “sync” sound recordings, actors’ live performances, and surround sound arrangements of location-specific ambient sounds. I demonstrate how these layers of location-recorded sounds lead viewers to renegotiate their association with the site through perceptual processes involving spatial cognition, mimesis, presence, and immersion. I briefly discuss how portable and easy-to-handle digital recording devices have triggered the emergence of field recording-based sound art. The article sets the premise for drawing attention to the inherent limitations in an industrial sound practice lacking artistic sensibilities.

2.4 “Sonic Menageries: Composing the Sound of Place”

“Sonic Menageries” shows that making site-specific field recordings is basically an exercise in the dislocation of sound from the environment. Often, the purpose of recording is reconstructive; here, however, the site-specificity of the recorded sound is displaced by further artistic mediation. By developing the argument from an experiential perspective, that is, in relation to one of my own sound artworks entitled *Landscape in Metamorphoses* (2008), the article shows how the notion of acoustic ecology needs reformulation when relating it to the way environmental sound content recorded at a site is put to use in the production of soundscape composition as sound art. The discussion is expanded to the application of digital technology in artistic practice, arguing that this shift generates a transformation of the discourse on the sound–site relationship.

2.5 “Sonic Drifting: Sound, City and Psychogeography”

The article shows that perceiving a noisy Indian city by listening to its location-recorded sounds might be phenomenologically reductive. However, a psychogeographic approach as artistic practice of playful drifting and random, location-based field recording can lead to a more relevant understanding of the fabric of contemporary urban sites. By examining the artistic processes undertaken in my recent sound artwork *Elegy for Bangalore* (2013), I suggest an apropos method for recording urban sites through listening to the multi-layered sounds and, subsequently, evoking their character.

2.6 “Decomposing Landscape: Hearing the Troubled Site”

This final article traces the coming into existence of my recent field recording-based sound artwork *Decomposing Landscape* (2015), demonstrating that the compositional strategy in this kind of works relies on artistic interventions through intricate digital recording and

compositional transformation. The composing process employed techniques of post-digital processing and multi-channel spatialization of recognizable ambient sounds. The article further shows that artistic mediation generates works that might be considered to fall into a blurry area between musical abstraction and sonic recognition. The article assesses how much spatial information is retained and how much abstraction is generated in the artistic transformation, shedding light on the methodology of handling sonic material collected at a particular site as it is practiced within sound art production as compared to digital film sound production, the latter being more bound to creating a certain mimetic representation of site than the former.

3. Critical observations

3.1 Historical mapping of film sound production leading up to the contemporary digital

Critically looking at the trajectories of sound production within Indian cinema, it can be concluded that sites have been inconstantly rendered and produced through various phases of sound production. I have divided these trajectories into three primary historical markers that seemed useful when locating and mapping the foremost technological shifts. I have studied how these shifts have become manifest in the emerging aesthetic choices available to and embraced by sound practitioners and how these choices are reflected in the production of a site's sonic presence. In other words, the various forms and formats of technological innovations and transformation have informed the degree of site-specific presence produced by ambient sound components. Therefore, my central concern has been to study the specific nature of ambient sound's usage in these corresponding and intercepting phases of recording and sound production in Indian cinema: the analogue monaural synchronized sound recording (direct optical on location) and monaural mixing; dubbing, studio processed, and stereophonic mixing; digital multi-track synchronized recording and surround sound design. Critical observation, reflection, and analysis of the passages of sound from representative Indian films, specifically from these three different phases of sound production, qualify the evidential account of the research as following a top-down approach. In light of the above, this research set out to challenge the traditional reading of Indian cinema as producing mostly song and dance sequences.

Questions might be raised as to whether this broad historical overview suffers from not being able to delve adequately into a specifically focused and detailed discussion of a particular era. In defense, I refer to the argument of certain film and media historians who

maintain that writing history demands a broader perspective in order to accommodate historiographical accounts (Tybjerg 2013). Emerging from a void of serious and sustained research on sound in Indian films, this current research, with its inherent constraints, can be acknowledged as creating a context for future research that might present more detailed studies of particular periods of sound production. Moreover, the project has been inspired by my own professional background as a sound artist and my academic experience in the historical developments of sound in Indian cinema, opening up the research to a new range of knowledge production. As film historian Casper Tybjerg argues: "In order to connect the dots of the historical record into some sort of coherent pattern, historians must inevitably draw on their own experience and understanding of human life and behavior [...] [W]e must inevitably rely on our background knowledge of the world when we discuss the past" (Tybjerg 2013: n.p.).

Indian cinema – with its diverse fields of practices, productions, and experiences – is the world's largest producer of films. It was the intention of this project to locate the dominant tendencies and predilections from this diversity with a practice-led approach. This approach was driven by the methodologies of critical and self-reflective observation, pursued through a number of complex and intercepting threads of production trajectories in a vastly heterogeneous national cinema, loosely unified by technological and aesthetic developments. This observational approach helped to locate the major historical developments with a particular focus on the use of ambient sound, which is in itself an underexplored subject of film sound research, and within the wider field of Sound Studies.

My aim was also to facilitate a study of film sound that questioned the classical assumption of the sound-image relationship and shift the focus toward the site's presence as a vital narrative component in film sound production. To that purpose I have devised a taxonomical model on the basis of critical observations of the historical and technological shifts and emergent aesthetic strategies. This model's point of departure is found in specific phases of technological innovations and transitions in sound production, but is not limited to a discussion of the history of sound technology. On the contrary, the model highlights characteristics delineating the sonic aesthetics emerging from these most prominent technological phases, thereby linking studies in sound art to film sound. The use of ambient sound in each of these phases can be broadly categorized as:

1. Ambient sounds used as direct evidence of a location
2. A lack of ambient sounds to facilitate site-unspecific spectacles

3. Ambient sounds used to create spatially evocative environments

This model helps to map the various technological shifts within film sound production practices and makes it easier to categorize the types of experiences these practices have been facilitating. As an outcome, the project provides a novel approach in studies of cinematic sound: shifting the scholarly attention from “sound in relation to image” to “sound in relation to site.”

The corresponding model for the production of presence of site in cinema by means of ambient sound (for the three phases demonstrated above) can be loosely categorized as:

1. Locating the Site
2. Escaping the Site
3. Being Sited

What this tripartition shows is that ambient sounds were used in phase 1, the phase of analogue monaural synchronized sound recording (e.g. direct optical on location) and monaural mixing (to varying degrees, and more by Satyajit Ray than by his predecessors). This should primarily be regarded as the direct observational evidence of a location, producing a sense of “locating the site.” Ambient sounds were mostly ignored in the phase of dubbing, studio processing, and stereophonic mixing, to facilitate unsitely fantastic spectacles. They were incorporated again, in the present era, but this time with greater richness and wider spatialization in order to create spatially evocative environments; this is what I mean by “being sited.” In the digital era, many of the production aesthetics of the “direct era” find revival (albeit within a spatialized environment) with particular inspiration from Ray and his followers, who strived after a realistic (re)presentation of sites.

I have used the nomenclature of these three corresponding categories for the simple purpose of order and punctuation, as well as taxonomy. From the outset, these categories can be questioned concerning their historical accuracy. In defense, I present the argument that the three-part division can be considered as a heuristic, pragmatic, and useful way to read the fragmentary and uneven trajectories of Indian cinema sound production processes in a historical context. There are other shifts that occur in parallel or intersect to a certain degree, but the choice to use these three prominent markers facilitates an understanding of the use of ambient sound within highly diverse Indian cinema in a more or less coherent and comprehensive manner. The division reflects the discourse and vocabularies of the sound

practitioners as well. Moreover, the categorization is not arbitrary; the proposed model takes its inspiration from existing research in Sound Studies and new media theories. Frances Dyson, in her book *Sounding New Media* (2009), observes some key “rhetorical maneuvers” that accompany the transition of sound media from the analogue phase to the digital realm, stating that, “[T]he shift from ‘looking at’ to ‘being in’ [...] is reflected by the artful dropping of analogical markers: the ‘it’s as if you are there’ of screen-based media is truncated to a ‘you are there’ [...] By ‘being in,’ rather than ‘looking at’ [...] the viewer is said to occupy the space and time, the here and now, the virtual present of a separate but ontologically real space” (Dyson 2009: 2).

The transformation of the diegetic space from a screen-centric, monaural soundtrack to the ultra-screen expanded stereophonic space and further to today’s spatially enveloping surround sound environment can be understood as paradigmatic shifts from “looking at” to “being in” – a clear indication of a spatial shift characterized by the changing relationship between site and sound as created through evolving production practices. Much of this shift is made audible through the use and spatial ordering of ambient sounds to create an immersive environment facilitating an embodied experience of a site’s presence. I have shown how the screen-centric, monaural recording and mixing of synchronized ambient sound as direct evidence helped to “trace the site.” Dubbing and ultra-screen stereophonic mixing created an auditory setting of an unsitely spectacle by a deliberate lack of ambient sound to “escape the site.” I have also demonstrated that the contemporary digital era is more generous in including ambiances in the sound organization than former eras had been. Consequently, the site becomes more bodily “present.” I have analyzed significant passages from Indian movies after 2001, showing that many embraced digital multi-track sync sound recording before it gradually became standard practice around 2009. The novel experience of listening to the film space in the digital era is marked by low frequency room tones, atmospheric contents recorded from the location in synchronization with the onsite live setting. The *mise-en-sonore* is rendered by elaborate spatialization of these ambient sound recordings that provide ample evidence of the site in a spatially enveloping environment of surround sound. These new methods and approaches produce a sense of “being sited” as an embodied experience of the site’s realistic and convincing presence. In this dissertation I have discussed these transitions within sound production in Indian cinema from the analogue eras towards the contemporary digitalization of sound to study the latter’s implications in triggering novel cinematic experiences of immersion and site-oriented engagement. It is widely acknowledged that film is possibly “the first medium to efficiently accommodate sound” (d’Escriván 2009: 65). My interest here has been to study how

creativity with cinematic sound developed historically and where this creativity intersects with sound art.

3.2 Comparative analysis: film sound/sound art

In his book *Film, a Sound Art* (2009) Michel Chion argues that watching movies is more than just a visual exercise; it also enacts a process of “audio-viewing.” The audiovisual makes use of a wealth of tropes, devices, techniques, and effects that convert multiple sensations into image and sound, therefore rendering, instead of reproducing, the world through cinema as a “truly audiovisual language.” Chion’s formulation adheres to the image-centric reading of sound in cinema and, therefore, fails to make a clear distinction between the approaches toward auditory and visual setting as two distinct processes within production practices. My project has aspired to make this distinction clear by not just using the coinage “sound art” as a metaphor, but, unlike Chion, to cite real works of sound art to show how the creative possibilities and potentials of sound in cinema are delimited, often suppressed, in order to cater to the industrial needs of storytelling, diegesis, and narration as well as an overwhelming desire to juxtapose sound events with the visual cues (Chion 1994). The discussion on sound art offered here intends to enable a comparative analysis of the similarities and differences between the use of ambient sound to construct and narrate the site within the interior world of the film production and the use of field recordings in certain site-driven sound artworks and compositions.

In the last three articles in Part 2 I have shown that field recording practices emerged as a response to the advent of digital technology in sound recording. However, I do not claim that digital technology *alone* triggered this flux of field recording practices. My suggestion is that digital media provided a unique condition for these practices to flourish within a more innovative and creative realm, namely through a proliferation of production technologies, such as multi-track recording, multi-channel spatialization and diffusion of sound, transmission of works through a globally dispersed digital network, enabling previously unimaginable level of access, and, most importantly, the development of digital communities promoting and fostering sound art and field recording. There were some instances of pre-digital or analogue field recording in India; in my artwork *Elegy for Bangalore*, I have acknowledged these practices from the magnetic tape era. But what was lacking then was an aesthetic grounding. Many film sound professionals made field recording for their own creative pleasure, but their works remained “amateurish” due to the lack of publication and dissemination, which has become so much easier in the digital realm.

So, while location recording with heavy analogue recorders was, firstly, cumbersome and, secondly, almost always financially unfeasible, easy-to-handle digital equipment made recording more democratic and widespread. Therefore, now is the appropriate time to make a critical commentary on the differences and similarities between film sound and sound art that are informed, influenced, and enhanced by digital technology. In this context, I have demonstrated that ambient sounds are used in field recording-based sound art productions, not as means to construct immersive environments for the audience by creating a feeling of “being sited,” but as materials to develop a more nuanced impression of the site as ingrained with many complex social, cultural, political, and ethical issues.

In the works cited, the tension between site-specific evidence and compositional abstraction engages the attention of audience in inclusive and often playful ways. My sound work *Elegy for Bangalore* (2013), based on field recordings made at various metro construction sites in Bangalore, is an example of this. Materials of the piece also include retrieved audio from old reel-to-reel tapes found at a city’s flea market. This extensive repository of field recordings and other audio materials eventually took the form of an elegiac composition, infused with random recordings gathered through sonic drifting and reflecting the perceived longing of the past prevalent in the rapidly modernizing urbanization of India. The work creates a conceptual, practical, and methodological premise for in-depth listening to the passage of time and offers a psychogeographic reflection on emergent urban sites in India, with their chaotic, noisy, and hybridized sonic environments, many of which are often absent in Indian films. The artistic methodology involving psychogeographic drifting helped me to shape the general outer appearances of the city that had become registered in my mind as a personified construct. Emphasizing a subjective and adaptive auditory perception, *Elegy for Bangalore* suggests a kind of apt ethnographic methodology (a) for listening to a noisy Indian city by engaging with the multilayered urban context and (b) for composing a “truthful” and nuanced sonic portrayal of the city.

Take, for comparison, the example of an Indian film, shot also in Bangalore during the same period when recordings for *Elegy for Bangalore* were made, *Gori Tere Pyaar Mein* (In Your Love O Lady, Punit Malhotra 2013). The locations – such as street corners, restaurants, and airports depicted in the story-world – are depicted with fewer sonic details than necessary for an inclusive and thorough understanding of these urban sites and their auditory characters. Although shot during the digital sync era of sound production, the sonic quality of Bangalore as site has been practically erased within the filmic space.

I have shown that both film sound and field recording-based sound art utilize recordings of sound from particular sites and use similar technological tools and equipment. There are, however, fundamental differences in their approaches to the utilization of ambient sounds. This difference of approach stems from the structures of functionality and storytelling within which sound is deployed in cinema as a narrative component. In many occasions, the dense and noisy parts of the ambient sound recordings are controlled and sanitized through editing and advanced noise reduction to provide “cleaner” sonic textures, whereby more “aestheticized” and rather sterilized accounts of the sites are heard. This compulsion for achieving clarity in the cinematic soundscape leads the sound practitioner to often employ easy and obvious “soundmarks” instead of accurately capturing and rendering the complete ambience of the sites. This tendency toward highlighting a stereotypical sound, often at the expense of the many other ambient sounds emanating from a specific site, is meant to balance out the noise reduction and editing of digital sync sounds during post-production. These “industrial” norms, practical rules, and creative regulations embedded in the essentially “functional” aspects of film sound production often tend to hinder the artistic potential of the sound practitioner and fails to further enrich the film’s spatial features. Here, knowledge concerning the ways sound artworks can be conceived and developed may influence and inspire, if not radically alter, film sound practices.

3.3 Best practice in film sound production

It is my belief that learning about these similarities and differences can generate novel and relevant insights for producing a specific set of new knowledge that can contribute to the notion of “best practice”¹⁷³ in film sound production.

There is no official document or manual related to best practice in sound production for Indian film industry yet. However, examining my interviews and in-depth conversations with several sound practitioners may shed light on the perception of a best practice, critically gauging the industry standards in this context. This is often reflected in the national awards given to the “best” works in the categories of “Location Sound Recordist,” “Sound Designer”

¹⁷³ As explained earlier, best practice is a method, technique or approach that is generally considered as better than its alternatives, either because it produces results that are deemed superior to those achieved by other means of production or because it has become a standard way of doing things in compliance with certain aesthetic references. As a result, a best practice becomes widely accepted as better than any alternatives that have been traditionally embraced in the production process.

and "Re-recordist of the Final Mixed Track."¹⁷⁴ Many of the interviewees of my project received this type of awards from national (as well as international) bodies based on the film industry's evaluation of a highest level of craftsmanship in sound production. How do these "best" works sound? Do they indeed represent and exemplify exceptional works of film sound production, those that demonstrate a sensitive application of artistry? In my opinion, sound-based creative endeavors are often characterized by a refusal to be standardized, destabilizing existing systems of industrial norms and protocols. To articulate how the idea of producing "better" sounds occupies the minds of practitioners and how they aspire to achieve certain (personal) standards of quality and efficacy within the immense constraints of the film industry, I refer to the interviews that discuss how the creative utilization of ambient sound expanded in the digital era (e.g. Chaki, Dev, Dey, Chatterjee, Pookutty). It is ambient sound that is categorically singled out by these established practitioners as the primary element of artistic exploration in film sound production. However, sound production in mainstream Indian cinema is still dominated by the pervasive norms and rules of the film industry, even though the digital realm opens up possibilities for creative intervention by the practitioner, shaking up the hierarchical and feudal chains of industrial and studio-centric production. One example of this is how sync sound requires the glorified actor's committed participation on the film set on a par with the location sound technician, who has long held a lower status in film crew hierarchy. In this project I have argued that the lenses provided by sound art can be useful in the attempt to find out how film sound can be more inclusive towards the site, more playful, more aware as well as more nuanced in its application. Here I intend to distance myself from industrial norms and regulations in search for more freedom, hacking the technology and subverting industrial standards. I am, therefore, critical of the standardizing idea of a best practice when it comes to individual artistry and send out a call for greater inclusiveness and sensitivity to the site-specificity of sound. Best practice, as I apply the concept here, envisions a future of film sound where these creative sensibilities will be explored artistically, using industry-dependent ideas of a "best sound" in film only as a point of departure to reinterpret and recontextualize the conventional notion of "best practice."

It is in the independent, so-called "art house" cinema rather than the cinema for the masses where the possibilities for artistic exploration and developing exceptional examples of creativity in sound are most present. Take for example a review from Amersfoort, The Netherlands, paraphrasing the director of the independent Indian film *Anhey Ghorhey Da*

¹⁷⁴ See: https://en.wikipedia.org/wiki/National_Film_Award_for_Best_Audiography

Daan (Alms for a Blind Horse, Gurvinder Singh 2011): "Even a still scene can create its own sound and tell [you] what's going on."¹⁷⁵ The director was present when the film was shown at the Rotterdam International Film Festival 2012 and talked about his ideas of sound in Indian cinema. The statement suggests a clear emphasis on the potential of ambience and its deeply evocative effectiveness in establishing the poetic presence of the landscape shown on a static frame. Sound, in this handful, but growing number, of Indian "indie" films, takes its own course by creating layers of multiple impressions within, around, and beyond the visual narrative and the overarching story. Here the authors' (both the director of the film and the sound practitioner) subjective interpretations of a place are paramount and crucial when developing an auditory setting.

In similar ways, subjectivity is central in sound artworks developed from field recordings. I have shown how the artist's personality, idiosyncratic state of being, playfulness, and a sense of abundant freedom allow the artwork to be more engaging and evocative than it would be if a merely functional approach were taken. While many film sound works tend to be inflexibly culture-specific and controlled, sound artworks seem to strive for a subtler sense of subjective truth and contingent universality. As Brandon LaBelle argues, sound art "attempts to tell the truth, to locate origin, capturing, harnessing, finding, and researching the environment, its inhabitants, and delivering up its [...] reality" (LaBelle 2006: 220). Hence, film sound can learn from how sound art is developed. Throughout the history of motion pictures we have witnessed a complex discourse concerning the reciprocal relationship film establishes with other arts, mostly defined by creative efforts and experimental gestures in mutual domains, permeated by dialogic inquiries into how those other arts express themselves in film and the latter transmutes into the former. On this note, my project aligns with a fertile discourse and opens up a space for a stimulating dialogue. In his article *Sound Art (?) on/in Film* (2009), film music scholar Julio d'Escriván notes that "a fair evaluation of the work of sound artists in film is still largely virgin territory" while "film has gradually brought into focus the practice of sound art as something distinct from music yet existing at the end of a unified continuum between abstraction and representation" (d'Escriván 2009: 65 and 72).¹⁷⁶ From d'Escriván's statements it is fairly easy to speculate about possible dialogues and how such dialogues can contribute to the

¹⁷⁵ See the film review by JvH48 (28 October 2012)

http://www.imdb.com/title/tt2085746/reviews?ref=tt_urv

¹⁷⁶ What d'Escriván broadly refers to as "sound artists in film," I call "sound practitioners," with a specific focus on the creativity they have introduced in film sound.

enrichment of film sound and also inform sound art in its many modes of expression. My PhD-project makes a conscious and deliberate effort to step into this “virgin territory” with the intention to intervene and develop relevant new knowledge in both fields.

3.4 Rethinking the concept of presence

In the light of (more or less recent) historical developments in sound production and looking towards a future scenario, this project instigates a reconsideration of the concept of “presence” precipitated by the (re)presentation of sound in film and sound art. I have discussed in this dissertation how presence was conceptualized within an analogue sound recording context (Doane 1985) and how it gains currency in the ways contemporary media negotiate and establish place in mediated experience in the digital era. Reading these trajectories of understanding presence, one primary theme emerges, namely a contribution to the sense of embodied experience through a perceived notion of realism. This sense of embodiment elicited by the perceived realism is a literal translation of stepping into a site “present” through its acoustic elements; “thus, presence may be the key to understanding the processes of embodied experiences” (Ahn 2011: 25). If the goal of media is to reproduce the illusion of nonmediated communication, the degree of vividness or realism that users experience during their perception of the media environment is crucial to the production of presence. In this context presence is “the psychological state of feeling that the mediated experience reproduced by virtual environments is ‘real’” (Ahn 2011: 22). Likewise, in film sound, presence is produced by creating an illusion of “being there” for the audience, which intensifies as filmmakers employ digital technology that is inherently able to provide the means to simulate reality in a more perceptually lifelike fashion. Through the use of sync sound recording and surround design in the digital realm of cinema, similar to any other augmented digital media environment, “spatial presence” is produced to the degree to which an audience “feels that the mediated environment and the objects within the environment that surrounds him or her is real to the extent that the environment responds realistically” (Ahn 2011: 25, see also Lombard and Ditton 1997; Skalski and Whitbred 2010; Grimshaw 2011).

The mobility and portability of contemporary media contribute to the so-called “spatial turn”¹⁷⁷ in media and communication studies as well as in the social sciences and

¹⁷⁷ I have explained the term “spatial turn” in the subchapter “Sound Studies” of the Introduction as “the increasing recognition of the intimate links between sound and space” (Eisenberg 2015: 195).

humanities. On the issue of “spatial presence” within a broader context, philosopher Hans Ulrich Gumbrecht has stated that “the (spatial) tangibility effect coming from the communication media is subjected, in space, to movements of greater or lesser proximity” (Gumbrecht 2004: 17), indicating the importance of contemporary media to include increasingly spatial features. This development may explain the intensified sense of a site’s presence in the digital realm. Such views are shared not only by digital media scholars (whose works I have referred to extensively in other parts of this dissertation) but also by sound scholars. For the latter, sound strengthens the condition of the “preconceptual sensory experience, for immediacy, bodily presence, or states of immersion” (Gess 2015: n.p.). In her recent article “Ideologies of Sound: Longing for presence from the eighteenth century until today,” sound scholar Nicola Gess notes how in the contemporary discourse on sound

the key concepts of the aesthetics of presence promise an experience beyond symbolic orders, that is, an experience of immediate contact with “materiality,” “phenomenal being,” or the “real.” (Gess 2015: n.p.)

However, she further explains that this promise often establishes an “ideology of presence” rather than an actual, “historically informed, critical and concrete examination of sound” in contemporary theories. Through an engaged literature review, she shows how this promise is often “accompanied by an appeal to a past era when these essences are thought to have been central, or at least when the experience of sensory presence is thought to have been more central” (Gess 2015: n.p.). To her, the essence and appeal of this promise are marked by a romanticized view of the past, longing for its lost glory of immediacy, sensory, and corporeal presence of the genuine and the original.

While my principal findings may resonate with this promise of an unmediated merging with reality in the digital era, this research project also demands a closer and critical look at the concept of presence. Looking through the lenses of sound art, the presence of a site in Indian cinema emerges in terms of a functional approach in mimetically (re)presenting sound’s inherent site-specificity. Presence is, therefore, often “manufactured,” technically crafted and/or constructed, rather than being an immediate, sensitive, and direct exploration of the many layers of the “real” India and its nebulous but wonderful sites. The truthfulness of the site withdraws or slips away under the pressure of the cinematic storytelling. In my opinion this habitually elusive veracity of the site in Indian films is first of all an outcome of the pervasive control of the market and the film industry at the expense of a greater artistic

freedom of the practitioner, who is often not allowed to indulge his or her creative self. The practitioner's sincere artistic efforts have historically met with resistance¹⁷⁸ arising from an adherence to, or the demand to adhere to, the norms of the film industry. This has led to inaccurate and untruthful (re)presentations of reality in favor of a manufactured presence, what film scholar Stephen Prince has called "perceptual realism," meaning that unreal images (and sounds) appear "referentially fictional but perceptually realistic" (Prince 1996: 32). In Part 1 and 2 of the dissertation I have mapped out and reflected on this formidable absence of the subtler actualities of sites in Indian cinema, hence, the title of this project: *Audible Absence*. Here I would like to point out once again that the apparent intensification of presence in Indian cinema in the digital era is largely artificial and constructed – with the help of market-driven digital technology with its readily available tools, presets, formats and systems – rather than tapping (or hacking) into the contemporary post-digital¹⁷⁹ realm's open-source playing field with its immensely creative applications.

In sound art, conversely, the artist has the likelihood to intervene more intimately and render a rather subjective account of the site. While writing on the works of Hildegard Westerkamp, Brandon LaBelle speaks of the artists' own "interference" that helps to embrace "a counternarrative [...] against mimesis and toward alterity [...] while accentuating the real [...] and chart[ing] the dynamism of acoustic spaces inhabited by both real and mythological beings" (LaBelle 2006: 213). However, despite this openly interventionist and performative process, sound artists may remain "sensitive to the acoustic environment" (LaBelle 2006: 215) by becoming mindful of the deeper intricacies of a site and its complex sound world. The performativity (Gallagher 2015) involved in field recording-based sound artworks is embedded in the fact that field recordings are presented primarily as independent sounds, often sans juxtaposition with a dominant visual cue, unlike cinema. Therefore, the possibility of multiple interpretations of these works in a more open-ended way leads to a condition of a "poetic presence," as mentioned before. With this poetic presence, sound operates beyond the confines of immediate meaning-making and readily-

¹⁷⁸ In some of the interviews (see Appendix), sound practitioners have expressed their frustration with not being able to contribute their creative best by responding with sarcasm, irritation, withdrawal, or hostility to the suggestion of instigating change or voicing their opinion. While their defence of their profession and their own position in the system is understandable, it is also imperative to pay attention to what they truly aspire to, revealed through the intermittent flashes of inspiration with which they describe their work.

¹⁷⁹ I will elaborate on the term "post-digital" in the next subchapter "Future Directions."

available signification. This is a condition where the “realness” of a site may intermingle with imaginary “mythological beings,” as LaBelle points out, thereby transcending a state of mere spatial presence towards eliciting an “associative” or poetic-contemplative state in the mind of the listener. In an article¹⁸⁰ for the *Journal of Sonic Studies*, and subsequently in other writings, I have articulated this state in terms of the “auditory situation” (Chattopadhyay 2013, 2014, 2015), suggesting “a listening that wanders across thresholds of presence and absence, the immediate and the remembered to create all sorts of associations” (LaBelle 2015: 319). LaBelle cites the article in the new edition of *Background Noise* (2015) and interprets it this way:

The artist and writer Budhaditya Chattopadhyay investigates the question of presence, and how sound suggests another understanding of perceptual experience. For him, sound and listening are intensely “associative,” never singular but always already superimposed across multiple levels of presence and that easily stitch together present and past, now and then. As he suggests, ‘Knowledge about the locative source of sound becomes blurry in its juxtaposition with memory, contemplation, imagination and mood,’ which creates a rather ‘disorienting experience.’” (LaBelle 2015: 319)

Likewise, in my sound artworks, similar to many other field recording artists, capturing the real or constructing the presence of the real is not the primary aim, but, as Christoph Cox notes in general on post-Cagian sound art, my field recording “offers [...] an aural opening onto a region of this sound” (Cox 2009: 23). The works foreground the “background” by framing, accentuating (LaBelle 2006), or amplifying (Cox 2009) the “real” to trigger fertile imagination and a ground for the listener to participate. By coalescing presence and the imaginary, the real and the virtual, these works tend to obscure site-derived information “through a superimposition of sound that interpenetrates preexisting spaces, effecting a layering or doubling, which can produce hybrid spaces” (Gallagher 2015: 574).

Coming back to LaBelle’s analysis of Westerkamp’s *Kits Beach Soundwalk* (1989), the apparent problem for him is that she *seems* to present an unmediated account of the site – while the recording makes clear how much manipulation she has employed on the recorded

¹⁸⁰ Chattopadhyay, Budhaditya (2013). “Auditory Situations: Notes from Nowhere.” *Journal of Sonic Studies* 4.

sound – hence, that the reality of Kits Beach¹⁸¹ is constructed by the recordist, the recording device, the post-production, the playback, and so forth. However, in my opinion, this critique does not hold much ground. Field recording-based sound artists do not record reality as it is, nor do they intend to compose presence; they aspire to open up the multiple layers of reality by creating an interplay between presence and poetic imagination. As Cox (2009) suggests, field recording does not so much capture as transduce, amplify, and reiterate site. LaBelle also recognizes this, as he points out that in field recording-based sound art, “place paradoxically comes to life by being somewhat alien, other, and separate, removed and dislocated, rather than being thoroughly mimetically real [...]. [A]s a listener I hear just as much displacement as placement, just as much placelessness as place, for the extraction of sound from its environment partially wields its power by being boundless, uprooted and distinct” (LaBelle 2006: 211). These sensitive readings suggest that listeners are asked to engage more creatively with these works; they are encouraged to participate in unfolding the many potential interpretations and imaginings inherent to such a work.

Questions can be raised as to whether it is possible at all to present reality as “thoroughly mimetically real” because reality always needs some sort of representation to appear. Philosophers would argue that presence or reality is always already mediated and endlessly deferred in any form of representation. As music philosopher and Sound Studies scholar Marcel Cobussen writes: “The real is always already permeated with a deficit, a shortage. However, if the real cannot exist without its representation, if the latter is established as the precondition for the presence of the real, then representation should become the point of departure. On the other hand, representation also prevents the real from appearing; it defers the real” (Cobussen 2002: n.p.). My PhD project, with its inherent academic delimitations, has humbly redrawn attention to this triangular relationship between reality, its representation, and presence within the context of sound production, arguing that there are differences in approaches when enacting this relationship in various forms of media production, e.g. film and sound art. My final comment on this topic would be that reality is perceived and constructed in the mind of the listener with ardent and helpful contributions from sound practitioners and artists, depending on the extent to which expressiveness and creative freedom as well as care and sensitivity is used in building the delicate bridge between listener and creator of sound-works.

¹⁸¹ See my previous remarks on *Kits Beach Soundwalk* in footnote 34 of the Introduction.

4. Future directions

At the outset, this PhD project appeared to be limited in scope by only focusing on Indian cinema and a few sound art productions originating from India. However, the findings of my research can be considered, more broadly, to inform the (potential) futurity of a sound production both in and outside India in which varied forms and formats of expression coalesce. Film sound and sound art practices may intersect through intensive technological convergence, aesthetic inclusivity, a sense of democratization, and artistic freedom. This sense of inclusivity and creative freedom will trigger the production of new, hybrid artistic forms, enriched with experimentations that subvert former and current industrial norms and limitations. Here I am able to only briefly speculate on these future conditions.

However, my speculations are more than mere flights of fancy; they resonate well with the so-called “post-digital aesthetics”¹⁸² of contemporary film and media practices (Cramer 2014; Cox 2014; Bosma 2014; Chattopadhyay 2014). When the digitalization of sound production has reached a state of saturation, contemporary media theories suggest that a critical juncture will occur, which will include the shifts this project has discussed, analyzed, and hypothesized. Such a “post-digital” context directs to potentially new fields of inquiry for future researchers.

In terms of considering post-digital aesthetics as a potential future direction, pivotal is the question of the a-temporal convergences, as performed through the emergence of a so-called precarious aesthetics, exemplified by hybrid film and media productions, from GIF¹⁸³ artworks based on archival materials to silent films like *The Artist* (Hazanavicius 2011). In the context of sound production following the demise of the digital revolution, Kim Cascone has argued that, “the medium of digital technology holds less fascination for composers in and of itself” (Cascone 2002: n.p.). In articulating the “post-digital” in relation to sound art and new music, Cascone advocates an attention to the alleged failures of digital technology and the way in which it triggers subversive and alternative events through glitches,

¹⁸² The “post-digital” is a condition in contemporary creative media practice where applications of digital technologies do not remain an end in themselves (Cramer 2014). This tendency is exemplified by the way older mono- and stereophonic practices are converged with, and absorbed within, the three-dimensional surround sound universe. Also, certain retro-aesthetics from the analogue sound eras have been applied in contemporary sound production, leading to an intense flexibility and hybridization of various practices.

¹⁸³ The Graphics Interchange Format. See: <http://giphy.com/artists>

clippings, aliasing, distortion, and so forth. His formulation of the “post-digital” thus accommodates the breaking down of “digital essentialism” into fragments of digital sonic artifacts that can be reused and repurposed as artistic materials in a new spatial ordering of soundworks in fluid, malleable, flexible, and inclusive manners. Riding on these waves, artists may push the technical limits of sound recording, exploring the lo-fi recording possibilities of smartphones in addition to demanding extended frequency response in portable, easy-to-use recording formats, ranging from high-resolution multi-track recording gadgets to the self-made technologies of DIY contact microphones. My project has shown that the emergence of field recording as a means of assembling the novel materials to artistically (re)engage with the site and develop a more nuanced reproductive impression has been indebted to these developments.¹⁸⁴

Such use of sound is also accentuated in the post-digital context of cinematic experience, especially in the spatially fluid environments of digital systems such as Dolby Atmos or Auro 3D. In *A Theory of Digital Objects*, Jannis Kallinikos, Aleksi Aaltonen, and Attila Marton claim that “digital objects are marked by a limited set of variable yet generic attributes such as editability, interactivity, openness and distributedness that confer them a distinct functional profile” (Kallinikos et al. 2010: n.p.). This leads to a profound sense of “object instability,” with digital material being experienced as evasive and fleeting artifacts in contrast to the more solid and self-evident nature of traditional film sound media, such as the optical strip, the magnetic tape, or a soundtrack released on a CD or DVD, etc. The dispersed and mutating nature of the universe of digital sound objects and their diffusion across the itinerant and mobile three-dimensional space makes them difficult to authenticate from the

¹⁸⁴ As I have shown earlier, digital technology merely creates the conditions in which the artistic practice of field recording can flourish and be widely acknowledged. I do not glorify here a modernist “progressive” role of digital technology, nor is it my intention to downplay or undermine older techniques. As mentioned before, early digital recording and reproduction systems had several drawbacks, e.g. a lack of warmth, an absence of natural roughness, and no grains of sounds, all of which are typical characteristics of analogue recordings, as Jonathan Sterne has argued (2003, 2006). Digital technology can, however, facilitate postproduction by replacing cumbersome and noisy analogue processes. The two technologies, in fact, can complement each other in fruitful ways. That is why I speculate about a “post-digital” condition, where all the techniques, old or new, analogue and digital, coalesce and consolidate freely and uninhibitedly, forging new forms of sonic expressions, from sonification to Ambisonics compositions and interactive installations.

perspective of the fixed screen and its two-dimensional visual narrative. Sounds that are disembodied from the screen space cause multiple layers of mediation, leading to, potentially, many interpretations beyond the screen – most importantly in the mind of the listener.

The post-digital discourse essentially relates to the perpetual transience of these amorphous but fertile “auditory situations” (Chattopadhyay 2013, 2014, 2015) that need to be navigated spatially, just as in real life. It is evident that, in this milieu, the access of sound in cinema to greater spatiality, mobility, interaction, and sensorial presence, leads to an extension of the presence of sounds beyond their visual image-based object-hood, a structure that was necessary to understand and appropriate Michel Chion’s terminology of “illusion of redundancy,” “added value,” “audiovisiogenic effects,” and “syncretism” in the earlier organization of sound, i.e. monaural and stereophonic eras of sound production. In the reorganized space of digital sound, these notions tend to lose their validity. Contemporary sound practices and their emergences contribute to the formulation of the speculative concepts of the “post-digital,” not only by regarding sound recordings as relocated and transformed sonic artifacts in the spatial reordering of systems, such as Dolby Atmos and Auro 3D, but also by facilitating multi-level spatiotemporal reinterpretations of older sonic experiences in an era of rapidly converging and intensely hybridizing fluid environments marked by an expiry of the digital. I hope that my dissertation also opens up such issues for discussion and creates a fertile framework in which to address them. I hope that the findings and suggestions of this research can be considered as a point of departure for future researchers venturing into a study of sound in cinema, sound art, and other media art.

These free-floating sonic states in contemporary film and media art are less attached to the cinematic screen and visual image, thereby acquiring independent identities. Such states are articulated in Steven Shaviro’s recent book *Post Cinematic Affect* (2010), where he claims that “digital technologies, together with neoliberal economic relations, have given birth to radically new ways of manufacturing and articulating lived experience [...] Recent film and video works are expressive: that is to say, in the ways that they give voice (or better, give sounds and images) to a kind of ambient, free-floating sensibility that permeates our society today” (Shaviro 2010: 2). This ambient, free-floating sensibility loosens up the cinematic structures into new forms of artistic expressions, inviting and incorporating new media art practices and giving birth to forms akin to the previously ignored *Expanded Cinema* (Youngblood 1970). In the late 1960s, Expanded Cinema was considered an unfixed mode of

film presentation encompassing multiple projections, live sound performances, and spatial film environments. Similar to new media art installations, each individual projection in Expanded Cinema was a unique and finite durational experience where audiovisual works were structured to incorporate temporal drifts and spatial variations, with performances often depending on the active participation of the artists. Expanded Cinema deconstructed standard conditions of traditional screen-centric cinema formats and broke down the relationship between film and viewer as well as the inherent dependence between film and 2D visual images, thus liberating the mechanics of cinema from the hidden confines of the single projection booth and dispersing them amongst the audience, a condition that has also become possible through the development of digital technology in cinematic sound. The resulting freedom may lead to further experiments with spatialization in cinema, bringing it closer to sound art, interactive inter-media, and video installations.

In view of this, my project has speculated as to whether there will be a future condition in which these two approaches can enjoy a fruitful dialogue and bridge the creative divide. Let me end on a hopeful note. As concluding remark, I would like to underscore the prevailing practices that employ creative and artistically inventive means to produce new sonic experiences that are relatively more dedicated in their attention to the nature of the site and its ambient particularities. The primary relevance of this project is to substantially contribute to this evolving vision and associated discourses on sonic spatial practices and the site-inherent potentialities of ambient sounds in future cinematic and sound art contexts.

Part IV: Appendix – Interviews

See separate book

Bibliography

- Ahn, S. J. (2011). "Embodied experiences in immersive virtual environments: effects on pro-environmental attitude and behavior" (Doctoral dissertation). Stanford, CA: Stanford University.
- Allen, R. and Smith, M. (eds.) (1999). *Film Theory and Philosophy*. Oxford: Oxford University Press.
- Allen, R. (2009). "Pather Panchali". In Gopalan, L. (ed.), *The Cinema of India* (pp. 86-95). London: Wallflower Press.
- Alloway, L. (1981). "Sites/Nonsites". In Hobbs, R. (ed.), *Robert Smithson: Sculpture* (pp. 41 - 46). Ithaca: Cornell University Press.
- Altman, R. (2012). "Four and a Half Film Fallacies". In Sterne, J. (ed.), *The Sound Studies Reader* (pp. 225 - 233). London: Routledge.
- Altman, R. (2001). "The Living Nickelodeon". In Abel, R. and Altman, R. (eds.), *The Sounds of Early Cinema* (pp. 232 - 240). Bloomington: Indiana University Press.
- Altman, R. (1994). "Deep-Focus Sound: Citizen Kane and the Radio Aesthetic". *Quarterly Review of Film and Video* 15/3: 5.
- Altman, R. (ed.) (1992). *Sound Theory/Sound Practice*. New York: Routledge.
- Altman R. (1985). "The Evolution of Sound Technology". In Weis, E. and Belton, J. (eds.), *Film sound: Theory and practice* (pp. 44 - 53). New York: Columbia University Press.
- Altman, R. (ed.) (1980). *Yale French Studies Number 60: Cinema/Sound*. New Haven: Yale University Press.
- Bachelard, G. (1969). *The Poetics of Reverie: Childhood, Language, and the Cosmos* (trans. Daniel Russell). Boston: Beacon Press.

Balázs, B. (1985). "Theory of the film: Sound". In Weis, E. and Belton, J. (eds.), *Film sound: Theory and practice* (pp. 116 - 125). New York: Columbia University Press.

Basset, K. (2004). "Walking as an aesthetic practice and a critical tool: Some psychogeographic experiments". *Journal of Geography in Higher Education* 28/3: 397-410.

Beck, J. (2008). "The Sounds of 'Silence': Dolby Stereo, Sound Design, and The Silence of the Lambs". In Beck, J. and Grajeda, T. (eds.), *Lowering the Boom: Critical Studies in Film Sound* (pp. 68-86). Urbana: University of Illinois Press.

Beck, J. and Grajeda, T. (eds.) (2008). *Lowering the Boom: Critical Studies in Film Sound*. Urbana: University of Illinois Press.

Bhan, G. (2013). "Planned illegalities: Housing and the 'failure' of planning in Delhi: 1947-2010". *Economic and Political Weekly* 48: 24.

Biancorosso, G. (2009). "Sound". In Livingston, P. and Plantinga, C. (eds.), *The Routledge companion to philosophy and film* (pp. 260-267). London: Routledge.

Birtwistle, A. (2010). *Cinesonica: Sounding Film and Video*. Manchester: Manchester University Press.

Blessner, B. and Salter, L. R. (2009). *Spaces speak, are you listening?: Experiencing aural architecture*. Cambridge, MA: MIT Press.

Bloom, P. J. (2014). "Sound Theory". In Branigan, E. and Buckland, W. (eds.), *The Routledge encyclopedia of film theory*. London: Routledge.

Böhme, G. (1993). "Atmosphere as the fundamental concept of a new aesthetics." *Thesis Eleven* 36: 113-26.

Booth, G. D., and Shope, B. (eds.) (2013). *More Than Bollywood: Studies in Indian Popular Music*. New York: Oxford University Press.

Bordwell, D. (2009). "Cognitive theory". In Livingston, P. and Plantinga, C. (eds.), *The Routledge companion to philosophy and film* (pp. 356-365). London: Routledge.

Bordwell, D. and Thompson, K. (1997). *Film Art. An Introduction*. McGraw-Hill Publishing Company.

Bordwell, D. and Thompson, K. (1985). "Fundamental aesthetics of sound in the cinema". In Weis, E. and Belton, J. (eds.), *Film sound: Theory and practice* (pp. 181-199). New York: Columbia University Press.

Borges, J. L. (1999). *The total library: Non-fiction 1922-1986*. London: Penguin Publishers.

Bosma, J. (2014). "Post-Digital is Post-Screen: Arnheim's Visual Thinking applied to Art in the Expanded Digital Media Field". *A Peer-reviewed Journal About* 3.1. <http://www.aprja.net/?p=1892>

Branigan, E. (1997). "Sound, epistemology, film". In Allen, R. and Smith, M. (eds.), *Film theory and philosophy* (pp. 95-125). Oxford: Oxford University Press.

Branigan, E. (1992). *Narrative Comprehension and Film*. London: Routledge.

Branigan, E. (1989). "Sound and Epistemology in Film". *The Journal of Aesthetics and Art Criticism* 47/4: 311-324.

Buhler, J., Neumeyer, D. and Deemer, R. (2010). *Hearing the Movies: Music and Sound in Film History*. New York: Oxford University Press.

Burch, N. (1982). "Narrative/Diegesis – Thresholds, limits". *Screen* 23/2: 16-33.

Burch, N. (1985). "On the Structural Use of Sound". In Weis, E. and Belton, J. (eds.), *Film Sound: Theory and Practice*. New York: Columbia University Press.

Carrigy, M. (2009a). "Bhuvan Shome". In Gopalan, L. (ed.), *The Cinema of India* (pp. 138-147). London: Wallflower Press.

Carrigy, M. (2009b). "Meghe Dhaka Tara". In Gopalan, L. (ed.), *The Cinema of India* (pp. 126-137). London: Wallflower Press.

Cascone, K. (2002). "The aesthetics of failure: 'Post-digital' tendencies in contemporary computer music". *Computer Music Journal* 24/4.

Ceserani, R. (2010). "The essayistic style of Walter Benjamin". *Primerjalna književnost* 33/1: 83-92

Chattopadhyay, B. "Orphan Sounds: Locating Sonic Artifacts in Contemporary Media". *M/C Journal* (submitted).

Chattopadhyay, B. (2015). "The Auditory Spectacle: Designing Sound for the 'Dubbing Era' of Indian Cinema". *The New Soundtrack* 5/1: 55-68.

Chattopadhyay, B. (2015). *Decomposing Landscape*. Digital Download. London: Touch.

Chattopadhyay, B. (2014). "Object-Disoriented Sound: Listening in the Post-Digital Condition". *A Peer-reviewed Journal About* 3/1.

<http://www.aprja.net/?p=1839>

Chattopadhyay, B. (2014). "The invisible sound: A study in the trajectories of sound practice in Indian films by online archival research". *IASA Journal* 42: 89-95.

Chattopadhyay, B. (2013). "The cinematic soundscape: Conceptualising the use of sound in Indian films". *SoundEffects* 2/2: 66-78.

Chattopadhyay, B. (2013a). "Auditory situations: Notes from nowhere". *Journal of Sonic Studies* 4.

Chattopadhyay, B. (2013b). *Elegy for Bangalore*. Frankfurt am Main: Gruenrekorder.

Chattopadhyay, B. (2013c). "Interview". In Lane, C. and Carlyle, A. (eds.), *In the Field: The Art of Field Recording* (pp. 49-58). London: Uniformbooks.

Chattopadhyay, B. (2012). "Sonic Menageries: Composing the sound of place". *Organised Sound* 17: 223 - 229.

Chattopadhyay, B. (2012). *Sonification of cinema: Studying the use of location sound in Indian films*. Paper presented at Music and The Moving Image Conference, NY.

Chattopadhyay, B. (2012a). "Soundhunting in a city: Chronicles of an urban field recording expedition". *Field Notes* 3. Frankfurt am Main: Gruenrekorder.

Chattopadhyay, B. (2008). *Landscape in Metamorphoses*. Frankfurt am Main: Gruenrekorder (Gr 057/ LC 09488).

Chattopadhyay, B. (2007). "Sound memories: In search of lost sounds in Indian cinema". *Journal of the Moving Image* 6: 102-111.

Chaudhuri, S. (2007). "Space, Interiority and Affect in *Charulata* and *Ghare Baire*". *Journal of the Moving Image* 6.

Chion, M. (1994). *Audio-vision: Sound on screen* (trans. C. Gorbman). New York: Columbia University Press.

Chion, M. (2009). *Film, a sound art*. New York: Columbia University Press.

Clair, R. (1929/1985). "The Art of Sound". In Weis, E. and Belton, J. (eds.), *Film Sound: Theory and Practice* (pp. 92-96). New York: Columbia University Press.

Cobussen, M. (2002). "Deconstruction In Music" (Doctoral dissertation). Rotterdam: Erasmus University Rotterdam.

Cogan, J. (2006). "The phenomenological reduction". *Internet Encyclopedia of Philosophy*. <http://www.iep.utm.edu/phen-red/>

Connor, S. (2004). "Sound and the Self". In Smith, M. M. (ed.), *Hearing History: A Reader* (pp. 54 – 66). Athens: The University of Georgia Press.

Cooper, D. (2000). *The Cinema of Satyajit Ray: Between Tradition and Modernity*. New York: Cambridge University Press.

Coverley, M. (2010). *Psychogeography*. Herts: Pocket Essentials.

Cox, C. (2009). "Sound Art and the Sonic Unconscious". *Organised Sound* 14/1: 19–26.

Cox, C. and Warner, D. (2004). *Audio culture: Readings in modern music*. New York: Bloomsbury.

Cox, G. (2014). "Prehistories of the Post-digital: or, some old problems with post-anything". *A Peer-reviewed Journal About* 3.1. <http://www.aprja.net/?p=1318>

Cramer, F. (2014). "What is 'Post-digital'?". *A Peer-reviewed Journal About* 3/1. <http://www.aprja.net/?p=1318>

Cvetkovich, A. and Kellner, D. (eds.) (1996). *Articulating the global and the local. Globalisation and cultural studies*. Boulder: Westview Press.

Dasman, Raymond F. (2002). *Called by the Wild: The Autobiography of a Conservationist*. Berkeley: University of California Press.

De, A. (ed.) (2008). *Multiple city: Writings on Bangalore*. New Delhi: Penguin Books India.

Demers, J. (2010). *Listening through the Noise: The Aesthetics of Experimental Electronic Music*. New York: Oxford University Press.

Demers, J. (2009). Field recording, sound art and objecthood. *Organised Sound* 14/1: 39–45.

D'Escriván, J. (2009). "Sound Art (?) on/in Film". *Organised Sound* 14/1: 65–73.

Doane, M. A. (1985). "The Voice in the Cinema: The Articulation of Body and Space". In Weis, E. and Belton, J. (eds.), *Film Sound: Theory and Practice*. New York: Columbia University Press.

Doane, M. A. (1985). "Ideology and the Practice of Sound Editing and Mixing". In Weis, E. and Belton, J. (eds.), *Film Sound: Theory and Practice*. New York: Columbia University Press.

Donnelly, K. J. (2014). *Occult Aesthetics: Synchronization in Sound Film*. New York: Oxford University Press.

Drever, L. J. (2002). "Soundscape Composition: The Convergence of Ethnography and Acousmatic Music". *Organised Sound* 7/1: 21-27.

Dumouchel, P. (2015). "Mirrors of Nature: Artificial Agents in real life and virtual worlds". In Cowdell, S., Fleming, C. and Hodge, J. (eds.), *Mimesis, Movies, and Media: Violence, Desire, and the Sacred*. New York: Bloomsbury.

Dunleavy, P. (2003). *Authoring a PhD: How to plan, draft, write and finish a doctoral thesis or dissertation*. New York: Palgrave Macmillan.

Đurovičová, N. (2003). "Local ghosts: Dubbing bodies in early sound cinema". *Moveast* 9. http://www.filmintezet.hu/uj/kiadvanyok/moveast/moveast_9/durovicova.htm

Dyson, F. (2009). *Sounding new media: Immersion and embodiment in the arts and culture*. Berkeley: University of California Press.

Eisenberg, A. J. (2015). "Space". In Novak, D. and Sakakeeny, M. (eds.), *Keywords in Sound* (pp. 193 – 207). Durham: Duke University Press.

English, L. (2014). "A Beginner's Guide To...Field Recording". *FACT Magazine*. <http://www.factmag.com/2014/11/18/a-beginners-guide-to-field-recording/>

Eno, Brian (1978). Liner notes from "Music for Airports / Ambient 1", PVC 7908 (AMB 001) http://music.hyperreal.org/artists/brian_eno/MFA-txt.html

Fischer, L. (1985). "Applause: The visual and acoustic landscape". In Weis, E. and Belton, J. (eds.), *Film sound: Theory and practice* (pp. 233 – 250). New York: Columbia University Press.

Gallagher, M. (2015). "Field recording and the sounding of spaces". *Environment and Planning D: Society and Space* 33: 560 – 576.

Ganguly, S. (2001). *Satyajit Ray: in search of the modern*. New Delhi: Indialog.

Gess, N. (2015). "Ideologies of Sound: Longing for presence from the eighteenth century until today". *Journal of Sonic Studies* 10.

Gopalan, L. (2002). *Cinema of Interruptions: Action Genres in Contemporary Indian Cinema*. London: British Film Institute.

Gorbman, C. (1987). *Unheard melodies: narrative film music*. Bloomington: Indiana University Press.

Grimshaw, M. (2011). *Game Sound Technology and Player Interaction: Concepts and Developments*. Hershey: Information Science Reference, IGI Global.

Gumbrecht, H. U. (2004). *Production of Presence: What Meaning Cannot Convey*. Stanford: Stanford University Press.

Gooptu, S. (2011). *Bengali Cinema: An other nation*. London: Routledge.

Harper, G., Doughty, R. and Eisentraut, J. (eds.) (2009). *Sound and Music in Film and Visual Media: A Critical Overview*. New York: Bloomsbury.

Hayward, S. (2006). *Cinema Studies: The Key Concepts*. London: Routledge.

Helles, R. and Jensen, K. B. (2013). "Introduction to the special issue - Making data: Big data and beyond". *First Monday* 18/10.

Hermann, T., Hunt, A. and Neuhoff, J. G. (eds.) (2011). *The Sonification Handbook*. Berlin: Logos Publishing House.

Holman, T. (2002). *Sound for film and television*. Boston: Focal Press.

Ihde, D. (2012). "The Auditory Dimension". In Sterne, J. (ed.), *The Sound Studies Reader* (pp. 23 - 28). London: Routledge.

Ihde, D. (2007). *Listening and voice: Phenomenologies of sound*. New York: Sunny Press.

Kania, A. (2009). "Realism". In Livingston, P. and Plantinga, C. (eds.), *The Routledge Companion to Philosophy and Film* (pp. 237-247). London: Routledge.

Kassabian, A. (2013a). "The End of Diegesis As We Know It?" In Richardson, J., Gorbman, C. and Vernallis, C. (eds.), *The Oxford Handbook of New Audiovisual Aesthetics* (pp. 89-106). New York: Oxford University Press.

Kassabian, A. (2013b). *Ubiquitous listening: Affect, attention, and distributed subjectivity*. Berkeley: University of California Press.

Kallinikos, J., Aaltonen, A. and Marton, A. (2010). "A theory of digital objects". *First Monday* 15/6.

Kelman, Ari Y. (2010). "Rethinking the Soundscape: A Critical Genealogy of a Key Term in Sound Studies". *Senses and Society* 5/2: 212-234.

Kerins, M. (2011). *Beyond Dolby (Stereo): Cinema in the digital sound age*. Bloomington: Indiana University Press.

Kerins, M. (2006). "Narration in the Cinema of Digital Sound". *The Velvet Light Trap* 58: 41-54.

Kim-Cohen, S. (2013). *Against Ambience*. New York: Bloomsbury Academic.

Kracauer, S. (1960). *Theory of film*. Princeton: Princeton University Press.

Kuhn, A. and Westwell, G. (2012). *A Dictionary of Film Studies*. Oxford: Oxford University Press.

Kuhn, A. and Westwell, G. (2014/2015). "A Dictionary of Film Studies". Oxford Reference Online.

<http://www.oxfordreference.com/view/10.1093/acref/9780199587261.001.0001/acref-9780199587261-e-0561>

<http://www.oxfordreference.com/view/10.1093/acref/9780199587261.001.0001/acref-9780199587261-e-0561?rskey=5Njasaandresult=555>

- Kwon, M. (2002). *One Place after Another: Notes on Site Specificity*. London: MIT Press.
- LaBelle, B. and Martinho, C. (eds.) (2011). *Site of sound: Of architecture and the ear: Vol 2*. Berlin: Errant Bodies Press.
- LaBelle, B. (2006). *Background Noise: Perspectives on Sound Art*. New York: Bloomsbury Academic.
- Lane, C. and Carlyle, A. (eds.) (2013). *In the Field: The Art of Field Recording*. London: Uniformbooks.
- Langkjær, B. (2010). "Making fictions sound real: On film sound, perceptual realism and genre". *MedieKultur* 48: 5 – 17.
- Langkjær, B. (2006). "Mediernes lyd. En multimodal analysemetode". *MedieKultur* 40: 14 - 26.
- Langkjær, B. (2000). *Den lyttende tilskuer*. Copenhagen: Museum Tusculanum Press.
- Lastra, J. (2000). *Sound technology and the American cinema: Perception, representation, modernity*. New York: Columbia University Press.
- Lawrence, A. (1992). "Women's Voices in Third World Cinema". In Altman, R. (ed.), *Sound Theory/Sound Practice* (pp. 178 – 190). New York: Routledge.
- Lefebvre, H. (1974). *La production de l'espace*. Paris: Éditions Anthropos.
- Licht, A. (2009). "Sound Art: Origins, development and ambiguities". *Organised Sound* 14/1: 3–10.
- LoBrutto, V. (1994). *Sound-on-Film: Interviews with Creators of Film Sound*. Westport: Praeger.
- Lombard, M. and Ditton, T. (2006). "At the Heart of It All: The Concept of Presence". *Journal of Computer-Mediated Communication* 3/2.
<http://onlinelibrary.wiley.com/doi/10.1111/j.1083-6101.1997.tb00072.x/full>

Marchessault, J. and Lord, S. (eds.) (2008). *Fluid screens, expanded cinema (digital futures)*. Toronto: University of Toronto Press.

Mazumdar, R. (2009). "Satya". In Gopalan, L. (ed.), *The Cinema of India* (pp. 236-245). London: Wallflower Press.

McAdams, S. and Bigand, E. (1993). *Thinking in sound: The cognitive psychology of human audition*. New York: Oxford University Press.

McKinsey (2010). "India's urbanization: A closer look". *McKinsey Quarterly*.

McLuhan, M. (2003). *Understanding media: The extensions of man*. Berkeley: Gingko Press.

Merleau-Ponty, Maurice (2005). *Phenomenology of perception* (trans C. Smith), London: Routledge.

Messerli, D. (2011). "Trapped in the past". *International Cinema Review*.
<http://internationalcinemareview.blogspot.de/2011/12/trapped-in-past-by-douglas-messerli.html>

Metz, C. (1980). "Aural Objects" (trans. Georgia Gurrieri). In Altman, R. (ed.), *Yale French Studies Number 60: Cinema/Sound* (pp. 24-32). New Haven: Yale University Press.

Miller, J. and Glassner B. (2011). "The 'Inside' and the 'Outside': Finding Realities in Interviews". In Silverman, D. (Ed.), *Qualitative Research: Issues of Theory, Method and practice* (pp. 125 – 139). London: Sage.

Mohler, B. J., Di Luca, M., and Bülhoff, H. H. (2013). "Multisensory contributions to spatial perception". In Waller, D. A. and Nadel, L., (eds.). *Handbook of spatial cognition* (pp. 81-97). Washington DC: American Psychological Association.

Morris, A. K. (ed.) (1998). *Sound States: Innovative Poetics and Acoustical Technologies*. Chapel Hill: The University of North Carolina Press.

Morton, T. (2013). *Hyperobjects: Philosophy and Ecology after the End of the World*. Minneapolis: University of Minnesota Press.

Mukherjee, M. (2007). "Early Indian Talkies: Voice, Performance and Aura". *Journal of the Moving Image* 6: 39-61.

Nancy, J. L. (2007). *Listening* (trans. Charlotte Mandell). New York: Fordham University Press.

Neale, S. (1985). *Cinema and Technology: Image, Sound, Colour*. London: BFI

Negroponte, N. (1998). "Beyond digital". *Wired* 6/12.

Neumeyer, D. (1997). "Source Music, Background Music, Fantasy and Reality in Early Sound Film". *College Music Symposium* 37: 13-20

Novak, D. and Sakakeeny, M. (eds.) (2015). *Keywords in Sound*. Durham: Duke University Press.

O'Donnell, E. (2004). "'Woman' and 'Homeland' in Ritwik Ghatak's films: Constructing post-Independence Bengali cultural identity". *Jump Cut: A Review of Contemporary Media* 47.

<http://www.ejumpcut.org/archive/jc47.2005/ghatak/text.html>

Pemmaraju, G. (2013). "Soundbaazi: The sound of more than music". *ArtConnect: The IFA Magazine* 7/1: 62-82.

Percheron, D. (1980). "Sound in cinema and its relationship to image and diegesis". In Altman, R. (ed.), *Yale French Studies Number 60: Cinema/Sound* (pp. 16-23). New Haven: Yale University Press.

Pinch, T. and Bijsterveld, K. (eds.) (2012). *The Oxford Handbook of Sound Studies*, New York: Oxford University Press.

Plantinga, C. (2009). "Emotion and affect". In Livingston, P. and Plantinga, C. (eds.), *The Routledge Companion to Philosophy and Film* (pp. 356-365). London: Routledge.

Prince, S. (1996). "True Lies: Perceptual Realism, Digital Images, and Film Theory". *Film Quarterly* 49/3: 27-37

Rajadhyaksha, A. (2009). *Indian cinema in the time of celluloid: From Bollywood to the emergency*. New Delhi: Indiana University Press.

Rajadhyaksha, A. (2007). "An aesthetic for film sound in India?" *Journal of the Moving Image* 6.

Ray, B. (2011). *Amader Katha*. Calcutta: Ananda Publishers.

Ray, S. (1976). *Our films their films*. Delhi: Orient Blackswan.

Ray, S. (ed.) (2011). *Satyajit Ray on cinema*. New York: Columbia University Press.

Reiter, U. (2011). "Perceived Quality in Game Audio". In Grimshaw, M. (ed.), *Game Sound Technology and Player Interaction: Concepts and Developments*. Hershey: Information Science Reference.

Ribrant, G. (1999). "Style parameters in film sound". *FilmSound.org*
<http://filmsound.org/bibliography/stylepara.pdf>

Richardson, J., Gorbman, C. and Vernallis, C. (eds.) (2015). *The Oxford Handbook of New Audiovisual Aesthetics*. New York: Oxford University Press.

Rogers, A. (2013). *Cinematic appeals: The experience of new movie technologies*. New York: Columbia University Press.

Sadler, S. (1999). *The Situationist City*. Cambridge, MA: MIT press.

Schafer, R. M. (1994). *The soundscape: Our sonic environment and the tuning of the world*. Rochester: Destiny Books.

Schepper, R. (2008). "Budhaditya Chattopadhyay: Landscape in Metamorphoses". *Textura*.

Shaviro, S. (2010). *Post Cinematic Affect*. Ropley: John Hunt Publishing.

Schneider, S. J. (ed.) (2008). *1001 Movies You Must See Before You Die*. New York: Quintessence.

Schulze, H. (2013). "Adventures In Sonic Fiction: A Heuristic For Sound Studies". *Journal of Sonic Studies* 4.

Sengupta, A. (2007). "Seeing through the sound: Certain Tendencies of the Soundtrack in Satyajit Ray's Films of the 1970s". *Journal of the Moving Image* 6: 86-101.

Self, W. (2007). *Psychogeography*. London: Bloomsbury.

Sergi, G. (2004). *The Dolby era: Film sound in contemporary Hollywood*. Manchester: Manchester University Press.

Seton, M. (2003). *Portrait of a Director: Satyajit Ray*. New Delhi: Penguin Books India.

Shankar, P. (2009). "Sholay". In Gopalan, L. (ed.), *The Cinema of India* (pp. 160-169). 24 frames series. London: Wallflower Press.

Shaviro, S. (2010). *Post cinematic affect*. Winchester: Zer0 books

Sider, L., Sider, J. and Freeman, D. (eds.) (2003). *Soundscape: The School of Sound Lectures 1998-2001*. London: Wallflower Press.

Skalski, P. and Whitbred, R. (2010). "Image versus Sound: A Comparison of Formal Feature Effects on Presence and Video Game Enjoyment". *PsychNology Journal* 8/1: 67 – 84.

Schmidt, U. (2013). *Det ambiente: Sansning, medialisering, omgivelse*. Aarhus: Aarhus Universitetsforlag.

Schmidt, U. (2012). "Ambience and Ubiquity". In Ekman, U. (ed.), *Throughout – Art and Culture Emerging with Ubiquitous Computing* (pp. 175-188). Cambridge, MA: MIT Press.

Sobchack, V. (2005). "When the ear dreams: Dolby digital and the imagination of sound". *Film Quarterly* 58/4: 2-15.

Sobchack, V. (1991). *The address of the eye: A phenomenology of film experience*. Princeton, NJ: Princeton University Press.

Sonnenschein, D. (2001). *Sound design: The expressive power of music, voice, and sound effects in cinema*. Studio City, CA: Michael Wiese Productions.

Sorfa, D. (2014). "A Glossary of Film Terms".
http://www.academia.edu/1739157/A_Glossary_of_Film_Terms

Sterne, J. (2012). "Sonic Imaginations". In Sterne, J. (ed.), *The Sound Studies Reader* (pp. 1 – 17). London: Routledge.

Sterne, J. (ed.) (2012). *The Sound Studies Reader*. London: Routledge.

Sterne, J. (2006). "The death and life of digital audio". *Interdisciplinary Science Reviews* 31/4: 338 – 348.

Sterne, J. (2003). *The Audible Past: Cultural Origins of Sound Reproduction*. Durham: Duke University Press.

Tan, E. S. (2011). *Emotion and the Structure of Narrative Film: Film as an Emotion Machine*. New York: Routledge.

Thibaud, J.-P. (2011). "A Sonic Paradigm of Urban Ambiances". *Journal of Sonic Studies* 1.

Thompson, E. (2004). *The Soundscape of Modernity: Architectural Acoustics and the Culture of Listening in America, 1900-1933*. Cambridge, MA: MIT Press.

Toop, D. (1995). *Ocean of Sound: Aether Talk, Ambient Sound and Imaginary Worlds*. London: Serpent's Tail.

Truax, B. (2007). "Sound in Context: Acoustic Communication and Soundscape Research at Simon Fraser University" *SFU website*: http://wfae.net/library/articles/truax_SFUniversity.pdf

Truax, B. (2001). *Acoustic Communication*. Westport, CT: Greenwood Publishing Group.

Tybjerg, C. (2013). "The Sown and the Waste – or, the psychedelic writing of film history". *NECSUS_European Journal of Media Studies*, Autumn issue: 'Waste'.

Vaughan, H. (2013). *Where Film Meets Philosophy: Godard, Resnais, and Experiments in Cinematic Thinking*. New York: Columbia University Press.

Vasudevan, R. (2001). "Nationhood, Authenticity and Realism in Indian Cinema: The Double Take of Modernism in the Work of Satyajit Ray". *Journal of the Moving Image* 2: 52-76.

Vijayakar, R. (2009). *The History of Indian Film Music: A Showcase of the Very Best in Hindi Cinema*. New Delhi: Times Group Books.

Voegelin, S. (2010). *Listening to noise and silence: Towards a philosophy of sound art*. New York: Continuum.

Waard, F. de (2009). "Budhaditya Chattopadhyay: Landscape in Metamorphoses (CD-R by Gruenrekorder)". *Vital Weekly* 640.

Waller, D. and Nadel, L. (eds.) (2013). *Handbook of spatial cognition*. Washington DC: American Psychological Association.

Waterman, T. and Wall, E. (2010). *Basics of landscape architecture 01: Urban design*. Switzerland: AVA Publishing.

Wayne, M. (1997). *Theorising Video Practice*. London: Lawrence and Wishart Limited.

Weiss, A. S. (2011). *Varieties of Audio Mimesis: Musical Evocations of Landscape*. Berlin: Errant Bodies Press.

Youngblood, G. (1970). *Expanded Cinema*. Boston, MA: E. P. Dutton.

Biography

Budhaditya Chattopadhyay is an Indian-born sound/media artist, researcher, writer and theorist, currently based in Europe. Chattopadhyay's work questions the materiality, site-specificity, and object-hood of sound, and addresses the aspects of contingency, contemplation, mindfulness and, transcendence inherent in listening. His artistic practice intends to shift the emphasis from "object" to "situation" in the realm of sound. His sound works are published by Gruenrekorder (Germany) and Touch (UK). Chattopadhyay is a Charles Wallace scholar, Prince Claus grantee, and Falling Walls fellow, and has received several residencies and international awards, notably a First Prize in Computer and Electronic Music category of Computer Space festival 2014, Sofia, and an Honorary Mention at PRIX Ars Electronica 2011, Linz. Appearing in numerous exhibitions, concerts, conferences, and festivals, Chattopadhyay's sound and video works have been exhibited, performed, or presented among others in Transmediale, Berlin; Today's Art Festival, The Hague; Donau Festival, Krems; Museo de Arte Moderno de Medellín; IEM, Kunstuniversität Graz; Sonorities Festival, Belfast; RE-NEW Digital Arts Festival, Copenhagen; Q-O2, Brussels; Sluice Screens, London; Akusmata, Helsinki; Overgaden Institute of Contemporary Art, Copenhagen; CTM, Berlin; Errant Bodies, Berlin; Palazzo Medici Riccardi, Firenze; Spazioersetti Gallery, Udine; CPH PIX, Copenhagen; Hochschule Darmstadt; SoundFjord, London; Deutschlandradio, Berlin; Institut für Neue Medien, Frankfurt; and Nikolaj Kunsthal, Copenhagen. Chattopadhyay publishes in the areas of sound art, media aesthetics, artistic research, contemporary media, cinema, and sound studies in leading peer-reviewed journals, most notably in *Organised Sound*, *The Journal of Sonic Studies*, *The New Soundtrack*, *SoundEffects*, *Ear | Wave | Event*, and *Leonardo Music Journal*. He has graduated from India's national film school, specializing in sound, completed a Master of Arts degree in new media/sound art at Aarhus University, Denmark, and will defend his PhD thesis in sound studies involving artistic research at Leiden University, The Netherlands.

Abstract

Ambient sound is a standard term used by sound practitioners to denote the site-specific background sound component that provides a characteristic atmosphere and spatial information for a sound work. Here I set out to examine *how* ambient sound is used as a site-specific element to create spatial awareness in the production of Indian films and field recording-based sound artworks. Taking a critical attitude towards the notions of diegetic sound, mimesis, presence, artistic transformations of soundscapes, and technological innovations, the project highlights the inherent similarities and differences between the ways ambient sounds are used in film and sound art; the aim has been to investigate how the latter practice informs the former and vice versa. The dissertation cites examples from a substantial number of representative Indian films and focuses on three of my recent sound artworks. These case studies are examined via critical listening, historical mapping, and thorough analyses of the sound production processes. The project also draws inputs from prominent sound practitioners in the form of semi-structured interviews, which, alongside my own experiential accounts on the development of the sound artworks, constitute the empirical basis of the project. These interviews and my personal insights shed light on the production process, providing links between certain techniques available to specific phases of production and aesthetic principles shaped by the respective phases of sound practice. The project makes an effort to posit my own artistic practice within a historical trajectory, showing that presence of the site in cinema is constructed according to the narrative strategy and technological context of sound recording and design, while in sound art there exists a tension between documentation and abstraction of the site in the composition of ambient sounds via practices of field recording and subsequent artistic transformation via digital manipulation. I question the classical assumptions about sound in film (e.g. image-based relationships) and shift the focus toward a careful constructing of a site's presence in the diegetic world as a vital narrative strategy. The emphasis on "site" enables the study of the similarities and differences between location recording of ambient sounds made for the purpose of constructing the site within the interior world of the film and field recordings used in certain site-driven sound artworks. Finding inherent similarities and differences between the ways ambient sounds are used in film and sound art generates new knowledge that contributes to the notion of a "best practice."

Samenvatting

Ambient sound is de standaard term die gebruikt wordt door geluidstechnici om het achtergrondgeluid van een specifieke plaats aan te duiden, geluid dat informatie over een bepaalde plaats geeft en (dus) een karakteristieke atmosfeer presenteert. Dit onderzoek richt zich op de vraag hoe *ambient sound* in Indiase films en in op *field recordings* gebaseerde geluidskunst wordt gebruikt om een beleving van zo'n specifieke plaats te creëren. Via een kritische reflectie aangaande termen als "diëgetisch geluid", "mimesis", "aanwezigheid", "artistieke transformaties van *soundscales*" en "technologische vernieuwingen" wordt uitgebreid ingegaan op de overeenkomsten en verschillen tussen het gebruik van *ambient sound* in films aan de ene kant en geluidskunst aan de andere kant, maar laat tevens zien hoe de ene praktijk de andere beïnvloedt.

De empirische basis van het onderzoek wordt gevormd door (a) een groot aantal representatieve Indiase films, (b) drie recente geluidskunstwerken van de auteur zelf en (c) de input van prominente geluidstechnici middels semigestructureerde interviews.

De case studies (a en b) zijn onderworpen aan een kritisch luisterend oor, historisch onderzoek en uitgebreide analyses van de gebruikte geluidsproductieprocessen. Zowel de interviews als de eigen artistieke praktijk hebben nieuwe inzichten opgeleverd ten aanzien van de inzet van *ambient sound*, onder andere door verbanden te constateren tussen bepaalde technieken die nodig zijn voor specifieke productiefasen en esthetische principes die mede beïnvloed worden door de verschillende fasen die de productie van geluid doorloopt.

Het onderzoek heeft de eigen artistieke praktijk van de auteur in een nieuw perspectief geplaatst door het te verbinden met cinematografische ontwikkelingen; het laat tevens zien dat in (Indiase) films een plaats aanwezig wordt gesteld door de narratieve strategie en techniek van geluidsopnames, terwijl geluidskunst doorgaans gekenmerkt wordt door een spanning tussen het documenteren van een specifieke plek enerzijds, en het abstraheren via artistieke bewerkingen (onder andere met behulp van digitale manipulatie) anderzijds.

Het onderzoek plaatst kanttekeningen bij de klassieke vooronderstellingen aangaande de inzet van geluid in films (bijvoorbeeld de relatie tussen geluid en beeld) en verplaatst de aandacht naar een constructie van "plaats" in de diëgetische wereld als een essentiële narratieve strategie. Met name deze nadruk op "plaats" heeft het mogelijk gemaakt om de overeenkomsten en verschillen te bestuderen tussen het opnemen van *ambient sounds* om een plaats te (re)construeren in de wereld van de film en het gebruik van *field recordings* bij

bepaalde geluidskunst. Door deze overeenkomsten en verschillen op te sporen ontstaat nieuwe kennis die tevens bijdraagt aan de idee van een “best practice”.