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‘Composing for Instruments and Electronics; a commentary on my recent music’

Colin Crichton

A thesis submitted to the University of Huddersfield
in partial fulfilment of the requirements for the
degree of Master in Research

September 2013

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Abstract

The research presented here illustrates my interest and response to composing for acoustic instruments and electronics through the presentation of a body of eclectic works which combine an improvisatory approach to writing for acoustic instruments with the use of the studio as a compositional tool. The commentary will seek to illustrate how bringing these approaches together has allowed for a diversity of sonic exploration that would not have been possible with purely acoustic or electronic resources. As well as providing some background information and a general descriptive breakdown of the structure of these works, the commentary will provide a more in-depth contextualisation, which serves to illustrate the various influences upon the works. I will conclude by illustrating where this research has taken me and give examples of possibilities for future exploration.

Chapter 1: An Overview of my Compositional Practice

1.1 Background and Influences

As a composer, performer and studio engineer I am drawn to many different styles of music, from jazz, experimental, electronica, IDM (intelligent dance music), glitch, pop, ambient, dub, afrobeat and hip-hop to contemporary classical and world music. My music can be seen as the result of combining these influences in various ways. The eclecticism of the resulting music is sometimes approached consciously or may be the intuitive results of working in different ways, such as improvising a modal saxophone line against a dance beat. Such an approach comes from the ways I tend to listen to music; my reaction when listening to music is usually impulsive; certain music appeals, whilst other music leave me cold. In the first instance, it could be the sheer emotional impact of, say a piece of classical music, or the excitement and essential wildness of afrobeat that could be the source of inspiration. Certain forms of music relate to my social life whilst other music provides a nostalgic link with my past. Finally, we live in an age of flexibility with art forms easily crossing boundaries due to the instant availability of music from across the globe via the internet. As such, I draw upon music and sound from several sources.

As a jazz saxophonist, I have been influenced by many significant players, such as Jan Garbarek and John Coltrane. Garbarek, from Norway, is especially known for his distinctive tone. For me, his compositions evoke an image of the icy wastes of Northern Europe, with a frozen, ice-covered landscape. Emotionally, his sound has the capacity to invoke feelings of great melancholy, but also feelings of introspection. American saxophonist John Coltrane, on the other hand, has influenced me more directly in terms of his technical approach to the instrument, I am particularly drawn to his use of extended techniques, modality and chromaticism.

In particular, I am aware of the expressive and emotional potential of the instrument, and I have tried over the years, to create a distinctive and personal sound. I find musical value in the full spectrum of emotions can be expressed through the saxophone, from the angry violence of an over-blown sound, to the subtle nuances of expression, especially when certain breathing and tonguing techniques are employed. I believe that one can find his own original voice using a method beginning at experimenting with new techniques of sound projection and venturing into the unknown territory of improvisation through a trial-and-error process, allowing one's inner voice to speak.

As a sound engineer and producer, and the owner of the recording studio (Polygon Studios), I produce both my own music and the music of other people though multi-tracking and live recording sessions. Currently, I am compiling a portfolio of film music in addition to producing and co-writing a pop album for a Jamaican songwriter.

Over the last few years, I have been capitalising on combining these interests; through recording, computer and acoustic composition, I have seen the enormous potential of mixing acoustic and electronic sounds. It means that with a reasonable command of both electronic and instrumental techniques, it is possible for me to realise my musical and sonic creativity in full. I have been particularly attracted to the genre of music termed “Glitch Music”.

Cox and Warner describe the origins of glitch music as follows:

> …it is from the "failure" of digital technology that this new work has emerged: glitches, bugs, application errors, system crashes, clipping, aliasing, distortion, quantization noise, and even the noise floor of computer sound cards are the raw materials composers seek to incorporate into their music. [He continues:] While technological failure is often controlled and suppressed—its effects buried beneath the threshold of perception—most audio tools can zoom in on the errors, allowing composers to make them the focus of their work. Indeed, "failure" has become a prominent aesthetic in many of the arts in the late 20th century, reminding us that our control of technology is an illusion, and revealing digital tools to be only as perfect, precise, and efficient as the humans who build them. New techniques are often discovered by accident or by the failure of an intended technique or experiment. Cox, C. and Warner, D. (2004, p.393)

Later, Cox and Warner add that:

> The glitch genre arrived on the back of the *electronica* movement, an umbrella term for alternative, largely dance-based electronic music (including *hous*e, *techn*o, *electr*o, *drum’n’bas*s, *ambien*t) that has come into vogue in the past five years. (Italics in original). Cox, C. and Warner, D. (2004, p.395)

My motivation for producing these compositions arises from a desire to combine this interest in computer-based glitch music with my passion for jazz. Additionally, I try to approach this with a willingness to use sounds from all possible sources: acoustic, electronic and from everyday life. The contrast between glitch, general electronic music and the human sound of the tenor and alto saxophone gives me the chance to create a personal voice, with the capacity to express the most personal, yet potentially universal, emotional messages.

Musical ideas, I find, often materialize by experimentation. Sounds may emerge from a warming-up exercise on the saxophone or from playing around with a rhythmic device. From there, material may develop which can be subsequently developed into a compositional form. What emerges may immediately suggest something from my own experience, perhaps to reinforce a strongly held view, like considering the plight of the indigenous people of Brazil, as in my composition *Cry for the Indian*.

It is important to note that in my portfolio the recorded medium is of prime importance. My compositional ideas are often notated as sketch transcriptions for the recording of instrumental parts which do not exist in score form as a final product. I believe the main form of dissemination of these works is through the CD or digital download format. Some of these pieces have been performed live and included electronics, but most often, these have been semi-improvised events involving myself as a performer. Therefore the submissions included here are presented in CD format without accompanying scores. Exceptions are *When Pearl Dozes* and *La Danse des Russes Saouls,* which were conceived for live performance.

1.2 General Approach to my Compositions

I often have a strong, impulsive sense of the sounds that I wish to use, but there is usually a degree of trial and error involved in how these sounds are put together and utilized.
Part of my compositional procedure is about being aware of all sounds around me, including those in the environment, which can be sampled, tested out and possibly processed. Another part of my procedure is to create opportunities for mistakes using glitch elements and then to note the result. The early history of people damaging CDs to see what they would sound like is instructive. According to Cox and Warner:

> When the German sound experimenters known as Oval started creating music in the early 1990s by painting small images on the underside of CDs to make them skip, they were using an aspect of “failure” in their work that revealed a subtextual layer embedded in the compact disc. Oval’s investigation of “failure” is not new. Much work had previously been done in this area such as the optical soundtrack work of László Moholy-Nagy and Oskar Fischinger, as well as the vinyl record manipulations of John Cage and Christian Marclay, to name a few. Cox, C. and Warner, D. (2004, pp.393-4)

For me, there is one general method I use in the development of my compositions. This method abides to what Brian Eno describes as: “…dabble and play. Any music worth anything is born in clumsiness and chaos…” (Tamm, 1995, p.27). I find free improvisation alone or with other musicians a very liberating act. When working with other musicians, ideas can be shared and experimented with in the moment. By recording ideas and improvisations, I can then edit, leaving all the best segments in – an analogy perhaps to a gardener taking all

the weeds out and only keeping the good soil ready for sowing. The good elements can then either be the starting point or even the main structure of a new piece. In a similar manner to Brian Eno, I use the recording studio as a compositional tool, working to find my sounds intuitively.

In essence, I use my ears to make this artistic judgment. The challenge is to use one's listening skills in a systematic way. Trial and error and experimentation may be the starting points, but disciplined application and rigorous self-criticism are equally important. Starting off with a seed of an idea, knowing that I want to produce a glitchy or jazz-influenced composition, I then ask myself questions such as "Does the transformation of the saxophone sound through bit-crushing methods work with the varied rhythmic ostinato backing figure?" My ideas often undergo many changes throughout the development process. A similar process to this occurs again in the editing stages. I let my ears be the final judge. It is a balancing act – on the one hand preserving the character of a particular genre but often on the other hand transforming it into a different context. It is working in this way, I feel, that makes the compositions more intrinsically unique. The origins of the sounds I decide to work on are either sounds that I have recorded, found samples or are preset instruments sounds that I alter using various effects. The incorporation of glitch elements in my music has introduced me to new approaches to the randomization of rhythm and timbre, leading to a new stylistic approach to the sound in general.

1.3 Equipment and Software Used

The rational for using a particular piece of software in conjunction with an acoustic sound and aspects of processing is largely one of experimentation and evaluation. Of all the various pieces of software available, Ableton Live meets my specific needs the best. It is flexible and attuned to the creative process. I find that Ableton Live is straight forward to use and has an extensive list of quality effect plug-ins to choose from. It is also much more appropriate to my needs than a software like Pro Tools, which is more geared towards studio recording production. Ableton Live offers that facet of music production as well, but it is also designed for physical modelling synthesis and electronic music production. In Ableton, it is easy to record a variety of different arrangements of the same composition with a multitude of automations on the flow. The arrangements can then be worked on separately by editing the audio and midi elements and all the automations that go with them as well.

My recording studio has been tuned specifically for mixing and multi-tracking. Reverberation time in that sense is almost inexistent; therefore recorded live instruments might require adding effects such as artificial reverbs and delays in order to blend in with the musical direction required for a particular composition. Often, I use a condenser microphone such as a Rode NT2 to record a saxophone, vocals, or other acoustic instruments. Miking techniques may vary depending on what effect I want to produce. Because of my interest in creating

original new sounds, I might use rough ambient recordings in equal measure then more “classically” recorded ones. In that sense, it doesn’t really matter if the original sounds truly represent the instrument or the object recorded. I am more interested in the end result achieved after processing with the use of a multitude of effects such as frequency equalization, phaser, chorus, flanger, reverb and delays for example.

The music, in most cases is created by trying things out. With the aid of this software, I have integrated digitally created and processed sounds with those of acoustic instruments. The studio and all its facilities effectively provide a workshop for refining and processing the music. A considerable amount of post-production is involved, where aspects of rhythmic looseness are tidied up and where sound balances are achieved. The choice of effects is another key set of decisions. Does it need to be a dry sound, or would reverb improve it? Would it help to double track the saxophone or to apply a touch of chorus? The use of plug-ins and sampled sounds has great value, but it can be argued that it is impossible to emulate the sheer emotional impact of say, the raw sound of a tenor saxophone with a sampled sound. Similarly, the acoustic use of a small drum or a glockenspiel, skillfully recorded, and maybe processed can sound more appropriate and effective than a sampled sound. Again, the judgment is subjective and it comes down to the proximity of the original sound in my imagination, or indeed to the ears of other listeners — fellow musicians and composers who can give valuable feedback.

Chapter 2: Commentary on the Pieces

The following chapter illustrates how the various aspects of my compositional approach outlined in the previous chapter have been applied to four particular compositions. I have tried to choose works for commentary that draw on the various stylistic influences that I am interested in. The first of these pieces, *When Pearl Dozes*, draws less specifically on popular idioms but is included as it formed an important part of my thinking in terms of increasing my understanding of writing for live instruments and in having to incorporate acoustic instruments with electronics within a concert environment. There are six other pieces submitted within the portfolio but commentary on all of these works would have been too extensive for a thesis of this kind and involve some duplication of working methods.

2.1 *When Pearl Dozes* for Electric Guitar, Vibraphone and Tape

2.1.1 Background

This piece was written for the visiting Belgian ensemble *Besides*. The unusual scoring (guitar plus percussion) gave me the chance to explore new sonorities that I was less familiar with. It also provided an opportunity to use electronics in a live context. The inspiration for this piece was summer memories of a long day playing hide-and-seek with my three-year-old daughter. After a long day, she relentlessly dozed off into a dreamy state as I was reading her favorite bedtime story to her. This piece represents the very last moments before she completely fell asleep. This is depicted musically by threads of a simple childlike melody, performed delicately and intermittently and accompanied by a spacious but more restless tape part.

In this composition, I was primarily drawn towards the music of the minimalist composer Arvo Pärt. In particular, I wished to reflect the simplicity and softness of the tintinnabuli style, a style which is referred by Skipp as:

> … the esoteric manner of composition in which a work's entire content emerges from a succession of chordal inversions fashioned from two principal voices. The first voice, T (tintinnabuli voice), is restricted to the pitches of a chosen and undeviating triad, while the second voice, M (modal voice), is a freer, melodic presence which mostly moves conjunctly through the degrees of a single mode. Skipp (2009, p.3).

In particular, it was Pärt's composition *Für Alina* from album *Alina* (1999), which limits the material to just two voices that I was inspired by. Skipp commented that "…tintinnabuli is, in essence, harmonically simple, undeviating in terms of its modal relationships and could not be classed as 'experimental'." (Italics in original). Skipp (2009, p.5)

Für Alina is a simple piano piece in B minor. It starts with two sustained low octave voices (B-1 and B1) which act as a pedal. On top of that, a two-voice melody is played in rhythmic unison starting on the notes B4 and C#5. Throughout this short piece, the left hand always plays a note from the B minor triad. Having one of these voices always present removes any sense of harmonic motion, thus removing a sense of goal orientation. The register is kept to the middle range on the piano. The melody unfolds in step-wise motion and the interval between the two doesn't stretch any further then a perfect fifth (E to B). Throughout Pärt's piece, the sustaining pedal is down. This allows for the strings of the piano to vibrate longer, thus creating a harmonic ambience throughout.

Another inspiration on my work was the music of Brian Eno, particularly the piece *1/1* (composed with Robert Wyatt and Rhett Davies) on the album *Music for Airports* (1978). *1/1* was written entirely in the studio and was created with tape loops that were edited together to produce a slow moving tapestry of sound, as described by Eno:

> … I found this very short section of tape where two pianos, unbeknownst to each other, played melodic lines that interlocked in an interesting way. To make a piece of music out of it, I cut that part out, made a stereo loop on the 24-track, then I discovered I liked it best at half speed, so the instruments sounded very soft, and the whole movement was very slow. Rugrat (2008)

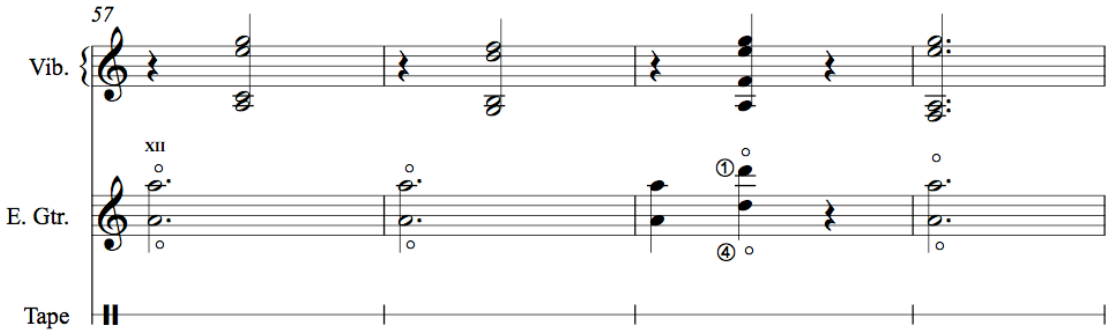
Eno's piece is comprised of simple melodic themes around the notes of the D major scale which constantly loop and interact in changing ways. Like Pärt's piece, the overall form is not teleologically conceived but inhabits a static and spacious harmonic sound-world through which resonance is an important aspect of the work.

2.1.2 Musical Content and Structure

When Pearl Dozes maintains a similar simplicity to both the works of Pärt and Eno through the inclusion of simple, non-rhythmic melodies and its lack of harmonic modulations. Resonance is also a key element of my piece created through the sustained tones of the vibraphone (often bowed), the medium-to-large reverb effects added to the electric guitar and the bell-like sonorities of the tape part. It does not attempt to replicate Part's Tintinnabuli technique but draws rather on its essence in its incorporation of similar harmonic intervals (composed largely in thirds but sometimes with the use of major seventh) and use of white-note modality.

For my piece, I used a scordatura tuning for the top two strings of the guitar with the top E string dropped down to D and the B string dropped down to A. This allowed access to harmonics otherwise unavailable on the instrument. The guitar part is comprised of natural harmonics, which blend well with the timbre of the vibraphone to produce a homogenous sound. The combination produces a modal set of pitches, which do not deviate throughout.

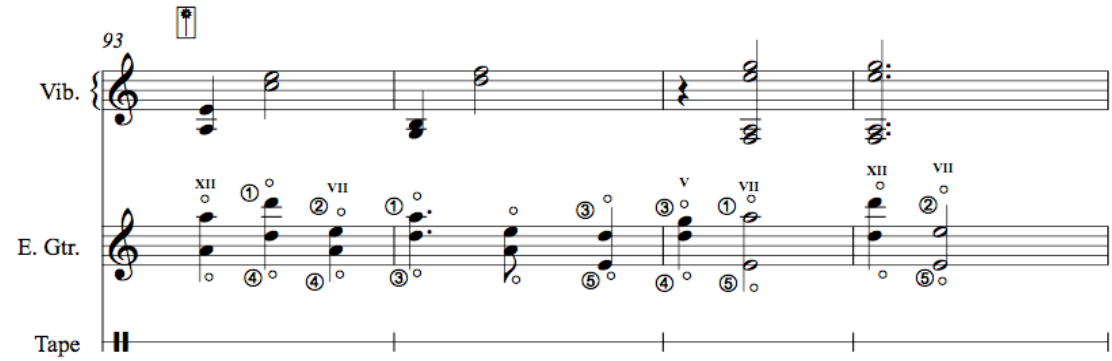
The childlike melodic theme unravels slowly and gradually in small sections exponentially throughout the piece (See example 1).



Example 1 Section of Childlike Melody.

The simplicity of the melody is contrasted with the more erratic structure of the tape part. Towards the end, the melody is fully developed between the vibraphone and the electric guitar (see example 2). The drone in the tape part carries on ringing but gradually reduces the amount of notes in the chord one at a time until only the bottom G is left ringing. There is anticipation for the next sounding event. What we often hear is a slight interruption in the tape part. The entries of the “Church bell” sounds created in the tape part are a-periodic, producing uncertainty as to when the next entry will be. The melodic phrases are sparse throughout the piece, coming together like a puzzle to be revealed only at the end in their entirety.

This structure underwent many revisions, which generally involved removing material from both the live and tape parts until a balance was achieved between sounding events and silence to create the melody of the original skeleton I had created.



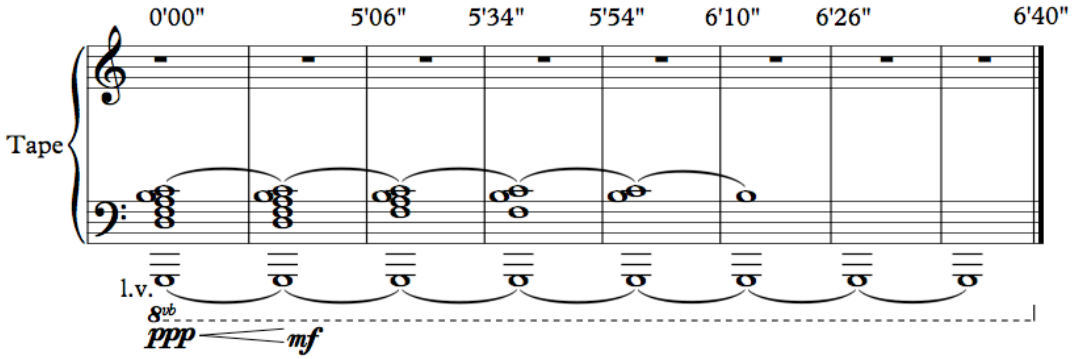
Example 2 Fully Developed Melody.

2.1.3 Studio Techniques

The tape part was conceived to work in conjunction with the guitar and vibraphone parts but has no click track to be exactly synchronised to. This freedom between the incidental sounds of the tape parts, such as the sporadically sounding bells, and the live synchronised elements of the guitar and vibraphone mimic the intermediary state between being awake and dreaming, a path that is not metrical or rigid, nor one that can be precisely repeated.

The tape part consists of a constant drone chord with the notes: C3, B2, A2, F2, D2 and G -1 (as shown in example 3). The resultant texture produced is a buzzing sound perhaps reminiscent of the quiet humming of a fridge or the soothing sound of crickets in the South of France. This was achieved by boosting the frequency of 1.68 kilohertz. At about 2 minutes and 30 seconds through the piece this sound changes by tweaking an LFO (Low frequency oscillator) and recording the audio frequency automation changes.

The tape part was composed initially using the Ableton Live software. I have developed the tape part by recording sounds produced by hitting two glasses filled up partially with water and using a metal spoon as a beater. The original pitch of the glass samples (E3 and E5) was then lowered drastically in Ableton Live. E3 was pitch shifted by 4 octaves and E5 by 3 octaves and 11 semitones. This has softened the harshness of the original sound and made it sound more like church bells. These “church bells” sounds are heard throughout the piece sporadically at irregular intervals.



Example 3 Drone Chord Cluster in the Tape Part.

2.2 *Nean* (2013) for Tenor Saxophone and Tape

2.2.1 Background

The word “nean” means nothing or nothingness in French and the idea of this composition is to depict a sense of desolation through music. Particularly influential were the illustrations of the strict Brutalist architecture from the 1950’s until the mid 1970’s, which, with their straight edges and bleak grey colour encapsulate a feeling of despondency. Similarly, Anselm Kiefer’s postmodernist graphical depiction of astrological themes in large paintings depict isolation, such as in *Die Milchstraße – Alcahest (The Milky Way – Alcahest)*, 1985-87, a painting made of copper wire, lead object and lead strips on oil, acrylic, emulsion, and shellac on a canvas size of 380 x 560 cm. (See example 4 below).

I felt this isolation, feeling small and vulnerable at an exhibition at The Museum of Modern Art in Salzburg, as I stood in front of the huge apocalyptic paintings of Kiefer’s work, hung on bare concrete walls.

Example 4 *Die Milchstraße – Alcahest (The Milky Way – Alcahest)*, 1985-87.

Another example of desolation in art is the painting *Für Paul Celan, Aschenblume (For Paul Celan, Ash Flower)*, 2006. This is a painting made of oil, emulsion, acrylic, shellac and books on a canvas size of 330 x 760 cm dedicated to one of his favourite writers, Paul Celan (1920-70), a German Jewish poet who survived the German labour camps but lost his family in the holocaust. (See example 5 below).

Example 5 *Für Paul Celan, Aschenblume (For Paul Celan, Ash Flower)*, 2006.

The poem *I am alone* (see example 6) is yet another example of nothingness. According to Lauterwein:

> …it does not refer to the solitude of the melancholic, but to the historical, concrete isolation of the conscience and consciousness of a poet whose mother, father, family and friends were all exterminated. Lauterwein (2007, p.164).

I AM ALONE, I put the ash flower
In a glass of ripened black, sister mouth,
The word you speak lives on before the windows
And silent climbs me, just as I had dreamt.

I stand in the full bloom of the faded hour
And save a resin for a bird delayed:
It bears the snowflake on its life-red feather,
The ice-grain in its beak, and gets through summer

Paul Celan's *I am Alone* Lauterwein (2007, p.164).

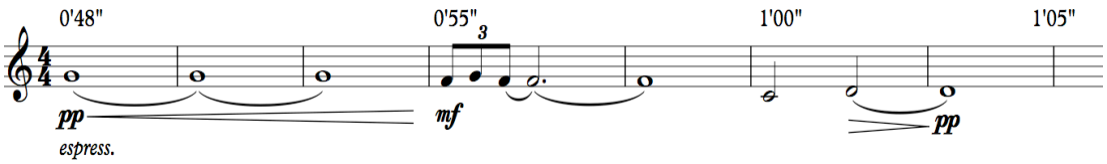
Example 6 Poem *I am alone* by Paul Celan.

The general conception, shapes and colours of such paintings, poetry and architecture provide a chilling picture of desolation, conformity, frustration, and I have tried to reflect these ideas and images sonically in “Nean.”

2.2.2 Musical Content and Structure

The piece opens with a treated sample that is continually looped, over which additional electronically-treated sounds are added. The harmonic orientation is around G minor and the ambience is towards dark sounds to create a feeling of desolation and stasis. The role of the ostinato repetition could be heard as not structurally evolving at first, but actually throughout the pieces it is constantly changing, either rhythmically or dynamically. For the first minute, the ostinato cell stays the same and follows a straight 4/4 time signature, but afterwards, it goes through a multitude of variations with cross-rhythms, tempo changes, time signature changes, and rises and falls in dynamics from *p* to *ƒƒ*.

I have developed long plaintive, melodic tones on the tenor saxophone, (see example 7 below) inspired by the Norwegian saxophonist Jan Garbarek and I have also used a similar compositional process to his; composing directly on a laptop the backbone of the piece and then adding solos later in real time. This compositional procedure was developed on Garbarek’s album *All those born with wings* (1987).



Example 7 Tenor saxophone opening melody.

This sustained sense of musical stasis is broken at 4’ 20’’, giving momentarily a suggestion of hope. The chords change from a G minor to D major to C minor twice around and ends on G minor. After this plagal cadence, the opening is reinstated to create a sense of closure to the work.

2.2.3 Studio Techniques

The opening ostinato was originally created from a recorded saxophone trill on the notes G3 to G#3 which was looped. The pitch of the recorded sample was lowered by 2 octaves and 1 semitone. The resulting sound was then altered, by adding a large reverb effect, and a frequency shifter. The frequency shifter drastically altered the sound into a totally different lo-fi dissonant and metallic sounding instrument. This change was achieved by setting-up a low frequency oscillator with a sine wave shape of an amount of 5 KHz, a rate of 50 Hz and a phase of 177°. The frequency shifter was set to -6.32 KHz with a fine-tuning of -500Hz and

the overall amount of wetness was set to 100%. Finally, to add some harmonic resonance to the sound, I added a “Berlin” resonator effect with a boost on the notes G1, A#1 and D3.

Listening back to the improvisation, I decided to add more transformative qualities to the saxophone to create a greater feeling of synthesis between the live elements and the tape sounds. I did this through disturbing the even rhythmical flow of the saxophone’s performance with the use of a quirky Glitch destructuring resonator effect. In this case Ableton’s “Rome” effect with an initial boost of the D Sharp 2 frequency (77.78 hertz). The sound of the “old vinyl scratch noises” which come at 1 minute 48 seconds was also produced by looping a saxophone melody line and altering its audio characteristic with pitch shifting and applying frequency shifting.

2.3 *ecilA on the Train* (2013) for Alto Saxophone and Tape

2.3.1 Background

This composition developed not only from my interest in modal Jazz, but also from experimental electronic music artists, mostly from the Warp Record Music Label and in particular the band Autechre. I wanted to compose a hybrid piece that embraced both my interest in modality and the IDM Idiom, a type of music that has experimental aspects such as complex and jagged rhythms and counterpoints. I was particularly drawn by the unpredictable rhythm variations of tracks such as *Tewe* from Autechre’s Album *Chiastic Slide* (1997) and also the free jazz improvisations of John Coltrane on his composition *Impressions* from the self-titled Album *Impressions* (1963). The name of the piece hints to my interest in the saxophonist John Coltrane and is a reference to his nickname, “Trane.”

Additionally, this piece depicts a memory of my ex-girlfriend, Alice, as she was traveling by train. Vague allusions to the sounds of trains can be heard in the work. Two other influential composers that used the train as a subject for their compositions are Pierre Schaeffer with his *Etudes aux Chemin de Fer* and Steve Reich with *Different Trains*.

Griffiths talks about Pierre Schaeffer and “Musique Concrete”:

> …In May 1948, Pierre Schaeffer created the first example of what became known as ‘musique concrete’: *Etudes aux chemins de fer,* a three minute piece made by manipulating recordings of railway trains…Experiments with discs had been conducted before the war, notably and independently by Milhaud, Hindemith, and Varèse, but it remained to Schaeffer to discover and use the basic techniques of sound transformation: reversing a sound by playing its recording backwards, altering it in pitch, speed, and timbre by changing the velocity of playback, isolating elements from it, and superimposing one sound on another. Just as important as these possibilities was the change to the art of composition. Every example of musique concrete was an

> improvisation created by the composer working directly with the sounds available: notation and performance were bypassed, and many traditional compositorial skills-those of imagining sounds and shapes, and setting them down precisely enough for the needs of performers-were irrelevant (Italics in original). Griffiths (2010, p.18).

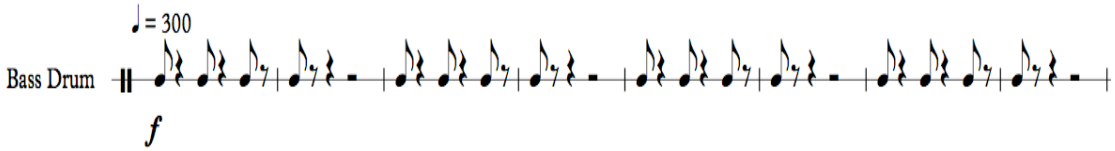
In regards to Steve Reich's minimalist composition *Different Trains* (1989) for string quartet and tape, Griffiths explains that:

> The tape component of the piece also includes train sounds (rattles of wheels and carriages that accord with the *moto perpetuo*, whistling that similarly go with the sustained chords), so that the composition, besides being a description of train journeys, seems to enact one, as it shuttles along the tracks of repetition and shifts-across points made by metric and tonal modulation-from one speech melody to another. (Italics in original). Griffiths (2010, p.351).

ecilA on the Train is somewhat different in approach, but the common thread is that the sounds are all based on train journeys. The composition could be considered to sit in the middle between the rawness of Pierre Schaffer's collages of train sounds and Steve Reich's minimalist repetitive soundscape. In my piece, the music is not totally created from "concrete" sound sources, as it is in Schaeffer's composition, but also from electronic preset sounds that I have manipulated to create new sonic entities. The relationship between Steve Reich's composition and mine is that both are driven by the repetitive trance like pulse of the rhythms and the importance of counterpoint.

2.3.2 Musical Content and Structure

ecilA on the Train starts with a rhythmical pattern reminiscent of the sound of Baião music from Northeast of Brazil. The rhythmical figures of a bass drum pattern (shown in example 8) develop throughout the composition. At the beginning, the emphasis is on the first beat of the bar in a 4/4 meter, and then it moves to the third beat of the bar after the intro and shifts freely back and forth to the first beat. In the outro, it resolves back to the first beat of the bar again.

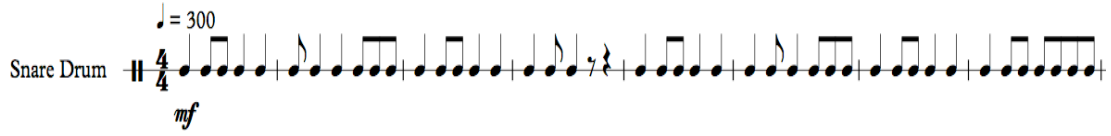


Example 8 Main bass drum pattern.

Extra percussive sonorities come in and out in counterpoint throughout the piece with an emphasis on the third beat of the bar in the beginning and the end, and on the second beat of the bar mainly throughout the rest of the piece. The rhythm keeps the pace of "the train"

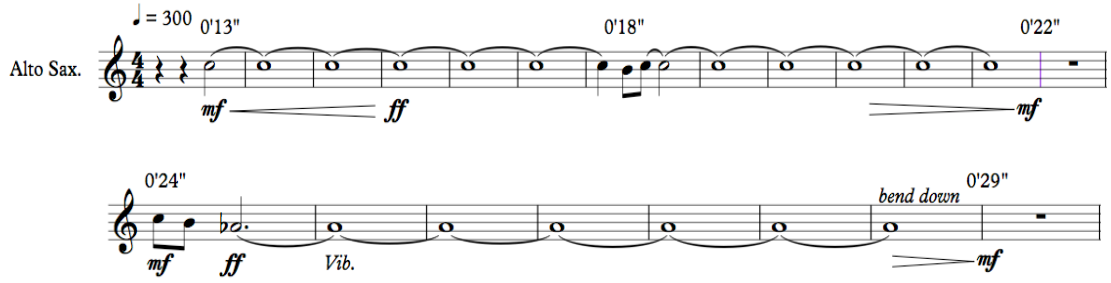
moving forward. As the rhythmical figure develops, it unfolds into a myriad of different percussive sounds occurring at random intervals of the beat.

A sound evocative of a “marching band snare” keeps the music moving forward with a constantly changing rhythm such as shown in example 9. These rhythmical patterns continuously develop and some figures might repeat but always with a degree of variation. This element of having no fixed grid maintains a freer form of development though the piece, an idea from Jazz and improvisation drumming that I am keen on.



Example 9 Snare Patterns Developed.

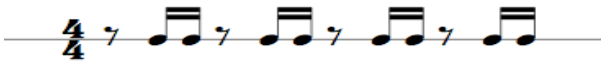
A melodic theme is introduced at the beginning on the alto saxophone as shown in the example 10 below.



Example 10 Alto Saxophone Opening Melody.

This opening theme is reiterated later in the piece. It starts simply but soon moves away from the first note C and develops into a more complex free improvisation on the Ab diminished scale (starting with a half step (semitone)). Then, the solo moves to an Ab minor pentatonic scale and, throughout the improvisation, it moves between the scales. At at 1’47” it uses notes from the Ab major scale, emphasizing the G. The improvisation develops through the inclusion of chromaticism. The music stops briefly before the outro that is driven again by the “marching snare” sound. The later part of the piece unfolds into an overblowing “sheets of sound” technique of free improvisation on the alto saxophone. Myers describes that “ [the term] “sheets of sounds” was invented by Downbeat Magazine jazz Critic Ira Gitler in 1958.” Myers (2009). John Coltrane used this technique as his career evolved. It involves a rapid succession of high-speed arpeggios and scale patterns. These sounds offer an emotional intensity not achievable via sampling. There has to be a human being effectively breathing and blowing into the instrument to create genuine human sounds, with all the variety of tone and attack that is as natural as breathing or singing.

My interest with the development of rhythmical grooves emanates from my attraction to African rhythms mostly from Nigerian's High Life Afrobeat music, particularly from the piece *Expensive Shit*, from Fela Ransome-Kuti's self-titled album *Expensive Shit* (1975).
The rhythmical elements of this music are driven by the indefinite-pitch percussions of the cabasa on the first and third beat of the bar and the clave with the rhythm shown in example 11 below.



Example 11 Clave rhythm.

I believe that continuously developing a repeating rhythmical cycle emanates a trance-like effect on the listener. This trance effect can be heard in the constant cyclic movement of the sounds and could be considered somewhat like Coltrane's state of mind in his free jazz explorations and his passion for African and Indian music. Coltrane composed a piece called *India*, released on the *Impressions* (1963) Album and also *Africa*, released on the *Africa/Brass* Album (1961). Both of these compositions were written in honour to both countries. The similarities of African and Indian music go beyond rhythmic and melodic compatibilities. According to Cole, the professor, musician and composer Fela Sowande observed:

> The absence of Western concepts of harmony in large areas of the African continent is similarly matched by India where, as in Africa, Western harmony is conspicuous by its absence. Cole (2001, p.146).

The rhythmical drum patterns represent the sound produced by the old train's machinery or according to Tagg it is also described as "kinetic anaphones":

> Anaphone is etymologically analogous to analogy; but instead of mean- ing the 'imitation of existing models... in the formation of words' (ana-logy), anaphone means the use of existing models in the formation of (mean-ingful musical) sounds. Anaphones are in that sense homologous sign types and can be thought of in three main categories —sonic, kinetic and tactile— depending on which mode of perception —sound, movement or touch— is most striking in the link between musical structure and paramusical phenomena. Tagg (2012, p.487).

The drum pattern is driven by the regular bass drum and marching snare-like sound. As the piece progresses, the rhythms get more jagged and uneven and the sound produced by the saxophone is less controlled and more distorted. This could be heard as representing the decaying sound of the train's mechanical moving parts.

2.3.3 Studio Techniques

The main drum pattern throughout the piece was programmed using Ableton preset sounds "Kit-Carbonized". The "marching snare" type of sound was produced by programming percussion samples and altering the timbre drastically by the use of extreme low frequency oscillator. In this case, I created a rhythmical sweep with a square-shaped wave setting by cutting off frequencies up to 3.48 KHz. On top of that, I added a medium "Corridor" reverb to smoothen the harshness of the tone. The saxophone improvisation was recorded in one take with no effects to start with, but later I added a large "Cathedral" reverb and, a "comb filter" flanger effect called "Hearing voices". Hugill says that a "comb filter":

> …adds a slightly delayed version of a signal to itself, and is called a comb filter because its frequency response wave form looks like a series of spikes. Comb filtering is really a corrective device, using *phase cancelation* to avoid unwanted phenomena but it is also useful for creating echo effects. The effect of an echoing cylinder, for example, can be created readily using this method. Here we start to see ways in which the time and frequency domains may be combined. (Italics in original). Hugill, A. (2012, p.112).

2.4 *Cry for the Indian* (2013) for Voice, Tenor Saxophone and Tape

2.4.1 Background

This piece was inspired by my thoughts on the maltreatment of the South American ethnic Indians in the Brazilian rainforest, who have suffered exploitation, cruelty and destruction. Musically speaking, it demonstrates a more popular and experimental approach to my work that involves sampling and Plunderphonia techniques. Cox and Warner talk about the early days of sampling and plunderphonic techniques as such:

> When tape recorders, basically designed for documentation and reproduction, became available in the '40s, a few individuals, like Pierre Schaeffer in France, began transforming the recordings, distorting them into something new, producing music through them as if the tape recorders were magnetic violins. Even earlier, composer John Cage was specifying the use of radios and phonographs as musical instruments. Cox, C. and Warner, D. (2004, p.132).

> Plunderphonics addresses precisely the realm of the recorded. It treats of the point where both public domain and contemporary sound world meet the transformational and organisational aspects of recording technology; where listening and production, criticism and creation elide. It is also where copyright law from another age can't follow – as Oswald himself remarked – "If creativity is a field, copyright is the fence". Cox, C. and Warner, D. (2004, p.152).

The music influences for this composition include lo-fi beat elements and a vocal style that can be related to the anti-folk American singer-songwriter Beck, especially on his album *Odelay* (1996). I have been drawn towards three tracks in particular from this album: *Devil's haircut*, *Novacane* and *Where it's at*. Throughout these three particular tracks, the main elements I have wanted to develop are the experimental aspects of rock-driven beats (broken down with hip-hop break-beats), the use of samples and the overall use of lo-fi sounds including "dirty" distortion.

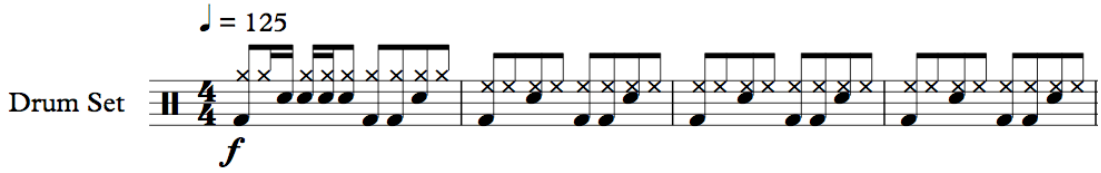
Other influences can be found from artists such as Squarepusher, with his use of pre-programmed electronic groove-based drum break-beats and dub-sounding bass lines on pieces such as *My red hot car* from the album *Go Plastic* (2001).

2.4.2 Musical Content and Structure

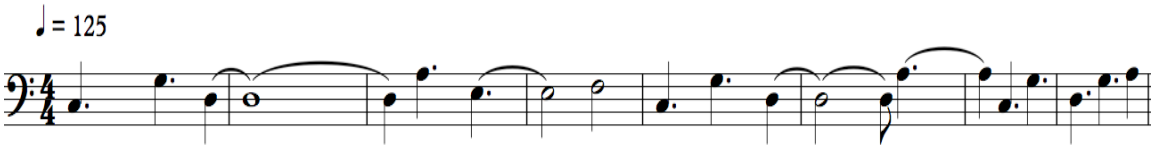
The lyrics in this piece are very blunt and the words are self-explanatory: "Cry for the Indian, a fifty star nation of morons taking over". This is directly pointed at the way the Brazilian leaders are following in the footsteps of The United States of America with the destruction of their unique, native Indian heritage.

The glitch elements throughout the piece and particularly in the later part represent the noisy machinery elements of destruction approaching the peaceful Amazon rainforest. The melody on the glockenspiel represents the purity and simplicity of the Indian people. As the piece progresses, the glockenspiel gradually wanes under the noisy mass and chaos of the glitch distortion.

The piece starts with a basic rock drum machine pattern in 4/4 (see example 12). The rhythm of the drums is underpinned by a dub-sounding, bass-synthesizer line, programmed in Ableton. (see example 13).

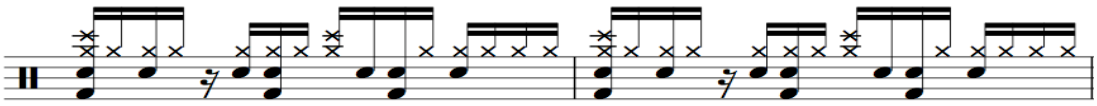


Example 12 Rock Drum Machine Pattern.



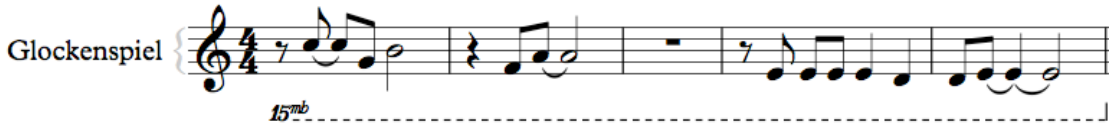
Example 13 Dub Bass Synthesiser Line.

The singing 'Cry for the Indian' is then heard and is later followed by the repetitive sample of a voice saying 'What do you do'. The sample was taken from the opening track *I could be a star now* of Frank Zappa's compilation album *Cheap thrills* (1998). The rhythms become more hypnotic and fragmented as the track progresses with the addition of cross-rhythmical drum patterns (see example 14).



Example 14 Cross Rhythmical Drum Patterns.

A third of the way through the piece, there are backing chords played on a Rhodes keyboard with a chorus effect. This creates a resonance and change in the timbre which makes the keyboard sound like bells. A tenor saxophone melody then comes in against the keyboard major chord cluster (A1, D2, F3, E3). The drums drop out shortly and a leitmotiv of a glockenspiel melody (see example 15) played with soft mallets is then introduced with the main vocal line, this time sounding double-tracked.



Example 15 Glockenspiel Melody.

The quirky drum rhythm continues, creating interesting glitch sounds well away from the usual range of a drum kit, but nevertheless adding life, variety and surprise to the pattern. The bass line evolves into a dub solo underpinning the jagged drum groove, and additional drum sounds are added, getting heavier with distortion. Towards the end, the glockenspiel's melody is reintroduced and used as the piece gradually fades to an end.

2.4.3 Studio Techniques

In my piece, I have developed plunderphonia techniques by using pre-programmed drums as the driving element and transforming the samples by speeding them up, applying some frequency equalization and reverb in order to mold it into my own sound. In this case, the drum loop 'Acs_01 StrghtAhead_130.rx2' is from the loops bank in the software Reason 4.0.1 Dr Rex. This loop is pitch-shifted six octaves higher. Another element of plunderphonia was achieved with the use of the Frank Zappa sample that I experimented with as an extra rhythmical element. In essence, I am working like a painter, using colours that exist already but turning them into different ones and transforming them into new objects by adding all types of odd elements into the mix. My composition also contains elements of IDM,

particularly in the use of break-beats and the development of counterpoint in the drums and percussions grooves.

The glitch textures are applied to the rock-drum pattern by programming automations of Ableton's beat repeat plug-in effect 'Deconstruct 01', which is switched on and off intermittently. In this case, I am creating digital distortion through methods of "post digital" bit crushing. This is achieved by reducing the bit resolution from a high quality to a low quality, thus creating a digital distortion.

Chapter 3: General Conclusions

The work commented on in the previous chapter and the other six pieces included in the portfolio form the main output of compositions I have written over the last two years. I have also been interested in developing my purely acoustic work and, as an example of this, have included the first movement of my Symphony No.1 “La Danse des Russes Saouls,” also completed during the time of my Master’s degree. (Unfortunately, due to the focus of this writing on pieces that incorporate electronics it was not possible to include a full commentary on this piece). I also include “The Final Drop” as an example of a piece written in a purely electronic medium. Through the previous chapters, I have attempted to demonstrate ways in which an eclectic array of influences can be brought together into an original collection of pieces. It serves to illustrate how, especially with the more popular-inspired works, my thinking has moved towards a more rhythm-based genre through my introduction to glitch and IDM. This has involved a better understanding of the software, the use of appropriate sampling, the creation of a rhythmic pulse and finding new ways in which the tenor and alto saxophones recordings can be manipulated. The use of effects plug-ins has been important and the development of glitch techniques has introduced me to an element of surprise and unpredictability in my music.

Being exposed to a vast array of new music over the last two years has been, at times, daunting. I have been fascinated by the challenge of discovering new ways of thinking and working. I have been researching composers such as Brian Eno, whom I found many similarities with the way he works in the studio. More recently, I have been looking into the ideologies of John Cage and in particular his *Sonatas and Interludes* (1946-8) for prepared piano. I am also drawn towards the sounds produced in his early experiments with electronic music. I feel that there is a lot for me to learn from Cage in terms of his research for new sonorities. I can see parallels to his naive period (*The Seasons* (1947) and the *Suite for Toy Piano* (1948)) and ways of exploring simple harmonies and sonorities.

Researching artists like Aphex Twin, Autechre, Squarepusher, Matmos, Mira Calix, and Jimi Tenor to name but a few, represent some of the modern left-field voice of electronic and instrumental music today. Right now, I feel an urge to learn as much as I possibly can about the language of these pioneers in ambient, experimental, electronic, improvisation and jazz.

Undertaking this work has increased my understanding of my identity as a composer. It has made me realise that being a performer is inherent to the ways I think about composition and has provided different platforms for me to incorporate my work as a performer into my compositions. I tend to respond to what I hear and can create in real-time. From this perspective, the score is of less value to me in terms of informing the decisions I make. However, I have enjoyed writing for a live performance and *When Pearl Dozes* has opened

me to the possibilities of working with sound and silence in more meaningful ways. It has been a challenge for me to reduce the materials I was using in such a radical way and has made me question how I might work in the future with such limitations.

My aims in the future is to further develop my studio composition skills using Ableton Live more thoroughly and also learning to use new software programs such as Supercollider, Max MSP, Reaktor and Recycle to name but a few. I would like also to further develop my standard music notation skills and also to develop my improvisation skills, as it can be a great source of original material to use.

The bringing together of acoustic instruments with electronic and other sound sources creates unlimited opportunities for musical creation, allowing composers who are both familiar with conventional instruments and skilled in the techniques of musical software and recording, to produce original works. It is my modest claim that the pieces put forward for consideration do offer something highly personal and unique, demonstrating the evolution of a more distinctive voice.

Throughout the course of these two years of research I have avoided following processes and rule-based compositional methodologies. My thoughts are summarised by the following quote taken from Young who state that:

> …Carl Jung 'argues that in the twentieth century, we are just obsessed with 1+1=2, rationality, we attack the problem like this. [Jung's] saying, Look back inside and reacquaint ourselves with the primitive, instinctive, the old mind, if you like. That will itself reveal where we've got to go – as in, not just trying to work it out rationally, because logic and rationale are not providing the answer any more… Young (2005, p.85).

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Appendix

List of Compositions Submitted in the MRes Portfolio:

1. *Recycled Paper Heart* (2011) For Alto Saxophone, Double-Bass, Accordion and Tape. 10'09"
   (Colin Crichton - Alto Saxophone, Jim Parris – Double-Bass, Tim Connor - Accordion).

2. *When Pearl Dozes* (2012) For Vibraphone, Electric Guitar and Tape. 5'59"
   (Jeroen Stevens – Vibraphone, Toon Callier – Electric Guitar).

3. *Dangling Wires in the Wind* (2012) For Tenor Saxophone, Double-Bass and Tape. 5'26"
   (Colin Crichton - Tenor Saxophone, Jim Parris – Double-Bass).

4. *In Transit* (2012) For Alto Saxophone, Double-Bass, Accordion and Tape. 6'04"
   (Colin Crichton – Alto Saxophone, Jim Parris – Double-Bass, Tim Connor – Accordion).

5. *Transition* (2012) for Tenor Saxophone, Double-Bass and Tape. 5'47"
   (Colin Crichton - Tenor Saxophone, Jim Parris – Double-Bass).

6. *Symphony 1 First Movement La Danse des Russes Saouls* (2012) For Horn in F, 3'54"
   Snare Drum, Bass Drum, Gong, Glockenspiel, Piano, Mezzo-Soprano, Tenor,
   Violin 1, Violin 2, Viola, Violoncello, Contrabass.

7. *Nean* (2013) For Tenor Saxophone and Tape. 7'47"
   (Colin Crichton - Tenor Saxophone).

8. *ecilA on the Train* (2013) For Alto Saxophone and Tape. 5'07"
   (Colin Crichton – Alto Saxophone)

9. *Cry for the Indian* (2013) For Voice, Tenor Saxophone and Tape. 4'13"
   (Colin Crichton – Voice and Tenor Saxophone)

10. *The Last Drop* (2013) For Tape. 4'58"