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A music Informatics report
Music and sound effects
Medialogi 2003 at AUC.AUE
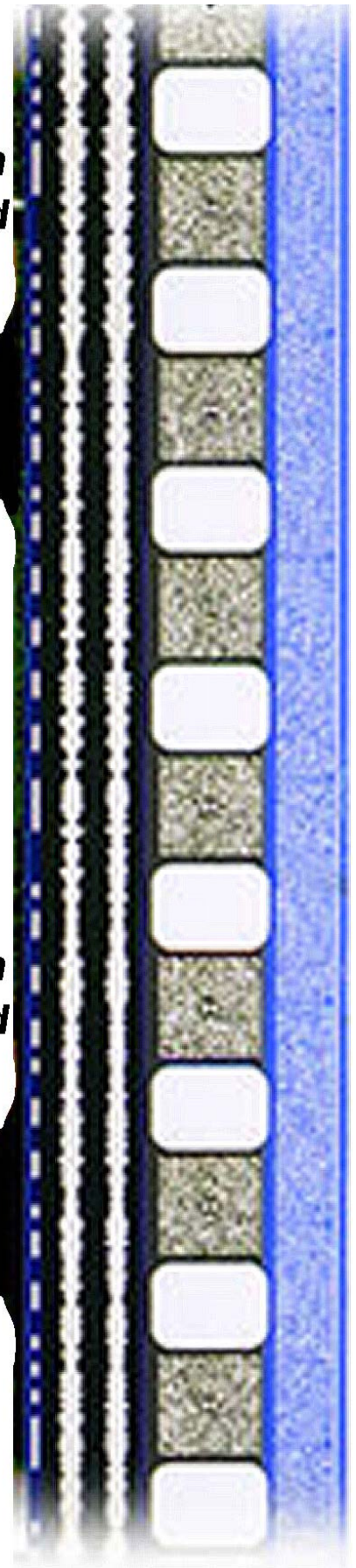
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1   Introduction

Sound and music have often been underestimated in movies. Music is a very important part of the story, because of its strength and ability to tell what is going to happen. Furthermore music is a great tool to emphasize a particular mood.

In this report we will describe some of the different aspects of music and sound effects. We will relate this to some examples of animation with sound.
Finally we will describe how we made our sound effects and music for our cartoon.

2 Theory

What would a movie be without music and sound effects? Most people would say that it would be dull. There have been made movies with 100 % natural sound. In fact there is a concept developed by two Danes: Lars von Trier and Thomas Vinterberg, called Dogme. They made 10 rules, which have to be kept before they could call their movies dogme movies.[1]

The vow of chastity
"I swear to submit to the following set of rules drawn up and confirmed by DOGME 95:

1. Shooting must be done on location. Props and sets must not be brought in (if a particular prop is necessary for the story, a location must be chosen where this prop is to be found).
2. The sound must never be produced apart from the images or vice versa. (Music must not be used unless it occurs where the scene is being shot).
3. The camera must be hand-held. Any movement or immobility attainable in the hand is permitted. (The film must not take place where the camera is standing; shooting must take place where the film takes place).
4. The film must be in colour. Special lighting is not acceptable. (If there is too little light for exposure the scene must be cut or a single lamp be attached to the camera).
5. Optical work and filters are forbidden.
6. The film must not contain superficial action. (Murders, weapons, etc. must not occur.)
7. Temporal and geographical alienation are forbidden. (That is to say that the film takes place here and now.)
8. Genre movies are not acceptable.
9. The film format must be Academy 35 mm.
10. The director must not be credited.

Furthermore I swear as a director to refrain from personal taste! I am no longer an artist. I swear to refrain from creating a "work", as I regard the instant as more important than the whole. My supreme goal is to force the truth out of my characters and settings. I swear to do so by all the means available and at the cost of any good taste and any aesthetic considerations. Thus I make my VOW OF CHASTITY."
 Copenhagen, Monday 13 March 1995

On behalf of DOGME 95

Lars von Trier   Thomas Vinterberg

Figure 1 - Dogme Rules

The question is why they choose to make this kind of rules. Most of the movie theoretics believes that it is a rebellious way of saying that filmmakers have to focus on the story and not the 3D effects and explosions. In fact there are made less than 20 movies, which uphold the rules of Dogme 95. It is thereby safe to assume that most moviemakers use sound effects etc.

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[1] Dogme Rules from http://www.dogme95.dk/the_vow/vow.html

2.1 How do we perceive sound?

In this part we will explain the basics of how humans perceive sound. It will loosely be based on the books "Sensation & Perception" and "Sound for FILM and TELEVISION" 's point of view.

A sound is basically waves of compressed air molecules hitting our eardrums. Imagine taking a tuning fork and hitting it gently with a hammer. The fork will now vibrate and make a sort of sound.
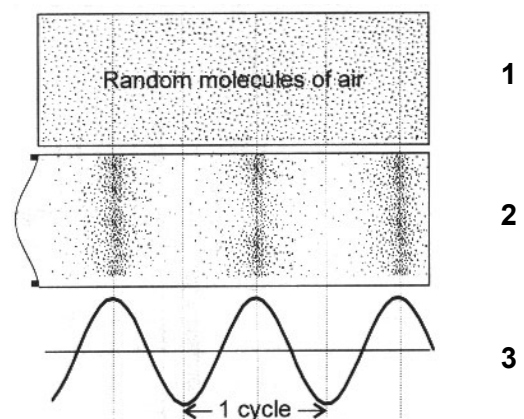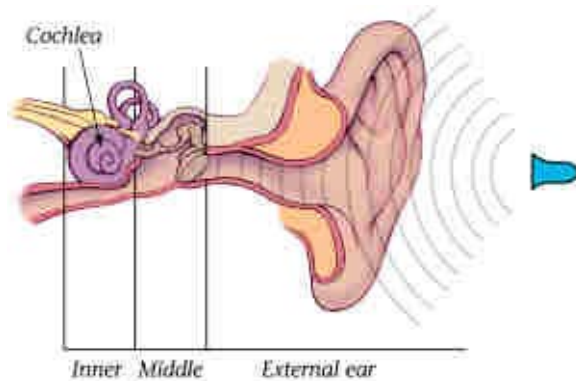If you look at the pictures underneath (Figure 2) you will see a vibrating turning fork.
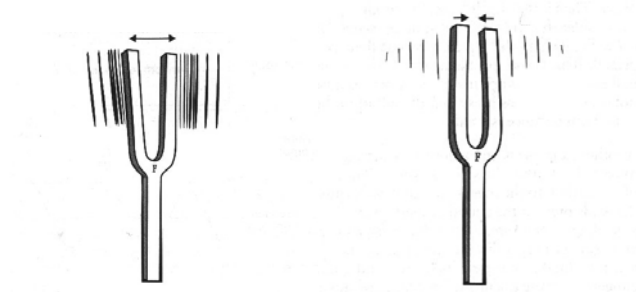
Figur 2 Tuning fork

To the right you will see three parts

1. The random air molecules.

2. The sound produced by the tuning fork when looking at the air pressure

3. The waves produced by the fork create a wave. [2]

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[2] Waves – from the book Sound for FILM and TELEVISION

The air pressure is channelled into the observer's external ear.

The sound vibrations continue into the middle ear, which contains three tiny bones called the hammer, anvil and stirrup. These form the bridge from the eardrum into the inner ear. They amplify the sound vibrations, before transmitting them on to the inner ear via the oval window.

The vibrations continues into the inner ear where the pressure of liquid filled cochlea changes. Inside the cochlea are minute hairs, which react to a specific frequency and tell the brain that there is sound. [3]

Cochlea

Inner   Middle   External ear

---

[3] Picture taken from: http://www.bcm.tmc.edu/oto/research/cochlea/Volta/04.html

2.2 Sound effects

We use sounds to perceive where we are. Our brain is wired in such way that we are able to determine where a sound originates from, in 3D-space, just by using our own ears. This is important if we wish to create a believable environment in movies or TV.

To create a sound for a scene, we have to imagine what would give the impression of being in the right environment.

After the background sounds have been made we have to think if there are any sounds that have to be moved to the foreground. If this is the case, the sounds should be made more distinct. With this done we can now focus on the immediate foreground. Who is talking when? What does a person do at this specific time? And so on. All this have to be mixed into a stereo mix.

- Background
- Back- to foreground
- Foreground

The relationship between the picture and the effects can be a 1 to 1 correspondence with a picture, a bus for example. But it could also be a completely foreign sound like in the scene from Full Metal Jacket, where you see the soldiers walk in a line into a heavily bombarded residential area. This changes the tension of the scene.

There are many good examples of what you can do in terms of sound mixing. One of our favourites is from the movie Silence of the lambs: (The clip is enclosed on the CD)

Figure 3 pictures from the motion picture Silence of the lambs

On the pictures you see a cocoon being removed from the throat of a victim. You hear a breath when the cocoon is removed. This makes you think that the killer have deprived the victim of her last breath, truly an evil thing to do.

Sound is often "hyper-real"

"Sound recording for film and television are often an exaggeration of reality. One reason for this is that there is typically so much competing sound at any given moment that each sound at any given moment that each sound that is recorded and must be heard has to be rather overemphatically stated just to "read" through the clutter. Heard in isolation, the recordings seem silly, over hyped, but heard in context, they assume a mare natural balance. The elements that often best illustrated this effect are called Foley sound effects. These are effects recorded and are often exaggerated from how they would be in reality, both loudness and in intimacy. While some of this exaggeration is due to the experience if practitioners finding that average sound playback system obscure details, a good deal of the exaggeration still desirable under the best playback conditions, simply of the competition from other kinds of sound." [4]

2.3 Clichés

There are a lot of clichés when it comes to sound effects. Most of the movie audience have a good idea what different things should sound like, when they see then on screen. Sounds have to be realistic and it is not believable that a car sounds like a truck when it passes by on the screen. There are some exceptions to this general rule. Cartoon sound has to be exaggerated but there is a fine line between exaggerating and to overdo it.

It is possible to define some clichés of what viewers expect when they see a movie. This is just a random selection of the entire list. More examples can be seen in Appendix 1.

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[4] Tomlinson Holman – Sound for FILM and TELEVISION - Page xvi

ANIMALS
- Animals are never ever silent - dogs whine/bark/yip, cats meow or purr, cows moo, even in cases where most animals wouldn't be making a sound.
- In a horror film when there is a full moon there is either an owl or a wolf howling in the distance.
- Dogs always know who's bad, and bark at them.

BICYCLES
- All bicycles have bells (that sounds)

CARS
- Car breaks must always squeak
- Car tires must always squeal when the car turns, pulls away or stops

ENVIRONMENT
- Storms start instantaneously: there's a crack of thunder and lightning, then heavy rain starts falling. Thunder is always in sync with the lightning, and the explosion sounds are always in sync with the stuff blowing up, no matter how far away. Same for fireworks
- Doors always squeak

PEOPLE
- The DJ always turns the music down when actors talk in disco and club-scenes
- Those tiny people far, far away in that long shot on the beach should always sound like they're talking directly into your ear - no matter how far away they are, even though they're whispering . . .
- When you get punched in the face, it sounds like you broke a salami over the back of a chair
- All kisses need to sound sloppy and wet.
- People never answer the door until the doorbell or knocking has sounded at least three times. [5]

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[5] http://www.filmsound.org/cliche

2.4 Music

Why do we use sound and music in movies? And how do these terms affect the understanding of movies? This is a very hard question to answer. To get a proper answer we have to look at the history of movies.

2.4.1 History

The first experiments of combining movies and sound was made by The Edison Company. According to the website http://lcweb2.loc.gov/ammem/edhtml/edmrrg.html a supervisor of The Edison Company, Dickson experimented with this already in 1894.

"By the spring of 1895, Edison was offering Kinetophones--Kinetoscopes with phonographs inside their cabinets. The viewer would look into the peep-holes of the Kinetoscope to watch the motion picture while listening to the accompanying phonograph through two rubber ear tubes connected to the machine. The picture and sound were made somewhat synchronous by connecting the two with a belt. Although the initial novelty of the machine drew attention, the decline of the Kinetoscope business and Dickson's departure from Edison ended any further work on the Kinetophone for 18 years.

In 1913, a different version of the Kinetophone was introduced to the public. This time, the sound was made to synchronize with a motion picture projected onto a screen. A celluloid cylinder record measuring 5 1/2" in diameter was used for the phonograph. Synchronization was achieved by connecting the projector at one end of the theatre and the phonograph at the other end with a long pulley.

Nineteen talking pictures were produced in 1913 by Edison, but by 1915 he had abandoned sound motion pictures. There were several reasons for this. First, union rules stipulated that local union projectionists had to operate the Kinetophones, even though they hadn't been trained properly in its use. This led to many instances where synchronization was not achieved, causing audience dissatisfaction. The method of synchronization used was still less than perfect, and breaks in the film would cause the motion picture to get out of step with the phonograph record. The dissolution of the

Motion Picture Patents Corp. in 1915 may also have contributed to Edison's departure from sound films, since this act deprived him of patent protection for his motion picture inventions."[6]

There are a lot of different opinions on when the first movies with sound were made. Many argue that it is only a movie with sound when it is synchronized with the pictures on screen. The big question is: Was the Edison Company films really synchronized or not?

This question is nearly impossible to answer but we decided to mention Edison's work because it was so revolutionary for its time.

First in the late 1920s sound in movies became a widespread phenomenon. It required a lot of technical innovation before synchronized sound and picture could be a reality. Back then, there were no standards for film recording and projection. Film being unsynchronized is not a problem unless you have something you see to compare it with.

An engineer at Western Electric solved this problem with synchronization. He decided to create a new standard for movie projection 24 frames per second or 90 feet per minute.[7]

This meant that filmmakers could make movies for that standard and then be sure that it could be shown all over the world where they have adopted that standard. This also meant that it was possible to synchronize sound to the 24 frames per second.

On the webpage http://www.amps.net/newsletters/issue15/15_lets_.htm they list some of the good things that sound did for movies:

- As a result of enthusiasm stimulated by talking pictures box office takings shot up by 50%. In America admissions leapt from 57 million in 1927 to an average of 110 million in 1930. This success partly explains why the film industry survived the Wall Street crash and the Great Depression
- Standardisation of exact speed ensured movies being projected in all places at all times at the speed and edited pace intended by the director.

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[6] From http://lcweb2.loc.gov/ammem/edhtml/edmrrg.html
[7] http://www.amps.net/newsletters/issue15/15_lets_.htm

- The adoption of panchromatic film stock resulted in a vast improvement of black and white tonal quality plus because of its increased sensitivity picture making in lower light levels became possible.

- Sound's necessity for continuous negative development brought about the introduction of reliable processing machines which were also of great advantage to black and white picture negative processing.

- The introduction of Sensometric control necessitated by the precise requirements of sound negative and print densities also benefited both picture negative and positive development. Motion picture film processing became an exact science.

2.4.2 The sound's role in movies

Tomlinson Holman has some interesting thoughts in his book "Sound for FILM and TELEVISION".

- Narrative role
  a sound can direct your attention to an event off screen. A car crash for example.

- Subliminal role
  the audience is unconsciously tricked into believing that the environment on screen is real. If you listen to film scores without watching the movie, you will notice that it has deliberately been made to enhance the mood of a scene.
  The audience has gotten used to the unwritten rules of sound. Most of them know indirectly of the sound clichés. Most of them is emotional affected when they the sad music in a scene where two have to say goodbye.

- A grammatical role
  Filmmakers use this all the time. If you see several cuts in a scene but the music remains the same, the audience believes that there is continuity between them.

These statements are a very good guideline when making movies. You have to think a lot about how you want the audience to react on the movie, and how to compose the music in addition to your primary goals.

2.5 Sound in cartoons

As we mentioned before, sounds in cartoons are quite a bit different from sounds in ordinary feature films. This is mainly because there is no original sound at all. Frankly, this means that you have full freedom in imagining how things sound like and to make your own characteristic sounds.

To be diverse we have selected two cartoons that represent their own nice music and sounds in cartoons and animation.

2.5.1 Tom and Jerry – "Dr. Jekyll and Mr. Mouse"
By Hanna Barbera cartoons 1947

Toms steals some milk from outside and pours it into his bowl and starts drinking. Then Jerry tries to steal it. Tom gets the idea that he will poison Jerry, and he mixes a lot of household chemicals into the bowl and serves it to Jerry. Jerry drinks it and turns into Mr. Mouse and starts beating up Tom. In the midst of this he turns back into himself. He rushes to the bowl and drinks the rest. He continues to beat up Tom, but soon turns back again. Jerry then tries to mix his own super mix, but Tom manages to get hold of it and drinks it. It turns out that the mix Jerry made is a shrinking mix instead. The cartoon ends with Tom shrinking and Jerry chasing him.

The Tom and Jerry cartoons use a lot of classical music. When they are not fighting or running on screen they play music themes, which are recomposed through the cartoon. When something happens the music accompanies the action, either by speeding up or slowing down. Besides playing music some instruments function as sound effects.

The sound effects in the Tom and Jerry cartoons are very distinct and definitely not realistic. They reuse most of their sounds again and again, some to the point where it is possible to say that "this is a Tom and Jerry sound". One of these sounds is the "slam":
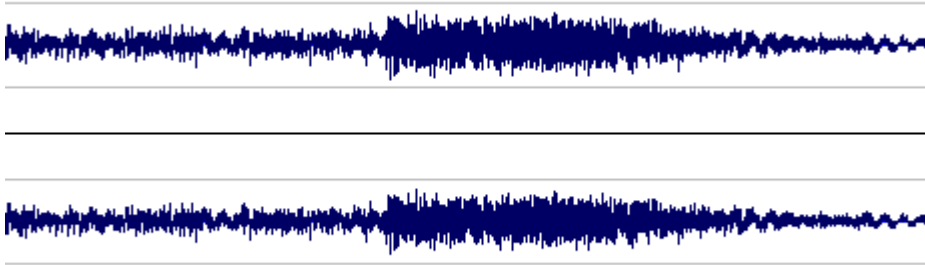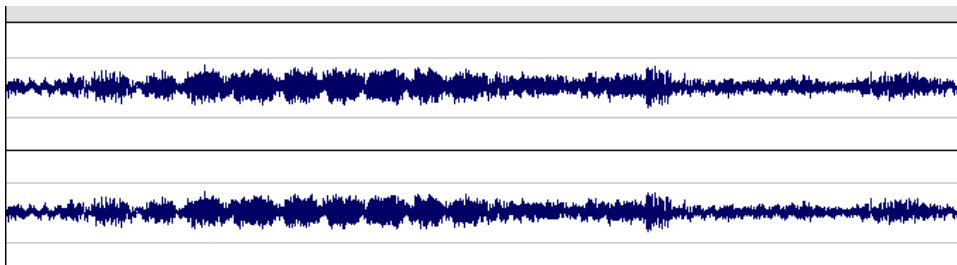
Slam.wav

Check the sound sample on
the CD, named Slam.wav or
Slam.aif

The sample is used in this part of the cartoon:

This sound is a real classic. In this cartoon it has been used twice. The sound is used whenever someone gets hit hard with a large object. The sound has been made by slamming a wooden closet door shut.

Another is the sqeech sound:

Sqeech.wav

Check the sound sample
on the CD, named
sqeech.wav or sqeech.aif

The sample is used in this part of the cartoon:

This sound effect is used when somebody runs around a corner. It is almost a cliché in Tom and Jerry cartoons. When someone runs around a corner their feet have to act like they are heavier than the rest of the body. If you look at the picture next to this text, you see how it is. Tom has just moved his upper body around the corner, but his lower body is too heavy. This means that Toms lower body slides like a car around the corner making this characteristic sound.

We have discussed how the sound was produced but it is quite hard to determine how. A car turning around a corner is one possibility.

2.5.2 The Animatrix - The Second Renaissance Part II by Mahiro Maeda

The Animatrix is a collection of animated movie from the Matrix universe. The second Renaissance is the story of how humanity ended in what we saw in the Matrix movies. This is part two of the second renaissance.

It starts with description of how they tried to destroy the machines, by waging war against them. Mankind decides to block out the sun to deprive the machines of their primary energy source. The machines look for a new energy source, and discover that humans can be used to produce all the energy they need.

The animation consists of clips taken from different mediums. At first glimpse it looks more like a music video or a trailer for a movie. But Mahiro have chosen to tell the story by the use of clips. This gives it a rough feel. To glue all this together Mahiro uses sounds and music.

If we analyze the music part of the movie we hear three distinct parts.

Please note that the time code of the different clips may vary on the various clips. This is due to the different compression techniques.

1. Part. 00:13 – 03:00

We hear a faint matrix theme which intros this part.

After that we hear horn music, which accompanies the atomic explosions we see on screen. The music changes when we cut to the robot march. It now consists of a weak dance / techno rhythm.

When we see mans last desperate plan the music changes again. It now appears as a slowly changing in chords on a keyboard. They give a gloomy feel, which is just confirmed when we see the clapping humans slowly turning into skeletons.

The next change is when we see the men prepare for war. The slowly changing chords on the keyboard gets even slower and is moved down several octaves. To the middle of this section we hear a sort of horn, which gets more and more predominant (this may symbolize hope). It changes again when we see the carrier and the bombers. The music is back in the low octaves and the horn is lower than before. Only change a few notes the horn in a "a-b a-c a-b" fashion. At 02:48 it stops, it is now only possible to hear a deep note. This ends the first part.

2. Part 03:00 – 05:05

This part is very different from the first part. We hear a very prominent techno rhythm. It stops at certain points of the movie. At the first stop we see a soldier injecting himself with future syringe. Second time, we see several fights where the mankind loose. We hear a voice say "Back out of there and give them some more artillery…" we then see an atomic bomb explode and then the rhythm picks up the speed again.

Throughout the chip, more and more is added to the music, this intensifies the action shown on screen.

3. Part 05:05 – 09:00

Mankind has lost. The music reflects that by ending the techno rhythm from the second part and continuing in very long notes. The music changes to the matrix theme which is

repeated again and again. There is a change at 06:31 when we see the machine demanding mankind to "hand over their flesh".

It is possible to recognise the matrix theme, but only the high tones are playing. This gives us the feeling that we are waiting for something. This change when we see another atomic explosion. The music changes to some simple notes, but a choir sings the theme instead. The volume of the choir is turned up when the little boy realizes who his parents are, a slowly tune dies out when we fade out of the scene to the place where he really is. Instead we go back to the theme in the beginning of the third part, just louder than before.

In all parts it is easy to see that Mahiro uses most of the theories we mentioned so far in this report. He uses the right sound effects the right places in the movie. The music varies from classical to techno style rhythms. In parts where the audience has to feel the stress he pumps up the volume and speed. On the other hand when we have to feel sorry or pity he have chosen clam but low music.

These examples of the importance of music and sound in movies, gives an idea of how to face our problems according to the music composition for our animated movie.

3 Music & sound in our animation

Making sound effects for movies is quite a monotonous job. When large movie productions are made, the sound designer has a wide range of sound effects from other productions. They therefore only have to produce a limited number of effects to a given production.

After the completion of our cartoon "Cold Existence" we were ready to compose the music and the sound effects we needed to create a unified whole.

At first we made the sound effects. Some of the sounds from our animatic could be used and some could not. The way we have managed to make the sounds has been a rather humorous affair.
The first thing we had to do in every sound clip was to remove the background noise and increase the volume. We only had standard computer equipment to our disposal. This made the largest part of the noise.

3.1 The sound effects
Here follows an explanation of how we achieved the different sounds in the cartoon:

Fan

The sound of the fan has been made by recording a standard 80mm computer fan. The tricky thing when recording it was to find the optimal angle to get as much sound as possible without the air destroying the recording.
Afterwards we had to cut the sample perfectly to make it possible to do a loop, which we could repeat endlessly. Luckily for us a fan is a mechanical object that almost always sounds the same way, therefore this were not a problem.

Elevator door

First of all we did not make this sound ourselves; it is from the cartoon Futurama.
The given sound is a recording of an airbrake or from a bus or a truck. We did not do anything but trim the sample to what we needed.

Elevator bell

The clip is a recording of a bell you often find in a hotel or something like that. In our case we captured the sound in the local pizzeria.

Steps

We have made several different footsteps to match the different characters in our movie. The small tomatoes have small steps, carrots larger steps, and the corn cob the loudest.

The small steps are made with a plastic lid wrapped in a cloth, and banged on a piece of wood.

The medium steps are the same as the small, but we have altered the pitch to make the sound deeper.

The large steps are made with a dish wash soap bottle, banged on a piece of wood.

Bump of the fallen corn

This sound is produced by hitting a potato on a grill. This makes a dump sound with a faint ring to it.

Voices

We have two distinct voices in our animation: the tomatoes' and the corns' voice.

The tomatoes have been made by rising one of our voices physical and then raising it further by changing the pitch by 9 semitones. This gives us a very high voice to place with the tomatoes.

The voice of the corn cob has not been changed as much as the tomatoes, but the voice in the recording were very low, we have therefore pitched it a few semitones.

The corn cob should have a deeper voice than the tomatoes because of the difference in size.

The button

This is a short sinusoid.

Sound of corn melting together

This sound was a very difficult one to make. We started with a recording of the electrical noise from a computer fan. This sample we multiplied several times until we had a sample 6 seconds long. Afterwards we manipulated it in the program Adobe Audition, and used a

special time/pitch effect that emulates Doppler environments. We chose a preset called "Eye of Tornado" which gives it a special stereo effect. Finally we faded the sound in and out to achieve the wanted sound.

The cut

This is a sound we found on the Internet. It sounds like a sword running across a metal pipe. This sample has been used several times in other movies.

The boing sound

It was very hard to make this sound ourselves. We ended up with recording one of us saying "boing". We then changed the pitch of it and pitch shifted several times during the sample. This makes a believable sound when our characters jump on the pudding. There are two variations of this sample one when the corn cob jumps and the other were everybody else jumps.

3.2 The Music

Composing music for our cartoon was quite a task for us, because no one in the group is a good musician. We have discussed a number of possibilities to create music for the animation. The Mandelbrot generated music in PD was a possibility, midi music from the Internet was another. We decided to find a musician and to our luck Bjarkes mother plays the harmonica. We asked her to play several different types of music, so we had a range to select from. She made four different types of music for us: happy, sad, divined, and some neutral music.

These samples were added to the movie in scenes where it matched the mood on screen. We have discussed if we should have continues music during the cartoon, but we decided not to do it that way. We thought that there would be a good chance that we would make mixing errors when mixing between the different music styles. Another argument against was that we were not sure that we had enough music to accompany the entire movie.

4   Software

We have used quite a lot of different sound software, but the primary programs are listed below:

4.1 Soundforge 7.0
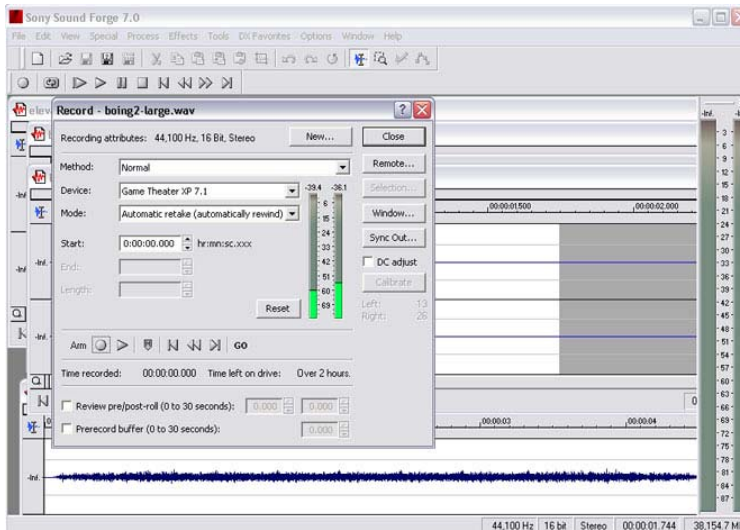
Soundforge is a wave editing software. We have used this program to record the sound effects used in our animation. The great thing about this software is that it supports directX sound plug-in, which is this plug-in we used to remove noise etc.

4.2 Adobe Audition

Adobe Audition is a wave editing program, but not as flexible as Soundforge. The feature we used in Adobe Audition was the sound mixer. It is possible to load several different wave sounds into the program and make a sort of sound montage.

5 Conclusion

As wrote earlier in the report, music is an important part of a movie. It has huge influence in how the movie is perceived by the viewer.

We tried to use the different theories in our production of a believable sound environment in our animation. We think it was a positive result; however we underestimated the difficulties in making even the simplest sound effects.

We think it can all be summed up into the fact that "Music can make or break a movie".

6   References

Internet:

http://www.filmsite.org/filmh.html - Film History by Decade

http://www.filmsound.org/film-sound-history/ - Film Sound History

http://www.filmsound.org/film-sound-history/documentary.htm - DOCUMENTARY AND THE COMING OF SOUND by Bill Nichols

http://www.hometheaterhifi.com/volume_6_2/feature-anightintheprojectionbooth.html - Techniques of cinema.

http://www.filmsound.org/murch/dickson.htm - Dickson Experimental Sound Film 1895

Books:

Sensation & Perception

By Margaret W. Matlin & Hugh J. Foley

ISBN: 0-205-26382

5.1 Surround Sound up and running

By Tomlinson Holman

ISBN: 0-240-80383-3

SOUND for FILM and TELEVISION

By Tomlinson Holman

ISBN: 0-240-80291-8

7 Appendix

Appendix 1

ANIMALS
- Animals are never ever silent - dogs whine/bark/yip, cats meow or purr, cows moo, even in cases where most animals wouldn't be making a sound.
- Rats, mice, squirrels and other vermin always make the tiny little squeaky noises constantly while they are on screen.
- Dolphins always make that same "dolphin chatter" sound when spinning, jumping, etc.
- Red-tailed hawk screeching - [Listen to and read about Red-tailed hawks!]
  Whenever we see a hawk or a bald eagle, the sound is always that same red-tailed hawk screeching sound that's been around since the 50's!

  Always just before/or after some dramatic part of an adventure flick, you will here the screeching of a red-tailed hawk.

  Whenever a cliff or mountain is shown, especially if it's high, the Red-tailed hawk will screech.
- Owls sound like Great Horned Owl. (a bird, that for the most part seems invisible)
- In a horror film when there is a full moon there is either an owl or a wolf howling in the distance.
- The Loon is mostly found in lakes in northern Canada and Alaska. In the movies it seems to be just about anywhere in the world.
- Kookaburras (a type of large Australian kingfisher) are inhabitants of African/South American jungles, not Australian open forest. (Laughing bird sound, see most Tarzan films). [Listen to Laughing Kookaburra!]
- Crickets in winter and peepers in the fall
- Dogs always know who's bad, and bark at them.
- It's the same Cat scream over & over.

Sound effects editor Peter Steinbach once tried to record his own cat scream by stepping on it's tail. His advice: - You only have one take. Step hard! (and don't wear shorts)

BICYCLES
- All bicycles have bells (that sounds)

CARS
- Car tires "always" screech on dirt roads.
- Car breaks must always squeak
- Car tires must always squeal when the car turns, pulls away or stops

COMPUTERS
- Every button you press on a computer makes some kind of beep

ENVIRONMENT
- Castle Thunder
  until around the late '80s, whenever you heard a thunderclap in a movie, it was probably "Castle Thunder".

- Storms start instantaneously: there's a crack of thunder and lightning, then heavy rain starts falling. Thunder is always in sync with the lightning, and the explosion sounds are always in sync with the stuff blowing up, no matter how far away. Same for fireworks
- Whistling types of wind are always used
- Non-stop bubbles underwater
- Doors always squeak
- Environmental sound to a shoot with the window open, are always next to a schoolyard or a construction-site.
- When in San Francisco, no matter where you are, you always hear a cable car and or a fog horn.
- The Universal Telephone Ring
  Endlessly used on television (especially in TV shows produced at Universal Studios during the '70s and '80s) and in many films as well - is the sound of a telephone ringing.

HELICOPTERS & AIRPLANES
- Helicopters always fly from surround to front-speakers.
- People standing outside a running helicopter can always talk in normal or just slightly louder than normal voices.
- Every helicopter shutting down emits the chirp-chirp-chirp sound of the rubber drive belts disengaging, in spite of the fact that only the famous Bell 47G (the Mash chopper) actually makes this sound.
- An approaching airplane or helicopter will make no noise until it is directly over the characters, at which point it will suddenly become thunderingly loud.
- Characters will never hear an approaching airplane or helicopter, even though in real life you would hear them approaching for at least a minute before they were close enough to see. This also holds true for approaching armies on horseback and tank battalions.
- The tires of any jet screech upon landing
- Any airplane in a dive will make a whining noise that will get louder and higher-pitched the longer the dive lasts.

KNIFE
- When a character pulls out a knife, even from his pants, you hear a sound of metal brushing metal

LANGUAGE & VOICE

- *The WILHELM Scream*
  A series of short painful screams performed by an actor were recorded in 1951 for the Warner Brother's film "Distant Drums." They were used for a scene where a man is bitten and dragged underwater by an alligator. The recording was archived into the studio's sound effects library -- and it was used in many of their films since. "Star Wars" Sound Designer Ben Burtt tracked down the scream recording - which he named "Wilhelm" from a character who let out the same scream in "Charge at Feather River."

  Ben has adopted the scream as sort of a personal sound signature, and has worked it into as many films as he can.

- Even when depicted as foreigners (including aliens from outer space) all actors speak and understand a common language (usually English) unless the film's plot depends on a language barrier.
- The same women's recorded voice is heard in every spaceship, space-station, government building, etc. announcing something to the effect of the main computer has been shut down, this ship will self destruct in one minute.

- Baby crying and bad news
  The Godfather: when Don Corleone is shot, Sonny barges in to his house and announces this. Followed by baby crying.
  Snow Falling on Cedars: the sheriff announces to a woman that her fisherman husband is dead. Followed by baby crying
- Kids can always whisper even if their two inches away from a villain, & he won't hear. if they step on a branch however, the villains will immediately know its not some animal, & catch them.

MARTIAL ART
- Arm and legs of karate-actors always make a funny "swish" sound when they kick, hit or jump; they also tend to scream in a funny way prior to any fighting-action.

MICROPHONES
- Anytime a person speaks into a microphone, their first words will cause the microphone to feed back.

MOVING GRAPHIC
- Any moving graphic on a sport broadcast (esp. NBC) has to use the same "fireball" sound effect.

PEOPLE
- The DJ always turns the music down when actors talk in disco and club-scenes
- Those tiny people far, far away in that long shot on the beach should always sound like they're talking directly into your ear - no matter how far away they are, even though they're whispering . . .
- People in a wide open field or dense forest can make their voice echo if they yell loud enough.
- When you get punched in the face, it sounds like you broke a salami over the back of a chair
- All kisses need to sound sloppy and wet.
- Blood will always squish when oozing from a wound.
- Dreams are always drenched in a lot of reverb.
- People never answer the door until the doorbell or knocking has sounded at least three times

SPACE
- It is now the modern era, and thus, sound has been installed in space by the elimination of that nasty vacuum problem.
- Explosions in space make noise
- There's a deep humming in space, no doubt about it
- Sounds in space must have some element of a flanger involved

SPEED OF SOUND
- Applies to absolutely every movie: Some noisy event (crash, shot, explosion) occurs at quite a distance from the camera. Nevertheless, the sound is heard at the same instant. The speed of sound - usually 300 meters per second - here always is the same as the speed of light.

MISC
- In the M&E-Mix you always have to hear footsteps (and cloth rubbing) that where never heard on the original sound track. [M&E (Music & Effects) is a special mix which is done to prepare for foreign language (dubbed) versions of a film]