

Sound Design for Next Gen.

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Next Gen.Audio

- Higher Sampling Rates
- Higher Memory Budgets
- More Simultaneous Voices
- Discrete Multi Channel Surround (5.1/7.1)
- Real Time DSP (EQ, Dynamics, Reverb, etc.)
- more... more... more.....

Next Gen. Sound Design

- SFX recording
- Foley
- Sampling
- Pitch Shifting
- Worldizing & Futzing
- Modulation & Doppler
- Reverb
- Granular Synthesis
- Cross Synthesis
- Morphing

Sound Field Recording

SFX Field Recording

- This is the get up out of your chair, grab a microphone, & portable recorder method.
- Provides you with wealth of original material to draw from unique to your title.
- Creates excitement and motivates the all members of the production team.
- Impresses Management!

SFX Field Recording

- Military bases
- Airports
- Harbors
- Sporting Events
- Oceans, lakes, rivers
- Zoos
- Power Plants
- Wrecking yards
- Pets
- Children
- Weather
- Everyday household objects

SFX Studio Recording

SFX Recording Examples

- ▶ F-22 Falcon @ Miramar Airshow
- ▶ F-18 Hornet @ USS Stennis
- ▶ Styrofoam rubbing
- ▶ Rubber cement fire
- ▶ Plastic soda can zip bys

Foley

Foley Recordings

- Original sound recordings performed to picture by a Foley artist.
- Provides you with a wealth of original material to use on your title.
- “Wild” Foley - not performed to picture.

Foley Sound Examples

- ▶ Boots
- ▶ Guns & Gear
- ▶ Wing Flaps
- ▶ Rock Impacts
- ▶ Chains

Sampling

Sampling

- Sampling = Time Manipulation
- Speed Manipulation
- Looping
- Layering / Multi-samples
- Reverse it - The Paul is dead effect
- Scrubbing - Manipulating the playback head
- Reordering

Software Samplers

Sample Reordering

Sampling Examples

- ▶ Original Sound
- ▶ Munchkin & Monster Effect
- ▶ Looped Sound
- ▶ Reversed Sound
- ▶ Scrubbed Sound
- ▶ Reordered Sound

Pitch Shifting

Pitch Shifting

- ▶ Traditional
- ▶ Excessive Pitch Changes (+/-)
- ▶ Importing at wrong sample rate
- ▶ Varispeeding
- ▶ Pitch Envelopes

Pitch Change - normal

Pitch Envelopes

Extreme Pitch Change

Pitch Shift Examples

- ▶ dry source
- ▶ 1 Octave Down
- ▶ 4 Octaves Down
- ▶ Pitch Envelope
- ▶ Importing at wrong sample rate

Worldizing & Futzing

Worldizing

Worldizing

- A way to place a sound object into an environment by manipulating its source of origin.

Worldizing Techniques

- Play a recording thru a real PA, Radio, TV, amp, etc...& record it via a mic or line input.
- Place microphones next to speakers that color the sound.
- Broadcast sounds from unorthodox places to capture the effect of the environment.
 - mouth, parking garage, tubes, tunnels.

Futzing

- Also known as radio-izing.
- A technique used to simulate a broadcast.
- Often used to emulate various speakers.
- Radios, Telephones, PA's, TV's, etc...

Futzing & Worldizing Examples

- ▶ dry source
- ▶ walkie talkie - Futzing
- ▶ PA system - Futzing
- ▶ bad digital transmission - Futzing
- ▶ Metal Pipe - Worldizing
- ▶ Freeway Overpass - Worldizing

Modulation & Doppler

Modulation

- LFO's to Amplitude (VCA)
- LFO's to Filter (VCF)
- LFO's to Pitch (Oscillator or Sample)
- Delay Effects
- Gating/Ducking Effects
- Panning Effects

Modulation - Delays

Doppler

Modulation Examples

- ▶ dry source
- ▶ Sound Toys - Pure Pitch Modulation
- ▶ GRM Tools - Delays (excessive)
- ▶ GRM Tools - Pitch Accumulation
- ▶ Waves - Doppler Bys
- ▶ GRM Tools - Doppler Bys

REVERBERATION

Reverberation

- Reverb enhances the size of a sound
- Reverb conveys distance & occlusion
- Reverb creates mood
- Reverb can be used for sound design as well....

Reverb Techniques

- Traditional approach
- Excessive Reverb for Smearing Effect
- Reverse Reverb
- Use of unorthodox IR's for effect

REVERB - Normal

REVERB - IR Sample

Reverb Examples

- ▶ Dry source
- ▶ Reverse Reverb
- ▶ 10 Second Reverb Tail
- ▶ 10 Second Reverb Tail x 2
- ▶ Audio soundfile (gunshot) used for IR
- ▶ Audio soundfile (bodyfall) used for IR

Granular Synthesis

Granular Synthesis

- The Audio equivalent of Wonka Vision
- The slicing, dicing & reordering of samples
- Randomly plays bits of audio from buffer
- Can have concurrent pitch & pan mod
- Instantly makes interesting sounds!

Granular Software

- RTGS - X
- Metasynth - UI Software
- Max/MSP - Cycling 74
- KYMA - Symbolic Sound
- Reaktor - Native Instruments

RTGS-X

Metasynth

MAX/MSP

KYMA

Granular Examples

- ▶ dry source
- ▶ Grain Scrub - Max/MSP
- ▶ Grain Sutter - Max/MSP
- ▶ Grain stretch - Metasynth
- ▶ Grain bits - Metasynth
- ▶ Echoid - KYMA
- ▶ Time scrubbed crowd - KYMA

Spectral Manipulation

- Frequency domain processing
- Sometimes requires analysis phase
- utilizes Fourier Transform
- Breaking down a sound into individual simple frequencies (sine waves).
- Once this is done, we can begin the fun.

GRM Tools ST

KYMA

Spectral Warping Examples

- ▶ dry source
- ▶ Processed 1 - Freq Warp
- ▶ Processed 2 - Contrast
- ▶ Cross Synthesis I - KYMA
- ▶ Cross Synthesis II - KYMA
- ▶ Morphing - KYMA

In Summary....

- Try not to use stock SFX CD's!
- Go and record the SFX for yourself.
- Hire a Foley studio or make one.
- Use combinations of processing techniques.
- Misuse the applications you have.
- Don't get locked into using one application!
- Don't be afraid to experiment!!!!!!

Fin

Q & A

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