Game Developers Conference®

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www.GDConf.com

GDC

UBM
TechWeb

AUDIO BOOT CAMP:
Introduction to Game Audio

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Why make audio for games?

Fame

What do "they" think of game sound?

- Often they don't
- Sometimes they don't even listen
- If they do, it's often voice acting

Aside: Interactive Dialogue

Oh, ick.
I remember I had a hairball once...
Could I hold that metal detector for a second?

Grim Fandango (1998)

Why make audio for games?

~~Fame~~

Combating Audio Apathy

- Acknowledge the playback environment

- Embrace and extend

- Make the sound key to the experience

Reward Player Awareness
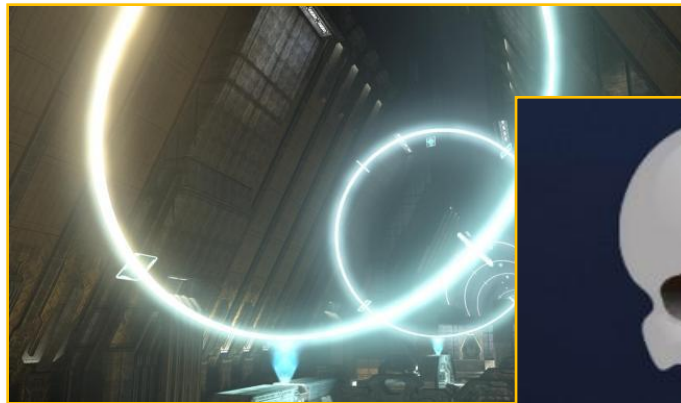
- Sound can contribute to and inform gameplay

Splinter Cell

Reward Player Intelligence

- Sound can be sophisticated

Fallout 3

IWHBYD

Halo 3

Enhance Player Emotion

- The simplest things still often work best

Asteroids

Once More, With Feeling

- Sound can play on (or against) gameplay

King Kong

SSX Tricky

Reward Player Mastery

Gears of War

Achievement unlocked
500G - Attended GDC Audio Boot Camp

Why make audio for games?

~~Fortune~~

"If you try to get your foot in the door by working for free, that is the value the developer will place on your work in the future."
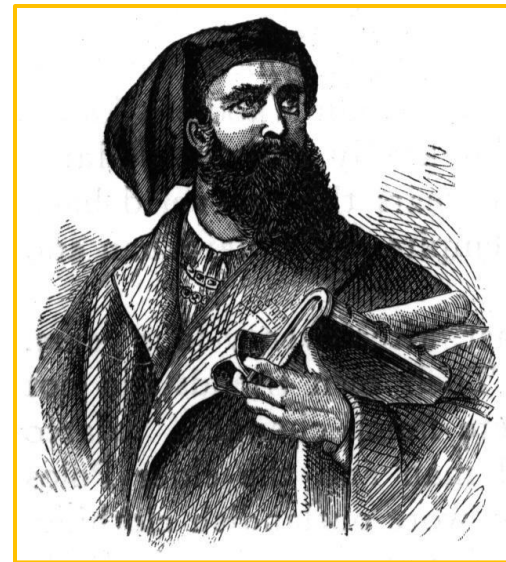
Duane Decker

("Game Audio Contracts" Gamasutra.com article)

Why make audio for games?

Vision

Can sound be the game?

Sound Can Be the Game

NAME
THAT
TUNE

Sound Can Be the Game

DDR

Rez

Lifeline

Musaic Box

Rock Band

Phase

Dance Central

Papa Sangre

Sound Can Be the Game

AudioSurf

Sound Can Be the Game

Cinnamon Beats

Sound Can Be the Game

ElektroPlankton

Why make audio for games?

✓ Vision

Why make audio for games?

Art

tempered with craft

Technical Differences from Other Media

- Games are non-linear
  - Timings, order of events can't be predicted
  - Challenges of repetition
- Games are dynamic
  - Respond appropriately to user and game state
- Games are generated in "real-time"

Know Thy Platform

- Games push against fixed boundaries
  - Memory – instant access
  - Disc space – access with latency
  - Storage characteristics – bandwidth
  - CPU processing – real-time manipulation
- Entire experience shares these challenges – and these resources

Know Thy User

- Approach them the same as for linear media
  - The same listening environment
  - The same expectations for fidelity and production values
- Approach them entirely differently
  - Player is participant, not observer
  - Experience length is ~~longer~~ ~~shorter~~ unpredictable

Illustration: Interactive Music

BioShock

Why make audio for games?

✓ Art

(with craft)

Why make audio for games?

Time

Timescale differences

- Film

  - Audio is often post-production activity

  - All visuals are complete/locked

  - Days focused on balancing various elements

- Games

  - "Post-production" = day before ship

  - Visuals/game constantly evolving

  - Final mix = on the spot, in real-time

Audio Staffing (outrageously oversimplified)

Film/TV

- Composer
- Orchestrator(s)
- Music copyist(s)
- Sound designer(s)
- Foley artists
- Recording engineers
- Mixing engineers
- Editors
- PAs/Interns

Games

"Sound guy/girl"

- Needs to know how things work
- May be only 'voice' for audio
- Luckily this is changing…

Why make audio for games?

~~Time~~

"Default" Game Audio Pipeline

- Programmer designs/selects audio engine

- Composer/sound designer given list of assets to provide

- Programmer integrates assets into title
  - Often tasked with editing/compressing assets
  - May or may not mix, with or without the audio creator

Goals for Tools

- Define/distinguish responsibilities
  - Programmer vs. content creator
  - Independent and collaborative work
- Provide a better audio pipeline
  - Real-time content 'auditioning'
  - Abstractions for better communication

Current Game Audio Tools (a sampling)

- FMOD (Firelight fmod.org)
- Wwise (AudioKinetic audiokinetic.com)
- CRI Audio (CRI [cri-mw.com](cri-mw.com))
- Miles (RAD radgametools.com)
- Unreal (Epic Games unreal.com)
- Platform-specific, proprietary, title-specific, and many more

Okay, but do I do with these tools?

IASIG.org Unreal Engine interactive audio tutorial
(courtesy Leeds Metropolitan University, UK)

Okay, but do I do with these tools?

Half-Life 2 (User Modified)

Other Tools of the Trade

- DAW
    - Also for prototyping in-game use
- DSP Effects
    - Offline plug-ins, plus in-game real-time plug-ins
    - Again proving space for title-developed processing
- Asset management tools
    - `C:\>ren c:\*.* *_level1.*`

Why make audio for games?

~~Time~~

Why make audio for games?

Passion

You are a gamer.

- We <u>all</u> play games

- We <u>all</u> tell stories

- That said, know your medium
  - Play what's out there – or watch someone else
  - Evaluate, analyze, understand
  - Surpass and surprise

Why make audio for games?

Fame
(Revisited)

53rd
GRAMMY® Award
WINNER

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Your Assignment:
Play a game. No, really.

- It's research

- It's fun – but why?

- Understand the artifice

- Know and be able to speak proficiently in your medium

- Push on the fourth wall

Questions?

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