

Acoustic Ambience in Cinematography:
An Exploration of the Descriptive and
Emotive Impact of the Aural Environment

By

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Submitted in partial fulfilment of the requirements for the degree
of Master of Music in Composition, University of KwaZulu-Natal,
Durban, September 2005.

Acknowledgements

I would like to extend gratitude to my supervisor, Professor Bräuninger, for his skilled guidance that enabled me to find my own approach, and for his dedicated assistance throughout the time of this study. I would also like to thank my family for their support and encouragement.

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Introduction

Ambience is defined by the American Heritage Dictionary as “the special atmosphere or mood created by a particular environment.” This definition reveals the ubiquitous and ambiguous identity of acoustic ambience, as “environment” is a broad collective term. Unlike music or dialogue, ambience in film is akin to peripheral vision: once focused upon it loses a collective identity. Yet, there is a means to unravelling the aural atmosphere of a particular environment.

The solution in defining ambient sound lies primarily in the logical process of eliminating the tangible sound components within the soundtrack of film. Metaphorically speaking the soundtrack may be seen as a glass jar. The solid rocks placed in the jar are the major components of film: voice, sound effects and music. All other sound is like coloured liquid poured around the rocks. Not only does liquid fill the jar, but also affects the appearance of the rocks. Consequently we encounter unique practical examples that weaken terminology and provide inevitable exceptions to the rule.

The lack of theoretical development in a medium borne in the late nineteen twenties is both mystifying and understandable. Sound is the underdog to visuals, and ambience is overlooked for more recognizable components such as music. Indeed, there are multitudes of books on music and sound effects (impact effects) in film. Ambience however, appears to be advanced in practical application but primitive in theoretical exploration.

Exploring sound film holistically has not deterred all theorists. Michel Chion is a pioneer who devises credible terminology with an emphasis on the equality of sound and visuals. Naturally, in a medium rife with subjective interpretation, it is all but impossible to make cut and dry theoretical statements. Chion comments:

Of course we must continue to refine and fill in our typology of film sound. We must add new categories—not claiming thereby to exhaust all possibilities, but at least to enlarge the scope, to recognize, define, and develop new areas.” [1]

This statement outlines the aim of part one. I have drawn on Chion’s terminology relevant or related to ambience, as well as defined new areas. The greater part of this research article

contains new terminology in cases where no established theoretical identifications relevant to ambience were found. As a reference point, I have created and proposed the following new terms: Ambience as a Cultural Reflector, Ambience as a Musical Trait, Ambience of Indefinite Status, Ambience Recall, Ambient Synchronism, Dual-Perspective Location Indicator, Epic Ambience as Abstract Narrative, Illuminated Sound, Impact Effects, Lexical Ambience, Macro-Contrast and Micro-Contrast, Music as a Hindrance, Ratio of Active or Dormant Diegetic Ambience, Rhythmic Density and *Idée Fixe*, Source Ambience, and Source Extension. These terms will be explained in part one and illustrated in part two. The terms are significantly applicable to theoretical exploration and are not directly intended for a practitioner's utilisation. Unidentified sound components must be discovered in order for analytical insight to expand. This article therefore became an investigation of ambience terminology through necessity owing to the absence of established theory.

Part two will demonstrate most of the tangible terms discussed in part one through examples. It seemed more practical to select films that contain at least three constituents of ambience discussed in part one. Two of the films, *Blade Runner* and *2001: A Space Odyssey* are recognized as pivotal films for innovative use of sound, and rich source of inspiration for developing new terminology, "*Blade Runner* is arguably the most famous and influential science fiction film ever made. It has exerted a pervasive influence over all subsequent science fiction cinema, and indeed our cultural perceptions of the future." [2] *2001: A Space Odyssey* shares similar acclaim, "*2001: A Space Odyssey* (1968) is a landmark science fiction classic-and probably the best science-fiction film of all time." [3]

Panic Room and *The Fellowship of the Ring* are contemporary films that both use unique methods in sound design. Naturally, there are hundreds if not thousands of films that would provide further material for theoretical expansion. Within the length limitations of this research article, however, the selection seems equally balanced.

PART ONE

A Brief Overview of the Major Sound Components

The collective term allocating sound of film in a group is generally known as the soundtrack. The soundtrack is commonly divided by technical origin into three groups: dialogue, music and sound effects.

1.1 Dialogue

Dialogue is language verbally expressed by both diegetic and acousmatic¹ characters.

A spectator inherently focuses on the spoken word therefore dialogue needs to be clearly captured, unless intentionally rendered unintelligible for narrative purposes. If production recording is flawed by extraneous noise, actors are required to synchronize their voice to the looped visual in post-production. This is known as ADR (Automated Dialogue Replacement). ADR is generally utilized conservatively as the original performance of the actor is often the most powerful, and a sterile studio environment may prove artistically inhibiting. Some films, however, have a large proportion of ADR according to the noise density of a film location's aural environment. Simple errors may cause unnecessary difficulties in sound. For example, the starship interior set made of plywood in a Star Trek series was poorly assembled and creaked excessively, leaving little choice but to utilise ADR. [4]

1.2 Music

There are two music delineations: non-diegetic or acousmatic, and source (diegetic). Music written with the sole intent of being recorded without any possibility of seeing its physical source (acoustic instruments or transmitted via speakers) is called acousmatic music. The most common form of acousmatic music is traditionally original orchestral music, or what Chion calls "pit-music"[5]. Chion terms music used in the diegetic space as "on-the-air" sounds [6], such as a car radio or music at a nightclub. The distinction between non-diegetic and diegetic

¹ off-screen characters

music, within the analysis of film however, is dependent on many interpretative factors. Claudia Gorbman comments:

It is not difficult to realize that the soundtrack takes many more liberties with the diegesis than does the image track. Voiceover commentaries and verbally narrated flashbacks, both nondiegetic, punctuate many film narratives. Sound effects, however, tend to remain diegetic (unless they accompany also non-diegetic images). One reason for this lies in the ambiguity of many sounds when presented out of the context of their sound source. Significantly, the only element of filmic discourse that appears extensively in nondiegetic as well as diegetic contexts, and often freely crosses the boundary line in between, is music. [7]

Gorbman follows on to assert the flexibility of music and its numerous functions in the diegesis, thus including refined terminology for practical scenarios that challenge the simple distinction between diegetic and non-diegetic music. In rare cases music may be transitional to an actual diegetic musical instrument: in *Blade Runner*, non-diegetic piano music accompanies visuals followed by a sequence where a character is playing the same melody on the piano transforming the sound identification to source music. The use of these transitions is rapidly interchangeable, and sometimes difficult to distinguish depending on the choices of the re-recording mixer.

1.3 Sound Effects

Sound effects as a group component entails the rendering of sounds that are not identifiable as music or dialogue. These sounds may be sub-categorized as impact effects, Foley, and ambience.

1.3.1 Impact Effect

The term impact effect is proposed by the author to help make a distinction of the three sound effect components mentioned above. A sound effect does not specifically refer to the effects defined by the term impact effect, justifying its function. An impact effect is created either for a diegetic inanimate object that has no aural identification to the ordinary world, or for a real object that needs emotive impact within the diegesis. Common impact effects are car-tyres

screaching, bomb explosions, gunfire and so forth. In the case of uncommon sounds, sound designers create and mix a combination of sounds that are appropriate for the relevant picture both in mood and in narrative. In *Titanic* Chris Boyes describes creating the sound for the watertight doors closing after the ship hits an iceberg:

I needed to have a very smooth, controlled but very heavy rolling metallic sound, and one of the elements that I used was a processed field recording of a heavy bin sitting on a truck that was rolling on a track. Then, for the gear mechanism I recorded the rapping sound of a large bolt that I leaned gently against the turning, geared winch on an old tow truck...lastly, for the shutting of the door I used a combination of the doors shutting on an old ship...[and] some jail doors. [8]

1.3.2 Foley

Foley effects (named after Jack Foley, the pioneer of this craft) involve artists who synchronize the actions of the character projected on a screen, and record the relevant sound in a “sound pit”. A typical sound pit would have ground platforms of different materials (gravel, sand or stone). Cognitive consonance allows plenty of leeway for the Foley artist to improvise a certain sound for an object. Typical sounds of Foley are footsteps, opening and closing doors or forks and knives scraped against plates.

In a film like *Star Wars: Phantom Menace*, the Foley artists were required to create movement sounds of animated characters:

When the characters were shot up or blown apart, we'd use various old vacuum cleaners, jacks, drills and heavy pieces of iron, so that each head and arm and leg and hand and maybe torso had a sound of its own. Added to that were the sounds of the characters touching themselves or each other, and being that a lot of them are not people we would use pineapples or coconuts or even cantalopes for their skin surfaces. [9]

1.3.3 Ambience

Ambience—the echo of a cave, blustering wind on the beach, massive roar of a crowd in a stadium, room tone of an office, bustle of people in an heavy urban area, chirping of crickets at night, the quiet before a storm. These are possible ambiances one may encounter in film. Why is ambience used?

Consider storytelling. Technically, it requires no more than the human body to communicate, be it acting or miming. In many cases, and particularly for children, sound effects are created using simple props or parts of the body to enhance the dramatic element of a story (*the wind was howling!* and someone breathes a raspy whistle through their mouth, *the waves crashed against the ship!* and crashing noises are imitated) [10].

Naturally, sound film deals with audio-visual complexities not possible in acoustic storytelling; but I draw a parallel between these two media to demonstrate the initial motivation for all environmental and descriptive sound: imitation in the context of an emotive world. If it were possible for humans to imitate ambience would storytelling not include sound that helps describe the location and enhance the emotive atmosphere described in the narrative? Ambience in film is a micro-detail that occupies the space around us in the theatre, affecting the way we perceive the narrative and level of our immersion in the film.

“To be immersed” is commonly used to describe a tangible action, for example, to be immersed in water. It also describes the state of intense participation a spectator or player feels from the stimulation of a narrative virtual world and the state of mind that is the ultimate induction of effective narrative. Ryan comments:

For a text to be immersive...it must create a space to which the reader, spectator, or user can relate, and it must populate this space with individuated objects. It must, in other words, construct the setting for a potential narrative action, even though it may lack the temporal extension to develop this action into a plot. This fundamentally mimetic concept of immersion remains faithful to the VR [Virtual Reality] experience, since the purpose of VR technology is to connect the user to a simulated reality. It applies to novels, movies, drama, representational paintings, and those computer games that cast the user in the role of a character in a story. [11]

The key point in Ryan’s quote is the significance of mimicry. Mimicry is essential to create meaning and relevance to an audience. However, this is by no means a restriction on artistic freedom. Our startling ability as spectators’ to identify aural and visual connections from our own experience of the world and our imagination provides a wide spectrum of mimic possibilities; this is a crucial point for the sound designer. The sound designer has artistic

freedom but must carefully discriminate which sounds enhance and detract from the immersive experience. Fred Brennan concurs:

Our profession is a rather curious one because the best sound is the kind the audience no longer consciously registers. When that happens, it means they're totally caught up in what's happening on the screen. [12]

1.4 Ambience Terminology

In the introduction, I used a glass container as a metaphor for the soundtrack and ambience as the liquid around the rocks. In this section I will attempt to illustrate the virtual space different terms occupy and their meanings.

1.4.1 Lexical Ambience

One could say that given a certain diegetic location there are collective environmental potentials. This concept could be described as lexical ambience, such as ambiances of the city, forest, seaside and so forth. City ambiances may have the following sounds: car hooters, the whistle of a roaming traffic policeman, brakes screeching and footsteps on the sidewalk.

1.4.2 Acoustic Space

When all sound emitted from diegetic characters is cloaked with spatial designation according to the level of reverberation² it is acoustic ambient space. The decisions for the level of reverberation are not entirely based on the authenticity of an acoustic area. The leeway for deciding the degree of reverberation is particularly liberal as spatial reverberation has strong emotive potential. The sound designer therefore determines the narrative structure and decides what level of reverberation best suits the *mood* of a scenario. Chion concurs:

In the case of ambient sounds, which are often the product of specific and local sources (a brook, bird songs), what is important is the space inhabited and defined by sound, more than its multisource origin. [13]

² in the context of sound design it is relevant to the acoustic setting that effects the delay or echo of sound.

1.4.3 On Screen and Off Screen Sound

As ambience is considered off screen it is important we cover the established choice of such a term. In a literal sense on screen sound is a misnomer, as all sounds are emitted from speakers and have no physical relationship with the cinema screen (apart from locked synchronization on the reel). However, for a spectator there are certainly sounds that belong to animate or inanimate objects within the visual frame. The spectator automatically registers movement within the diegetic visuals and correlates with the sound provided (Chion calls this phenomenon *synchresis* [14]). Hence, in perception these sounds are on the screen. Other sounds that have no direct connection with a specific visual source are off screen. To rectify this clumsy term, I suggest replacing on screen sound with Illuminated Sound (I.S.) and off screen sound as acousmatic sound³ [15].

1.4.4 Superfield

Chion includes all sounds that belong to the space around the physical boundaries of the screen, be it ambience or rustling sounds, as the superfield [16]. He attributes the possibility of the superfield to technical development in multitrack film that allows enhanced surround sound possibilities. Artistically, the greatest advantage of the superfield for a director is to substitute visual scope with aural expansion, thus allowing the possibility of less panoramic shots and more experimentation with close-up shots. The other advantage is the possibility of rapid visual editing with a sense of continuous flow or unification provided by a continual ambience.

³ A.S is sound one “hears without seeing their originating cause.”

1.4.5 Punctuation: Elements of Auditory Setting (E.A.S.)

E.A.S. is effectively a singular diegetic sound belonging to the environment as opposed to a collective source; that is, sounds that signify a particular environment such as the distant ship horn at the docks, or a car hooter in the city [17]. There may be a few exceptions, but in general one would expect these sounds to be at a very low volume in relation to other sound components, as any prominent sound playing a direct role in the narrative would be considered an impact effect. E.A.S. is a significant aspect of the superfield mentioned above.

1.4.6 Source Ambience

When a particular ambience belongs to a character or inanimate object regardless of the diegetic location, or when a character carries certain aural characteristics that do not alter with different diegetic locations I propose the term: source ambience. For example, the Nine Riders in *The Fellowship of the Ring* have a hissing, wet reverberation on their voices regardless of the acoustic dimensions of a location.

1.4.7 Source Extension

There are two types of source extension. The more common source extension is related to the impact effect, that is, a sound that is used to enhance the characteristics of a character. The second source extension is of a more abstract nature most often belonging to supernatural characters (wizards, fantasy characters). One could call source extension the surreal portrayal of a character through audio.

1.4.8 Ambience of Indefinite Status

Acousmatic sound that has indirect relevance to the narrative and has no identifiable source from our experience of the aural world is indefinite. These sounds may possibly belong both to the musical non-diegetic spectrum of sound and to the aural environment. Attempting to make a concrete designation of these sounds is presumptuous and impractical. If ambient

sounds have a stronger (albeit subtle) connection to non-diegetic musical material I propose the term indefinite ambience thematic link.

1.4.9 Ambient Synchronism

Synchronised sound and visuals perceived within the visual frame is imperative for cognitive harmony. The viewer is unlikely to register synchronized sound but would be instantly distracted by problems of synchronization. On the borders of a diegetic space, it is quite common in film to see passing animate objects across a screen in the distance, for example a flock of seagulls. The trigger of sound for these birds should not occur before the visual presence onscreen or after. Our eyes identify flight and expect a bird call. If the spectator hears the bird call after the flying sequence with the bird now off screen, it may create cognitive dissonance.

1.4.10 Coloured Silence

Coloured silence in film is an extremely effective and rarely used technique. “Coloured” implies an aural space that allows a spectator to reflect the action shortly before and after its inception. Silence may evoke significant symbolism: the world has momentarily stopped, indescribable sound, a shut down of a character’s mental continuity, feelings of awe, suppressed anger, blind pain or shock. Examples of these will be covered in part two. Technical silence may distract the spectator, which is highly undesirable. Most silences therefore, have a faint reverb or brown noise to keep the speakers activated. Chion comments, “The impression of silence in a film does not simply come from the absence of noise. It can only be produced as a result of context and preparation.”[18] The type of location and acoustic space plays an important role in setting up silence. In most cases silence is preceded by a dense soundtrack to create a suitable contrast.

1.4.11 Ambience Recall

There are two types of potential playback of an ambience in a film: a source machine plays back recorded material, or a character recalls a memory of a particular scene. In most cases, the only sounds that are recalled in both instances leave out ambience altogether and focus on the dialogue or monologue. Therefore, in playing back a recorded scene, for example on a video, the sounds are rendered again without any trace of the original ambient sounds. In *Blade Runner* the interrogation of Kawolski was recorded on camera, and is recalled throughout the film but in every instance the ambience of the original scene is omitted.

1.4.12 Rhythmic density and Idée Fixe

This is a rare occurrence in film but merits mention. In music, there are terms to describe the density of rhythm: polyrhythmic means many rhythms occur simultaneously. Rhythmic density may be attributed to what Chion calls “off screen trash”: a term to describe many off screen sounds triggered all at once to create a dense montage of sound; however, rhythmic density is applicable to clearly structured and designated sound. In a sense, it is instrumental rhythm as opposed to electro-acoustic noise.

Idée fixe manifests as a repeated rhythmic or melodic pattern. One of the benefits of using a rhythmic motif across the spectrum of sound components is that it creates an aural bridge between non-diegetic and diegetic sound. For example, in *Blade Runner*, the Void-Comp Machine, which has prominent source ambience, shares a rhythmic two-note pattern with ambient material of indefinite thematic linkage heard prior to the scene with the void comp machine. This is discussed more elaborately in part two.

1.4.13 Dual-Perspective Location Indicator

If a narrative involves two intermittent scenes of differing proximate locations whereby the sounds of each parties movement may be heard by each other, then the spectator is given two perspectives of the same sound but from the location perspective. The constructed sound relies specifically on the acoustic space, thus the ambience must be taken into consideration.

1.4.14 The (Super-)Real and the Rendered

One may presume the real ambience of any given location recorded as it is would be suitable, if not more believable than rendered ambience in a film scenario. Yet, the spectators' perception of truth within an abstract fictional world demands careful consideration. Chion explains:

Reality is one thing, and its transposition into audiovisual two-dimensionality (a flat image and usually a monaural soundtrack), which involves radical sensory reduction, is another...the conventions of rendering sound effects, and so forth... consist of accommodations and adjustments, taking into account the audiovisual transposition in order to try to conserve a certain sense of realism and truth in their new representational context. [19]

In daily life we generally concentrate on one sound at a time, or block out sound altogether whilst in deep thought. Furthermore, we hear many common sounds, and our awareness of them lessens with repetitive knowledge. Therefore, an omni-directional microphone recording sounds in a particular environment, is in most cases *less* real, as we rarely listen to our entire aural environment.

Similarly, the sound designer administers sound as we do sub-consciously in the real world. The distinction between real and rendered sound at this point becomes paradoxical; as the process of rendering sound, more accurately portrays subjective reality. In this context, I deem "real" as inaccurate and would perhaps be better realized as "super-real".

1.4.15 Silences of Direct Sound

Using the real location sound untreated in post production has many disadvantages. Chion cites Rohmer as an example of a director who used this technique [20]. Inevitably, one would have to try preventative measures for any punctual⁴ sounds interfering with the dialogue, as intelligible voices are generally of utmost importance. The result is usually a static environment, a contrast to the carefully orchestrated ambiances sound designers create in post-production.

1.4.16 Passive and Active Acousmatic Sound

Active acousmatic sound is considered by Chion to be sound that has a direct role in the narrative and draws immediate attention from the spectator in an attempt to identify its source. Passive acousmatic sound, however is, “sound which creates an atmosphere that envelops and stabilizes the image, without in any way inspiring us to look elsewhere or to anticipate seeing its source.”[21]

1.4.17 Extension

One of the most significant roles of sound is to expand the concrete space beyond the parameters of the visual frame. According to the sounds utilized, particularly elements of auditory setting, one may gauge an approximate degree of extended space. The spectrum of minimum and maximum is termed “null extension” and “vast extension” by Chion. Null extension could be as close as the inner thoughts voiced by a character, that is, a subjective space not limited to one character.

⁴ sound of high velocity or volume that compromises the coherence of dialogue.

In *As Good As It Gets* when Carol and Mervin are in a restaurant and Mervin makes a cutting remark, the ambience gradually fades out as we observe Carol's facial reaction. The extension of space narrows down to the immediate area around them as she replies, allowing the spectator to feel the intensity of their interaction with no external distraction.

1.4.18 Macro-Contrast and Micro-Contrast

Contrast in film is largely important. Even most modern action films have developed to the point where aural contrast takes place to give the peak moments more effective status. In some cases, location changes provide opportunity for large spatial contrast in ambience. Micro-contrast occurs on a smaller scale: fast pace camera zooms, or rapid editing may provide options of contrasting ambiances. In *Panic Room*, there are scenes from the panic room, to just outside the panic room. The two environments differ substantially and create a micro-contrast.

1.4.19 Ratio of Active or Dormant Diegetic Ambience

The comparative ratio of ambience utilized in film varies greatly according to genre and directors' methodology. However, the main problem applicable to all genres is over-dependency on music as the emotive force. Incidental music (music that seemingly has no direct connection with the visuals) could be replaced with visually specific atmospheres creating a concrete bond in the immersive process.

Immersion is the final product, like a baked cake. All other components, be it the narrative, acting, editing or sound design are the ingredients. To draw the metaphor further, some people are happy to choose the same type of cake repeatedly, resulting in a level of mediocrity that has amassed thousands of unexceptional films. The exceptional and original projects use intelligent methodology.

Audiences may be sub-consciously wizened to the formulated method that attempts to trigger our emotions and may become bored with a film without knowing why. Re-administering the use of sound components may be highly effective; the potentials of which, audiences are unaware.

1.4.20 Music as a Hindrance

When music is used in an attempt to cover clumsy picture editing, to compensate poor acting or simply placed inappropriately in a particular scene, it clearly becomes a hindrance rather than an aid. Naturally, if music is unnecessarily utilized it is occupying aural space which ambience could have used. The example that inspired this analytical point is covered in part two where ambience is conscientiously used in *Panic Room*, but has a moment of weak sound design.

1.4.21 Ambience as a Cultural Reflector

This concept is applicable to a collage of sound that gives the listener a general idea of the cultural lifestyle of a particular society. To illustrate the powerful significance of sound in the environment as a cultural indicator consider the following scenario: It is night time, and a man is sitting just under-cover from the rain in an alleyway, in a densely populated urban area. One can hear the light patter of rain on the canopies of shops and barely distinguishable voice murmurs of people passing by. There is no music. The aural information is uninspiring, particularly if it belonged to a science fiction or fantasy film. This example is a reference to the completely different and effective approach used in *Blade Runner*, which is covered in part two.

1.4.22 Empathetic and Anempathetic Effects

Chion uses these terms to describe how visuals may be juxtaposed with either symbiotic (empathetic) or contradictory (anempathetic) sound [22]. For example, the twitter of birds with a panoramic shot of a beautiful sunrise followed by a panning sequence of an open-eyed corpse lying in the grass, with continuing bird call, is what Chion would call an anempathetic effect, “[a sound that] seems to exhibit conspicuous indifference to what is going on in the film’s plot, creating a strong sense of the tragic.” [23] Musical commentary of a dramatic nature in synchronization with the corpse image would be an empathetic effect. There are an abundance of empathetic effects in film, as most non-diegetic music is used to juxtapose the relevant narrative mood.

1.4.23 Reciprocity of Added Value

For the spectator, it is not acoustical realism so much as synchrony above all, and secondarily the factor of verisimilitude, that will lead him or her to connect a sound with an event or detail. [24]

In simpler terms certain neutral sounds are contextualized by the narrative. Indeed, all sounds are emotively different according to the narrative context. The sound of ripping open a watermelon is rather harmless, but given a visual context of Bruce Lee breaking someone's neck the sound characteristic changes. The relevance in the context of ambience is much the same. The narrative gives different sounds a level of emotive impact.

1.4.24 Ambience as a Musical Trait

All sounds share fundamental components: rhythm, velocity, volume, pitch, timbre and frequency. It is feasible therefore to draw a correlation between emotive devices of music composition with the arrangement of sounds other than music in a diegetic environment.

Most ambiances are rendered, therefore the instrumentation and quality of an ambience texture like music could be sharp, attacking, noisy, sparse, dense, and subtle. Ambience presents a rich opportunity for conveying emotional stimulus, without presenting the more classifiable source sounds of traditional instruments.

1.5 Aesthetic Principles of Designing Ambience

How far does a sound designer rationalize artistic choices when constructing ambience?

To demonstrate consider the following example. Jane Tattersall, a professional designer describes the mind-set of sound design with regards to room tone in *American Psycho*:

The figure of Bateman is cool, detached, devoid of any human contact. That's why we didn't use any low sequences or warm sounds. The room noise is like the low hum of an air-conditioning system, with the continuous breath of an arctic wind superimposed on it. [25]

Randy Thom describes the process of creating a typical location ambience:

In most "Hollywood" movies...the ambience in the typical scene is a combination of sounds recorded on the set while the camera was rolling, and sounds which the sound editors gathered or recorded during post production. Almost all car horns you hear in movies will have been added in post. Some of the "brown noise" typically comes from the set, because it's mixed with the dialog and can't be entirely removed even if the filmmakers want to remove it. Most of that "noise" will be coming mainly from the center channel in a theater because that is where the dialog mainly comes from. Ambient elements, which you hear spread around the room (left, right, left rear, right rear speakers) are almost always added in post. So, most of these elements are orchestrated. An enormous amount of energy goes into deciding exactly when a sound like a car horn will be heard, what speakers it should come from, and how loud it should be. [26]

PART TWO

Analysis

Analyzing the relationship between sound and image perception in film is problematic. To isolate a component and review its significance in relation to other components appears to be pointless, as the cohesive flow of our cinematic experience requires all components to be perceived in its entirety. Indeed the notion of analyzing components in this context is discarded by Randy Thom, a prominent practitioner of sound design. He comments:

When a scene works it's all one thing. Our attempts to dissect it in order to figure out what the sound is doing and what the image is doing seem ill conceived if not futile to me. [27]

In agreement James Bisset responds to Randy Thom:

When eating an exquisitely baked cake, I doubt if there is any regard to; how fresh the eggs were, how rich the pastures were that the cows fed on that produced creamy milk, how well balanced the soil was that produced the wheat for the particularly well milled flour. [28]

These quotes are informally expressed, but the point is clear. In agreement from the spectator's perspective, any analysis would detach one from the entertaining, immersive experience. Similarly, an artist does not necessarily create a piece using analysis. But to state the analyzing of interrelationships between sound and image as "futile" is flawed and uncooperative. I assert that to disregard analysis is to disregard a sociological norm: there are practitioners, academics, and those in both disciplines. The baked cake example is a good one, as it demonstrates that there are reasons behind the success of the cake.

Attempting to measure individual stimuli qualitatively cannot result in decisive theory, as every spectator has a subjective experience. However, we can consider general aesthetic and technical motivations of the artist. The director, in most circumstances, aims to guide the viewer through different perspectives of the diegesis, whilst maintaining the narrative structure. The selection of cinematic material in part two is primarily determined by a few of the most varied and significant works that have particular thematic or intelligent methodology.

2.1 Blade Runner (The Director's Cut)

Blade Runner is a science-fiction film set in 2019. The function of sound in this film is noteworthy for the following micro-components:

1. Source ambience and Indefinite Ambient Status
2. Ratio of Active Ambience Designation
3. Macro-Contrast
4. Idée Fixe
5. Ambience Recall
6. Ambience as a Cultural Reflector

2.1.1 Source Ambience and Indefinite Ambient Status

(00:05:08) Policeman Holden sits in an office at the Tyrell Corporation (a company that specializes in android design) to interview employees, one of which is believed to be a dangerous and wanted Nexus 6 android. Holden uses a 'Void Comp' machine that focuses on the interviewee's eyes to register involuntary fluctuation of the iris, a tell-tale sign of android reaction to particular emotional triggers.

The Void Comp machine emits high-pitched, penetrating and polyrhythmic sounds that represent the interrogatory nature of its function. In the interview involving Kawolski a *Nexus 6* robot (00:05:08), there is a high-pitched brief undulating whistle that complements the Void Comp machine, but seemingly does not belong to the source ambience; rather, it emphasizes a moment of anxiety Kawolski experiences (00:07:00). In other words, it is a sound one may attribute as indefinite ambient status that belongs in both the diegetic and non-diegetic world. The advantage of these ambiguous sounds is that our mind is subtly manipulated without boxing these sounds into any recognisable instrument.

2.1.2 Ratio of Active Ambience Designation

It was stated earlier that ambience is omnipresent albeit sometimes in *null extension* (inactive) mode. *Blade Runner* has a high proportion of ambience in active mode. Indeed, the effective quality of the audio in this film is largely due to the emphasis of describing diegetic space in place of musical commentary. There appears to be a distinct method in this film of using rich non-diegetic musical passages whenever Deckard is airborne. On landing at various locations, the active ambience resumes, providing contrast.

2.1.3 Macro-Contrast

The approach of using rich smoothly textured non-diegetic music for the airborne scenes in this film provides contrast to the industrial, dense ambiences used in land scenes. The music by Vangelis provides time for the spectator to reflect on a number of aspects of the narrative: Deckard the character, the depicted future world, the scenes that preceded the airborne scenes and so forth.

2.1.4 Idée Fixe

There is a certain *idée fixe* in the form of a two-note motif that has intervals generally ranging from a minor second to major seventh. This motif acts as a cohesive device throughout the film. For example, ambient sound prominently used in the beginning of the film recurs throughout the film. It contains the two-note rhythmic pattern. This pattern precedes the example described in example 2.1.1 and resumes through the use of effects for the void comp machine.

2.1.5 Ambience Recall

In *Blade Runner* the interview between Kawolski and Holden is recalled in the narrative via a video projection (00:13:48) and later in the car with Deckard (00:23:23). There is no trace of ambience from the void comp machine, yet a machine with such prominent sounds would surely be recorded by any recording device. (Incidentally the actors re-enacted the scene, and one may notice the difference in the way the dialogue is spoken to the original scene that takes place.)

2.1.6 Ambience as a Cultural Reflector

(00:07:40) A panoramic shot of the city zooms down past a neon light to focus on Deckard. Deckard, a Blade Runner (trained to track down androids), sits at a bench waiting for a vacant seat at a take-away street-vendor. The streets are small and many people occupy the space. Flying crafts fly low in the area, one of which is a mobile advertising board that blares out a voice. Large advertising screens are on the sides of buildings with audio accompaniment, and there are numerous neon lights. The visuals are highly dense with all the movement of machines and people.

The sounds are understandably dense. The panning designation is intelligently crafted. There are three source music elements all simultaneously played with no relationship to each other: one is panned about ninety percent left, another fifteen percent right and the other ninety percent to the right. There is a murmur of people talking, as well as loudspeakers blaring from various audio-visual advertising boards. Most of the visual scene allocates sound to a superfield status as described by Michel Chion. The sound extension is considerably vast. In *Blade Runner*, the ambience gives an audience some idea of the lifestyle and cultural fusion of a future society.

2.2 Lord of the Rings: The Fellowship of the Ring

Unlike *Blade Runner*, *The Fellowship of the Ring* contains less active methods of ambience utilization. In this way, it seems fortuitous to explore the reasons for certain methodology, be it in a particular genre or narrative world, as both films are successful in their own way. The null and vast extension again plays a part in understanding the reasons for various sound choices.

Ambience in *The Fellowship of the Ring* is dominated by richly-textured character voices, and a high proportion of musical commentary (music that is not only utilized in moments of drama, but also used in many parts of the film as a support for the dialogue).

In comparison, many of the components active in *Blade Runner* remain dormant throughout this film. Ambience as a cultural reflector may describe aspects of a culture but there is no direct relation to our worldly societies.

The micro-components that stand out are:

1. Source Ambience
2. Source Extension
3. Music as a Hindrance
4. Coloured Silence

2.2.1 Source Ambience

Ambience designated to characters in the film dominate the sound mix. One could say that ambience is referred in a more subtle way to the voice, and has less independent status, not belonging to the diegetic atmosphere. For a fantasy film where characters represent good and evil forces, there is a heightened emphasis on this representation. Characters like Gollum, Saruman and Sauron have a particular voice quality (deep, wet reverb, growling) that remains with them regardless of diegetic location.

The one inanimate object that also has source ambience is the Ring. The evil whisperings of Sauron are used when the Ring is enticing someone to wear it (00:44:30). The source ambience changes into a full change of perception when the Ring is actually worn:

(01:00:25) Frodo puts on the Ring as the Nine Riders are upon him to kill him, the visuals change to a washy, pasty mix of grey colour with sketchy images of the Nine Riders. The sound used for this subjective world accompanies the distorted images with windy, ‘whoosh’ sounds, implying a perception quite different to the normal one. These sounds are clearly not true to the book; the Ring is supposed to clarify and enhance sound and sight, not distort it.

2.2.2 Source Extension

(00:21:23) Bilbo Baggins and Gandalf are in Bilbo’s hobbit-hole discussing the Ring of Power, which Bilbo has in his possession. Bilbo is about to leave the Shire and stay with the Elves. Gandalf advises Bilbo to leave the Ring behind; a moment of possessiveness overwhelms Bilbo, and he accuses Gandalf of wanting the Ring for himself. At this point Gandalf booms “Bilbo Baggins, do not take me for some cheap conjurer of tricks! I’m not trying to rob you...I’m trying to help you.” At the point of speaking, the light around the room shrinks to darkness. Gandalf’s voice pitches unnaturally low. The wooden house creaks as if strained by an invisible force, and a deep rumbling wells up seemingly from underneath the house (this may be a technical allocation to the sub-woofers).

2.2.3 Music as a Hindrance

This concept is admittedly dependent on the spectators’ subjective experience. However, it must be mentioned that music is used extensively in *The Fellowship of the Ring* and may have been used more effectively with degrees of contrast. There are moments where music appears to wash out the dramatic impact with its continual commentary.

2.2.4 Coloured Silence

(00:23:23) Bilbo Baggins has just dropped the ring onto the wooden floor of his home before departing to see the elves. Gandalf walks to the Ring and looks down on it. There is absolute silence as he observes it. The moment he touches it with his hand there is an effective sound effect as an image of the “all-seeing eye” complements the sound.

Why use silence in this instance? In this case, there is literally not a hint of sound, which is rare in any film. Firstly, we focus on Gandalf's expression and feel the intense concentration of his state of mind. Secondly, it automatically creates anticipation of any event to follow. In this case, both aurally and visually the spectator experiences a jolt following the moment of silence.

2.3 Panic Room

Panic Room is one of the few films that use one location for the majority of the film.

The movie is set in a large old wooden house. The house has a security room called a panic room, which is isolated from the rest of the house with thick steel walls and concrete.

The focus on one location provides many opportunities to explore sounds that belong to the house. Foley plays an important role, with creaking floors, opening doors, walking down stairs and so forth. The elements of significance from the perspective of ambience are:

1. Thematic Ambience
2. Indefinite Ambient Status and Unification
3. Acoustic Ambient Space
4. Music as a Hindrance
5. Dual-Perspective Location Indicator

2.3.1 Thematic ambience

Thematic and source ambience is similar when involving inanimate objects. However, as most of the action is contained within the house, one could say the house has a particular theme. It is an old, creaky house with wooden floors. The acoustic reverb in the house is ‘wet’⁵, as the house is relatively empty. The majority of the narrative takes place within the period of a few hours, which lends itself to creating a thematic environment.

2.3.2 Ambience of Indefinite Status and Unification

While the action takes place in various dramatic parts of the film, a sound like that of a distant rumbling aircraft or an amplified air-conditioner is utilised. It is a subtle yet emotive sound that runs mostly through the sub-woofers. In a sense, it is more of a deep vibration than a pitched note. One may hypothesize such a sound has its roots in nature, ominous and thunderous, threatening and stimulating our survival instincts. This type of sound also creates a heavy atmosphere, empathetically enhancing the tension of the narrative.

Sound textures are often used as a bridge between outside and inside the panic room to soften the contrast of room ambience. One could say these sounds are a substitute for the normal role music would play to unify the picture editing, but this definition is not comprehensive or accurate. The reason is these sounds cannot be attributed to any particular musical instrument. Furthermore, this type of atmospheric sound is too closely linked to the diegetic space to specify it as non-diegetic. Indeed, this sound may be interpreted as belonging to the house, making observational comments on the narrative as a deep rumbling from underneath the house.

⁵ dry and wet are terms to roughly measure the spatial extension

2.3.3 Ratio of Active Diegetic Ambience and Macro and Micro Contrast

It is rare for a film to be based in one small location for most of its duration. In this case, there are two highly contrasting ambient themes namely the panic room, and the rest of the house. The ratio of active ambience is considerably high. In the latter half of the film the editing transition from the panic room to outside the panic room results in concentrated macro-contrast.

2.3.4 Music as a Hindrance

(00:15:04) Holstein and her daughter are lying asleep in their beds. The camera travels slowly from Holstein's bed downstairs through to one of the back doors. From the house we see a taxi arriving at the house. A man walks up to one of the back doors and tries to open it. He realizes the door is locked or the lock has been changed and moves to another entry point. The camera follows the intruder's movements from the inside of the house.

The low 'whoosh' sound which accompanies the movement of the traveling camera, along with rumble sounds associated with the ambience of the house, create a mood of uncertainty or perhaps suspense. The moment the intruder walks toward the door from the taxi, the thematic dark non-diegetic music begins. This is a good example of poor utilization of music. It takes away the unravelling logic of the spectator (so carefully plotted in the visuals) because the music immediately gives away the intent of these unknown men; namely that they are villains trying to break into the house. If the spectator is not given this musical signal, it would take slightly longer to think about what is happening in the narrative and the ambience would suffice in hinting the possibilities. To clarify how music of this nature describes a general perception for the spectator of good and evil music, Kassabien comments: "The entrance of a villain or hero in an action film, for example, can be prepared by 'one-time' music of a type perceivers recognize not only within the film , but also as a standard type of music." [29]

2.3.5 Dual-Perspective Location Indicator

(01:31:08) Robbers are in the panic room with the daughter, Sarah. Holsten decides to use a mallet to smash all the surveillance cameras. At first, the spectator sees Holsten smashing a camera, then we see the robbers in the panic room watching her as the monitors in the panic room black-out one by one.

Initially one hears the sound of Holsten breaking the camera, and then we hear what it sounds like from the panic room: a very dull but definite thud. The thud is an indication of how soundproofed the panic room is, and gives the spectator a subtle impression of what being in the panic room is like. In other words, the viewers are given a sound to gauge for themselves the contrast in acoustic space.

2.4 2001: A Space Odyssey

Stanley Kubrick's unique methodology requires new definitions of ambience in its own right. The most important component of the sound design in this film is the sparse dialogue and the epic proportions of continuous music and natural ambience. The treatment of ambience highlights the following components:

1. Empathetic and Anempathetic Ambience
2. Coloured Silence
3. Epic Ambience as Abstract Narrative⁶

It would be an erroneous and lengthy process to describe the narrative from a subjective point of view, as there are complex concepts within the narrative. Suffice to say that I will describe parts of the film are described as objectively as possible.

⁶ a term specific to this film.

A space voyage to Jupiter is navigated and coordinated by a computer (HAL 9000) designed to communicate in a human manner, in other words, convey emotion and feeling, and perceive human emotion. At a point, HAL starts to malfunction and terminates the humans onboard that are dependent on its machinery.

2.4.1 Empathetic and Anempathetic Ambience

(01:18:20) A crew member replacing a part in space, outside of the shuttle is detached (by HAL) from the spaceship with no oxygen support. He dies rapidly, and one can see his body writhing as he dies. There is absolute silence throughout this scene. Naturally, there is no sound in space (this fact has been overlooked or deliberately ignored in many films set in space). The question arises whether the example described above is an empathetic or anempathetic effect. From the conventional understanding of these terms, one would most likely point to the anempathetic as there is no musical commentary to empathise with the visuals. However, space in particular represents many aspects of evolving humanity and cannot be ignored. For example, does the silence not empathise with our basic feeling about unexplored territory, a vacuum of space we know little about? Furthermore, the conjunction of space and death is strongly linked. Silence, therefore, a strong representation of emptiness, death or a void, seems to empathise with our human understanding of the narrative.

2.4.2 Coloured Silence

How do we view coloured silence in the context of space? The role silence plays in the movie is of magnified significance in comparison to silence utilized in films set on earth. I would like to propose that ambient silence differs greatly in that it is utilized as a brief moment in a narrative to portray pain, trauma and the other aspects mentioned in part one. Therefore silence in *2001: A Space Odyssey* is more akin to epic ambience as abstract narrative.

2.4.3 Epic Ambience as Abstract Narrative

With less direct narrative guidance through dialogue, and more opportunity to focus on the visuals and sounds we are, in a sense, encouraged to ponder over the ideas presented to us. Ambience in this film, may extend for many minutes untainted by dialogue, leaving a spectator a choice to either be immersed in the narrative, or not.

2.5. Further Noteworthy Examples:

During the analytical research, there were certain examples from films, which merited mention but lacked overall significance to cover the film in its entirety. The following examples display scenes from different genres and styles.

2.5.1 Empathetic Ambience

a. *As Good As It Gets*

(00:13:05) Melvyn Udal, a regular customer at a restaurant is being served by Carol, a woman who plays a major supporting role in this film. Carol makes a comment about Melvyn's breakfast order, "You're gonna die soon with that diet, you know that?" Melvyn replies, "Yeah, well, we're all gonna die soon. I will, you will and it sure sounds like your son will."

At this moment, Carol fixates her eyes on Melvyn for about five seconds and slowly sits down at the table, "If you ever mention my son again, you will never be able to eat here again, do you understand?"

The tension of this scene continues, but most important is whilst initially hearing the clutter of dishes and the murmur of other people, these sounds are faded out completely, leaving just the dialogue between these two characters. The fade out occurs as Carol absorbs the impact of the retort; simultaneously it refers to the sudden awareness by Melvyn of what he has just said. The ambience, therefore, represents both the characters complete awareness and attention on each other. [30]

b. Dinosaur

(00:17:44) A huge meteorite is plummeting toward the sea, some distance from an island where the animal characters are located. The moment the meteorite hits the ocean, there is at least four seconds of coloured silence, and white light fills the entire screen. A shock wave then ripples toward the island that is represented aurally by a deep rumble that gradually becomes louder as it approaches.

The coloured silence serves three functions here: it depicts the silent fear and anticipation of the characters, the physical scale of the meteorite having an almost indescribable sound, and it allows a silent passage of audio for the following shockwave that hits the animal's island to have more impact (a type of ominous silence before the storm).

2.5.2 Indefinite Ambience Thematic Link (to non-diegetic material)

Ocean's Eleven

(00:08:05) Ocean and Rusty are sitting at a card game with amateur players. They both set up the game so that Ocean wins the game. They leave the club together and drive away. The chosen genre of non-diegetic music for the film is jazz. The most prominent instruments are double bass and Hammond organ. During the scene mentioned above, there is a double bass “rumble”, a heavy filter, barely making it possible to determine pitch. The ambiguity about the use of this sound is that it may possibly be the bass of music coming from another room. However, the bass sound is closely linked to the non-diegetic theme. Its function is more of an ambient slant than a musical slant. This idea is reinforced by the fact that the bass rumble continues as they drive away from the club adjacent to the sound of traffic.

Conclusion

All sound components have unique roles to play in the film experience. Speech cannot be more important than music, for example, as the absence or presence of music will affect a different aspect of the immersive experience. Yet, unlike music or speech, ambience is yet to be well established as a noteworthy component in the theoretical domain. Chion comments:

For a long time natural sound or noises were the forgotten elements, the “repressed” part of film not just in practice but also in analysis. There are a thousand studies of music (by far the easiest subject, since culturally the best understood), and numerous essays on the text of dialogues, and finally some work on the voice...but noises, those humble foot soldiers, have remained the outcasts of theory, having been assigned a purely utilitarian and figurative value and consequently neglected. [31]

The general academic disregard for ambience needs to be remedied. A fundamental step in spreading the awareness of ambience is acknowledging its equality with all other sound components and solidifying its existence through establishing feasible theory. The latter half of part one was an attempt to scratch the theoretical surface of this elusive sound component. The development of terminology related to ambience will greatly benefit understanding the soundtrack in its entirety. Music, dialogue and sound effects have been comprehensively researched and explored. Ambience may be one of the last sound components to explore in this medium and there are a multitude of practical examples that have, and will, continue to refine film terminology.

Ambience breathes descriptive information into the diegesis; it sits in the aural atmosphere as unconsciously as natural breathing and yet it does have a tangible presence. Indeed, its presence in the soundtrack is omnipresent, simply because ambience includes acoustic spatial designation. This effectively means the technical and aesthetic treatment of all sound components, from production to post-production, will ultimately emerge through the diagnosis of ambient constituents.

Practitioners of sound design are known to work in both film and interactive gaming. The connection between these two media needs to be addressed, as interactive gaming is a vastly popular entertainment medium. Sound designers play a pivotal role in creating non-linear

soundtracks for interactive projects. On a large scale, constructing soundscapes in any medium could be seen as using similar methodology and creativity. However, technical aspects of film and gaming separate the problems sound designers need to solve. Stockburger comments:

The use of sound objects in the game architecture reveals one of the major differences between the structuring of sound in a game and the sound practice in film. All the sounds or objects are part of a dynamic environment. Their qualities, such as pitch, volume, reverberation and other effects, as well as the relations among them are defined by a program that can also be influenced by user action. Every sound object can potentially enter a temporal and spatial relation with every other sound or graphic object. [32]

Robi Kauker concurs:

A game sound designer deals with much more on the technical side than the movie -in games you lack basic assumptions in today's film world such as: sync between picture and sound, listening environment, and visual elements. On the PC, game sync varies from machine to machine as they compensate for lack of cpu power - audio has to make it appear smooth (try making a irregular 8-38 fps look smooth) - our basic user has no concept of stereo imaging so they throw their speakers where ever they fit, and by the nature of many simulation games we can't predetermine anything - a user may place anything in their little world at anytime. [33]

Ironically, the difference between designing sound for film and interactive gaming may constructively affect the treatment of environmental sound in film. As Stockburger commented, sound objects become independent of each other in space and time. This means each component undergoes intensive consideration, including the virtual environment. In film, for example, the sound of an owl hooting in a dark forest may be heard once, but in the context of a non-linear experience the owl sample cannot be repeated continuously as the gamer will identify repetition immediately and be distracted by it.

In the race toward the lofty goal of virtual reality, all established audio-visual media will contribute to the understanding and development of creating sound for virtual environments. Film practitioners have a responsibility to continually exploit and expand the combined potentials of visual and aural relationships, for both film and the significant medium of interactivity, particularly the undeveloped potentials of environmental sound.

Notes

1. Chion, 1990, 75.
2. http://www.bbc.co.uk/films/2001/02/07/blade_runner_1982_review.shtml
(accessed 10/2005)
3. <http://www.filmsite.org/twot.html>
(accessed 10/2005)
4. http://www.filmsound.org/studiosound/pp_startrek.html
(accessed 04/2002).
5. Chion, 1990, 80.
6. Ibid.,76.
7. Gorbman, 1987, 22.
8. http://www.filmsound.org/studiosound/pp_titanic.html
(accessed 05/2002).
9. www.filmsound.org/starwars/phantomfoley.htm
(accessed 04/2002).
10. A connection of this concept later transpired with Ryan's book.
11. Ryan, 2001, 14.
12. BMW magazine, (edition unknown), pg.53.
11. Chion, 1990, 79.
13. *ibid.*, 63.
14. *ibid.*, 71.
15. *ibid.*, 150.
16. *ibid.*, 54.
17. *ibid.*, 57.
18. *ibid.*, 96.
19. *ibid.*, 104.
20. *ibid.*, 85.
21. *ibid.*, 8.
22. *ibid.*, 221.
23. *ibid.*, 22.

24. *ibid.*, 22.
25. Tattersall, BMW magazine (edition unknown)
26. Personal e-mail from Randy Thom.
27. <http://groups.yahoo.com/group/sound-article-list/message/1005>
(accessed 30/04/2002).
28. <http://groups.yahoo.com/group/sound-article-list/message/1010>
(accessed 30/04/2002).
29. Kassabian. 2001, 57.
30. This example was originally analyzed before reading *Sound Design* by Sonnenschein, who does mention this scene.
31. Chion, 1990, 145
32. <http://www2.hku.nl/~audiogam/ag/articles/gameenvironment.htm>
(accessed 30/05/2002).
33. <http://groups.yahoo.com/group/sound-article-list/message/966>
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