Sound Design Media P00185 - MOVE 1

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INTRODUCTION

A fictitious Sound Design Company has a commission to produce a sound library for a game that is under development by Design and Digital Media Students.

Once compiled, the library of sounds will provide the 3D Animator with enough sonic material to dynamically reflect the three dimensionality of both the animated and static graphical content of the design.

Initially, at the game design stage, dynamic sounds will be available as a series of audio files that were generated from edited regions of larger audio files.

Some of these pre-edited sounds are available for reasons outlined in section [1].

The sound files generated from the separated regions of a multitude of sounds will make up the extensive sonic library as requested in the Project Brief.
(Perhaps the pre-edit whole sounds can service a separate library for manipulation or inclusion in works of sonic art or electronic music composition where they can be subjected to further re-synthesis).

This serves 4 purposes.

[1] The unedited sound will aid the animator in the sonic profiling of a given graphical design element and speed up the auditioning of potential ideas for its sound map. For example: for a particular 'moving part' that, relative to time, requires a longer audio file (to be constructed from multiple incidental sound files) of greater sonic detail rather than a single short incidental sound.

At the same time, the animators are able to understand more clearly the characteristics of the individual sonic elements from the sound library in terms of time and space.

The intact pre region-edited sound illustrates one example of the interconnectivity of its separated sound library elements. It can act as a template or 'placeholder' while varying combinations of its separated elements and possibly elements derived from other sound sources, is auditioned.

If a sequence build is proving difficult then it is better to have 'something' present rather than nothing - until inspired later on.

[2] The individual library elements can be sequenced in any way deemed necessary by the animator in order to construct any number of variations for a dynamic sound and provide 'realism' in an organic sense – ***that no two instances of that sound should exhibit exactly the same sonic characteristics***.

This principle can be applied in two key areas of game-play:

a) A particular sound occurring throughout different scenarios or levels.
Example: Throwing consecutive punches, a sequence of CLASHING swords or ENGINE sounds on a virtual racetrack.

b) When a player has to go back and repeat a particular scenario due to a mistake having prevented the scene's completion on the first or previous attempt, perhaps due to a character's untimely demise!

Example: Character elimination through repetitious GUNFIRE or a car CRASH with multiple CAR-BODY to ROAD SURFACE impacts.

It should also be noted that in the case of short non-dynamic incidental 'shots' or 'clicks' of sound, there is far more freedom when considering the sonic profile for any chosen graphical element.

Example: ARMING a weapon, DOOR open and close, FOOTSTEPS.

[3] Where the decision to generate a sound is code-based', a random selection function could perhaps be written to select a sound from a relative group of sounds stored collectively as a category in a particular memory location.

There are many possibilities for defining categories. Relating to the previous observation, such a category could be file size in kilobytes - displayed in the library as milliseconds (ms), to aid time-line based graphical content sonification

As a sound designer, such a scenario would have to take into consideration the design of component elements having equal length and relevant sonic

characteristics.

A variation of this idea is based around routines of code designed to sequence a random selection of content-relative sonic elements with varying lengths in a predetermined time. This presents an interesting challenge from the viewpoint of the whole production team when considering the criteria for such a random selection function.

[4] There are important issues concerning memory allocation and data delivery – storage capacity and streaming - as it is not possible to either store or instantly deliver large audio files in the confines of a game console. Such delivery power sways towards the graphics engines and the real-time rendering needed to constantly update the visual elements dependent on the player's choice of moves and progress.

This ties in points [2] and [3] and explains the need to deconstruct desirable pre-edit complete sounds into separate 'element' files of sound library data. Memory is utilized far more efficiently and a broader range of sonic content can be delivered from the confines of available storage. Delivery is spontaneous because the audio engine is delivering tiny manageable components of sound rather than buffering and streaming large files.

RECORDING SESSION 1

01) DATE:

The Recordings were made on 26/10/2004.

02) LOCATION:

The 5.1 surround Studio at Alison House, Nicholson Sq. Edinburgh.

03) EQUIPMENT LIST:

2x Neumann KM 184 Microphones

2x Microphone Stand

HHB Portadisc

Sennheiser HD25 Headphones

Pro Tools 6.4 with Digi 002 Audio Interface

Apple G5 Dual 2.0 GHz

04) PERSONNEL: Michael, Daisy and Slawomir.

I decided that it would be a good exercise to work as a location recording team. One person would manipulate the materials, one person positioning the microphone and the third person monitoring the input on the HHB Portadisc via the level meters and through the Sennheiser HD25 Headphones.

The responsibilities were rotated after a recording or two.

Through a practical exercise I was able to demonstrate and share my knowledge regarding recording techniques and especially a Pro Tools Session setup, file management, region editing and keyboard shortcuts. My colleagues were enthusiastic to learn more about Pro Tools editing and got to grips with the shortcuts very quickly.

05) ACTIONS:

We decided to explore several types of material in order to get a varied library of sounds that captured a range of sonic qualities. These relationships are outlined below in a short table and expanded upon more in the subsequent section 'Materials and Techniques'.

Action	(Sonic Quality)
Scrapes –	Pitch, Time and Motion - (P.T.M),
Shake / Rattle	Rhythmical & Dynamic
Rip / Tear	Textural, Inharmonic, Phasing, P.T.M
Compact (Crunch)	Frequency Modulation (FM) & Dynamic
Hits	Percussive / Interfacing
Friction (Rubbing)	Textural, Time and Motion
Zipping	Rhythm, FM & Dynamic, Urgency,
Blowing	Wind, Resonance,
Vocal (Laughter)	Fricative (non-speech)

06) MATERIALS AND TECHNIQUES

a] Acoustic Guitar

b] Small Percussive Cymbal

The Cymbal was dragged along the Guitar Strings and away from the guitar. The resonating and decaying harmonics were recorded as part of the whole sound.

On some takes the cymbal was moved back and forth between the 2 Mic's to capture a panoramic sound - 'Sound in Motion'. The most noticeable quality of this sound was its long inharmonic and resonant decay evoking ideas of Motion, possibly in the form of escape or entrapment depending on its presentation - either normal or in reverse.

c] Container of Vitamins

The Container was shaken at varying levels of time and aggressiveness. The files with multiple shakes are good as alternative 'horse hooves' when played at half speed. The individual shake sounds are useful for interface sounds and maybe in a percussive or rhythmical context when linked or repeated.

d] Strips of Velcro

Having fastened the Velcro strip, the sound of unfastening it was then recorded. The recording is reminiscent of biting, crunching and neck-breaking sounds, excellent when dry and up front in the mix.

e] A Roll of Parcel Tape

The Tape was 'torn' away from the main roll - right to left. Result: A panned stereophonic recording with harsh sonic overtones.

f] An Empty Beer Can.

This was Gently crunched by hand and manipulated between the 2 microphones resulting in a dynamic stereophonic and rhythmical sound recording. Idea: an animation scenario - stumbling and tripping.

g] A Wooden Jewelry Box with Lid.

h] A bronze statuette of an Indian deity.

The Wooden lid has a concave form to it. This produced recordings of varying frequencies when tapped against the bronze statuette at different angles. Some naturally occurring phase effects were generated to the differing amplitudes and their reflections induced by the concave surface of the lid. Really fast attack transients. Idea: Alternative snare drums and percussion.

i] A synthetic item of clothing.

Rubbed against itself by hand in continuous back and forth motions. Rubbed in single sweeps. Idea: Try with the non-linear reverb in pro-tools. 'Gasping for air' like effects.

j] An Empty Plastic Bottle.

k] Breath

Blowing air across the open-top bottle. Clichéd effect, but still useful in a library. Idea: Pitch up 2 Octaves and add a big reverb for an Eerie Train Sound. Then Play this at half-speed for an alternative. Pitch down the original by 2 octaves for a bass heavy ghostly didgeridoo note.

l] A Zipper on a Coat.

A really interesting and dynamic sound with a rich frequency range and inharmonic overtones depending on the amount of force exerted. Slow movements produced a deep growling sound, perhaps useful for further pitch shifting - Heavy Machinery / Road Hammers at half-speed. Frantic movements producing rapidly rising pitch envelopes for useful alternative percussive sounds when chopped or even a kind of lead line if 'played' like a sequence. My favourite application for the Zipper is to mimic the sound of vinyl when played by a scratch DJ.

m] Human Laughter

One vocal example salvaged from the recording session. Good sound in two segments. Before the audible laugh is the 'explosion' of breath that may be useful for a mechanical piston effect.

7) REGION EDITS

In Pro Tools: Cut regions using Separation Tool.

Fades - In and Out to tidy up some undesirable transients post edit.

A variety of Hi Pass Filtering ranging from 60Hz to 450Hz to compensate for the lack of a Lo Cut Filter on the Microphone.

NAMING CONVENTIONS:

SOURCE MATERIAL, DESCRIPTION, SEQUENCE ID NUMBER.

I have only included a few sounds from this session in my submission. This is because I expect Daisy and Slawomir will submit variations of these sounds.

I want to avoid the possibility of too many people ending up with similar source material for transformation in Move 2.

The sounds not submitted are still part of my overall sound library.

RECORDING SESSION 2

01) DATE:

The Recordings were made on 26/10/2004.

02) LOCATION:

A room in the Edinburgh apartment that I share.

03) EQUIPMENT LIST:

1x Neumann TLM 103 Microphone on Stand
Fostex D-5 Digital Master Recorder DAT Machine
Sony MDR-CD1700 Headphones
Pro Tools 6.4 with MBox Audio Interface
Apple G4 Powerbook 667MHz

04) PERSONNEL:

Michael.

This was an impulsive home recording session organised as soon as the thought of ghostly interference down in the catacombs came to mind. It's a clichéd idea in many respects but on a more serious level presents interesting source material for further manipulation by whoever takes on my collection of sounds for that purpose. I have included the wind recording as part of my submission but not the electrical interference sounds.

05) ACTIONS:	**(SONIC QUALITIES)**
Wind	White Noise, Air pressure, Dynamic Velocity and Resonance.
Electricity	Static, Charge, Mid and High Frequency Modulation.

06) MATERIALS AND TECHNIQUES

a] The Wind 'whistling' by my window.

Very difficult to perfect the microphone placement with regards to low frequency distortions and other environmental issues. The microphone was angled away from the corner of the sill. This was a useful exercise in recording a delicate, yet dynamic sound. Afterwards I applied a Hi Pass EQ set at 450Hz to ease out perceptible hum.

b] AM Radio with wire and loop aerial. Mac Powerbook with TFT Monitor switched on.

I tuned in the radio to a different range of AM frequencies ranging from 1125MHz to 1593MHz. This produced different fairly constant electrical buzz tones. I then waved the aerial loop around in front of the TFT monitor. this had the effect of modulating the frequencies output from the radio. This reminded me of a cross between the classic Light Saber sound and Short Wave radio tuning.

7) EDITS

In Pro Tools: Cut regions using Separation Tool.

Fades - In and Out to tidy up some annoying transients post edit.

A variety of Hi Pass Filtering ranging from 60Hz to 450Hz to compensate for the lack of a Lo Cut Filter on the Microphone.

RECORDING SESSION 3

01) DATE:

The Recordings were made on 03/10/2004.

02) LOCATION:

Alison House Entrance: Swinging Doors.

My rented accommodation in Edinburgh.

03) EQUIPMENT LIST:

Sound Man In Ear Microphones
2x Neumann KM 184 Microphones
2x Microphone Stand
HHB Portadisc
Sony MDR-CD1700 Headphones
Pro Tools 6.4 with MBox Audio Interface
Apple G4 Powerbook 667MHz

04) PERSONNEL:

Michael.

The Swing Doors at Alison House are extremely 'Creaky'. A great game sound. Suitable for all kinds of movement in its natural context. Rich in tone and colour, suggesting a good source for further spectral manipulation in Sound Hack.

The sounds recorded at my apartment are different Door types, Lock mechanisms, Floor Boards, Keys, Metal scratching Porcelain, Gas Hob with Espresso Pot, Running Water.

05) ACTIONS:	**(SONIC QUALITIES)**
Doors: Open, Close, Swinging	Rich, Organic, Motion, Percussive,

	Dynamic.
Locks:	Motion, Incidental, Mechanical
Gas and Espresso, Tap Water	Air Pressure, Modulation, Desirable Noise.

06) Materials and Techniques

All sounds.

These sounds are self explanatory on inspection.

I chose a lot of lock and door type sounds because of the ease with which they can be separated into component audio file regions. These sounds illustrate very well what is expected in the brief and the points outlined in my introduction with reference to the re-sequencing of component parts of a sound to build variations while conserving storage capacity and memory allocation.

I purposely chose sounds structured around noise - gas, espresso steam and tap-water impacting on stainless steel. It was a kind of irony to focus on these sounds and record them as purely as possible independent of interfering noise - the kind associated with mains hum, and everyday sound pollution.

I was amazed at the intensity of white noise present in running tap water.

These recordings generated the following idea for a Sonic Art project.

One could map out the Analog recordings of House Sounds and reference the speakers in a 5.1 system to each reflect a room in the house where then recordings were made. The listener in the sweet spot could represent the crossover point between these rooms - in the case of my apartment, The Hallway.

This would allow for the simulation of blurring and fusion of activity at different levels throughout the piece.

I thought of a storey where a virtual listener is seduced by these sounds into a state of relaxation or even sleep. The recorded 'room' sounds could then morph in to transformations and evoke many emotions in the mind of the observer as to what the virtual listener is dreaming about.

Such a project would address surround sound recording, mixing and arranging techniques. Balancing Frequencies and Dynamics. Location Recording. Digital Manipulation and Spectral Transformation - all while creating a story based upon scenarios we are all familiar with - The Home and Dreams or Nightmares.

7) EDITS

In Pro Tools: Cut regions using Separation Tool.

Fades - In and Out to tidy up some undesirable glitches off zero-crossing points.

A variety of Hi Pass Filtering ranging from 60Hz to 450Hz to compensate for the lack of a Lo Cut Filter on the Microphone.

SAMPLE LIBRARY

The Library is categorized by action rather than material because many sounds are created through contact of 2 material types.

My typology better suggests on visual inspection the expected sonic qualities of the recordings.

All sounds recorded and compiled between 22/09/2004 and 03/10/04.

SAMPLE_LIBRARY – SOUND LIST

BLOW

Plastic_Bottle_Blow_01
Plastic_Bottle_Blow_02
Plastic_Bottle_Blow_03

COMPACT_CRUSH

Can_Scrunch_DYNAMIC_01
Can_Scrunch_DYNAMIC_02
Can_Scrunch_DYNAMIC_03
Can_Scrunch_DYNAMIC_04
Can_Scrunch_DYNAMIC_05
Can_Scrunch_DYNAMIC_06
Can_Scrunch_DYNAMIC_07
Can_Scrunch_DYNAMIC_08

DOORS

Door Bounce

MainDoor_BOUNCE_Part01
MainDoor_BOUNCE_Part02
MainDoor_BOUNCE_Part03
MainDoor_BOUNCE_Part04
MainDoor_BOUNCE_Part05
MainDoor_BOUNCE_Part06
MainDoor_BOUNCE_Whole

Door Close

Bth_Door_SHUT_01

Bth_Door_SLAM_01

Cupb_door_SHUT_01

E_Door_CLOSE_01

Kitchen_Door_CLOSE_01

Kitchen_Door_CLOSE_02

MainDoor_CLOSING_01

MainDoor_SHUT_01

Studio_DOOR_CLOSE_01

Studio_DOOR_CLOSE_02

Studio_DOOR_CLOSE_03

Door Open

Bth_Door_OPEN_Part01

Bth_Door_OPEN_Part02

E_Door_OPEN_01

Kitchen_Door_OPEN_01

Kitchen_Door_OPEN_02

Studio_DOOR_OPEN_01

Door Swing

SwingDoor_CLOSE_01

SwingDoor_OPEN_01

SwingDoor_OPEN_02

SwingDoor_OPEN_03

SwingDoor_OPEN_CLOSE_01

Hinges_Creeks

MainDoor_CREEK_01

MainDoor_CREEK_02

MainDoor_CREEK_Open_01

MainDoor_CREEK_Shut_01

MainDoor_HINGE_Close_01

MainDoor_HINGE_Open_Part01

MainDoor_HINGE_Open_Part02

SwingDoor_CREEK_01

SwingDoor_CREEK_02

SwingDoor_CREEK_03

SwingDoor_CREEK_04

SwingDoor_CREEK_05

SwingDoor_CREEK_06

SwingDoor_CREEK_07

Keys

Keys_RATTLE_01

Keys_RATTLE_02

Keys_RATTLE_03

Keys_RATTLE_04

Latches

B_Room_Door_LATCH_OFF_01

B_Room_Door_LATCH_ON_01

Locks

Cupb_LOCKTURN_01
Cupb_LOCKTURN_02
Cupb_LOCKTURN_03
Cupb_LOCKTURN_04
Cupb_LOCKTURN_05
Cupb_LOCKTURN_06
Cupb_LOCKTURN_07
Cupb_LOCKTURN_08
HallDoor_LOCK_Part01
HallDoor_LOCK_Part02
HallDoor_LOCK_Part03
HallDoor_LOCK_Part04
HallDoor_LOCK_Part05
HallDoor_LOCK_Part06
HallDoor_LOCK_Part07
HallDoor_LOCK_Part08
HallDoor_LOCK_Part09
HallDoor_LOCK_Part10
HallDoor_LOCK_Part11
HallDoor_LOCK_Part12
HallDoor_LOCK_Part13
HallDoor_LOCK_Part14
HallDoor_LOCK_Part15

DROP

Porcelain_DROP_on_Wood_01
Porcelain_DROP_on_Wood_02

ELECTRICITY

AM_aeriel_1125kHz_TFTmon
AM_aeriel_1332kHz_TFT_breath
AM_aeriel_1512kHz_TFTmon
AM_aeriel_1584kHz_TFTmon
AM_aeriel_1593kHz_TFTmon

FLOORS

FloorBoard_05
FloorBoard_CREEK_01
FloorBoard_CREEK_02
FloorBoard_CREEK_03
FloorBoard_CREEK_04
FloorBoard_CREEK_Whole

FRICTION_RUB

Clothing_Rub_01
Clothing_Rub_02
Clothing_Rub_03
Clothing_Rub_04
Clothing_Rub_05
Clothing_Rub_06
Clothing_Rub_07
Clothing_Rub_08
Clothing_Rub_09
Clothing_Rub_10
Clothing_Rub_11
Clothing_Rub_12
Mic_RUB_Breath_FX

HIGH PRESSURE

Gas

GasHob_GASandFLAME

GasHob_IGNITION_01

GasHob_IGNITION_02

GasHob_IGNITION_Whole

Steam

Espresso_BOIL_Part1

Espresso_BOIL_Part2

Espresso_BOIL_Part3

Espresso_BOIL_Part4

Espresso_BOIL_Part5

Espresso_BOIL_Whole

Vox

Laugh_NOISE_01

Water

TapWater_and_SteelSink_01

TapWater_and_SteelSink_02

TapWater_and_SteelSink_03

TapWater_and_SteelSink_04

TapWater_and_SteelSink_05

TapWater_and_SteelSink_06

Wind

Drafty_WIND_Part01

Drafty_WIND_Part02

Drafty_WIND_Part03

Drafty_WIND_Whole

HITS

wood_HIT_bronze_01
wood_HIT_bronze_02
wood_HIT_bronze_03
wood_HIT_bronze_04
wood_HIT_bronze_05
wood_HIT_bronze_06
wood_Plastic_HIT_bronze_01
wood_Plastic_HIT_bronze_02

SCRAPE

Cymbal_on_Guitar

Cymbal_guitar_01
Cymbal_guitar_02
Cymbal_guitar_03
Cymbal_guitar_04
Cymbal_guitar_05
Cymbal_guitar_06
Cymbal_guitar_07
Cymbal_guitar_08
Cymbal_guitar_09
Cymbal_guitar_10

Stone

Stone_SCRAPE_01

SCRATCH

Metal_on_Porcelain

Metal_Scratch_Bowl_01
Metal_Scratch_Bowl_02
Metal_Scratch_Bowl_03
Metal_Scratch_Bowl_04
Metal_STIRRING_Bowl_01
MetalOnPorcelainBowl_Part01
MetalOnPorcelainBowl_Part02
MetalOnPorcelainBowl_Part03
MetalOnPorcelainBowl_Part04
MetalOnPorcelainBowl_Part05
MetalOnPorcelainBowl_Part06
MetalOnPorcelainBowl_Part07
MetalOnPorcelainBowl_Part08
MetalOnPorcelainBowl_Part09
MetalOnPorcelainBowl_Part10
MetalOnPorcelainBowl_Part11
MetalOnPorcelainBowl_Part12
MetalOnPorcelainBowl_Part13
MetalOnPorcelainBowl_Part14
MetalOnPorcelainBowl_Part15
MetalOnPorcelainBowl_Part16
MetalOnPorcelainBowl_Part17
MetalOnPorcelainBowl_Part18
MetalOnPorcelainBowl_Part19
MetalOnPorcelainBowl_Part20
Porcelain_BRAKES_01

SHAKE

vitamins_SHAKE_01

vitamins_SHAKE_02

vitamins_SHAKE_03

Vitamins_SHAKE_04

Vitamins_SHAKE_05

TORN

Paper

Bag_RUSTLE_01

Tape

ParcelTape_TEAR_R_to_L_01

Velcro

Velcro_01

Velcro_02

Velcro_03

ZIP SLIDE

Zips

Zip_LoFreq_01
Zip_LoFreq_02
Zip_LoFreq_03
Zip_LoFreq_04
Zip_LoFreq_05
Zip_LoFreq_06
Zip_LoFreq_07
Zip_LoFreq_08
Zip_LoFreq_09
Zip_LoFreq_10
Zip_LoFreq_11
Zip_Rhythm_Pt01
Zip_Rhythm_Pt02
Zip_Rhythm_Pt03
Zip_Rhythm_Pt04
Zip_Rhythm_Pt05
Zip_Rhythm_Pt06
Zip_Rhythm_Pt07
Zip_Rhythm_Pt08
Zip_Rhythm_Pt09
Zip_Rhythm_Seq
Zip_Rhythm_Seq_02
Zip_Up_and_Down_01
Zipper_Hi_Freq_01
Zipper_Lo_Freq_Seq_01
Zipper_LoFreq_01
Zipper_LoFreq_02
Zipper_LoFreq_03
Zipper_Mixed_Freqs_01
Zipper_Speech_01