

Sound language

Atmospheres, grammars, sound tracks, and FX

Where is sound?

- ▶ Where do we hear sound?

Think about all the places and contexts...

Where is sound?

- ▶ Our environment (there is an auditory ecology)
- ▶ Music
 - ⊙ Radio, CDs, ...
 - ⊙ Concerts, etc
- ▶ TV/film/video
 - ⊙ Dialogue
 - ⊙ Sound effects (Foley art)
 - ⊙ Musical sound tracks
- ▶ On our computers (button clicks, etc. & in games)

What does sound do?

- ▶ In our environment?
- ▶ In music?
- ▶ In television/film/video?
- ▶ On our computers?

Our sonic environment

- ▶ Sounds in our environment
 - ⦿ Inform us about what's happening
 - ⦿ Tell us where things are
 - ⦿ Provide warnings and alerts
 - ⦿ Interact with our minds to set up mood
 - ★ Past associations trigger emotional responses. Paul Simon sang “everybody loves the sound of a train in the distance”
 - ★ We put on background music to complement a situation (mood music)
 - ⦿ Other examples?

Sound in music

- ▶ Is there music without sound?
 - ⦿ What does John Cage's 4'33" tell us?
- ▶ Music
 - ⦿ Stirs our feelings/emotions
 - ⦿ Communicates a message
 - ★ Directly via leitmotifs (e.g. Prokofiev's "Peter and the Wolf")
 - ★ Indirectly through emotional triggers (e.g. young ladies swooning at the sound of Chopin's nocturnes)
 - ⦿ Provides a carrier for a direct message in the lyrics
 - ★ Sometimes mood of music conveys different message from the lyrics

TV/film/video sound

- ▶ Dialogue carries verbal communication
- ▶ The soundtrack creates mood and atmosphere
- ▶ Sound effects (Foley art)
 - ⦿ Enhance story telling
 - ⦿ Draw attention to important events
 - ⦿ Add 'realism' or credibility & increase viewers' engagement

On our computers

- ▶ Most often as feedback to signal button presses
- ▶ MS Windows themes (get turned off soon after installation!)
- ▶ Notification of events (e.g. incoming email)
- ▶ Research is demonstrating how sound can communicate simple & complex information to free-up/augment the visual channel

Sound in games

- ▶ The earliest computer games had sound. Pong used beeps to signify the striking and bouncing of the ball
- ▶ Sound is integral to the video game experience
- ▶ Owes much to film industry
 - ⦿ In fact, modern games are very cinematic in their design

Atmospheric sound

- ▶ We can think of this in two ways
 - ⦿ Sound in our environment
 - ⦿ Sound added to a film, game, etc. to create atmosphere
 - ⦿ Actually, there's a third type, sound created from atmospheric/environmental data. This is a form of **sonification** which we'll look at next week

Creation of atmosphere

- ▶ Sometimes we can use recordings of environmental sounds to create atmosphere
 - ◉ E.g. recording of bird song in a park scene
- ▶ Or we can synthesise sounds & use sounds from different contexts to create atmosphere
 - ◉ Humming sound on bridge of Enterprise
 - ◉ Synthesised rain, explosions, thunder, etc.
 - ◉ This includes use of musical sounds/phrases
 - ◉ Consider the scene in Psycho when Janet Leigh gets stabbed...

Psycho screenplay

- ▶ It's informative to look at how Joseph Stefano described this effect in the screenplay
 - **“The scene is intensified by searing background music that seems to slash and scream.”** <http://www.paradiselost.org/psycho.html>
- ▶ Insights into Hitchcock's design decisions can be seen at
 - ◉ <http://www.filmsound.org/articles/hitchcock/makingpsycho.htm>
- ▶ How might you go about creating atmosphere for multimedia projects?

Soundtracks

- ▶ A film soundtrack is actually **all** the sonic elements of the film
- ▶ We can break it down roughly into three components
 - ◉ Sound effects & noises (Foley art)
 - ◉ Dialogue (actually, this is a branch of the Foley art)
 - ◉ The musical score

The score

- ▶ The score largely serves to add mood and temporal context (films set in 1970s tend to have songs/music from the '70s)
- ▶ Of course, temporal discontinuity adds interest. Consider the choice of songs chosen for Moulin Rouge (Madonna, Elton John, Nirvana, etc.)
- ▶ The score for The Magnificent Seven is a marvellous example of mood- and scene-setting
- ▶ What is your favourite film score? Why?

Foley art

- ▶ In Psycho, some sound effects (e.g. shower scene) were achieved through the film's musical score.
- ▶ More common is the use of non-musical sounds to create ambience and credibility, and to draw attention to important events.
- ▶ This is called **Foley art** after Jack Foley who is credited with developing many of the techniques of adding and enhancing film sound

Foley art

- ▶ Read more on Foley art at
 - ◉ <http://www.marblehead.net/foley/>
- ▶ Needed
 - ◉ To create a consistent sonic background
 - ◉ To make plastic swords sound real
 - ◉ To allow us to hear footsteps
 - ◉ To make punches audible
 - ◉ Etc. etc. etc.

Sonic/musical grammars

- ▶ A grammar (syntax) is a set of organising principles for a language. You are familiar with English syntax and the grammar of programming languages such as Java.
- ▶ Grammars can be constructed for non-speech audio to allow communication with sound without words

Examples of non-speech communication

- ▶ Foghorns for signalling to shipping
- ▶ Cavers use whistles to signal instructions
- ▶ Church bells communicate when someone has died as well as their sex and whether they were adult or child
- ▶ Drum languages
- ▶ Whistle (human) languages in Americas, Africa, Asia and New Guinea
 - ◉ <http://www-users.cs.york.ac.uk/~alistair/research/dphil/jckh/altcomm.html>

Computer-based musical grammars

- ▶ These ideas have been extended to the computing domain
- ▶ Musical & non-musical audio used to communicate computing information
 - ⊙ Earcons
 - ⊙ Auditory icons
 - ⊙ Program auralisation
 - ⊙ Sonification
- ▶ We'll look at this next week