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Free associative composition: Practice led research into composition techniques that help enable free association.

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[ Tom Adams ]

Free associative composition: Practice led  
research into composition techniques that  
help enable free association.







## Disclaimer

I declare that this dissertation is my own work.

Due to the multimedia nature of the portfolio, this commentary is intended to be presented as an ibook, allowing for concurrent and interactive presentation of text, audio, image and video offline. To view this portfolio correctly an ibook compatible ebook reader is required. A free software ibook reading app can be downloaded free from the Apple App Store:

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The ibook is intended to be viewed in landscape.

If reading the PDF version of this portfolio then the audio and video will not display properly. When audio or video should be played, the name of the track is given in the text and can be found under the relevant chapter and section headings in the accompanying media folder.

## Acknowledgments

I would like to thank my supervisor Julio d'Escrivan for his support and enthusiasm during this MPhil. In addition I would like to thank Julio for the many excellent conversations we have had, and hopefully will continue to have, on topics such as philosophy, songwriting, photography and the woes of being a freelance film composer. I would also like to thank my second supervisor Liz Dobson whose experience regarding the finer details of academic writing have been enormously useful whilst writing up this commentary.

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Lastly, I would like to thank my parents who's constant support, advice and timely suggestions of camping weekends away have been invaluable and much appreciated over the last year.

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## Abstract

The original compositions presented in this portfolio are the product of practice led research into developing and implementing composition techniques that enable free association. This commentary outlines the different approaches I have taken and the reasoning behind them.



Free association is in essence the subconscious connection of ideas from previously assimilated knowledge and is a term that has been borrowed from neurological research and applied to musical improvisation by Martinez (2010). Free associative composition is a term used in this thesis to describe the process of free association in a composition context. I encountered the term when contemplating the issues of my experiences composing whereby I found that I composed material that I considered to be the most exciting and original when I lost myself in what I was doing and was not consciously thinking through each and every compositional decision. The following quote by the legendary jazz saxophonist Charlie Parker arguably embodies the core principle of free association:



*" You've got to learn your instrument. Then, you practice, practice, practice. And then, when you finally get up there on the bandstand, forget all that and just wail."*

-Charlie Parker (Pugatch, 2006. p73)

Parker's statement is echoed by Gladwell who argues that it takes 10'000 hours of practice to master a skill (Gladwell, 2008), although there is dispute regarding the exacting nature of this claim (Szalavitz, 2013). In her article 'The Improvisational Brain', Martinez presents a scientific explanation of free association that agrees with both Gladwell and Parker;

*'A dedicated musician will immerse himself in the recordings of his chosen genre or composer, just as a language student might absorb foreign films or tapes of people speaking. Over time, both musician and student accumulate more phrases and ways to combine them...eventually, through constant practice, you get to the point where, scientists believe, these processes get pushed down into the subconscious. They don't need to be consciously worked out anymore. They become a subroutine. Suddenly you realise you're saying things you haven't heard or memorised. You're able to free-associate.'*

- (Martinez, 2010. p2)

There are many parallels between Martinez's observations of free association in improvisation and my own observations of my composition process. The links between improvisation and composition have been made by others such as Derek Bailey who describes improvisation as 'instant composition' (Bailey, 1992), as well as Brian Eno who presents the idea of composition being improvisation in slow motion (Tamm, 1995). Therefore, although Martinez is discussing improvisation it would be reasonable to assume that her concept of free association is equally valid when considering composition. In the same way that a language student reaches a point where they are able to create original phrases by free associating with the phrases they have internalised, it is likely that a practiced composer is similarly able to create original music by free associating with the music they have internalised.

This process of internalisation is different for a composer than for a language learner, however, in that every composer is learning a language unique to them, depending on their desired compositional voice and inherent

musical aesthetic. One way to address this individuality is by considering musical semiotics. In his book *Music's Meanings* (Tagg, 2012) Philip Tagg presents the idea of 'musical semiotics' whereby an object (in this case a particular sound) has a signifier (a recording, performance or presentation of a sound) and the final interpretant (one's opinion of the sound) is determined by an individual's relationship with both the object and the sign. When put in to a musical context, Tagg suggests that these distinctions are essential when it comes to understanding '*how the same sounds can mean different things to different people in different contexts at different times.*' (Tagg, 2012. p157). It is likely that the inherent aesthetic compositional choices that a composer makes when free associating are informed by a process of assimilating information explained by musical semiotics.

Free associative composition is not a particular technique for composing with an implied set of stylistic characteristics, instead it offers a more philosophical stance on the situational circumstances that enable composition in any given musical genre. In this way, Martinez's description of free association is not unlike Csikszentmihalyi's theory of flow in which an individual has an 'optimum experience' deriving from being in 'flow', a '*state in which people are so involved in an activity that nothing else seems to matter*' (Csikszentmihalyi, 1992. p28). Optimum experience is when an individual is able to '*control what happens in consciousness moment by moment*' giving them the ability to '*focus attention at will, to be oblivious to distractions*' (Csikszentmihalyi, 1992. p103). It is possible to draw similarities between Csikszentmihalyi's theory of being 'in flow' and Martinez's description of free association in that they both conclude that there are productivity performance benefits to achieving a mental state of altered consciousness. This suggests that once state of flow, sufficient to cause an optimum experience, is achieved then an individual's ability to free associate increases.

This commentary and associated portfolio illustrate various examples in which I have developed and put into practice a series of technological systems and composition devices that promote and enable a state of flow and free association in my own composition. By doing so I hope to establish a composition workflow that allows me to produce original creative output that is in a manner and style that I find rewarding as a composer.

## CHAPTER 2

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# Techniques for free associative composition.

[ This chapter will detail two ideas about free associative composition techniques ]

## Implementing a free associative composition technique: stream form

Stream Form is a composition and performance approach that provides a means of organizing and shaping musical materials whereby a composer/performer diverts the stream of audio in a desired direction (d'Esquivan and Adkins, 2013). Stream form composition combines pre-decided compositional decisions, such as what structural or timbral processes to set in motion, with real time reactive compositional decisions as a performer responds to the emerging landscape of a composition. It could be said that, in this aspect, the workflow that stream form offers is not unlike the narrative workflow offered by the scroll manuscript technique championed by beat generation authors such as Jack Kerouac (Kupetz, 2008). The medium of a scroll manuscript places an emphasis on an entire story being written as a continuous stream of ideas, similarly stream form places an emphasis on a composition being written in a continuous stream of audio. The moment by moment interaction that this encourages could be said to be like a state of 'flow', and an element of sub conscious decision making is introduced, something one would naturally associate with free association.

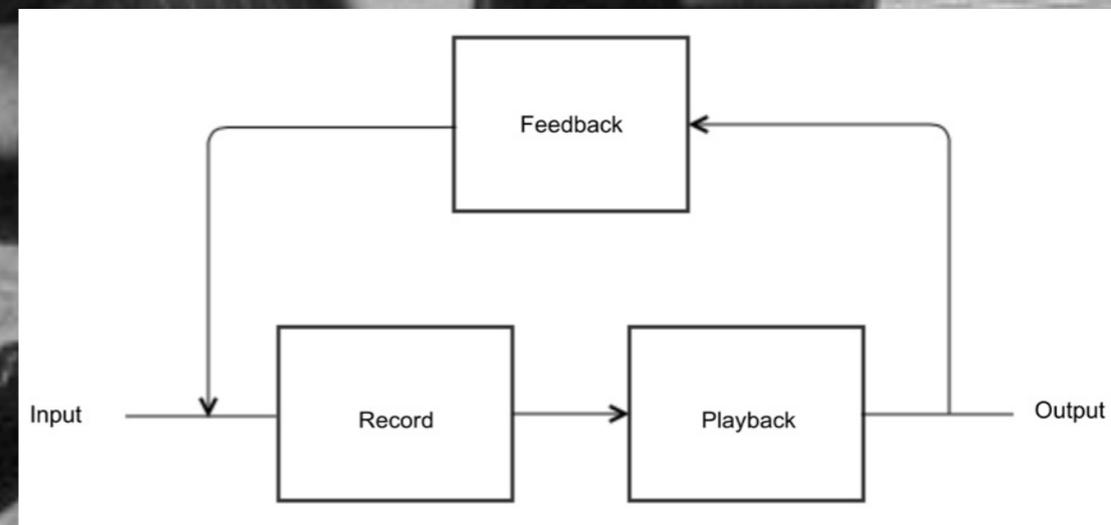
In order to use stream form as a technique it is necessary to have a method for setting a musical stream in motion. In my research I found that the most accessible way to do this was to design a technology based system. There is an unavoidably close relationship between the technology used to make music and the compositional results, a situation that has drawn criticism due to a perceived '*inherent tension between accepted software engineering and the requirements of creative composers*' (Nuhn, R et al. 2002, Motivation, para. 4). In my work however I have found that the use of both software and hardware has greatly enabled my composition workflow. The system I developed to employ the stream form technique constitutes a series of parallel and series phasing loops that feedback into each other. This system is essentially a combination of the fundamental concepts behind two existing means of sound generation; Robert Fripp's 'Frippertronics' looping system and Brian Eno's 'music for airports' loop phasing system.

The 'Frippertronics' loop system results in a gradual build up of layers to create a rich and full texture of increasing density. This system is based on an input source, often a guitar or synthesiser, to generate the material being looped. D'Esquivan and Adkins (2013) describe this composition technique as 'Delay Form' and it is the most common type of looping performance as it only requires a single looping device. Typically this results in a single type of composition shape where by the texture is uniformly built up or down by adding/removing loop layers.



Example shape of a composition using delay form looping.

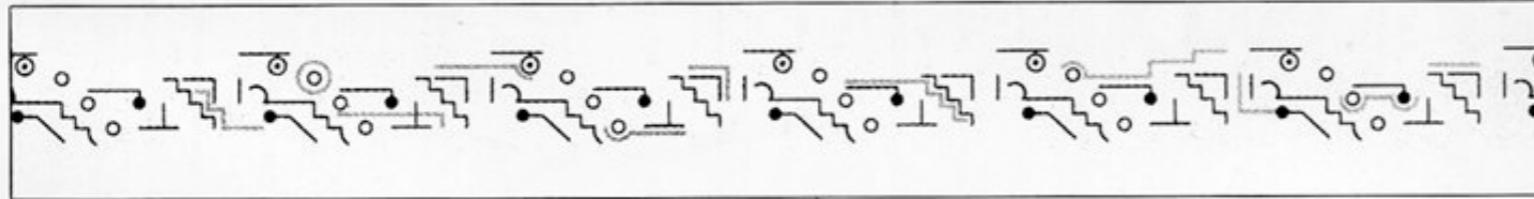
Signal flow of the 'Frippertronics' looping system



The Eno loop system plays back different length loops in parallel. Unlike Fripp's input reliant system, Eno chose to only use pre-recorded loops. The result of this is a texture that gradually develops structurally as the loops go in and out of phase with each other but maintains a static density.

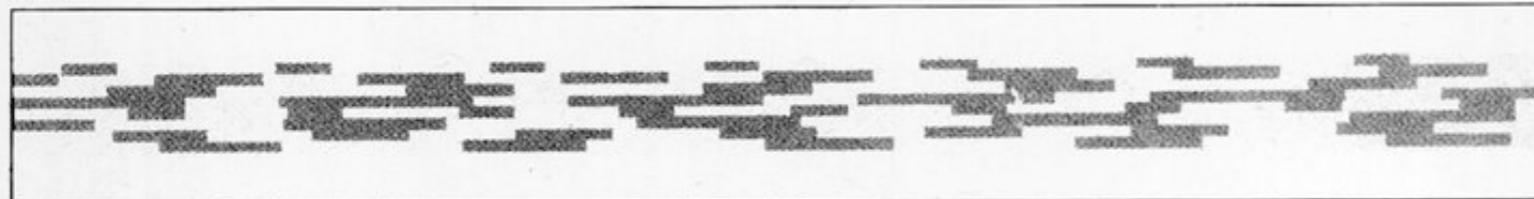
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16:39



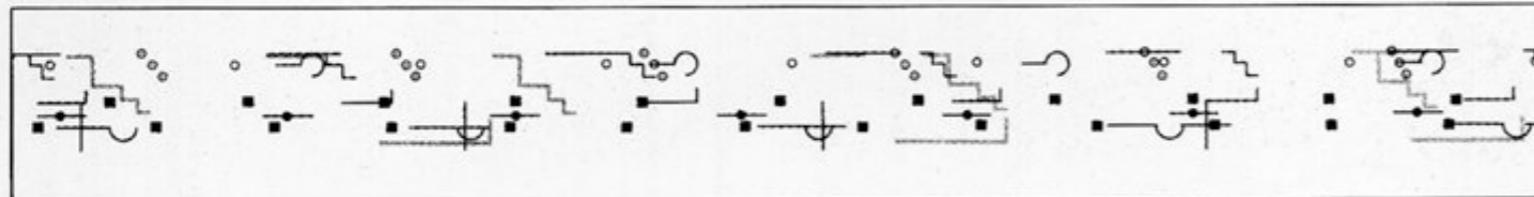
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8:25



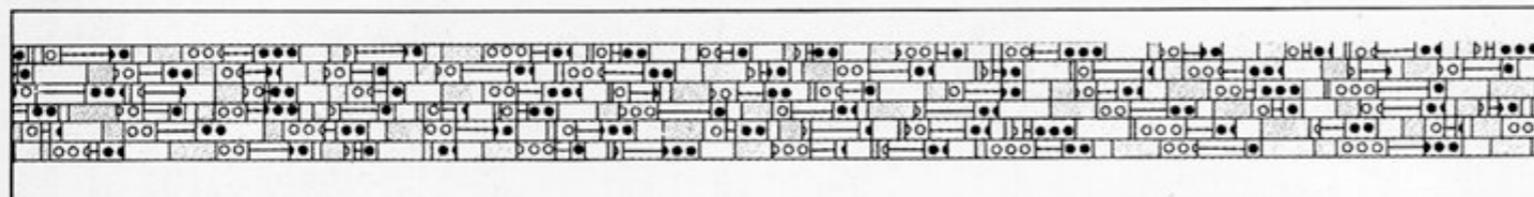
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11:36



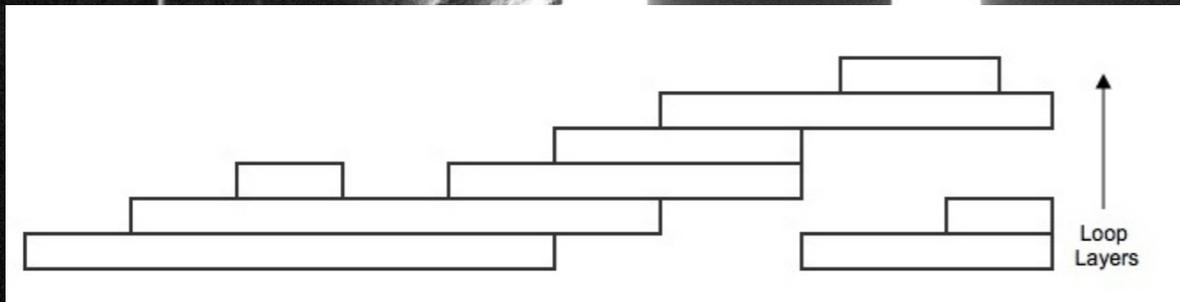
2/2

9:38



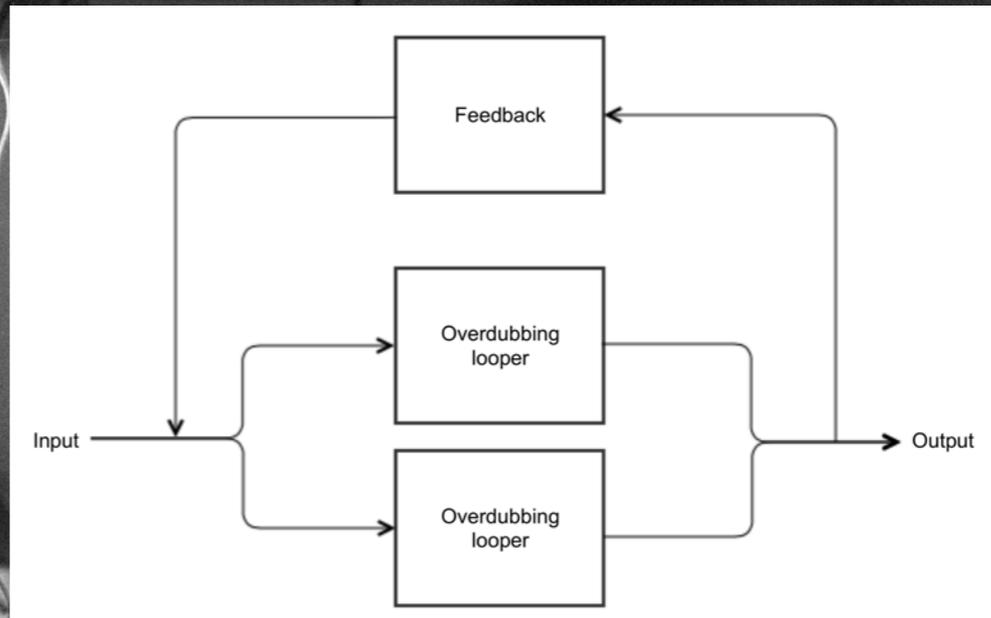
The score for Music for Airports

My looping system combines a parallel loop pair (Eno) and series feedback loop (Fripp), meaning that I am able to pass loops back and forth between three looping stages. This affords me a significantly greater degree of compositional flexibility over both the Eno and Fripp looping techniques, as I am simultaneously able to make real time decisions about both the structure and the density of the emergent texture. It is not always predictable how the two different looping systems will interact, therefore close attention is required on the part of the composer/performer, encouraging a state of flow. Similarly, the emerging texture will suggest a musical direction to the composer/performer that is based on their own interpretation of the textures and semiotic value(s). The compositional decisions being made in response to these interpretations cannot be pre-meditated and therefore could be regarded as actively encouraging free association to take place.



Example shape of a composition using stream form looping.

Signal flow of my stream form looping system



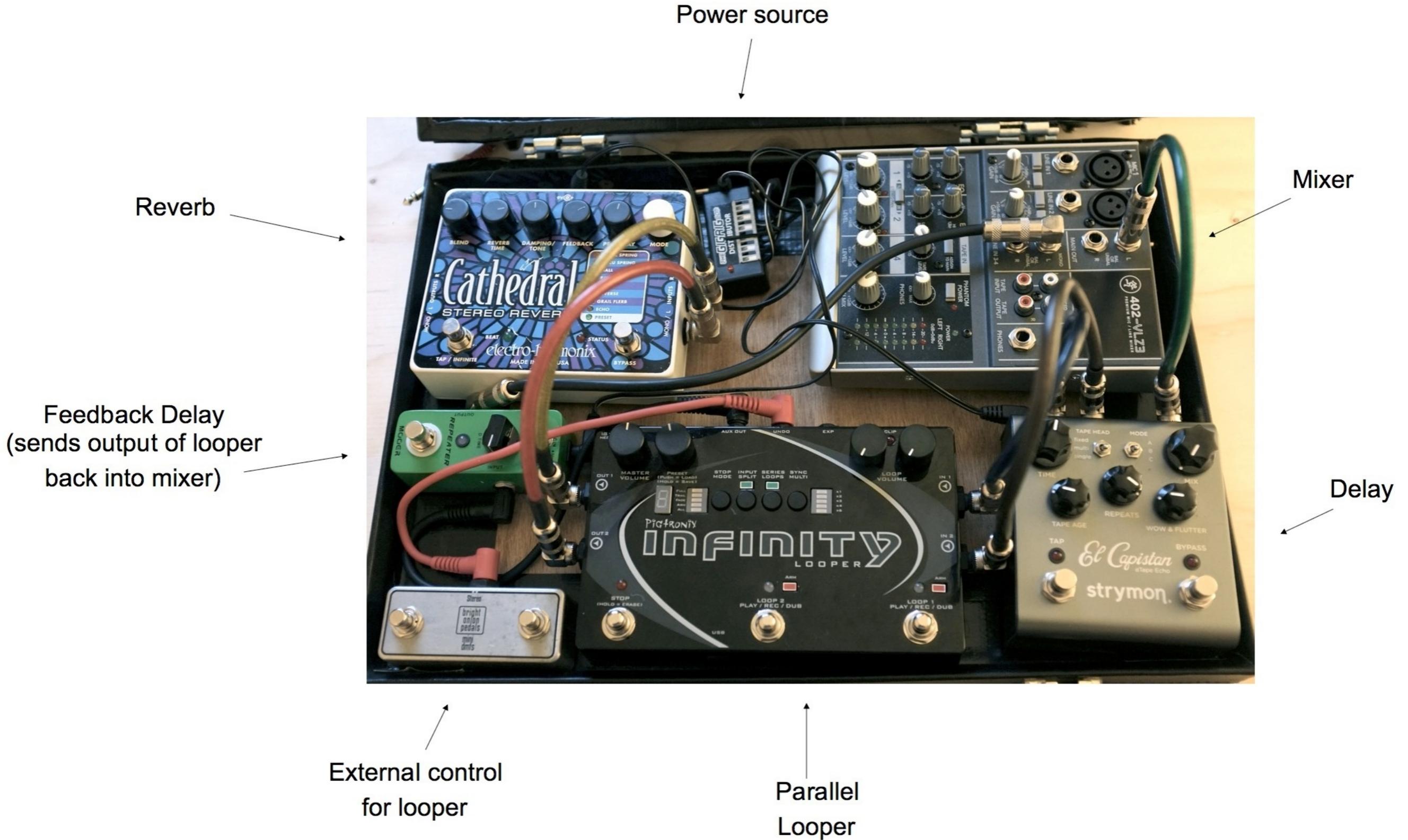
When designing how best to implement the combined looping system, my focus was on ensuring a high level of intuitive tactile interaction between myself and the loop manipulation. I considered this important because the ability to operate a system without necessarily having to think through every action would help enable a state of flow and also free association in much the same way as it would with an acoustic instrument. To achieve this state of familiarity with the electronic process a degree of practice and virtuosity would be required. To refer back to the Charlie Parker quote that opens this commentary:

*"You've got to learn your instrument. Then, you practice, practice, practice. And then, when you finally get up there on the bandstand, forget all that and just wail."*

- Charlie Parker (Pugatch, 2006. p73)

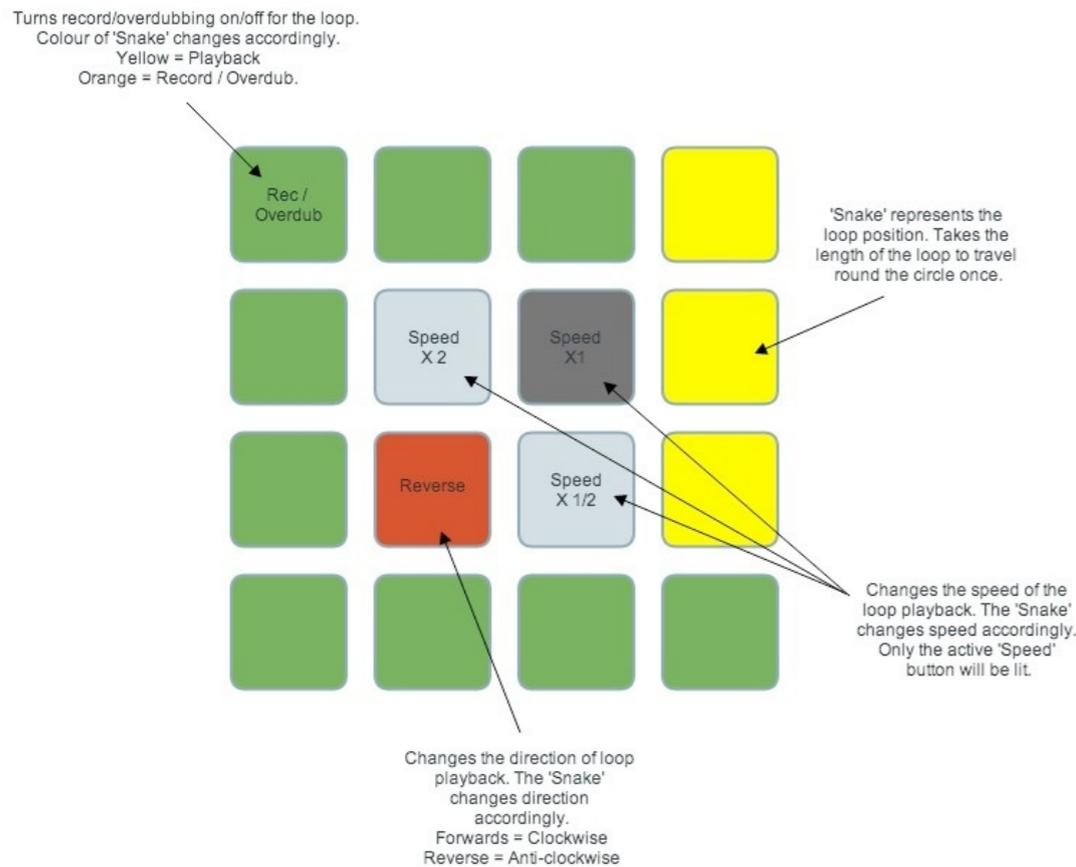
I designed two versions of my looping system, one for using hardware devices and one using software. I initially opted for hardware, using commercially available guitar pedals and a mixer to create a version of the combined looping system. Guitar pedals tend to have large controls, designed for use in live situations and also tend to have 'one knob per function' functionality which helps with tactility and as well as being intuitive to learn to use

AUDIO: The Long Walk Home - Live performance processing guitar  
using hardware to control stream form loops.



Annotated diagram of pedal looping system.

The hardware setup, although functioning as intended, offered very little by way of feedback on the process in motion apart from aural feedback. To address this I decided to create a version of the looping system using software controlled by a MIDI 8x8 grid of LEDs controlling a VST called 'SooperLooper' that is hosted in Ableton Live. The grid interface provides a rudimentary and interactive GUI that is controlled with a Max4Live patch that I wrote and that provides visual LED feedback about loop length, overdub/play, direction and pitch. There are a number of examples of looping being done with grid controllers (Constanzo, 2012) but I have not found any that use my particular looping system, or that present the loop information in such a visually representative, tactile and easy to perform way.



AUDIO: Winter Melody - Live performance processing vocals and trumpet using LED grid system to control stream form loops.

VIDEO: A Sudden Break In The Clouds - Live performance  
processing piano using LED grid system to control stream  
form loops.

Stylistically, parallels can be drawn between the textures I can obtain from my looping system and the sound of live loop performers such as Eluvium, Library Tapes and Hammock as well as studio orientated artists such as Sigur Ros, Olafur Arnalds, Johann Johansson and A Winged Victory For The Sullen. The combination of reverberant electronics and a minimalist acoustic source material is very much in keeping with the current emergent classical/electronic crossover scene based round a few key record labels such as 'Erased Tapes' and '13071' (Bulut, 2013).

Arguably, the challenge of originality resides in allowing ones aesthetic influences to show whilst not conforming too closely to the established idioms of a given genre. By using a technique that enables free association, such as stream form, the resulting music is naturally going to resonate with the semiotic values of the music that the interpreter (the composer) has spent the greatest time assimilating. However, due to the intuitive and performative nature of the combined looping system I developed for exploring stream form, particularly when used with the grid controller interface, I have been able to simultaneously conceive of the electronics and acoustic aspects of my compositions, resulting in a high level of integration between the two. This level of close integration is not something I have encountered in the work of either performance orientated live looping artists or studio orientated composers working in the classical/electronic genre, leading me to conjecture that my work may exist in a unique location in the diaspora of the movement.

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## Developing stream form: High-Level Composition

High-level composition is an adaptation of the term high-level programming, a method of computer coding where by a programmer works on an abstracted level, allowing them to consider the broader picture of what is being created.

*High-level programming involves writing a computer program in a language that keeps the programmer from having to deal directly with the hardware of the specific computer being programmed. This abstraction allows the programmer to focus more on program design, flow and functionality and less on marshalling basic system resources to accomplish those goals.*

- (Eugene, 2003. p1)

I arrived at the idea of high-level composition in response to a problem I had identified in the music I was composing using the stream form technique detailed in chapter 2A. I felt that the musical results that my combined looping system afforded were, although pleasingly detailed to my ears at any given moment, on occasion lacking a sense of overall shape. Upon reflection this is an inherent problem with any composition process based on moment by moment decision making. However, by considering a piece of music in the same abstracted way that a computer programmer considers a software program when high-level programming, a composition approach is offered that allows for an opportunity to not only compensate for, but also develop the shape and direction of a stream form composition beyond the scope of the original material.

Parallels can also be drawn between my use of high-level composition and John Oswald's plunderphonics (Oswald, 1985) in that I am essentially sampling a track to make a new track. The fundamental difference however is that I am using high-level composition to resample and reinterpret my own work as opposed to sampling other people's work. It is also worth noting that I am using high-level composition purely as a creative composition tool rather than using the recontextualisation of materials to make a particular point or social commentary in the manner of artists like Cassetteboy (Bolton and Warlin, 2013).

By applying a high-level composition process to music that I have previously composed using free associative techniques an interesting point about semiotics is raised. Many of the signifiers that are informing the high-level composition are in themselves already interpretants of a free associative process, creating a second generation of semantic objects based on the same set of musical aesthetics. By creating this additional layer of semiotic information it is arguably the case that high-level composition offers a degree of control over the sub-conscious process that free association seeks to access. This suggests that high-level composition could be regarded as a free association technique in its own right when used alongside music that has already been created in a state of flow or whilst free associating.

High-level composition depends on technology as it not only requires an already mediated composition to exist but also that a composer takes on the role of a producer, as discussed by earlier practitioners like Pierre Schaeffer in the 1940s and Brian Eno in the 1980s (Eno, 1983). By taking complete control of the composition, recording and production of a track it could be said that a composer using high-level composition as a creative technique is taking the role of the 'auteur' (Moorefield, 2010), a French term borrowed from the language of film used to describe the situation when an individual (often the director) takes an abnormally influential role on all creative and aesthetic aspects of a film. This reliance on editing technology, likely to be a software based Digital Audio Workstation (DAW), places an emphasis on creating a newly mediated idea that will be unavoidably linked with the characteristics of the software used, something that has been suggested as being problematic for composers (Nuhn et al. 2002). I would suggest that this is not a problem however, as I view the process of a producer choosing the right software/hardware to realise a desired sound as being no different to an arranger choosing the right acoustic instruments.

Another example of an early practitioner using a technique similar to high-level composition is the work of Teo Macero when producing the Miles Davis album 'Bitches Brew'.

Macero recorded Miles Davis improvising with his band and then used these recordings as source material from which he and Davis constructed completely new tracks by looping and layering the recorded audio as well as adding studio effects such as delay (Macero, 2004).

The result is a series of tracks that combine the characteristics and feel of the improvisations with the structure of a more considered compositional approach.



## CHAPTER 3

# Portfolio Examples

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[ This chapter will detail two projects in which I have implemented the stream form and high-level composition techniques discussed in chapter 2 ]

3A

# Hollow Mountain

Devices 00:18

The Great Hall 07:01

Kenosis 03:19

Milton Keynes: City Of The Future 00:53

In The Ruins Of The Cathedral 12:42

AUDIO: Hollow Mountain: Hollow Mountain

Released by Hollow Mountain in 2012.

also available online:

<http://hollowmountain.bandcamp.com/album/hollow-mountain-ep>

# MONUMENT FOR D. FLAVIN

Red 09:30

Green 14:48

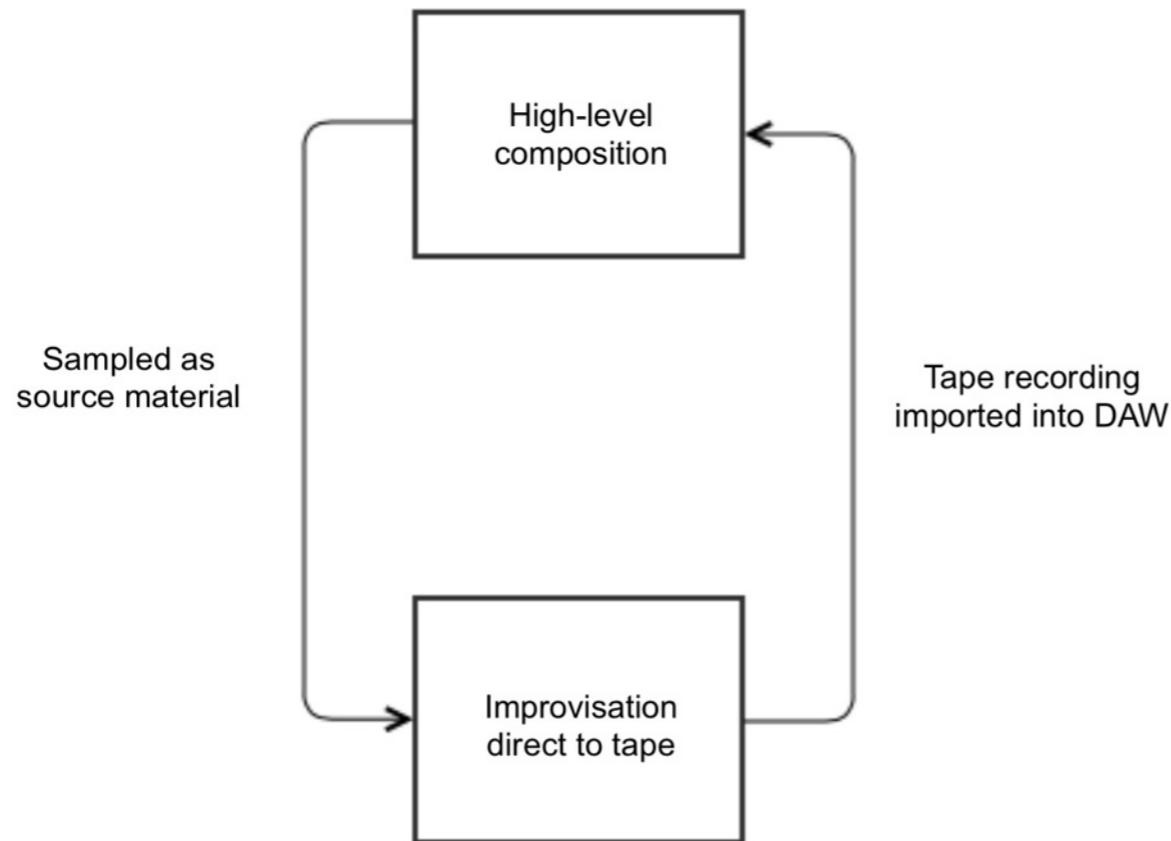
Blue 06:37

AUDIO: Hollow Mountain: Monument to D. Flavin.

Released by Hollow Mountain in 2012/2013

Also available online: <http://hollowmountain.bandcamp.com/album/monument-for-d-flavin>

Hollow Mountain is a collaborative project between myself and the composer/producer Rhys Copeland that we regard as having a long term creative trajectory, in that it is a single continuous body of work that develops over time. Accordingly, the portfolio pieces presented here are not definitive articles, instead it is best to consider them as temporary snapshots of the Hollow Mountain process. The continual development of this trajectory is enabled by combining free associative improvisation with high-level composition in a cyclic workflow.



### Stage 1: Free associative composition.

At stage 1 Rhys and I improvise freely together, improvisation being something one would naturally associate with a state of flow and free association. We improvise with a combination of acoustic sources and electronics, including the steam form looping system I detailed in chapter 2A to process guitar, granular Max/Msp patches we have programmed ourselves and carefully chosen hardware synths that complement our aesthetic. (Adams, Copeland, 2012). Our improvisations are recorded direct on to a stereo two track reel to reel tape machine.

### Stage 2: High-level composition.

At stage 2 I work on the stereo file of our recorded improvisation. The fact that the improvisation is only recorded in stereo is a deliberate choice as it is a commitment to only being able to continue the creative process with high-level composition techniques. Using the DAW Logic Pro I significantly rework the improvisations, adding processing and effects where necessary to produce what I consider to be complete compositions, examples of which can be heard in this portfolio. Typically, from a 45 minute reel of improvisation I create 10-15 minutes of material.

### Stage 3: Repeat.

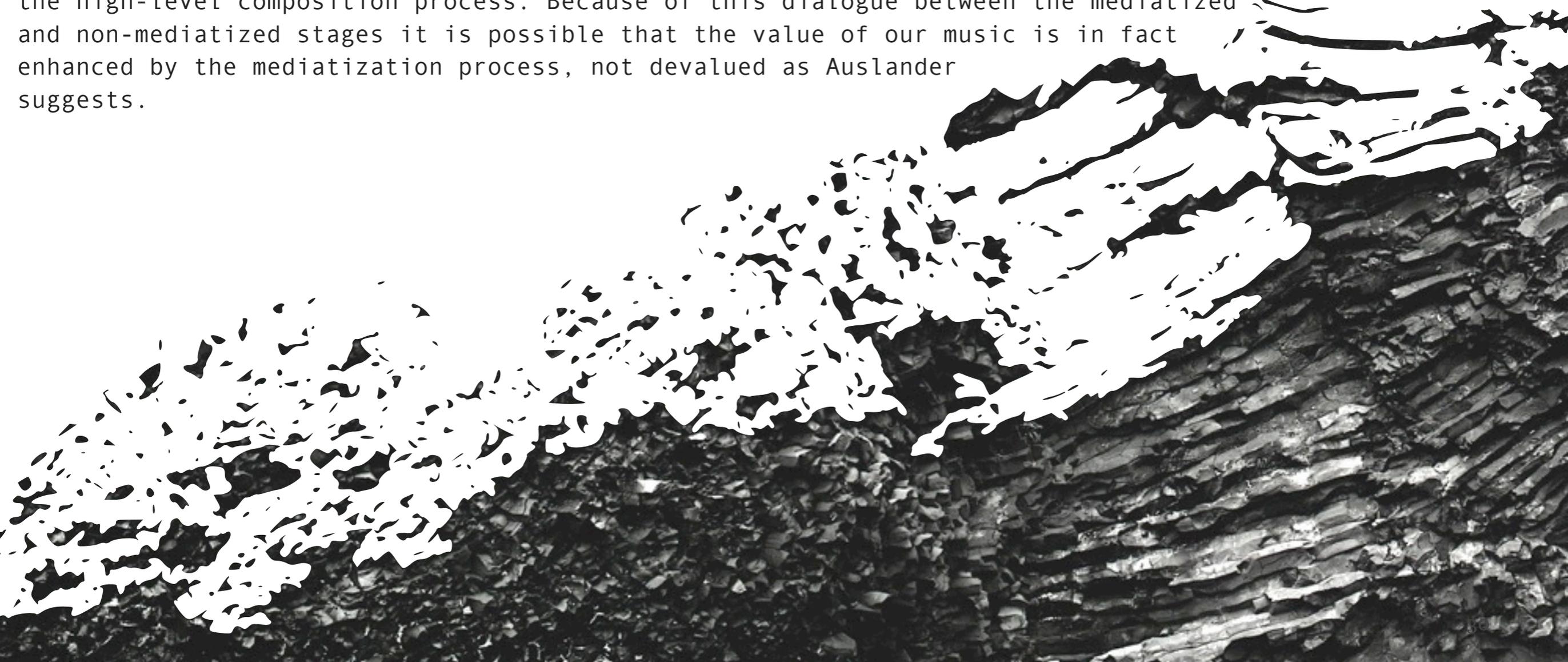
Stage 3 is where the cyclic nature of the Hollow Mountain process takes effect and is arguably where the claim for originality lies. We incorporate the results of my high-level composition process as samples and source material into our next improvisations. The cycle then starts again and the long term trajectory of the piece is continued, a process that could almost be regarded as a human scale version of the 'frippertronics' tape loop system.

Hollow Mountain improvising live at the Unitarian Chapel, Cambridge, 2013



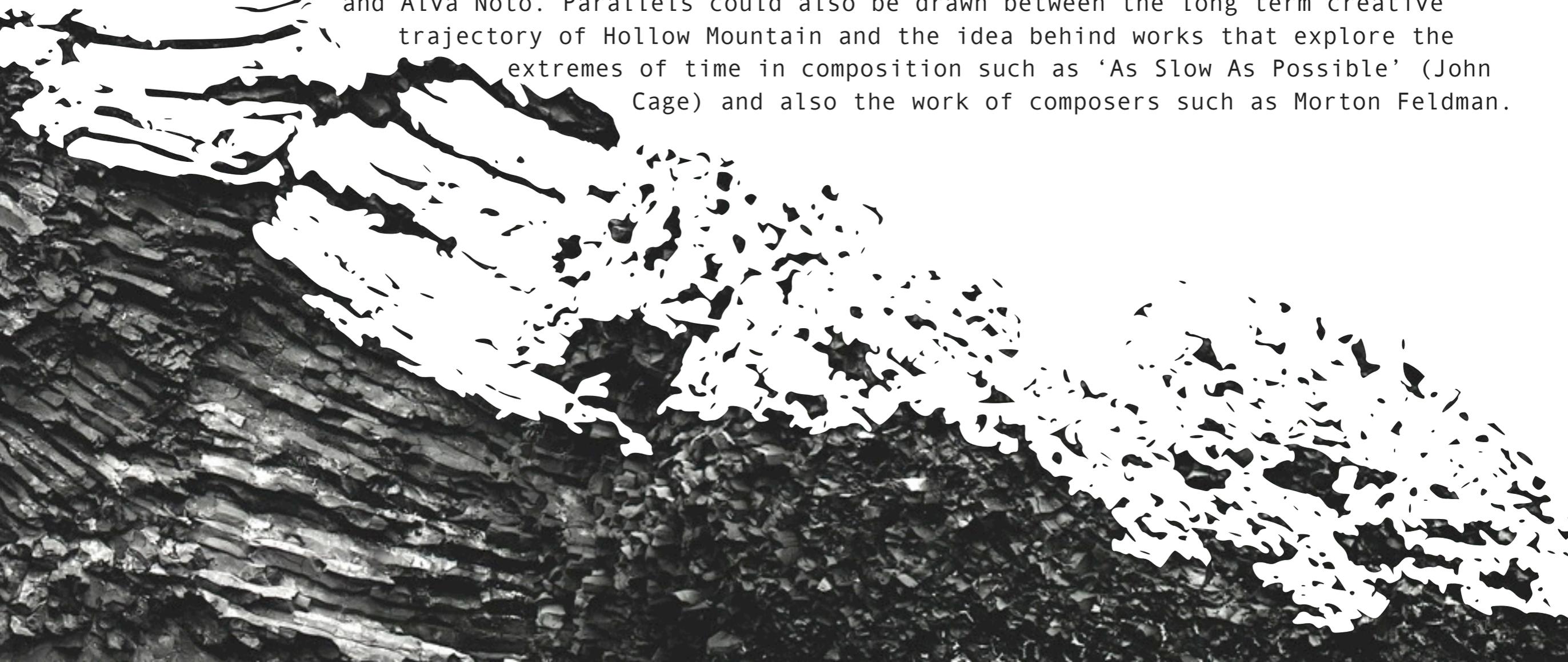
The cyclic nature of this creative composition process raises the interesting issue of what format the piece actually exists in. If the recorded examples of Hollow Mountain are not definitive articles, yet the live work is simply a means for generating source material for high-level composition techniques to create the recorded examples, then it appears to not exist as either a studio recording or a live performance. I would suggest that this non-teleological state is in fact the point of Hollow Mountain, in that it is a musical exploration into the philosophical idea of the journey being more important than the destination.

This fluctuating state of existing both as live performance and in the studio also poses a question about liveness. Philip Auslander presents the argument that the 'liveness' (the essence of what constitutes a live performance) of performance is devalued by its mediatization (Auslander, 1999). However, when considering the cyclic nature of the Hollow Mountain process, the live improvisations that constitute the free-associative stage of the process rely on the previously mediatized results of the high-level composition process. Because of this dialogue between the mediatized and non-mediatized stages it is possible that the value of our music is in fact enhanced by the mediatization process, not devalued as Auslander suggests.



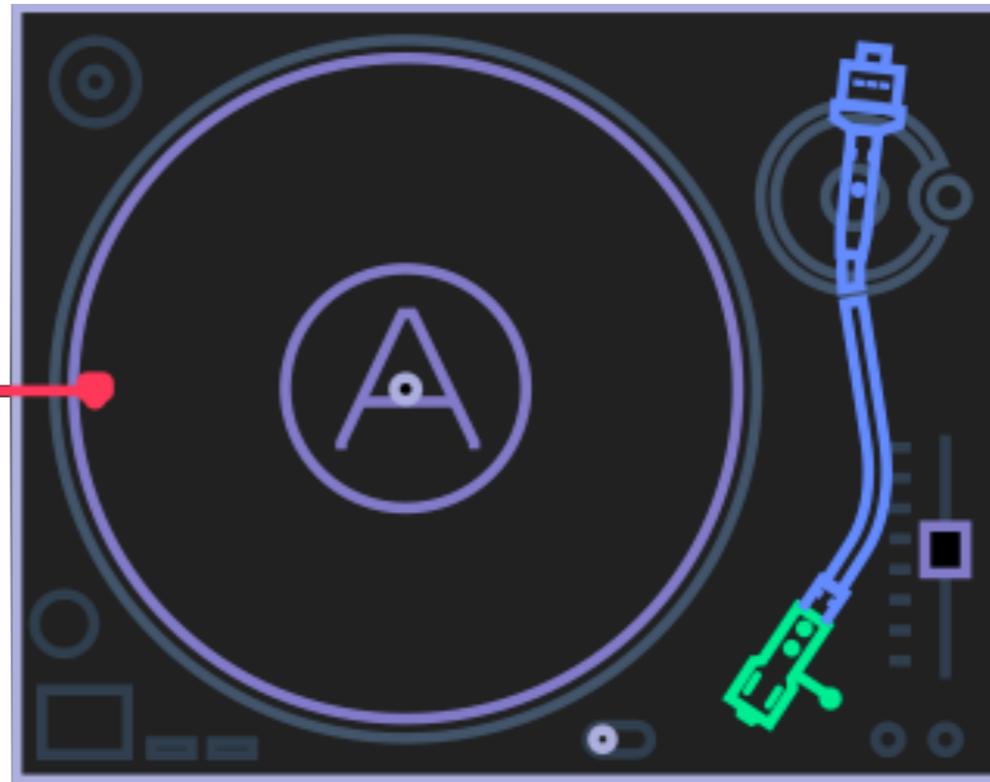
There are many benefits to creative collaboration projects such as Hollow Mountain, in particular the possibility for a collective work to emerge that neither collaborator could have produced individually (Sawyer, DeZutter, 2009). Consideration of the cyclic workflow used by Hollow Mountain, from the perspective of musical semiotics, offers an explanation. If we consider the long term Hollow Mountain trajectory to be a single object semiotically then each time the cyclic process moves on to a new stage, a new and more refined signifier is created. It is likely that this means that the collective interpretation that Rhys Copeland and I have of this signifier will also become increasingly refined, suggesting that the longer we keep the process in motion, the more unified, developed and nuanced our collective aesthetic values will become.

Stylistically our music places a heavy emphasis on sounding 'organic' and the development of texture within an electronic, austere, minimalist aesthetic. Sonic comparisons could be drawn between our music and the music of electronic drone/ambient artists such as William Basinski, Start of the Lid, Tim Hecker and Alva Noto. Parallels could also be drawn between the long term creative trajectory of Hollow Mountain and the idea behind works that explore the extremes of time in composition such as 'As Slow As Possible' (John Cage) and also the work of composers such as Morton Feldman.



3B

## Beat Tapes



AUDIO: Beat Tape

[ Also available online: <https://soundcloud.com/aswefallintostatic/op1-beat-tape> ]

AUDIO: Beat Tape #2 11:32

[ Also available online: <https://soundcloud.com/aswefallintostatic/beat-tape-002> ]

AUDIO: Beat Tape #3 10:37

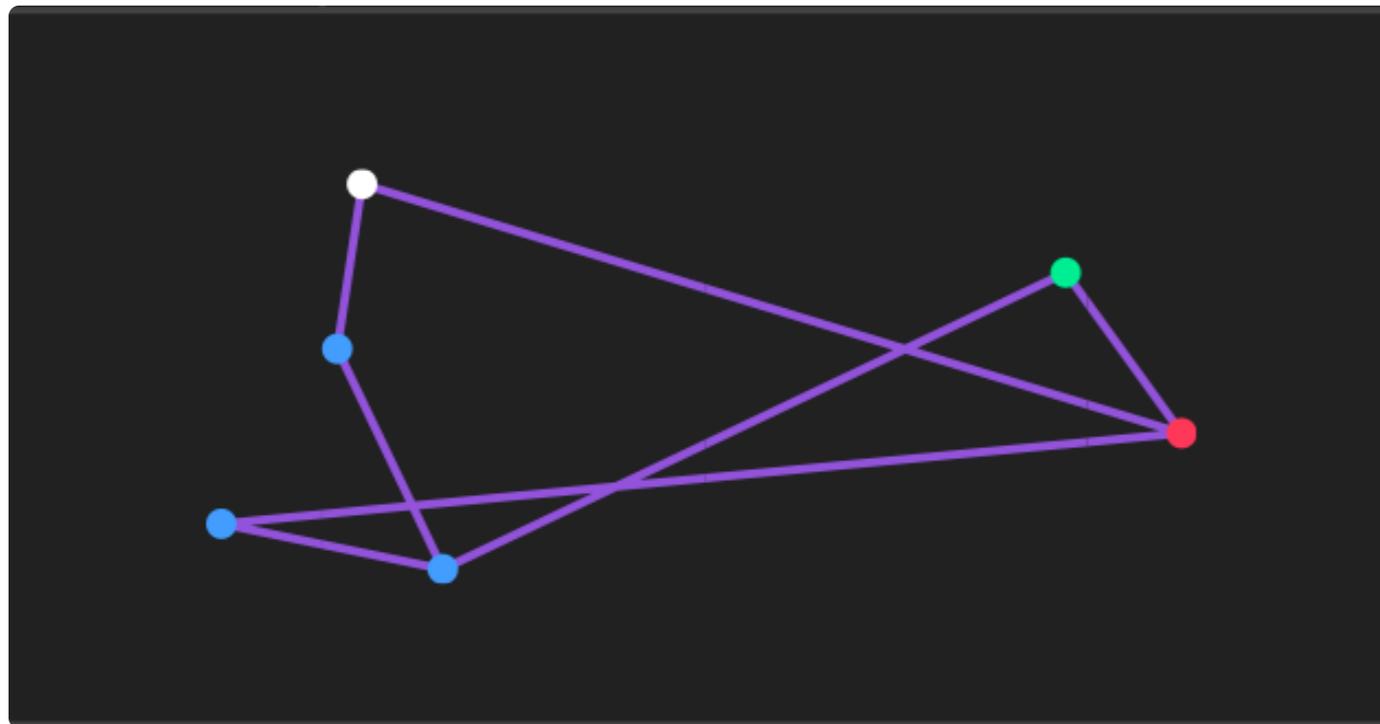
[ Also available online: <https://soundcloud.com/aswefallintostatic/op1-beat-tape-3> ]

As discussed in chapter 2B of this commentary, there is an intrinsic relationship between the musical output and the technology used to mediate it (Nuhn et al. 2002). In my work so far I have chosen to focus on developing technological solutions for encouraging free association in my composition workflow. This is partly a creative decision as it affords me a degree of control over the nature of this relationship, and partly a practical decision as there is no existing software or hardware tool that does exactly what I want. I decided that an interesting place to take my research next was to take the opposite approach and choose a single piece of technology and completely subscribe to its workflow. By deliberately limiting myself in this way I would be forced to practice with the technology in order to develop a level of physical virtuosity sufficient to produce musical output that I liked, a process already established by Martinez as enabling free association (Martinez, 2010). I decided to use a hardware synthesiser and sampler called the OP1 (Operator One).

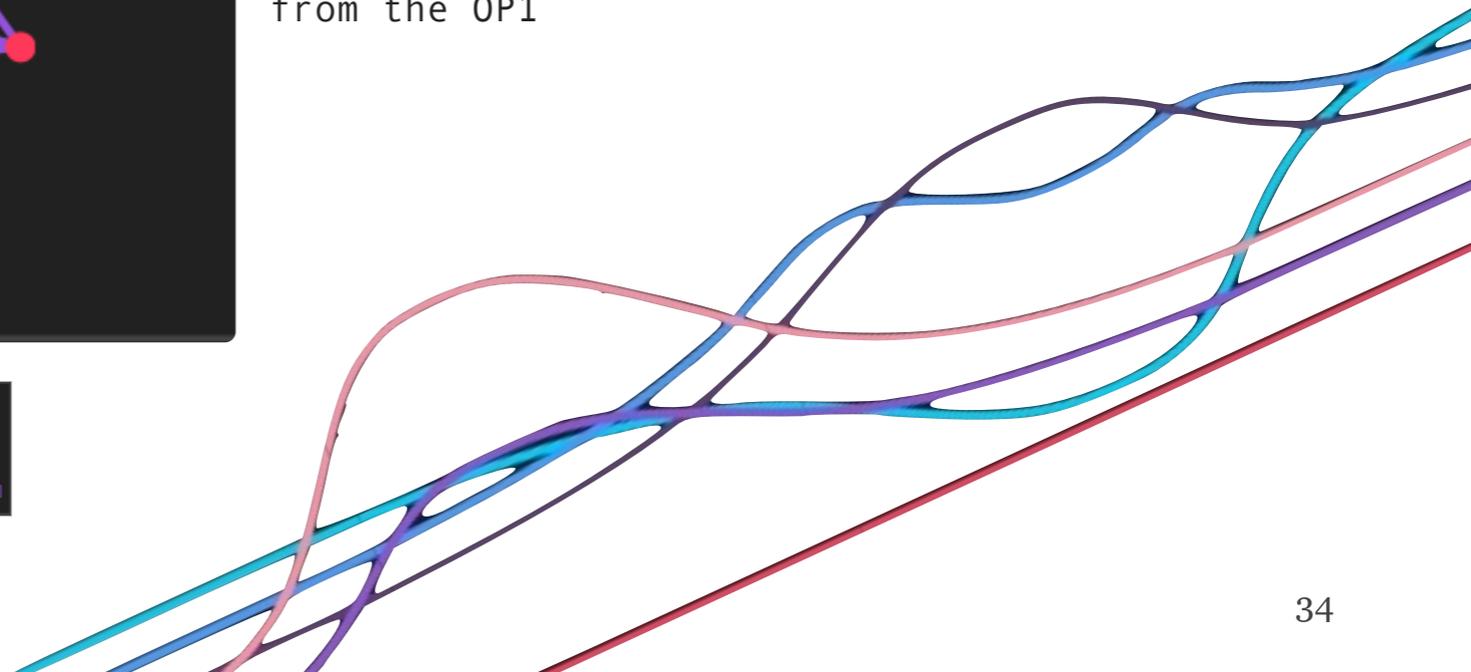
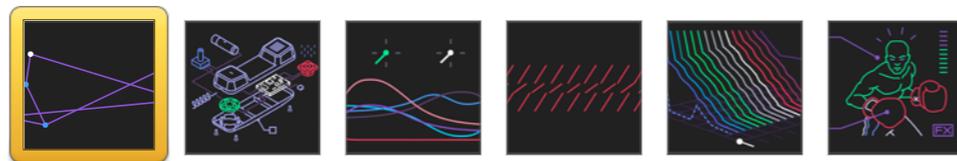


The OP1 is a highly intuitive portable digital synthesiser that is designed to be ‘an easy reading and non-technical way to control and shape your sounds’. (Teenage Engineering, 2011) The majority of the functionality and interaction is via colour-coded graphics on a display that directly relate to four coloured rotary encoders. Often these encoders control multiple parameters simultaneously, however the only visual feedback that a user has is the changing shape of the enigmatic onscreen graphic. This results in a user having to rely primarily on their ears and their own interpretation of the onscreen graphic to understand what is going on.

Deliberately subverting the available information in this way makes it hard to draw on existing knowledge of synthesis and processing therefore emphasizing a workflow based on aural feedback. By focussing a composer’s attention in this way, it seems likely that a state of being ‘in flow’ is being encouraged, ‘flow’ being something naturally associated with free association. This has a tangible effect on the speed with which a track can be created on the OP1, whereby an experienced practitioner can produce a full track over the space of a few hours.



Some example screenshots from the OP1



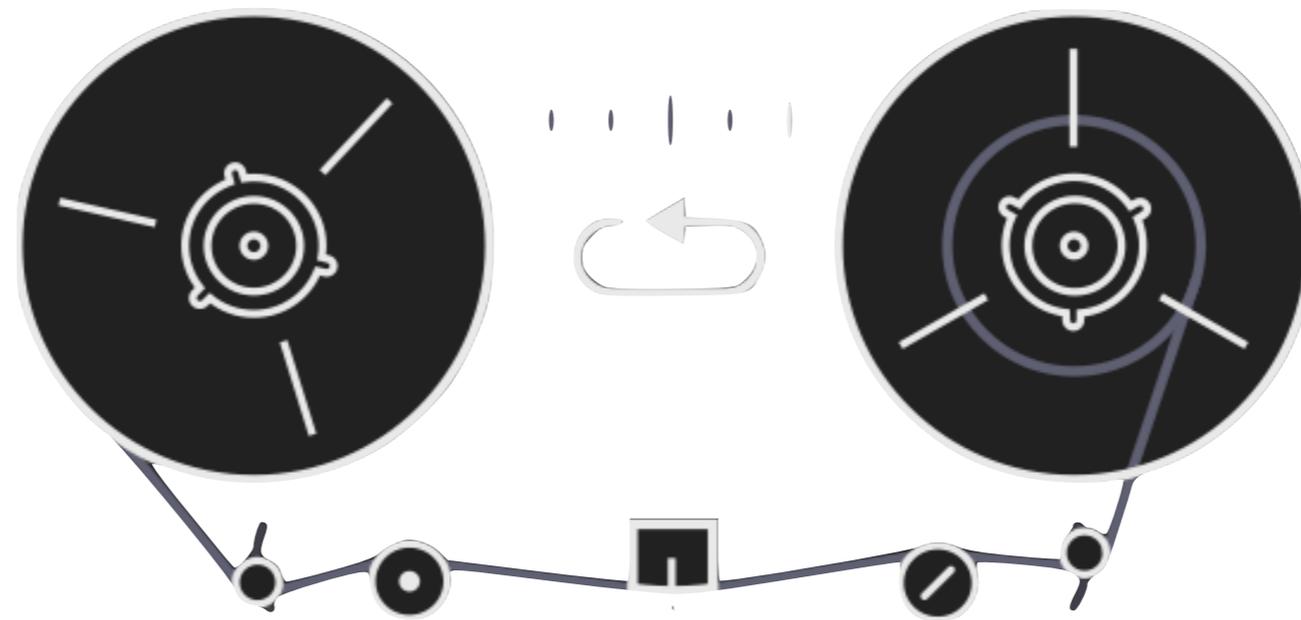
The main sequencing tool on the OP1 is an emulation of a four track mono tape machine, and when creating the beat tapes I recorded and overdubbed all the parts on to the tape. The tape is optimised for looped playback and a number of tape style performance effects are available such as reverse, solo track, stop, slow down/speed up. I use these tape effects creatively to perform a live take of a whole track into Logic (recorded in mono then presented in stereo using a sample delay).



VIDEO: Example of a live performance using an OP1.

An interesting consideration regarding the performative nature of the OP1 is that the tape effects are applied to the entire track and so conform to the 'one gesture to one acoustic event paradigm' (Wessel & Wright, 2002). There is a tangible difference however between someone performing on an OP1 and performing on an acoustic instrument, one way of considering this difference could be explained by semiotics. All the tape performance effects on the OP1 have been deliberately designed to sound as realistic as an actual reel to reel tape machine as possible (there is also graphic of a reel to reel tape machine when in tape mode). These tape

effects are semiotic signifiers of an actual reel to reel tape machine. The result is that to an observer of someone performing an OP1, when a tape effect is applied there is an expectation regarding the physical movements to manipulating the tape. Instead the performer has simply pressed a small button, causing the 'effort-input paradigm' (d'Esquivan, 2006) to be ruptured.



Once I have a number of tracks recorded in this way, I use high-level composition techniques to make any adjustments to the compositions and then create transitions between each track to produce a short continuous mix known as a 'beat-tape'. Traditionally 'beat-tapes' are a collection of short tracks that Hip Hop producers would create both as a way of developing their skills and as a portfolio of potential new track ideas (Primus, 2013). In particular the 'beat-tape' scene grew around the development and widespread availability of hardware samplers such as the Akai MPC and Boss SP series. Although initially being for private use, increasingly the 'beat-tape' has become an art form in itself, with big name producers such as J'Dilla (Donuts) and Flying Lotus (July Heat) releasing specific 'beat-tapes' (Fintoni, 2013). Stylistically, the 'beat-tapes' I have made draw upon the ambient aesthetic of my work so far but with a change of emphasis from texture to rhythm appropriate to the beat orientated environment of a 'beat-tape'.

## CHAPTER 4

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# Case Studies

[ This chapter will provide greater detail of the workflow behind specific example tracks from the portfolio ]

## Hollow Mountain

The initial part of the creative workflow that Rhys and myself use in Hollow mountain is based on recording our improvisations. It is frequently the case that upon listening back to an improvisation, neither of us are able to definitely lay claim to a particular sound. Whilst a collaborative project of this nature will inherently promote a situation where similar sounds are created, It is still surprisingly difficult to tell who actually created a particular layer of sound. Rather than considering this a problem however, we tend to both find it exciting and rewarding musically. I will now detail an example of this process and development behind one of our tracks.

Here is an example of a improvised hollow mountain track:

AUDIO: Hollow Mountain - Blue (full improvisation)

In this track, Rhys is performing an improvised solo keys line whilst manipulating a delay. I am creating a drone using the feedback loop system detailed in chapter 2. There is also a synth texture that neither of us remember playing.

In the second part of the Hollow Mountain workflow I take the full improvisation and edit it down to produce what I consider completed tracks. I felt that this particular improvisation was split in to two movements, defined by the entry of Rhys's keys solo. I much preferred the section with the keys solo as I felt achieved a sense of stasis that aesthetically crated an interesting counterpoint to the drone I was creating. I edited the piece so that is started at the keys entry and sent it to Rhys who agreed with my arrangement. The track went on to be featured on our release 'Monument For D. Flavin', titled 'Blue' (see portfolio chapter 3).

Completing the cyclic workflow of our creative process, we resample the track in to further improvisations, an example of which can be heard here:

AUDIO: Hollow Mountain - Untitled (developed improvisation on 'Blue')

This improvisation contains many of the sonic characteristics of the track 'Blue' however also introduces a noisy and darker feel to the soundscape. Rhys also re-used the same keys sound to further add improvisations over the sampled improvisations. It is in this way that the cyclic nature of the Hollow Mountain process comes to fore as every new piece contains some of the DNA of our previous work.



## Beat Tapes

Each beat tape is made up from a number of individual shorter tracks edited together in logic. I will now detail the process by which I create one of these shorter tracks.

Initially I prepare loops on the OP1. By repeating these loops, soloing various channels and using the different 'tape effects' in the OP1 I perform a live arrangement of the track in to Logic Pro. The performance effects on the OP1 are relatively imprecise, so these performances vary in quality. The more I practice with each loop the better I am able to assess the quality of any particular performance gesture. For example, when using a beat repeat I learn that if I time it correctly then I can get a particular rhythmic effect and any performance where this particular placement does not happen I deem to be a bad take.

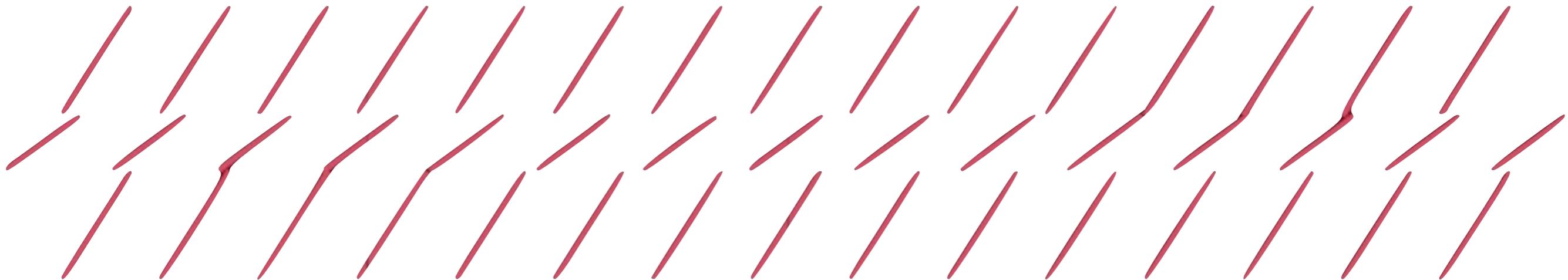
Here is an example of a track taken from 'Beat Tape #03' (portfolio chapter 3). In this early take I experiment with a number of the performance effects such as beat repeat tape stops. In particular at this stage I was trying to establish how I wanted the piece to develop in the second half, in this case by experimenting with filtering.

AUDIO: Beat Tape - You (bad take)

I did not like the results of the filtering as they felt too DJ orientated and distracted from the tape aesthetic. In a different take take I instead used pitch manipulation to develop the piece further in to an ambient section. You can also hear that the various performance effects are are more in time and also that the arrangement has become more detailed.

AUDIO: Beat Tape - You (better take)

I liked the development in to an ambient section and a version of it went on to be used in the final beat tape.





I initially set out to research ways in which I could enable free association in my composition workflow. This was in response to my experiences composing whereby I found that I composed best when I lost myself in what I was doing and was not consciously thinking through each and every compositional decision being made. An alternative line of research might have been to employ a musicological approach and considering the same question from the perspective of sociocultural theory. I feel however that this would have required more time than I had available and also would have necessitated a less hands on approach that would not take advantage of the fact that I am an active practitioner. By focussing on conducting practice led research, and considering the workflow in terms of its semantic values, I have been able to pose broader questions of originality in a way that is directly relevant to my own work and my continued development as a composer.

I seem to have derived from my research some useful musical findings, primarily that using composition techniques promoting free association does have what I would consider to be a positive impact on my composition. This has been particularly apparent in the more textural based work, where I have been able to use the stream form looping technique to create music that could be perceived to have a strong underlying aesthetic. Another positive consequence resulting from my research into free association composition techniques is that the systems I have developed have had use and consequence outside of an academic environment. In the year I have spent doing research, alongside the music presented in this portfolio I have composed/produced the soundtrack for a feature length Universal Pictures film and written/recorded an album of ambient folk music. These projects have incorporated aspects of the stream form looping system and high-level composition, and would not have sounded the same without the help of these free associative composition techniques.

The necessary relationship between musical output and the technology used to mediate it has been a recurring theme throughout my research so far. A number of questions have arisen regarding the nature of this relationship that would merit future investigation. At several points in my research I have been able to draw on the fact that I am already an accomplished improviser on several traditional instruments including the guitar and piano in order to create my source material. However, because traditional instruments often require two hands to play fluently,

I encountered an inherent conflict when wanting to play my instrument and manipulate electronics simultaneously. This suggests to me that alternative methods for controlling electronic processing might be beneficial, and it is here that I feel the scope for future research lies.

An existing method that addresses this problem is for an individual to control the electronics with their feet. The most commonplace example of this is guitarists using effects pedals, something I have observed to already be a well-established performance tradition in both Rock and Jazz. Often however, unless a performer has particularly dexterous toes, these manipulations are limited to turning processes on or off. I think that meaningful further research could be done on free associative composition by investigating the idea of hands-free audio reactive electronic processing. If implemented successfully a composer would be able to approach the combination electronics and acoustics as a single coherent instrument. Depending on the nature of the electronic processing, a composer who is an accomplished acoustic performer might then be able to directly apply their skills to improvising a multi layered electronic composition in real time. This would naturally enable a state of flow and free association to take place in the composition process.

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