Interrogating Interactive Interfaces:
On balance in the evocation of environmental responsibility
in the creation of Responsive Environments

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Chapter 5: StilmS

5.1 Project Overview

StilmS were electro-mechanical hybrids between Stills and films. They were staged as live events of projected 35mm photographic slides in three side-by-side slide projectors with an accompanying improvisational soundscape. The three separate works are referred to as Stilm I, Stilm II and Stilm III while v1, v2, v3 and v4 refer to the iterations of StilmS. They were incrementally implemented via increasingly complex technology used between...
StilmS v1-v4. Iterations also workshopped interaction modalities appropriate to different performance venues. While volunteer participants interacted in their staging, I was solely responsible for content, as Photographer, Producer, Editor, Sound Designer, Interface Designer and Installation Designer. They were staged 19 times in variegated venues and modalities in March, July, September, October and November 2004 (Figures 5-145, 5-146, 5-147, 5-148, 5-149, 5-150, 5-151, 5-152). Video documentation of a staging of StilmS v3 is included in Appendix A.

StilmS form a bridge between the PBR I conducted during the original and current PhD topics. They related to my past, present and future PBR between March 2004 and July 2005.622

1) Stilm I continued the themes explored in my Anthropology Honors thesis and Kali Yuga, my immediately preceding artwork623
2) Stilm II concerned my PhD topic and its documentary film at that time624
3) Stilm III resembled the abstract-experimental interactive installations pursued after I was prevented from doing fieldwork in India in March 2005.625

Responsivity and responsibility were investigated between:

1) Each Stilm and simultaneous co-participants
2) Simultaneous co-participants and myself (as co-performer)
3) Simultaneous co-participants and audience members
4) Myself and audience members.

This is further explained in excerpts from my production diary which outline the work and Interaction Design#1, Remote control (hereafter Design#1).

‘StilmS’ are an interactive installation that interfaces divergent audiovisual narratives with representation determined by degrees of divergent and convergent interaction between participants and the work. As a semi-

622 Although I began researching the topic in 2002, including conducting preparatory fieldwork in India for six months in 2003.

623 Kali Yuga is the subject of Section 4.3.

624 This is described on p214.

625 These are the subject of Chapter 6 and Appendix E.
immersive Responsive Environment, they spatially and experientially envelop audiences. Three screens are 60 degrees from one another, to partially wrap around the audience and fill their field-of-view (Figures 5-133, 5-135). The installation is pitch black, except for the projected images and ambient light emitted by the hardware used.
Narratives are made of data-sets of projected slides and associated soundscapes. Each ‘Stilm’ features multifarious narratives presented within each screen and between the three screens and between the three ‘StilmS,’ to form a metanarrative of the three ‘StilmS’ as a collective entity. The network of relationships between images and sounds forms a complex non-linear narrative of multitudinous timeframes, screens, sound sources, plots and sub-plots. Photographs include sequences showing long processes and movement from multiple perspectives, so while a time-lapse sunrise appears on Screen Left, then Screen Centre, then Screen Right, a series showing someone walking appears on Screen Right, then Screen Centre, then Screen Left (Figure 5.134). Active analysis of ‘seeing the bigger picture’ is encouraged by ‘connecting the dots’ between how each image forms a totality with all others from the same ‘Stilm,’ with leitmotifs connecting between ‘StilmS.’

Interactivity is trammeled to dispel any illusion of control over events other than their re-playing: original analogue photographs are ‘authentic’ moments in time. Even chronological sequences are not relived like video/cinema as there is no ‘real-time’ to be replayed in ‘real-time.’ The recombinant possibilities grow exponentially by presenting each image as a self-contained primitive which may be combined with other self-contained images within a larger structure that each refers to. Analogue rather than digital projectors are appropriate, as fading in and out between images can be removed with digital sequencing, which creates illusions of continuity. The artifice of cinematic illusion is undermined by the black interval between slides so every transition breaks the spell of continuity between images. There are also small gaps between the projected area of each screen, so images on different screens do not overlap. These caesuras take audiences in and out of the artwork-as-Environment, to emphasize its constructed nature. Placing all the technology and audiovisual media between audiences and the screens -rather than conventional concealment in a silenced projection booth behind audiences- accentuates the mechanics as an arsenal between the constructed Environment and the area occupied by the audience.

The projectors are amplified and each sound of changing slides is subject to Digital Signal Processing. Image transitions may instigate a series of enveloping repercussive sounds. Four volunteers from the audience are invited to participate in each staging. Three operate one projector each while another
controls all sound via a multi-channel mixing desk, including the auditory rhythms of the amplified projectors. This alleviates the ‘pressure problem’ of one-on-many interactivity, as used in ‘Kali Yuga’, by making it up to volunteers to participate. It is my responsibility to create an Environment conducive to participants wanting and feeling comfortable to volunteer. This also embraces ‘the uncertainty principle’ as I will not know who I am co-performing with until a few minutes before the start of the staging.

By controlling relatively few parameters amidst intuitive interfaces, participants can simultaneously engage with the narratives while co-determining the real-time behaviour of the audiovisual media. Visual sequencing and ensuing audiovisual rhythms arise from interaction between co-participants. Participants navigate their way at any rate they choose, although the intention is for each to collaboratively determine the behaviour of the audiovisual media through non-verbal dialogue with their co-participants, such as learning to navigate by observing the audio and visual effects of co-participants’ navigations. Collages, collisions and montages produced by participants have repercussions back and forth between audio and visual mediums. Complexity is brought to the interactivity by the synaesthetic repercussions between multiple simultaneous sounds and images, exemplified by polyrhythmic audio repercussions they create when changing images. Through consonance and dissonance the live improvisational soundscape forms synaesthetic relations to the images. This creates cybernetic feedback between visual rhythms and audio rhythms, in reference to complex causation and consequence, as a repercussion denotes an echo or reverberation. Such interactivity encourages participants’ investigation into cybernetic repercussions and ramifications of their interaction. Spontaneously choreographing their movements with one another may prioritise the visual sequencing they create and/or the audio rhythms that emerge from their movements. This produces a trade-off for participants to negotiate, as one may be at the deficit of the other. Timed choreographed movements requiring waiting for another participant to ‘go first’ may slow the pace and lead to relatively uninteresting audio rhythms, while moving very quickly may make relatively complex polyrhythms, but at the trade-off of having sufficient time to absorb individual images and their structured relationships with other appearing images. As well as moving forwards or backwards in single
increments, keeping the remote control pressed makes the carousel spin quickly, only projecting an image when the button is released. Such ‘random’ navigation encourages explorations back and forth across indeterminate numbers of images. Images can also be presented in a staccato or legato like manner, as pressing the remote control in quick succession makes each image appear for a fraction of a second with such rapid fading in and out that each leaves an afterimage, whereas pressing the remote control in distinctly separate intervals leaves corresponding images for enough time to absorb the content and with slower fading in and out that does not cause an afterimage. I do not mention such interaction modalities to them, as they decide the manner of interactivity. I provide minimal instructions and stress there is no ‘right’ or ‘wrong’ interactivity. This explores the ability of interaction between participants to create spontaneous and relatively non-structured forms of interaction. Superseding my imparted parameters impedes the narrative cogency, but raises participants’ responsibility in exerting more control over the behaviour of the artwork. Through these techniques ‘StilmS’ evoke literal social and physical responsibility to the artwork through the intrinsic responsivity and metaphorical responsibility to quotidian and/or natural environments as represented in the subject matter of each ‘Stilm’ and engaged with through this Interaction Design.

5.2 Form: Structure and Function

The narrative universe becomes reversible and no longer reflects the psychology of cause and effect. Repetitions, the suspension of linear time, temporal and spatial asynchrony blast classical chronology apart. Multiple screens function as fields in which scenes are depicted from multiple perspectives, their narrative thread broken.

Peter Weibel

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Form and content were in-between retrospective and prospective. Their silent images with live assemblages of non-synchronous sounds evoked pre-talkie cinema, while their form referenced Expanded Cinema of the 1960s-70s, as described by Weibel above. The content and form of *StilmS I-III* traversed such pre-cinema precedents as Muybridge and the Zoetrope, through to contemporary interactive electromechanical installation art in light of Weibel’s “goal” of “asynchronous, non-linear, non-chronological, seemingly illogical, parallel, multiple narrative approaches from multiple perspectives projected onto multiple screens” which occur when “linearity and chronology, as classical parameters of narration, fall victim to multiple perspectives projected onto multiple screens.”

Evoking both pre-cinema and Responsive Environments required organicist deconstruction of cinema into modular and malleable primitives. My techniques of *Intact Syntax*, *Arpeggiated Hierarchy* and *Translucinatory Recombinatronix* were applied to determine the context- and content-appropriate relationship between form, content and Interaction Design. Narrativity was the limiting factor in the balance of trade-offs with interactivity, as the cogent narratives were amenable to corresponding interaction modalities. Visual primitives were whole slides, so they were fully formed ‘words’ in the recombinant analogy on p92.

Through the technique of *Translucinatory Recombinatronix*, which is described in relation to my artwork *Sly Drooler*, individual audiovisual streams could become translucent, such as images and/or sounds being faded in and out or placed over the top of one another through sound and vision mixing consoles.

The recombinant potentiality for combining all visual primitives in real-time was determined by the combinatorics of participants’ sequencing of the images. In applying *Intact Syntax*, recombinant possibilities and their associated degree of interactivity were relatively limited, due to the trade-off between interactivity and narrativity. All slides could be shown alongside all slides on the other two screens at the expense of the careful cross-referencing between images on different screens (Figure 5-134). Increasing the fineness of

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627 Weibel 2002:50.
628 Or a 1000 words in the proverb of what a picture is ‘worth.’
629 See p181.
the granularity by deconstructing primitives to be equivalent to a syllable, phoneme or a graphical component forming part of a letter would facilitate exponentially more fine grained responsiveness in the work. I decided against primitives that were smaller than single whole slides, such as segments of slides, as whole slides balanced granularity with the flexibility of their form due to the relations between images. Skewing the “balance of specificity” in favour of interactivity over narrativity would only have been appropriate in v4.

The improvised sequencing by participants between each carousel as a ‘memory bank’ of photographs paralleled “the flexibility of the relations between data in programmable sequences offered by computers” as “a consequence of technology offering random access memory to whatever is defined as data.” Le Grice argues this is useful in Interactive Art where random access memory “has the potential to radically undermine the linearity of narrative sequence” as it “places instances of data into a structure which may be considered as a matrix (three- or multi-dimensional grid) no longer confining presentational sequence nor connective principle to the conventions of narrative causality.”

The use of anachronistic analogue visual technology, in combination with digital sound technology, came out of the relationship between the content of the StilmS and their form. Sound was distinctly different in each iteration, as each technological platform afforded variable form and content. As images had a relatively inflexible form, I used my technique of Arpeggiated Hierarchy to prioritise the non-linear malleability of digitally controlled soundscapes. Through Arpeggiated Hierarchy the soundscapes conjoined the indeterminacy of live improvised content that was initiated by the three participants and shaped by the fourth participant. This permitted a high degree of interactivity in the medium of sound, while the hermetically sealed, and thus less-interactive, data-sets of images ‘carried’ the narrativity.

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631 Discussed below on p234.
approached the complex interactivity of the acoustic dimension with the “‘under-engineering’” approach Penny used in creating his interactive robotic sculpture *Petit Mal*. Penny found that “the very fallibility of the system would generate unpredictability, behaviour, personality”634 which was also the case for the sonic dimension of *StilmS*. The innumerable variables and open parameters for participants’ interaction harnessed glitch approaches to Generative Art and Kim Cascone’s *Aesthetics of Failure*.635 Such cybernetic cycles produced “emergent interactive behavior” that was not “derived from a set of pre-determined alternatives” but “through a contingent and unconnected chain of triggers”636 as the complex sonic polyrhythms were created and shaped in real-time, without any prescribed design or pre-created audio content.

By applying *Arpeggiated Hierarchy* I determined the basic constraints required to underpin such variability. Each *Stilm* had its own backing track that provided the foundation of the Information Architecture: a pre-recorded, pre-mixed soundscape played at a relatively low volume to the dominant improvised soundscape. Each backing track provided rough indications for different sections and anticipated overall duration of each *Stilm*. On top of this base structure, improvised soundscapes were composed using a data-set of 27 samples, (being 1/3 of the 81 rows of images in the carousels). Samples were principally non-language based location sounds I recorded in India, supplemented by others from various albums and films and excerpts of my instrumental compositions.637 Samples were principally subject to three means of manipulation: direction (forwards-backwards), inflection (pitch and timbre modulation) and projection (panning). Samples varied between 0.5 and 50 seconds, to form a sonic vocabulary with the equivalent flexibility of 0.5 second phoneme through to a 50 second sentence. All but the longest samples were cyclically looped to create contrapuntal relationships with images and

634 Penny 1997b.
other looping sounds. Looping connected the cyclical sound structures with cyclical reiterations of visual leitmotifs amidst the cyclical narratives. Samples were indeterminately assembled to each other and image subsets, according to the specificities of each staging. *Arpeggiated Hierarchy* was also applied to the structure of the audio data-set, with longer samples constituting 'base notes,' upon which more malleable arpeggiated 'treble' like shorter samples were laid. The longer samples carried the weight of establishing larger acoustic themes that played out while a sequence of images was shown, while the quicker samples could be interspersed without destabilising the underlying acoustic themes. Controlling this was exceedingly difficult. Without separate volume control for individual samples, I anticipated stopping each sample based on partial fade outs that were pre-mixed into all but the longest samples. Sound was highly malleable as the same *Stilm* varied between 8-15 minutes in different stagings.

### 5.3 Content and Subject Matter

*StilmS* I-II formed a “public research laboratory” examining audience relationships with two documentaries about pilgrimage, conservation and development in India. Each of the three cylinders for each *Stilm* represented a self-contained memory repository of photographs I took while traveling in India, Nepal and Australia. *StilmS* I-II images were taken in 2003 during preliminary PhD fieldwork from the source of the Ganga in the Himalayas to where it meets the ocean in the Bay of Bengal. They are thematically, culturally and geographically connected: *Stilm I* concerns the same issues as *Stilm II*, with *Stilm II* depicting the Himalayan Ganga and *Stilm I* the plains Ganga in North India. They were deliberately temporal and anachronistic while *Stilm III* was self-contradictorily atemporal.

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638 Rokeby 1998.
639 I took some of the photographs in Banaras in February 2000. Insight was intended to feed into subsequent research and production of the film, during fieldwork scheduled for 2005.
5.3.1 Stilm I: A Day in the Life of the City of Death

*Stilm I* concerns the central subjects of the ethnographic film *Forest of Bliss* and my Honors thesis\(^\text{640}\): the omnipresence of death in daily life in the Hindu pilgrimage city of Banaras on the Ganga. These subjects are explored via interrelationships between binary oppositions, such as creation-destruction, conservation-development, sacred-profane and idealist-materialist perspectives on the interplay between life-death. The relationship between my Honours thesis and *Stilm I* is indicated below by their respective titles, with Figure 5-136 a photograph of the three projected screens:

The interrelationship between Life-Death in Banaras and Robert Gardner’s *Forest of Bliss*

![Image](image.png)

Figure 5-136: Stilm I title, taken during a staging at the CCR, ANU. Photograph by Josh Wodak.

5.3.2 Stilm II: Down to Earth Up in the Himalayas

*Stilm II* concerned my then current PhD project on pilgrimage amidst rural industrialisation in the revered Himalayan landscape around the source of the Ganga. Each section addressed the following themes:

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The relationship between my PhD topic and *Stilm II* is indicated by their respective titles (Figure 5-137):

The Idea of North:
Pilgrimage and Progress
in the Garhwal Himalayas

Each title encouraged reading vertically between words onto the same screen and horizontally and diagonally between screens. Placing complimentary and contrasting words within each screen – ‘Down/Up’ and ‘Earth/Himalayas’ – referred to the continued exploration of binary oppositions and also connected individual *Stilm* titles with the overarching themes of the work. This is illustrated in discussing *Stilm III*.

### 5.3.3 *Stilm III*: ABACADABA (AKA grin repercussions)

Following the themes developed in *StilmS I-II*, *Stilm III* completes the cyclical metanarrative. *grin repercussions* refers to grim repercussions of humans upon the natural environment and ‘grim reeper’ to death and regeneration. These themes are central to all *StilmS*, but are especially prominent in *Stilm III*. There are no people, signs or animals in *Stilm III*. It represents passing through a ‘ghost world’, where humans’ effects are shown,
Figure 5-138: Stilm III title, taken during a staging at the CCR, ANU. Photograph by Josh Wodak.

<table>
<thead>
<tr>
<th>Section+Slide Number</th>
<th>Narrative structure and subject matter</th>
<th>Time of Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1 (S1-9)</td>
<td>Combined abstract macrocosmic and microcosmic environments, indeterminable scale and subject</td>
<td>Daylight (unspecified)</td>
</tr>
<tr>
<td>B1 (S10-18)</td>
<td>Segue into macro photos of biomimetic gates, bricks and building adornments (e.g. floral cast iron and marble inlays)</td>
<td>Early morning</td>
</tr>
<tr>
<td>A2 (S19-27)</td>
<td>'Zoom out' from abstract micro of nature -bark, leaves, flowers- to identifiable forms: branches, shrubs, then trees</td>
<td>Midday</td>
</tr>
<tr>
<td>C (S28-35)</td>
<td>Movement from detail of parts of larger architectural forms -building facades, corridors- to revealing the whole</td>
<td>Mid afternoon</td>
</tr>
<tr>
<td>A3 (S37-45)</td>
<td>Beginning with tree parts, then whole trees, then whole forests</td>
<td>Dusk to dark</td>
</tr>
<tr>
<td>D (S45-54)</td>
<td>Massive architectural forms (bridges, large buildings) through to experimental time lapse photos of cities at night</td>
<td>Late night</td>
</tr>
<tr>
<td>A3 (S55-53)</td>
<td>Larger scale environments: wide angle landscapes and mountains</td>
<td>First light</td>
</tr>
<tr>
<td>B2 (S54-72)</td>
<td>The beginning of the end: reversing of scale in reverse structure to B1: long shots of urban decay and destruction, through to macro shots of unidentifiable scale</td>
<td>Early morning</td>
</tr>
<tr>
<td>A4 (S73-81)</td>
<td>The reverse of the structure of A1: nature in decay, examined in increasingly closeness, ending with the different perspectives on the same images shown in A1</td>
<td>Daylight (unspecified)</td>
</tr>
</tbody>
</table>

Figure 5-139: Schematic of the narrative structure of ABACADABA
but depicting humans is restricted to the culturally specific relationships in the quotidian and natural environments depicted in *StilmS I-II*.

*ABACADABA* refers to the form and structure of all *StilmS*, but in particular to *Stilm III* (Figure 5-138). The nine letters of *ABACADABA* refer to the order of the 9 Scenes (Figure 5-139). A sections denote not-so-built natural environments while *B*, *C*, *D*, *B* form an arch of not-so-natural built environments from India, Nepal, Tasmania, NSW and Canberra. Combined, they form interweaving patterns of collages, collisions and montages which are disclosed over progressive shifts back and forth between microscopic to macroscopic images. This is explained in the above schematic (Figure 5-139), which details how they were arranged into the nine scenes. The same organisational principle was used for *Stilm I* and *Stilm II*.

### 5.4 Metanarrative Structure

The narrativity-interactivity balancing in *KYv2* was incorporated into the interrelated form, content and function of *StilmS*. Both works concern obtaining, maintaining and retaining balance between binaries. Balance is impossible between two points, as an intermediary pivot point is required, like a middle-ground balance for a see saw. In *KYv1* balancing within a ternary system was created by the physical position of the intermediary silent screen between the two audible loudspeakers. In *KYv2* this was extended to participants adjusting the balance knob of the two audio channels. In *StilmS* the triptych physically embodied a ternary system, such as Screen Left depicting something overtly sacred, Screen Right depicting something overtly profane while the content and spatial position of Screen Centre depicted something between sacred and profane. Accompanying sounds reified these ternary relationships by complementing, contrasting or being ‘neutral’ relative to any number of images being shown. Ternary logic was also used in the structure of each *Stilm*, as described in relation to *ABACADABA* above.
The role of ternaries in forming balance was also reflected across their form and content. *StilmS I-III* were collectively titled *3forthree*, as they were composed of:

3 *StilmS*, each in 3 sections,  
each section of 3 scenes, each scene of 3 parts;  
3 slide projectors each using 3 carousels each containing  
3x3x3x3 slides projected onto 3 screens;  
3 amplifiers, 3 loudspeakers for  
3x3x3 location sound samples and 3x3 spoken words,  
which are all delivered together in  
3 mediums: image, location sound and speech

The metatitle of all three *StilmS* as a collective entity is:  
*3forthree/hATriok of Triple Tryptichs*  
(*F@First u donut secede Tri Trie Try Again*)

The word play, alliteration, onomatopoeia and malapropisms reflect *StilmS’* manipulation of form and content through ‘manguage’, which stands for *mangled language*. It contains three sections. As all three *StilmS* were triptychs, part two reads as *A Trio* or *A haTrick* of three triptychs. *Triple Tryptichs* also refers to *TripleTriplet*, the linguistic component of the soundscape. Letters ‘y’ and ‘i’ in *Tryptichs* are reversed to denote a noun, despite being a neologism derived from the adjective ‘tryp tic’ which describes the quality of “a digestive enzyme that breaks down proteins in the small intestine.”

This references the ‘debased’ material substrate of 35mm film emulsion disintegrating and dissolving over time, as used in my *Sly Drooler*.  

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641 *3forthree* was the first in a trilogy of interactive installations. The second being *3forfour* (what’s the point of balance) and the third being *4forfour* (four on the floor). *3forfour* and *4forfour* were not staged as I opted to work on *Emergence*. Instead, elements of them were used in *StilmS* v4, and *Emergence* (see p259). Photographs of the scale model of *3forfour* are on the cover of this thesis. As an example of the relationship between these works, *4forfour* involved four consecutive performative installations, which each use 4 projectors, 4 projector screens, 4 laptops, 4 microphones, 4 amplifiers and 4 loudspeakers, each of which has 4 drivers.

642 *New Oxford American Dictionary* on Mac OS10.5, s.v. ‘Tryptic.’

643 See p191.
This was also referenced in debasing the materiality of the medium by scratching the title of each Stilm onto emulsion film. Part three comments on the proverb “if at first you do not succeed, try, try, try again.” Fir" and Again" suffixes are raised, to refer to a version or number, such as “3rd time lucky.” Trie refers to the computer science term for an ordered tree data structure, which influenced the design of the data-sets.

**Slides are structured as spatio-temporal expressions of ternary relationships.** Each ‘Stilm’ has three sections. Each section has three scenes. Each scene has 3 parts. Each part has 3 rows of slides. All 720 images are arranged into shots, scenes and sequences according to consonance and dissonance with images they may be shown simultaneously alongside and those immediately preceding and succeeding. This forms subset sequences of 3 images in 3 neighbouring rows: each image with that immediately preceding and immediately succeeding, in relation to each immediately preceding and immediately succeeding images on the other screens. While ‘ABACADABA’ spells out this anagrammatical and palindronic structure, all ‘StilmS’ use this cross-referencing system and structure.

The following two diagrams (Figures 5-140, 5-141) illustrated this for audiences before StilmS v2 and v3:

Figure 5-140: Diagram projected before Stilm 1 v2 and v3 to explain the narrative and structure
Figure 5-141: Diagram projected before Stilm 1 v2 and v3 to explain the narrative and structure.

Diagrams by Josh Wodak.
As the carousels had 80 Rows and the narrative required 81 Rows (9 scenes each with 9 rows), each Stilm concludes with a repeat of Row#1 (the Stilm title). This embodied the self-perpetuating cyclical narrative in the circular form of the carousels. Each was structured to be experienced forwards (Row#1-through-Row#81) or in reverse (Row#81-through-Row#1), or for one full cycle between any two Rows (such as Row#55 of Cycle A through to Row#54 of Cycle B). This built on the same narrative and structure as KY, except that StilmS’ interactivity allowed random access to any image in any row at any time, which was appropriate to the narrativity of StilmS but not to the narrativity of KY.

TripleTriplet expresses the metanarrativity of all StilmS combined. TripleTriplet involved a 2nd Sound Participant controlling three arrangements of three words. They would be controlled on a separate laptop, so this fifth participant would be in dialogue with Sound Participant #1, who mixed all sounds together and subjected the amplified projectors to Digital Signal Processing. Manipulation would be similar to the polyrhythms from the repercussive projector sounds, as Sound Participant #2 subjected each triplet to revolving permutations and combinations that became progressively enveloping spoken word collages, in reference to sound works such as Steve Reich’s It’s Gonna Rain (1965) and Come Out (1966) and Glenn Gould’s The Idea of North (1967) (which my PhD title was named after). To illustrate the relationship between each TripleTriplet, they are described according to each Stilm they accompany:

Stilm I words and their arrangements were:

- dog eat dog
- dog eat god
- god eat dog

It concerns a central tenant of Vedic philosophy, where creation perpetually begets destruction, which perpetually begets creation. Given the prominence of death in Banaras and Stilm I, it also concerns the acrimony of a city where dogs feed off the semi-cremated remains of pilgrims who travel to Banaras to die.
For Stilm II they were:

this is bliss
bliss this is
is this bliss?

This concerns the Hindu identification of the Himalayas as a *tirthastan*: a place of transcendence and bliss. Such cultural constructions of landscape impute immaterial experiences onto material places. However, ‘this is bliss’ and ‘bliss this is’ are questioned by rearranging the terms to ‘is this bliss?’ Oscillating between these states is explored by depicting repercussions of pilgrimage on the Himalayas while the *TripleTriplet* fluctuates between consonance and dissonance with the images.

For Stilm III they were:

this is that
that is this
is this that?

This refers to the polemic of mutual interchangeability. This *TripleTriplet* critiques ubiquitous, didactic, prescriptive and authoritative voice-overs that reductively ‘explain’ images by discussing entities in terms of one another (such as a documentary voice over of “*This* is village X...*that* is village Y...*this* is the issue...*that* is the solution”). In Stilm III scenes are structured whereby *this* is *this* and *that* is *that*: leakages between types of environment (such as natural and physical) may go from drips to floods as the slides and sounds represent imbalance by progressively shifting their phrasing and phasing. Enveloping waves of sound gather momentum throughout, to progressively undermine any binary partition of the world into *this* and *that*, or into a unified whole where *this* is *that*. In relation to *Intact Syntax* and the Alphabet soup analogy in Chapter 2, their “balance of specification” involved re-ordering

644 See p92.
whole words rather than the higher responsibility of re-ordering individual letters, although the net effect resembled re-ordering letters due to phonetic similarities between the words.

### 5.5 From Implicit to Explicit Interactivity

The above ideas and intentions were incrementally implemented in progressively more interactive iterations. Progressing from implicit interactivity in *StilmS* v1 and v2 to explicit interactivity in *StilmS* v3 was through workshopping further developments to the form, content and Interaction Design at each stage and staging. During all *StilmS* I interpreted audiences’ real-time body language and non-verbal auditory responses to modify the performance:  

*Like an actor during a theatrical performance, subtle adjustments of tempo, intensity and atmosphere can instigate further adjustments in the roles of artist, artwork and audience by incorporating audiences’ real-time responses. To do so, modify the duration and tempo of images and sounds, consonance and dissonance between them, the selection of audio samples and their volume according to any perceived waxing and waning of audiences’ interest and attention.*

While this made *Stilm I* and *Stilm II* implicitly interactive, they could not offer intuited responses to audience behaviour, other than in Design#1 (Figure 5-133). Human perception is incalculably inferior to computationally sensing interest and attention to create correlations between cause and affect. In keeping with ‘the theme of threes’ I conceived three Interaction Designs, with Design#2 and Design#3 to be implemented in *StilmS* v4 after the phase of critical reflection following *StilmS* v3.
5.6 StilmS v1: Prototyping the Installation

Before staging Stilm I it was necessary to stage Still Philm, a ‘pre-prototype’ detailed in Appendix D. Both premiered at the Magical Theatre in Sydney, with Still Philm on January 25 2004 and Stilm I on March 21 2004. Stilm I proved invaluable for workshopping with a public audience that gave candid feedback as they were mostly artists, collaborators and/or friends. I conducted follow up discussions with select audience members as Magical Theatre occurred fortnightly with regular attendees. Discussions concerned their experiences and perspectives on the narrative and subjects and my proposed interactive iteration.

As the first staging of the first Stilm, my image sequencing requirements lead me to recruit close collaborators for the audio. Audio comprised live sitar by Cartwright,\textsuperscript{646} amplification of the slide projectors and a data-set of samples from Forest of Bliss. All were fed through a multi-track hard disk recorder and subjected to Digital Signal Processing by Richard Schweizer. The polyrhythms from the amplified projectors were an anachronistic mechanical supersession of tabla’s traditional accompaniment to sitar in Hindustani classical music. I directed Schweizer and Cartwright to accentuate audience input into the cybernetic Artist-Artwork-Audience network through the implicit interactivity discussed on p220 above. As the carousels were not circular, I indicated a hand signal to Schweizer and Cartwright when to fade out their performances when the final row of slides was reached. To elicit intuitive improvisational responses I did not show Cartwright or Schweizer Stilm I prior to the staging.

5.7 StilmS v2: Developing and Refining the Installation

v1 could not demonstrate the cyclical narrativity since the obtainable projectors used cylindrical cartridges. v2 overhauled the narrative and

\textsuperscript{646} Cartwright and I studied sitar and tabla respectively in India together and have collaborated on a range of film, music, performance art and installation projects, including Kali Yuga and Emergence.
structure given newfound access to light boxes and cyclical cartridges. Mapping out Stilm I in its entirety refined the interwoven image sequencing between simultaneous narrative threads (Figure 5-142). The following is one ‘script’ I used when performing v2.

To stage v2 unaccompanied I simultaneously controlled the three projectors and all the sound.\textsuperscript{647} I programmed an Arkaos software patch of the data-set of 27 samples, which allowed up to five simultaneous samples to be played (one by each right hand finger). Samples were arranged in four broad colour coded categories to assist in identifying which keyboard letters triggered corresponding samples (Figures 5-143, 5-144):

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{image.png}
\caption{My notes for sequencing the three projectors for Stilm II v2}
\end{figure}

\textsuperscript{647} I researched a range of software for non-linear computerised control of sound. The requirements made selection easier, as the software had to be operable with one hand as my right hand was singularly devoted to controlling three slide projectors. The software also needed to trigger video with the audio, so that text graphics triggered by the audio would identify which sounds corresponded to keyboard keys. As a result, the software used was Arkaos.
The research-practice relationship was reified by an academic staging in a small cinema at the ANU Centre for Cross-Cultural Research (CCR) on July 15 2004 (Figure 5-145). It seated 40 people and was near capacity for the event. Publicity was circulated around fine arts, social sciences and humanities departments, as StilmS drew principally from these disciplines. How StilmS relate to KY was demonstrated by beginning with KYv1 followed by Stilm I. The relationship was explained in an introduction about my PBR and through the publicity, which stated I would present two works in which...the relationship between image and sound generates a new context for elements commemorating Robert Gardner’s film Forest of Bliss, about death and regeneration in the Indian city of Banaras. Stilm I v2 was comprehensively contextualised to facilitate audience engagement and interpretation. Publicity informed attendees that

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648 The event demonstrated the relationship between my research and practice, as I presented Forest of Bliss in the same venue in April 2004.
the second work is a Stilm, a cross between a slide show and a film. It involves three side-by-side slide projectors and a simultaneous soundscape of samples taken from the film Forest of Bliss. The slides were taken in 2000 and 2003, in an attempt to represent the omnipresence of death in daily life in the most sacred Hindu pilgrimage city of Banaras.

The audience was informed that Stilm I was the first of the trilogy and I was seeking critical feedback for iteratively developing Stilm II and Stilm III in the discussion following the staging. The audience was largely unknown to me as I had moved to Canberra and begun the PhD at the CCR four months before. The audience offered insightful feedback about what was communicated from perspectives that were largely unfamiliar with Indian culture, expanded cinema, installation art or electronic art. These discussions occurred over ensuing months as I came into increasing contact with many who attended. This also kept discussants informed about staging all StilmS I-III in direct succession in the same venue three months later.

After Stilm I v1 and v2 I completed post-production of Stilm II and Stilm III and then staged StilmS v3 in its entirety with Design#1. TripleTriplet was slated for StilmS v4 as it could not be included in v3 due to the logistics of an additional participant controlling pre-existing verbal sounds.

5.8 StilmS v3: Implementing Explicit Interactivity

Like the StilmS themselves, managing participants’ “learning curve” was in light of Penny’s approach to ‘training’ participants in his interactive artworks. This entailed designing StilmS to be intelligible through repeated engagement or, for audiences who may only experience the work once, to demonstrate the interactivity modalities in Stilm I then Stilm II, to make the modalities familiar before volunteers were invited to participate in Stilm III. Staging all StilmS in succession also demonstrated the interconnected form and themes between all three StilmS, so that those participating in Stilm III may have an understanding of what to expect given they would not know what any of the audiovisual content was. This process of familiarisation was crucial

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649 Penny 2000. Penny’s technique of managing participants’ “learning curve” is described on p107 of Chapter 2.
to creating an atmosphere conducive to four volunteers desiring and feeling comfortable to participate, given they did so amidst fellow ‘passive’ participants. As their participation was integral for evoking social and physical responsibility between audiences and the work, the challenge was to create suitable conditions for such across four vastly different stagings. The differences between these stagings determined such variables as whether any verbal or textual contextualisation was appropriate. The second staging, discussed below, contextualised and demonstrated the narrativity and interactivity, the third staging explored the ability of the work itself to communicate how it functioned with no contextualisation provided while the fourth staging provided absolutely minimal contextualisation.

5.8.1 Design#1: Remote Control

Remote Control is the Interaction Design that was described in the introduction to this chapter. When staged, my control was relegated to emphasizing consonance or dissonance between images and their audio repercussions, by improvising a natural and/or industrial soundscape that was fed into the mixer controlled by Sound Participant #1. This referred to how musicians played ‘second fiddle’ to images they had no control over in pre-talkie cinema and how VJays play ‘second fiddle’ images for live musicians. Influencing participants’ navigation through the images was non-verbally negotiated with Sound Participant #1’s control of sounds produced by myself and participants. For example, if feedback delay descended into entropy in an ‘industrial’ scene while I provided sounds of birds and waterfalls, Sound Participant #1 could reduce the volume and Digital Signal Processing of the projectors to juxtapose nature sounds with industrial images.

The subject of responsibility to the natural environment was evoked by how participants collectively oscillated between the different states of the work, as represented by pre-arranged shifts back and forth between natural and urban scenes in Stilm III. Due to the structural arrangement of pre-recorded sounds and images, these oscillations occurred as repercussions of a
fugue, where they refer to “the return of the theme after an episode” and the definition of “response” in music which is “the answer to the subject in a fugue.” Repercussions are also between scenes, as the amplified sounds of transitions during a scene could produce frenetic polyrhythms that carry over such accumulating acoustic ‘residue’ into the next scene. This evokes permeable membranes between natural/human and audio/visual environments which ‘spill over’ into one another. Furthermore, participants’ navigation was likely to subjugate the narratives within the cross-referencing system between images, to highlight entropic interpenetration between ‘natural’ and ‘urban’ scenes. Retaining or undermining the arrangement of each scene as self-contained required spontaneous and unscripted “‘Real Conversation’...between members of the audience” to navigate through images in dialogue with co-participants.

5.8.2 Staging

5.8.2.1 Amnesty International Freedom Festival (AIFF)

Before staging StilmS I-II in succession I decided to stage Stilm II or Stilm III to garner responses, as neither had been staged. I chose Stilm III as it required little or no formal explanation, being without socio-cultural references. The images of Stilm III were staged at the AIFF on September 25 2004 at Tilleys in Canberra (Figures 5-151, 5-152). AIFF is important in Canberra’s cultural calendar and had over 140 attendees. I collaborated with Somaya Langley, who performed live electronic sound-art while I performed the visuals. Computer-controlling the slide projectors was researched, to facilitate greater responsivity between sound and vision. This was appropriate to v4,
Figure 5-145: Old Canberra House, venue for StilmS v2+v3  
Figure 5-146: Balmain Town Hall, venue for StilmS v3

Figures 5-147, 5-148: The rooftop courtyard at ANU School of Art, venue for StilmS v3

Figures 5-149, 5-150: The downstairs courtyard and exterior of ANU School of Art

Figure 5-151: Tilley’s stage area, venue for StilmS v3  
Figure 5-152: Somaya Langley performing during StilmS v3
with anachronistic analogue technology appropriate to the “media archeology”\textsuperscript{653} approach to \textit{v1-3}. The staging was useful to workshop \textit{Stilm III} with a public audience, however it was not highly relevant to the following stagings, which intended to cede greater control to participants over images and sound.

5.8.2.2 ANU CCR

The premiere of all \textit{StilmS} was at the CCR on October 8 2004 (Figure 5-145).\textsuperscript{654} It was publicised more extensively than \textit{v1}, resulting in an audience exceeding the 40 fixed seats, so I placed 10 extra chairs behind the back row. Attendees were faced with a deliberate bind as they entered the space, since the volume of equipment blocked the main entrance and thoroughfare.\textsuperscript{655} I stuck two arrows to the floor at the entrance: one pointing left and one right. Choosing right required squeezing through a narrow thoroughfare between a chair and a wall or choosing left required navigating between all the equipment. The physical and symbolic dominance of technology became a source of disagreement between attendees during the feedback session, as the disjuncture between representing 'nature' via the arsenal of equipment provoked debate.\textsuperscript{656}

A symbolic montage of \textit{StilmS}' form played on loop on the video projector while attendees settled in. As an academic staging, I introduced the socio-cultural basis of each \textit{Stilm} and the issues I was investigating through them. Explication of \textit{Stilm II} expanded on the limited publicity:

This \textit{Stilm} is about pilgrimage in a landscape revered for its sacredness: the Himalayan mountains at the source of the river Ganga. Organised around three related themes, \textit{Paradoxes of Pilgrimage}, \textit{Problems of Progress} and \textit{Purity or

\textsuperscript{653} Huhtamo 2004.

\textsuperscript{654} This was the same venue used for \textit{Stilm I v2}.

\textsuperscript{655} The equipment used were: 3 slide projectors, 3 remote controls, 3 projector screens, 2 microphones, 1 laptop, 1 sound mixing console with built in effects, 1 overhead projector, 1 video projector, 1 stereo amplifier, 2 loudspeakers, 1 video camera and all associated cabling.

\textsuperscript{656} Asking audiences to express preferences through movement became instrumental in \textit{Emergence} (see p268).
Pollution, the work concerns the performance of pilgrimage amidst a backdrop of rural industrialisation.

Audiences were informed that *Stilm S I-II* were relevant to the explicit interactivity in *Stilm III*. This encouraged active analysis of *Stilm S I-II* for anyone to decide if they wanted to interact in *Stilm III*. The publicity was also used to communicate about the interactivity:

ABACADABA is an experiment in interactive audiovisual installations. The slide projectors are amplified, and their operation is offered to three volunteers from the audience (which makes them part-performers in the work). A varied audiovisual environment is constructed, out of collages, collisions, contrasts and montages between not-so-natural built and not-so-built natural environments in India, Nepal, Tasmania, Blue Mountains, Sydney and Canberra. Shots, scenes and sequences pre-loaded into the projectors are jammed with: between different volunteer operators and between each operator and their own projector, as every slide change is amplified and sent through a series of delays, to create audio rhythms which spring from the visual rhythms. In response to image combinations created, I play a stereo soundscape from a laptop. The sound sources are mixed by another audience member, who may shape the balance of the soundscape in tune with their own response to the images.

Participants’ interaction was marked by some trepidation at the beginning. This was understandable given it was the first staging of all *Stilm S* and the first involving explicit interactivity and that this spontaneous collaboration between five people occurred in an academic setting without prior arrangement of who would participate.

### 5.8.2.3 ANU School of Art Ball

On the following night, October 9 2004, I staged all *Stilm S* in the radically different context of the ANU School of Art Ball (Figures 5-149, 5-150). They were part of a night long festival of simultaneous performances, exhibitions and installations occupying the entire School of Art. *Stilm S* were staged on a flat outdoor rooftop designated for electronic performance and installation art (Figure 5-148). In pre-production I identified a long white painted wall as appropriate due to the frequent images of walls, bricks, and

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657 Video documentation is included in Appendix A.
building sites (Figure 5.147). There were no seats so attendees dispersed themselves throughout the space. Presaging v4, participants controlled all projectors and Digital Signal Processing of all projectors in all StilmS. As I did not control any images, I concentrated on my contributions to the soundscape, by developing new audio patches of different samples. Warwick Lynch, who I did extensive audiovisual collaborative performances with, was Sound Participant #1.

The festive atmosphere, minimal contextualisation and expanded parameters of interactivity resulted in greater experimentation. In this context participants discovered the above mentioned random access from holding down the navigation button to move any number of images forwards or backwards in one go. As no program identified when the beginning or end was, some people came and went while StilmS were being staged while others interacted or sat, stood and walked around. For Stilm III I invited three dancers to dance with firesticks between the projectors and the wall. Images were partially projected onto their bodies and through the flames before they reached the wall.

5.8.2.4 Balmain Hybrid Happenings Festival (BHHF)

The last format StilmS were staged in was BHHF at Balmain Town Hall, from November 24-26 2004 (Figure 5.146). BHHF was promoted as “immersing the audience into a high-tech realm of interactive sensory wonders” which would be “beyond a bums-on-seats film festival experience”658 (Figures 5.153, 5.154). Each Stilm was staged consecutively on three consecutive nights as a 40 minute event within the program (Figures 5.155, 5.156). My solo practice and collaboration with Synarcade featured heavily, as each night we staged the first iteration of Emergence659 and VJayed for the bands, many of whom were affiliated with Synarcade. I devised appropriate technical specifications for the screens, projectors, microphones and PA to facilitate immersive engagement in

The website does not exist as of October 23 2009.
659 This iteration and staging of Emergence v1 is the subject of Appendix C.
the massive open-plan hall. This research was also used for Emergence v1, as it required most of the equipment used for StilmS in a similar configuration.

As “Hybrid Happenings,” the artists were invited to engage audiences in various modalities. I decided against any verbal introduction, contextualisation or formal feedback sessions. To publicise the interactivity, I used the prosaic title of Still Films: Interactive AudioVisual Installations and used the same summaries from v3 at the CCR. The following Figures (5-157 and 5-158) were digitally projected onto the centre screen for 30 seconds before respective StilmS:
Stilm III presented a different challenge to encourage audience interaction. I projected the following invitation (Figure 5-159) and instruction while waiting for volunteers:

However the publicity also established the parameters:

The operation of the slide projectors is offered to three volunteers from the audience, who shape collages, collisions, and montages between not-so-natural built and not-so-built natural environments in India, Nepal, Tasmania, Blue
Mountains, Sydney and Canberra. A soundscape is mixed by another audience member in tune with their own response to the images, as an experiment in interactive performance.

BHHF did not have the cordial atmosphere of the above stagings. StilmS were the first interactive event each evening, being preceded and succeeded by passive spectation of bands and films playing. They required improvised collaboration between heterogeneous audiences. Despite StilmS I-II displaying their operational logic, the invitation to interact with Stilm III surprised the audience on each night. Many of the volunteers who approached asked about the parameters of acceptable interaction, to determine whether their responsibility would be burdensome. Although I answered with candor and endeavoured to reassure them there was no ‘right’ or ‘wrong’ interaction, prospective volunteers expressed their inhibition of performing unknown material with co-performers they did not know. Although three volunteers interacted each night, interaction was initially cautious between them, as the five performers negotiated rapport with one another and the work. The amplified sound projectors were ominous relative to previous stagings, due to the ambient acoustics of the massive hall. The festival’s sound operator was Sound Participant#1 for each night.

5.9 StilmS v4: The Definitive Designs

StilmS v1-v3 were successful relative to the means, resources and time I could devote to the project. However they were limited in their subjugation of my authorial responsibility and elevation of participants’ control. They were also designed to become intelligible by attending multiple times, as it was difficult for participants to know what was on other screens during their first time observing or participating. This related to the same principle in KYv2, where adjusting the audio balance knob allowed a greater sense of engagement if a participant first knew what was on both audio channels, so they could make informed decisions about what voices they wanted to highlight and which they wanted to suppress. Similarly in StilmS, participants needed to use inductive logic to anticipate what may be appearing on other participants screens, based on the deductive logic of organising each Stilm
into nine scenes with nine images in each scene. Scene transitions formed figurative ‘anchor points,’ where if a participant felt bewildered, they could find their place within the meta-structure when they reached scene transitions in their own carousel and/or observed their co-participants doing likewise. Alongside the related developments discussed below, v4 sought to present StilmS so that participants could attend multiple times so as to discover their nuances of interactivity and narrativity.

The anachronistic ‘purity’ of original slides suited v1-v3 but v4 does not highlight disjunction between ‘ancient cultures,’ ‘timeless nature’ and the electro-mechanical installation. Rather, all slides are digitised and computationally controlled digital projections. This creates much greater spatial and temporal interactivity by the relative flexibility of digital image files over 35mm analogue slides. This expands the malleable and modular form of v1-v3 through ‘modular malleability’ and ‘malleable modularity.’ The visual primitives are still whole individual photos, but there are more means of moving between them, according to variable speed, duration, direction and transitions (such as cross-dissolving and fading in-and-out). Each ‘Stilm’ is retained as a separate artwork. For instance, images from ‘Stilm I’ would not appear in ‘Stilm II.’ The data-set of sounds is substantially expanded, both by adding new samples and by making the sound primitives substantially smaller, through granular synthesis and a wider array of Digital Signal Processing than used in ‘StilmS v1-v3.’ Through Design#2, my performative agency is literally the collective interactions of all participants. Design#3 supersedes my performance in place of perpetually self-perpetuating semi-autonomous networks derived from collaborative and collective interaction. Artificial perception systems used to analyse participants’ behaviour provide a rich interpretative field for exploring the behavioral properties of indeterminate causality and emergent behaviour. All behaviour of the work is digitally controlled in real-time, subject only to the artificial perception system and not to any prescribed order or sequencing.
5.9.1 Design#2: NoPainNoGain

Design#2 (Figure 5-160) explored biofeedback in interactive art, such as groups administering electric shocks in Stelarc’s Ping Body (1995-98). It was heavily influenced by my experiences of interacting with Khut’s Drawing Breath (2005) and Cardiomorphologies (2004-8) and my encounter with Parr’s Kingdom Come and/or Punch Holes In The Body Politic (2005) as described on p42 of Chapter 1.

Only a portion of audiences can interact in Design#1 and Design#3. Design #2 levels the playing field between ‘players’ and ‘sideline sitters’ whereby everyone exerts equal influences, as even opting to not interact exerts influences. Select muscles on my arms, hands and fingers are connected to electrodes. Participants determine the volume of electrical charges which involuntarily move these separate body parts (Figure 5-161, 5-162, 5-163, 5-164, 5-165). A 3D Motion Sensor system, such as Rokeby’s ‘Very Nervous System’ or Penny’s ‘Tracer,’ analyses the speed, direction and gestures to
produce corresponding inflections of the modules of audiovisual media. The performer does not control the work, but their puppeteered movements conduct the work. This is analogous to how conductors’ gestures in Western classical music communicate the parameters of how to play the score. As in Design#1, movements from the left arm, hand and finger control audio while right side movements control visuals. For example, moving the right arm away from the body at distance A and speed B causes effect C, such as changing images forward at rate D. Participants are divided into thirds, with each third connected to separate body parts. The left third controls location sounds according to left arm left-right movements. The middle third controls the ‘TripleTriplet’ according to left arm forward-backward movement. The right third controls the visuals according to right arm forward-backward and left-right movement. A circular dial is attached to each seat as a parody of the following electronic voting mechanisms in Figure 5-161 and 5-162.

The dial numbers range from -5 to +5. Turning the dial left, in increments of -1, -2, -3, -4, or -5, attributes a corresponding voltage to move a body part left and/or backwards, depending on which audience sector and which muscles the charge is mapped to. Positive values (+1, +2, +3, +4, or +5) produce corresponding shifts to the right and/or front with the same contingency (Figures 5-163, 5-164, 5-165). Deciding not to move the dial forms implicit interaction, as it allows those explicitly interacting (by moving the dial) to have greater control in the execution of the work.

While data from participants’ dials could interface directly with the work, the performer is still integral. Interacting via a mechanised human heightens attendees’ responsibility toward one another, to the performer and the Responsive Environment. The puppeteered body movements determine the sights and sounds attendees respond to. This produces cybernetic feedback loops between causes-consequences and Artist-Artwork-Audience, to temper haphazard dial adjustments, as the performer’s pain and frenetic bodily movement is in full view of attendees, with more frenetic bodily movement accordingly destabilising the behaviour of all audiovisual media. While the performer behaves involuntarily like a machine, the human body still behaves unpredictably, like a ‘ghost in the machine.’ After being tensed and flexed by electrical charges, the central nervous system can make the same muscles spontaneously recoil. This residue of agency in the Human Computer
Interaction allows for a margin of error in the responsiveness. Consequently, while participants may exact punitive control over the performer, this cannot be extended onto the behaviour of the work.

Figures 5-161, 5-162: Examples of some of the IRDA based systems for administering electric currents for Design#2

Figures 5-163, 5-164, 5-165: Electronic voting mechanisms for Design#2, whereby participants could decide on the extent of the positive or negative electric charge administered by moving the slider or dial. Of note is the name of the devices: “Interactive Response” and “Interactive Participation”

660 These voting devices were also considered for my Interaction Design for Emergence (see p268).
5.9.2 Design#3: Emote Control

‘Emote Control’ (Figure 5.166) re-conceives ‘Remote Control’ to allow multiple spontaneously self-forming and self-organising groups of participants to collectively interact with the work. It is a stand-alone installation that runs without any operator intervention or human performers. Content alternates every hour between ‘StilmS I-III’: i.e. ‘Stilm I’ from 9-10am, ‘Stilm II’ from 10-11am and so on. It encourages individuals within groups to collaborate and for groups to collaborate with other groups. Participants’ movement around the space collaboratively determines the selection, sequencing, inflexion, manipulation and Digital Signal Processing of all audiovisual media, which cybernetically determines how they navigate through the narrative.661 It is

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661 These principles were utilised in Demophobic and Emergence.
“beyond a bums on seats” installation where all are encouraged to roam within the perimeter of the screens. Given the “‘broad bandwidth’ of interaction” it is designed for 9-18 simultaneous participants, depending on how many move within range of the sensors versus how many do not. Infrared and sonar sensors assess the edges along which images are projected so crossing a sensors’ path induces corresponding influences on the audiovisual media. These paths are represented by triangles of intersecting coloured lines (Figure 5-166). The space in front of the screens has no hardware obstacles as the screens are rear-projected.

Sensor paths along the green lines corresponds to images, blue to non-verbal sounds and brown to ‘TripleTriplet.’ Images, sounds and words are influenced by where and when sensor paths are intercepted and whether three sensor paths from the same triangle are simultaneously intercepted. When three related sensor paths of the same colour are intercepted, the sensors calculate the distance between these three people. Subtlety and nuance are exerted by these networks of spatial relations between these three people which respond by highlighting correspondingly ‘cohesive’ pre-authored image-sound-text arrangements.

Data mapping does not equate collaboration with order and individuality with chaos. The behavioral responses to collective interaction are revealed through participants investigating control within the spectrum of indeterminate consequences. It encourages participants to learn how to collectively and interdependently engage with each other and the work, if they desire to reduce any entropic propensity of the media modules’ behaviour. Doing so reveals the cogent narrative(s) by sequencing the images such that the cross-referencing system becomes readily apparent. Participants may identify which image groups are associated, so if Screen Left is ‘three images ahead’ of Screen Right, participants may try to move through three Screen Right images to align both sequences. Any alignment is likely to be temporary, as it encourages ongoing negotiation between participants to collectively determine the behaviour of the work.

663 Rokeby 1990.
5.10 Summary

I developed StilmS to the extent possible while preparing to do fieldwork in India in 2005, with v4 to be implemented post completion of the original PhD topic. The period between staging StilmS v3 with Emergence v1 in November 2004 and Emergence v2 in October 2005 was rife with uncertainty from waiting nine months for a research visa for India. Finding out in March 2005 it would not be issued made it impossible to continue the original PhD topic. Throughout this period I continued StilmS v4 alongside burgeoning roles as a key creative for Emergence v2. I worked on both while determining which aligned better with the formal commencement of this PhD topic in July 2005. I presented my proposed StilmS v4 in a talk called Sound Samples, Slides and Audience Interactivity in Anthropology at the ANU Data-Sets Interdisciplinary Colloquium\textsuperscript{664} at the ANU School of Art on October 29 2004. As this preceded the final staging at BHHF, I analysed audience interaction during BHHF to assess the viability of v4. While v4 was not staged it provides an overview of “life-as-it-could-have-been”\textsuperscript{665} since it concluded the iterative development of StilmS and heavily influenced my contributions to Emergence. v4 also demonstrates the continuity between my research and practice between StilmS not being staged and the making of Emergence.

Opting for Emergence over StilmS concerned my practice stemming from my research trajectories. StilmS evoked environmental responsibility by combining environmentalist subject matter and interactivity that encouraged awareness of the influences of participants’ behaviour on the artwork-as-Environment. While they did not possess the one-to-many interactivity of KY, the observer-participant ratio appeared to create a performative burden in specific contexts, such as the BHHF staging. The decisive criteria for deciding on Emergence v2 over StilmS v4 stemmed from one of Armstrong’s techniques for

\textsuperscript{664} “Data Set” was defined by Martyn Jolly, the Symposium Convener, as: “a named collection of logically related data items arranged in a prescribed manner.” ANU Data-Sets Interdisciplinary Colloquium, ANU School of Art, Canberra, October 29 2004.

evoking environmental responsibility in Responsive Environments, according to whether
participants [are] becoming involved within broad scale processes of dialogue that
involve both the work and all other participants, and through such processes of
exchange and transfer may they begin to feel part of a broader and broadening
dialogue which incorporates both the work and all other participants.⁶⁶⁶

As the following chapter discusses, *Emergence* was a more appropriate means
through which to engage all participants to one another and to the artwork-as-
Environment.