

CONSTRUCTING REALITY: SOUND DESIGN IN REALISTIC CINEMA

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Abstract

Starting approximately with the second quarter of the 20th Century, the innovations in audio technology enabled feature films to have synchronized sounds and the era of silent films has rapidly ended. This transition to sound films, also known as talking pictures or talkies, triggered many theories and problems regarding the aesthetic and technical relations between the sound and the moving image. The general title “sound design”, which indicates the audio layers in a feature film, except the original musical score, is unquestionably capable to affect the reception of the film by the audiences and can singlehandedly define certain genres of film making. From the sound engineering perspective, the methodology of sound design is radically different than the traditional or contemporary music production and post-production. Investigating the sound design process in the context of realistic cinema would allow us to introduce the basic work flow and related technical process and might constitute a common ground for advanced sound design strategies with abstract / surrealist tendencies. From the basic audio editing, to signal processing principles, from the interaction of sound and image to the final delivery formats, sound design has its own aesthetical and technical criteria. Consequently sound design lectures have to become an integral part of modern sound engineering curriculums. This research aims to help developing an educational methodology for sound design along with the introduction to basic film grammar and terminology by investigating the conceptual and technical sound design procedures in realistic cinema.

Keywords: film sound, sound design, post production, signal processing

Introduction

Defining realism in cinema proposes its own challenges. Historically there are many genres, which have been associated with the term realism such as French Impressionism, Soviet Montage, Italian Neorealism and so on (Thompson, Bordwell 2003: 288-289). Additionally the aesthetical and ideological content of the term is highly subject to change over the relatively short history of cinema. New approaches to the concept of reality still continue to be introduced in mainstream or avant-garde film productions. The manifestation of Dogme 95 movement, led by directors Lars von Trier and Thomas Vinterberg, could be interpreted as a relatively recent contribution to the idea of realistic film making (Renée 2014). Despite the contextual diversity of the genres mentioned above, Tony McKibbin generalizes the overall tendencies of realistic film making: In addition to the dialogue dominated scripts, there are two common sonic features; using no non-diegetic music and the frequent use of off-screen sounds (McKibbin). Similar sound wise preferences can also be traced in films of established local directors such as Nuri Bilge Ceylan and Zeki Demirkubuz. Younger generations of directors also seem to follow similar paths as can be observed in two recent full

length features, *Sivas* (2014) and *Toz Ruhu* (2014), directorial debuts by Kaan Müjdeci and Nesimi Yetik respectively.

A realistic sound design is responsible for building up the auditory correspondence of the physical world present in a specific film often with minimal dramaturgical implications. Thus sound becomes a part of the *mise-en scene* (Chion 1994: 115), and frequently does have a complementary function to the sense of reality than having a narrative function. Due to the audio hierarchy between the layers of the sound track, especially evident in dialogue driven films, a certain work flow applies to production and post-production stages. This specific work flow inevitably dictates a certain approach to aesthetical matters, therefore preserving it in sound design studies allows the students not only focus on the role of the individual stages but also helps them to discover the interactions between the layers from various perspectives (Peck 2001). It is important to underline the fact that any sonic preferences cannot be evaluated apart from the requirements of visual material; instead they have to be evaluated collectively.

Genres which can be labeled under the overall term fiction require generally a different approach to the question of sound design. They often employ sound synthesis and processing techniques, originally rooted in early examples of electro-acoustic composition, in order to create sounds for imaginary objects, creatures and / or environments. Thus, necessary techniques and tools are eliminated in the subsequent chapters yet they constitute the advanced sections of any related curriculum. It is important to underline the fact that, there could be momentary deviations from absolute realism in some films. A classic example is the objective to subjective perspective switch in Steven Spielberg's *Saving Private Ryan* (1998). The audience is hearing the environment from Tom Hanks' perspective on a certain moment, when the character *Captain Miller* was experiencing a temporary hearing loss in the battle field, instead of listening to the actual sounds on the beach (Sonnenschein 2002:178). Another tendency usually found in mainstream cinema is hyper-realism, where the exaggeration of the daily sounds is achieved via complex layering and signal processing techniques, yet the core methods and principles are similar.

Production

Sound production of a film consists of two phases:

- Organization
- Location recording

Careful logistical and technical planning has to be done according to the requirements of the script before the actual shooting begin. A script might be specific in terms of sonic details or might contain almost no aural cues or descriptions, yet it has to be carefully examined for all sorts of preparation which will also have a direct influence on the other non-audio departments. A specific location might be visually ideal for a particular scene, yet it may not be suitable in terms of sound due to excessive noise or irrelevant ambient qualities. Recording on the set, either interior or exterior, is dominantly motivated by the task of capturing the dialogues primarily. Therefore, those recordings are not capable of containing all of the sonic events happening in a particular scene, since the choice of microphone types and placement are highly affected by this priority. Shotgun microphones, the main choice for recording film production sound, have an extremely narrow polar pattern in order to focus only to sound source (in our case the voice of the actors / actresses) and omit most of the acoustical information (Bartlett 1999: 64). Lavalier microphones, which can be attached to surfaces,

are spectrally modified to compensate with the off axis sound, since they are not directly pointing to the sound source. Furthermore they may suffer from clothing and other impact noises, if they are not mounted properly. Generally lavalier microphones should be considered as a safety option and might function as a spectral enhancer when blended with the output of shotguns, especially on the scenes where the boom stand has to be positioned relatively distant to the sound sources due to visual concerns (Holman 2005: 60).

Sound design is mainly a post-production process in realistic film making, since the nature of the design depends almost entirely on the quality of the set recordings, on the visual information and finally on the visual editing style. It enables us to construct the rest of the sonic reality except the dialogues and helps us to compensate the missing acoustic information, including the ambience and human action sounds, which are not sufficient enough in the dialogue tracks. In productions, where more fictional / surreal tendencies exist, or in animation films where no production sound will be available, sound design may begin years ago before the actual shooting due to its influence on several factors regarding the production.

The production sound mixer, responsible for capturing the sounds on the set and the leading figure of the recording team, may contribute to the later stages not just by recording the dialogues with a sufficient direct to reverberant and signal to noise ratio. He / she could also support the sound design by recording room tones and ambiences in which the actual shootings take place. Unlike the dialogue recordings, these ambient recordings preferably have to be stereo or surround, dependent on the final format required by the screening medium. Also, additional material for ADR and Foley can be gathered on the set by the mixer (Yewdall 2012: 30).

Post Production

Sound post production of a film consists of mainly four phases:

- Dialogue editing & automatic dialogue replacement, also known as ADR.
- Foley
- Sound design
- Mixing

A sound designer may work as the supervising sound designer in order to control the whole post production team for the pursuit of a specific aesthetic goal or may be responsible only for his / her department. In productions with lower budgets, the whole post production team may be comprised of less people; in some cases even a single sound engineer may be responsible for every department. Thus, having experience at every post stage would be beneficial for real world situations.

The backbone of the audio layers in a traditional dialogue oriented film is having consistent dialogue tracks with seamless transition characteristics. A standard feature film comprises of hundreds of different scenes and shots with variety of angles of each scene, thus synchronized audio tracks are also composed of countless slices, unless the film have less scenes with longer durations. Sound functions as a temporal linearization tool for moving images, creating unity in terms of time and space (Chion 1994: 17). In the case of dialogues, the timbre, the levels of the dialogues and ambient cues inherent in the dialogues have to be consistent in each scene; otherwise it may create an alienation effect or distorts the time / space recognition. Both situations are not desirable in most of the cases. Technically it is unlikely to be able to work with stable microphone preamp gains for a better signal to noise ratio and boom positions on the set and there are also acting

related factors and noise on the set oriented problems. A dialogue editor is in charge of deciding whether to use the boom only, or mix it with the lavalier microphones, replace words or sentences from other takes, apply fades to editing points and decides if ADR is necessary or not on specific performances. If possible, equalization and noise reduction should be avoided during this stage, which might cause problems later in the mixing stage. Equalization may be limited to low pass and high pass filters, possibly with gentle filter orders such as 6 / 12 dB per octave (first and second order filters respectively), in order to get rid of the proximity effect, wind noise or other types of noise. Successful dialogue editing should reflect the overall mood of the film by itself and provides useful information regarding the strategies required for the later stages.

The next step is Foley, named after its inventor Jack Foley, where the sound of the movements of the actors would be recorded again in synchronization (Rose 2009: 220). Boom recordings may contain movement and other action related sounds to a certain degree, yet they might be weak in spectral content or insufficient for the necessary dramatic impact. Actors who are in off axis position relative to the boom could not be covered sufficiently due to the polar pattern characteristics of the shotguns. In any scenario, Foley's are extremely important for achieving realism. Careful consideration must be given to the selection of microphones, microphone positions, synchronization and room acoustics. Generally shotgun microphones minimize the potential acoustic mismatches with the image, although they might be incapable to reproduce the acoustic reality at some cases such as a crowded dinner scene. Finishing the dialogue editing, ADR tracking and Foley recordings signifies the end of the human related sounds and action of the audio post production process and allows us to concentrate on ambient, environmental sounds and other necessary sound effects; in other words it is time to work on the essentials of a realistic sound design.

The first step of sound design is to add / enhance the ambient sounds. The ambience information coming from the boom tracks are not competent enough to reflect the liveliness of the environment, because of the high side and rear rejection of shotgun microphones and the monophonic image. Almost traditionally, the dialogue tracks are panned at the center or assigned to the center speaker in surround set ups. Thus, additional stereo or surround ambiences and room tones not just enliven the scenes; they also widen the spatial image. In cases, where no production ambience and room tones are available, attention must be paid to match the characteristics of the location, especially in nature environments, while recording ambiences. Frequently made mistakes are caused by ignoring the ambience changes due to the seasons and related animal sounds. Usually several layers of ambient tracks will be required, unless the exterior environment is highly isolated or the interior place is very quiet. Next step is to add the sounds of selected machines, objects and devices. Frequently encountered examples are ticking clock sounds, door bells, ring tones, car or plane pass by, AC hum, background radio or TV broadcasts, refrigerators and so on. A selective, almost an orchestral, approach to sound design would be useful in order to leave spectral space for each sound object and avoid clashes with the dialogue track. Again acoustical cues are important to sound natural. If artificial reverberation does not produce convincing results in close microphone applications, Tomlinson Holman's technique called "worldizing", rerecording the sound object by playing it back from loud speakers in the desired environment, generally serves the purpose (Holman 2005: 180). The same technique may be applied for diegetic music scenes to simulate different kinds of speakers successfully.

As mentioned earlier; off screen sounds have an important function in cinema realism. Typically they are indicated in the script, though there must be always room for creativity and innovation without overshadowing the core idea of the script. The presence of a successful realistic sound design should be unnoticeable most of the time, yet it may still be a powerful device to enhance the script, the performances of the actors and even the visual quality. Performing frequent big screen tests are excellent devices to check the continuity of the design and to identify any missing detail, since the size of the screens is crucial to figure out the nuances. Every trial and error process should be done with checking the image since the moving image redefines the properties of the sound objects. Judging the suitability and the function of the design only by hearing may be misleading. The opposite is valid for music production; the visual tools are only a support, yet auditory reception is the ultimate decision maker.

The last part of the post production process, mixing (also known as re-recording), is contextually similar to musical mixing, since the majority of signal processing, leveling and related parameter automations will be performed at this stage. Ideally a film sound mixing session should consist of stems, where every type of layer has its own dedicated sub track. A typical full length film consists of a large number of tracks; therefore having a sub track and logically organized session would save time and effort to everyone. Every layer may contain a rough leveling and basic panning or a detailed premix. It will depend on the preference of the re-recording mixer and the available mixing time. Consulting to the re-recording mixer is highly recommended, before applying automations and any kind of signal processing. Generally it is a wise decision to leave the surround panning automations to the mixing stage. The nuances of the spatial motions would be perceived better in a carefully calibrated mixing studio. Feature films employ a wider dynamic range than the trends of the current music production; hence more headroom is required at the end and over compression might be avoided most of the time, although hyper-realism favors over-compression for certain sound effects. Television targeted productions cannot use similar dynamic range due to the nature of broadcasting and marketing concerns. Analyzing film mixes with similar content in studio environment may provide useful cues for aesthetical decision making process and technical preparation.

Conclusion

Sound design for moving images is a platform where the technical knowledge meets with multi-disciplinary artistic perspectives. A realistic sound design contains the entire core elements required for advanced design applications and also demands detailed structuring and processing. Thus it could be taken as the basis to create a methodology for educational purposes. In addition to a linear introduction of the mandatory audio production and postproduction departments, an analytical approach regarding the relationship between sound and image has to be developed along with necessary knowledge regarding the film culture, history and terminology.

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