

Game Developers Conference®

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[www.GDCConf.com](http://www.GDCConf.com)

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# The Environment is the Orchestra: Soundscape Composition in LIMBO

GDC 2011

## What is this about?

- Viewing the audio in *LIMBO* from the perspective of soundscape and acousmatic composition

## What is this not about?

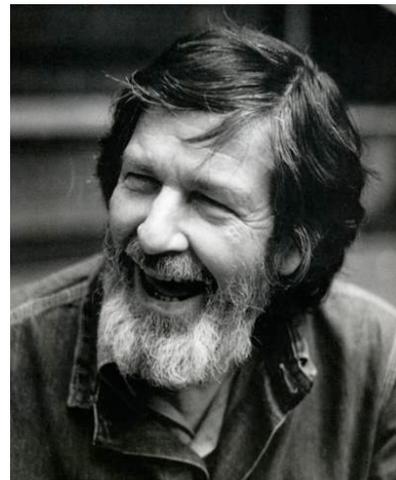
- How exactly the audio in *LIMBO* was conceived

# Agenda

- What exactly is soundscape and acousmatic composition (and what is music by the way)?
- Practical examples: Soundscape composition in *LIMBO*

## What exactly is soundscape and acousmatic composition (and what is music by the way)?

John Cage (1912-1992) explained the definition of music to *include all categories of sound, such as random everyday noises* (<http://www.levity.com/corduroy/cage.htm>)



## Reviewers' opinions on *LIMBO*

- “Limbo is devoid of a soundtrack...” (Palgn)
- “The music in Limbo is just phenomenal” (Gamersyndrome)
- “There is no music in Limbo...” (Extreme Gamer)
- “The music is also great” (Bangalore Mirror)
- “Music is entirely absent...” (RealGamer)
- “You will hear some incredible music...” (Gamespot)
- “The absence of background music is one of LIMBO's greatest features...” (Game Faqs)

"The border between music and noise is always culturally defined—which implies that, even within a single society, this border does not always pass through the same place; in short, there is rarely a consensus.... By all accounts there is no single and intercultural universal concept defining what music might be" (Nattiez: [http://en.wikipedia.org/wiki/Definition\\_of\\_music#Nattiez](http://en.wikipedia.org/wiki/Definition_of_music#Nattiez))

Music defined as  
“Organized Sound”  
(Edgar Varèse 1883 -  
1965)



Music ← Organized Sound → Sound Design

## Reviewers' opinions on *LIMBO*

“... ambient noise instantly replaces a traditional soundtrack...”  
(Rhythmic Circus)

## Reviewers' opinions on *LIMBO*

“... the jarring buzz sound effect of the stalking spider, and sounds of the forest's rustling leaves and the waterfall's rapids are the only musical elements that will accompany on your journey” (MyGamer)

## Reviewers' opinions on *LIMBO*

“The game world's ambient noise sets the mood better than most game's soundtracks.” (Otakubut Gangsta)

## Reviewers' opinions on *LIMBO*

“If the purpose of a soundtrack is to bring about an emotional response in an audience, then Limbo succeeds as well as any I’ve ever heard despite not having a single “song” to its name” (digitalhippos)

## Reviewers' opinions on *LIMBO*

“Ambient and environmental noises are the featured artists of this show”  
(The Tanooki)

## Acousmatic Music



“... exists only in a recorded format (as a fixed medium), and is composed for reception via loudspeakers.” (wikipedia.org)

*Francios Bayle diffusing sound on the Acousmoniumm, the orchestra of loudspeakers in Paris*

# Soundscape Composition

“... invoke(s) the listener's associations, memories,  
and imagination related to the soundscape.”  
(wikipedia.org)

*Members of the World Soundscape Project at  
Simon Fraser University in the early 70's*



## Soundscape Composition

“...to distinguish [soundscape composition] from musique concrète and acousmatic music, I have argued that the original sounds must stay recognizable and the listener's contextual and symbolic associations should be invoked for a piece to be a soundscape composition.”

(Barry Truax, 2008)



## Acousmatic Music

abstracted middle  
ground



absolute  
abstractness

## Soundscape Composition

## Acousmatic Music

contextual  
immersion



abstracted middle  
ground



absolute  
abstractness

## Soundscape Composition

## Acousmatic Music

contextual  
immersion



abstracted middle  
ground



absolute  
abstractness

*ex. 1: The Commuter's  
Dream*

## Soundscape Composition

contextual  
immersion



abstracted middle  
ground

*ex. 1: The Commuter's  
Dream*

## Acousmatic Music

absolute  
abstractness



*ex. 2: Sleepdriver*

## Soundscape Composition

## Acousmatic Music

contextual  
immersion



abstracted middle  
ground



absolute  
abstractness



*ex. 1: The Commuter's  
Dream*



*ex. 2: Sleepdriver*



traffic



“traffickness”



abstraction

## Soundscape Composition

## Acousmatic Music

contextual  
immersion



abstracted middle  
ground



absolute  
abstractness



*Close audiovisual  
correspondence*



*Remote audiovisual  
correspondence*



## Practical examples: Soundscape composition in *LIMBO*



## Soundscape Composition

## Acousmatic Music

contextual immersion



abstracted middle ground



absolute abstractness



*ex. 1: HOTEL-sign*



"city buzzing"



harmonized noise

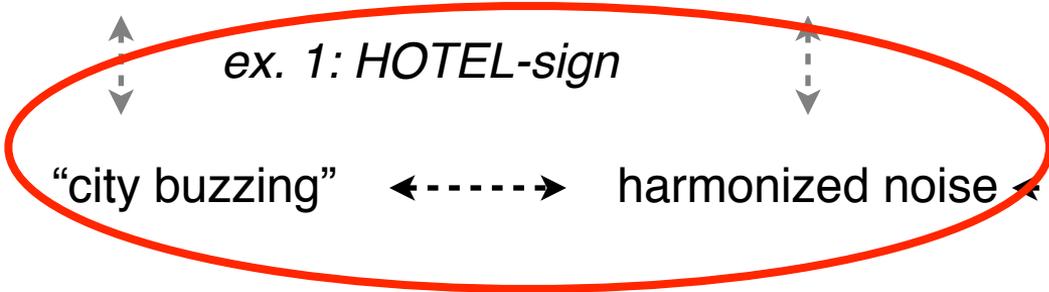


(melodic phrase)

*Close audiovisual correspondence*



*Remote audiovisual correspondence*



## Example 1, *HOTEL-sign*

Sound example 3: Original “synthetic” sound

## Example 1, *HOTEL-sign*

Sound example 4: The “synthetic” sound running through a wire-recorder



## Example 1, *HOTEL-sign*

Sound example 5: harmonized noise

## Example 1, *HOTEL-sign*

Sound example 6: melodic sound

## Example 1, *HOTEL-sign*

Sound example 7: city buzz

## Example 2, *Insect transport*



## Soundscape Composition

## Acousmatic Music

contextual  
immersion



abstracted middle  
ground



absolute  
abstractness



*ex. 2: Insect transport*



“city buzzing”



“frozen buzzing of  
insects”

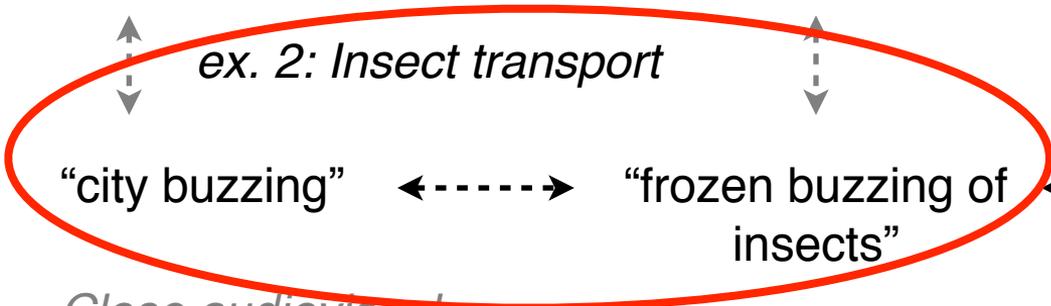


(dreamscape)

*Close audiovisual  
correspondence*



*Remote audiovisual  
correspondence*



## Example 2, *Insect transport*

Sound example 8: city buzz

## Example 2, *Insect transport*

Sound example 9: “frozen” insect swarm

## Example 2, *Insect transport*

Sound example 10: Insect-ish soundscape

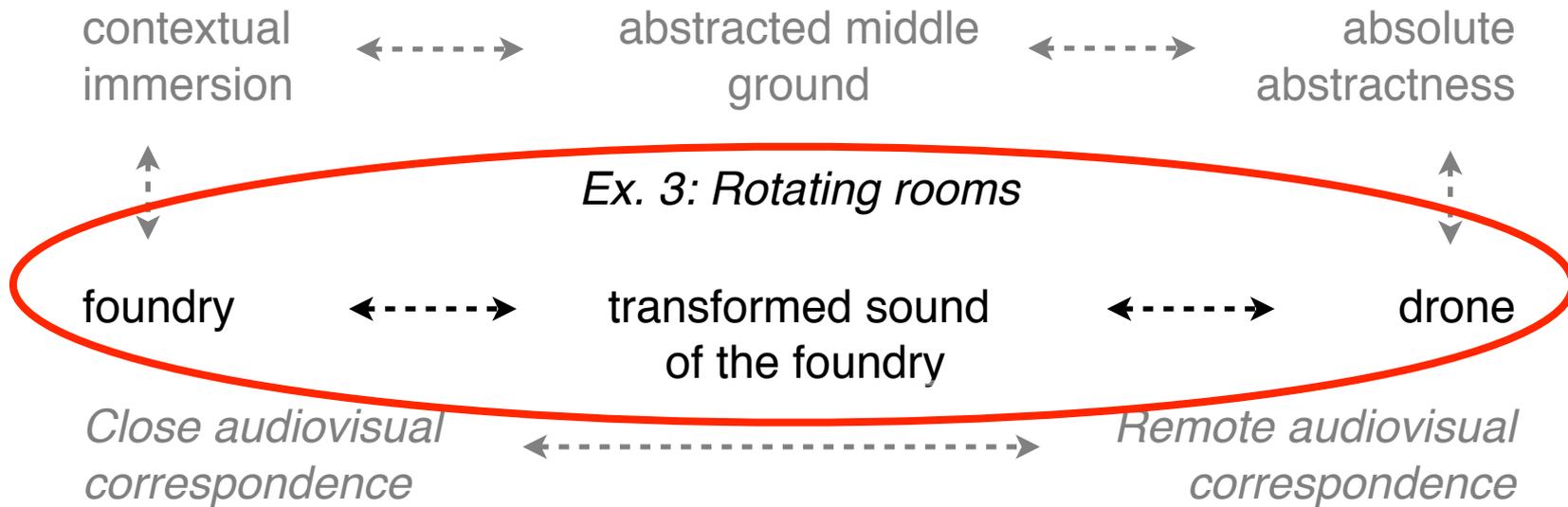
## Example 2, *Insect transport*

Sound example 11: stretched-out birdsong, pitched to match the insect-ish soundscape

## Example 3, *Rotating rooms*



## Example 3, *Rotating rooms*



## Example 3, *Rotating rooms*

Sound example 12: recording of a foundry

## Example 3, *Rotating rooms*

Sound example 13: orchestral recording

## Example 3, *Rotating rooms*

Sound example 14: interpolation between foundry and orchestra

## Example 3, *Rotating rooms*

Sound example 15: the previous rotating room (interpolation between orchestra and foundry)

## Example 3, *Rotating rooms*

Sound example 16: recording of a bowed cymbal



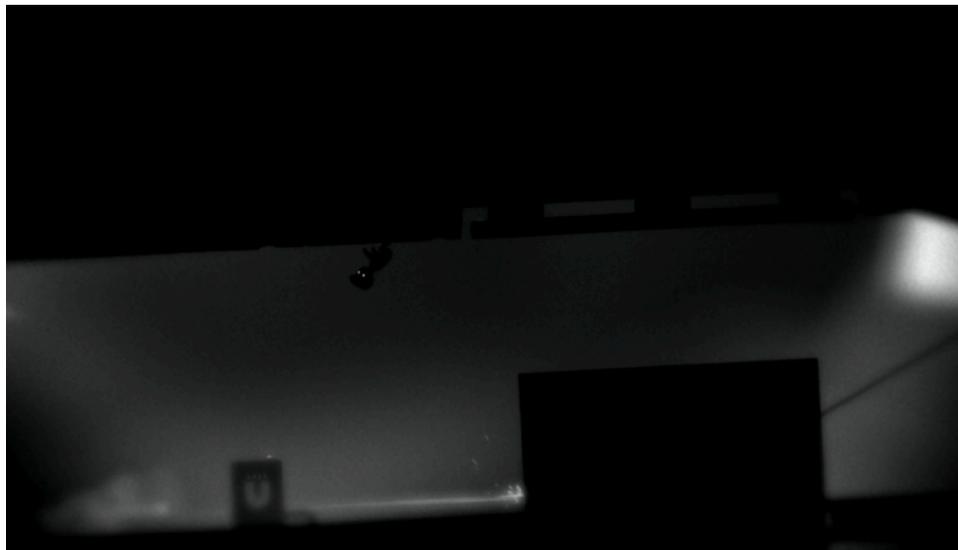
## Example 3, *Rotating rooms*

Sound example 17: interpolation between the sound of the first rotating room and the sound of the bowed cymbal

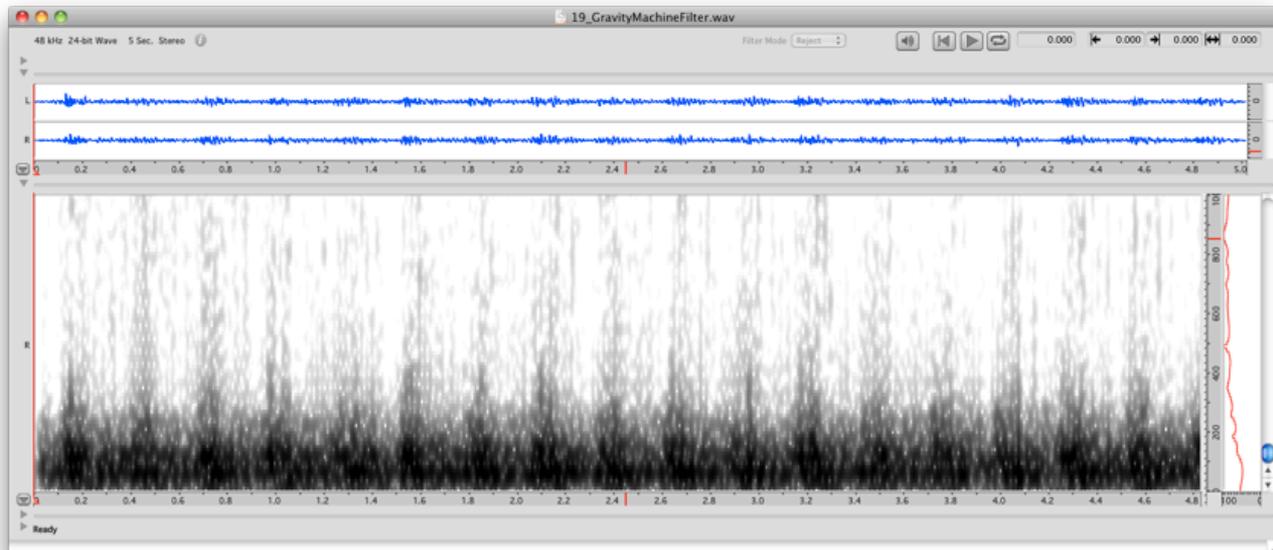
## Example 3, *Rotating rooms*

Sound example 18: stinger-like sound, triggered when the boy survives

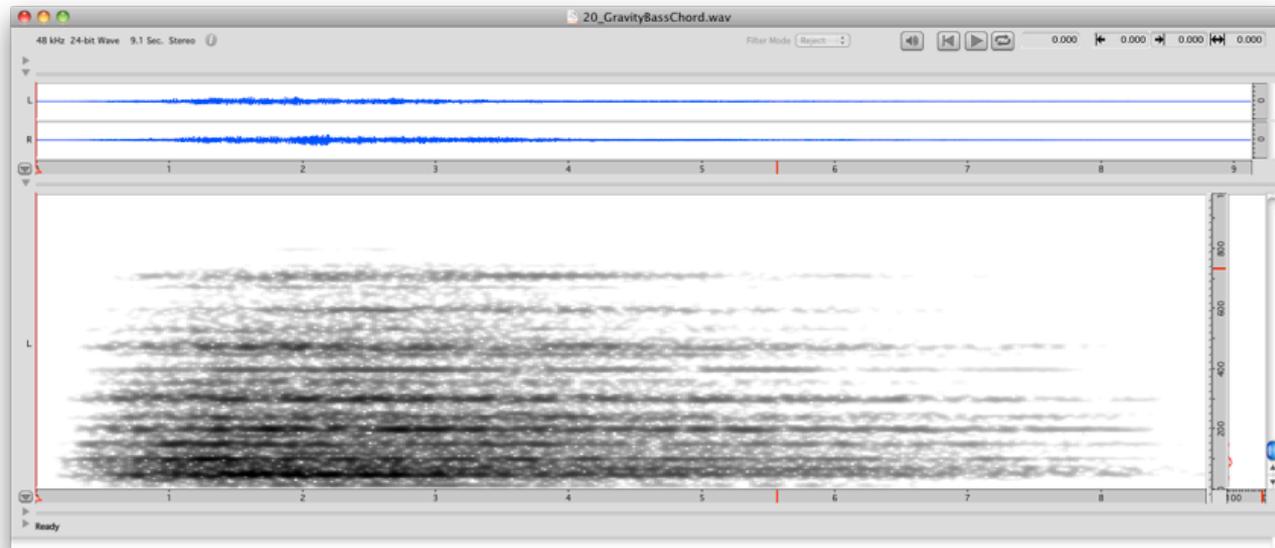
## Example 4, *Gravity jump*



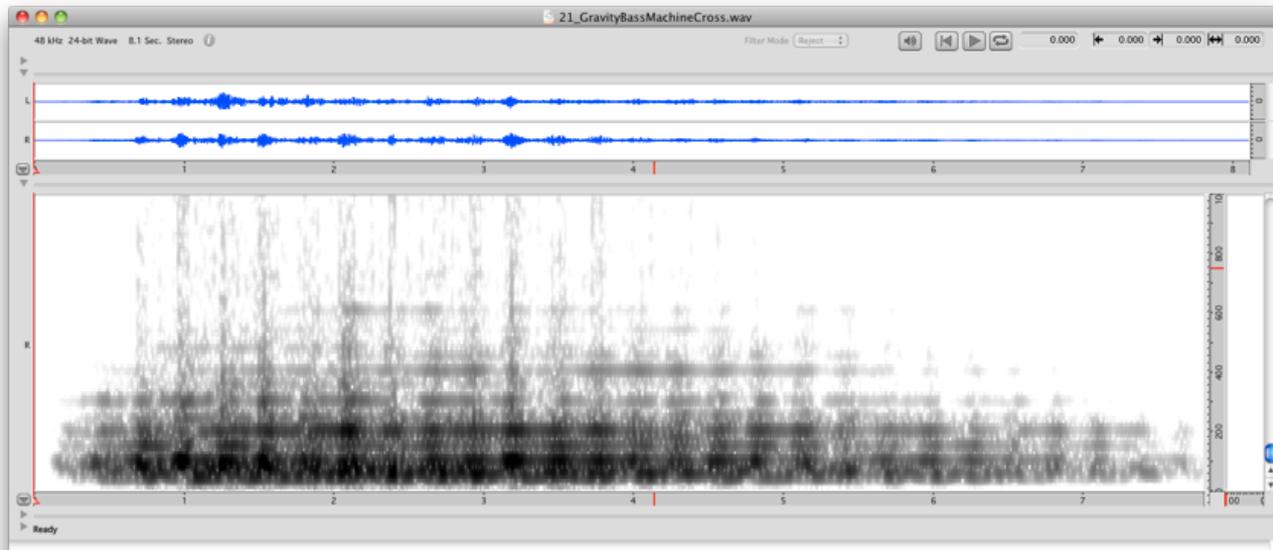
## Sound example 19: sound of a pulsing engine driving giant cogwheels



Sound example 20: fundamental note of the present soundscape

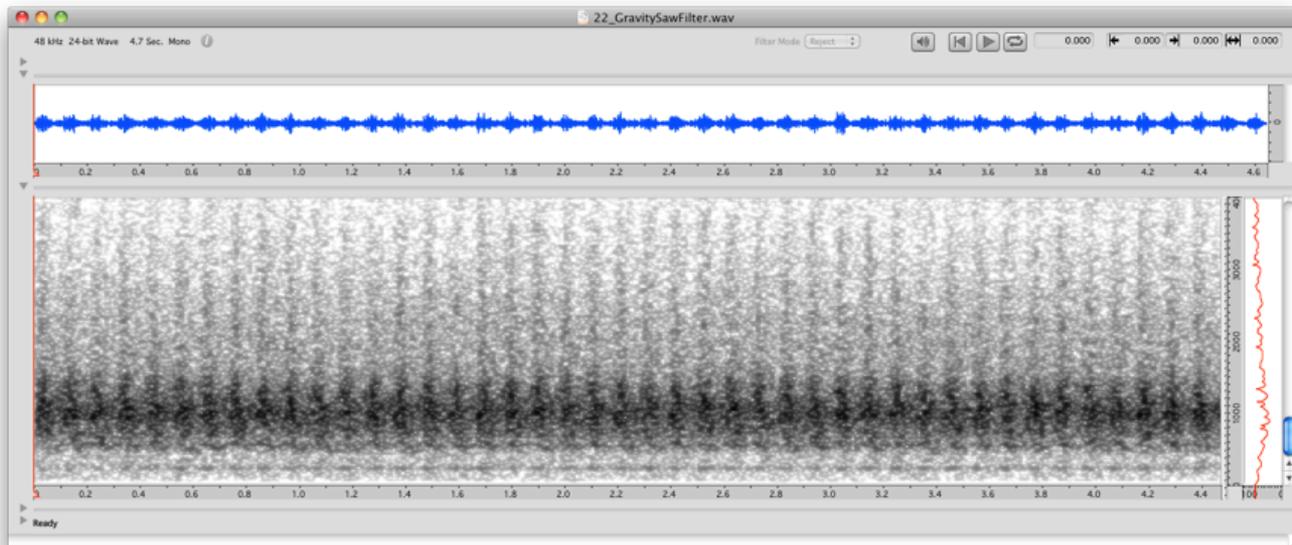


Sound example 21: activating the fundamental note by filtering it through the pulsing engine

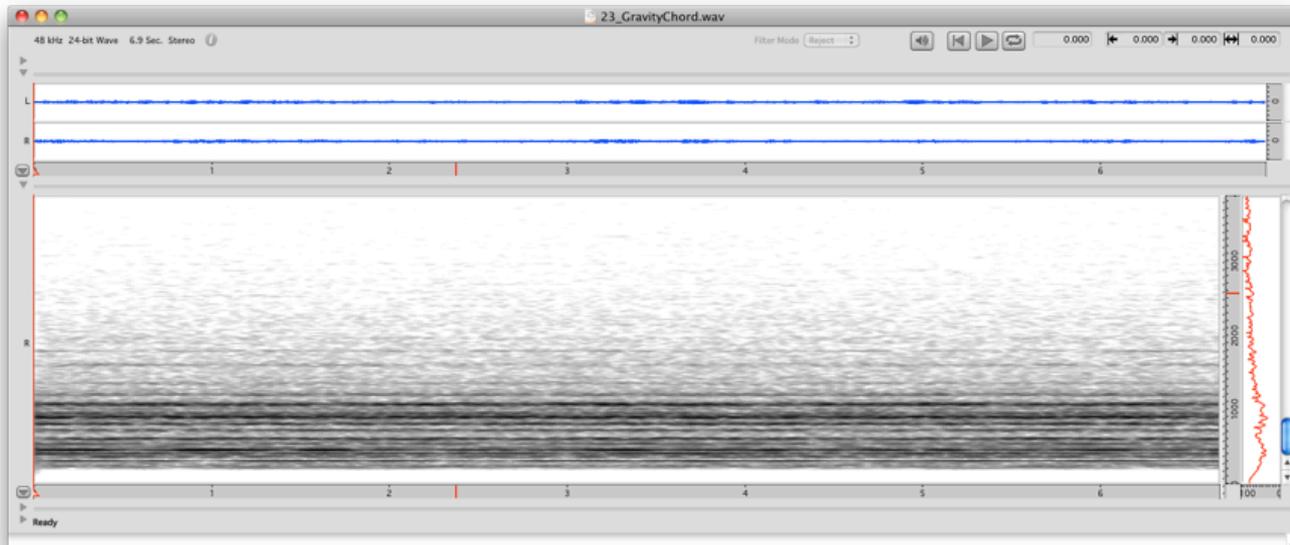




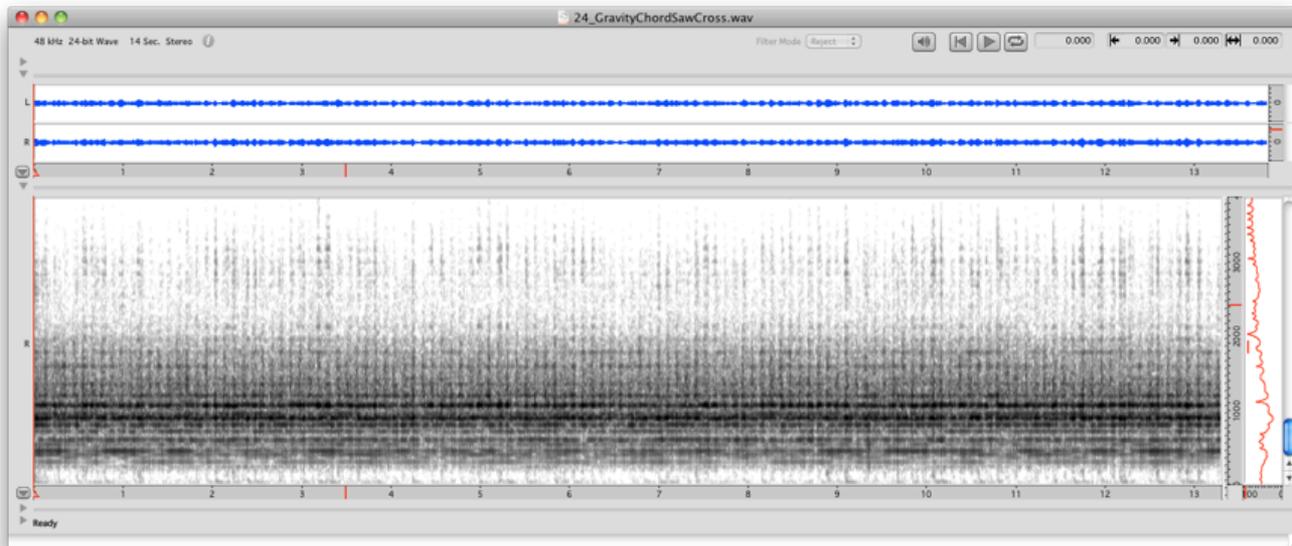
## Sound example 22: the swooshing sound of circular saws



## Sound example 23: drone matching the present soundscape



Sound example 24: activating the drone by filtering it through the swooshing sound of a circular saw



## References

- Andersen, M. S. *Audiovisual Correspondences*. econtact  
[http://cec.concordia.ca/econtact/12\\_4/andersen\\_audiovisual.html](http://cec.concordia.ca/econtact/12_4/andersen_audiovisual.html)
- Truax, B. *Soundscape Composition as Global Music: Electroacoustic Music as Soundscape*.  
Organised Sound  
<http://www.sfu.ca/~truax/OS7.html>

### *Music examples:*

- Andersen, M. S. *Sleepdriver*  
<http://www.martinstigandersen.dk/electroacousticmusic.html>
- Truax, B. *Pendlerdrøm (The Commuter's Dream)*  
<http://www.sfu.ca/~truax/pendler.html>

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