The Mother of Invention: Creative commitment as a reaction to financial and technological uncertainty

Dr Brendan Williams – University of Salford UK

Over the past few years – and largely due to my engagement in conferences and networks such as this – I have started to 'screw back' the lens and observe my own practice reflectively, analyzing what I do in the record making process, considering whether the reasons I choose to work in any particular way resonate beyond my own experiential 'locale', with a wider creative community. How much am I informed by what I read or hear about other producers practice, can we observe 'collective' changes, - 'convergent evolution' if you will - in studio practice, influenced by changes in technology, politics, commerce?

I wear a few different hats; I'm a producer / engineer, a teacher and a practice led academic; I bring iterative, overarching 'questions' to the projects I work on, the answers to these questions (my findings) are embodied in the records I make and in the more traditional texts which accompany them, this presentation sits within that context.

Regarding the title of this presentation, I'm not here to talk about Frank Zappa, it's an appropriation of the English language proverb, 'necessity is the mother of invention', itself a flowery, idiomatic mistranslation from Plato's republic. A more literal translation might read "our need will be the real creator".

Andrew Scheps's Punkerpad Studio

A particular event which brought the idea for this paper into focus was a fleeting conversation with producer / engineer Andrew Scheps, prior to his keynote at last year's ARP conference in Huddersfield. He stated that he no longer mixed in the analogue domain, he did not use 'hardware inserts' as he believed that the qualitative 'weakest links' in digital workflow were the AD/DA stages (multiple passes through them could adversely affect his mixes) and whilst he did not state that there were no discernable differences between emulative plug ins and the 'real deal' he had drawn a clear line in the sand; mixing in the analogue domain was too expensive and too time consuming, it didn't suit a world where artists, labels and management could request mix or arrangement changes with no notice - a result of a 'surface level' of technical understanding on their behalf- and most importantly, the sonic differences just weren't noticeable enough.

This was reflective of my own practice, I've found myself printing more hardware whilst recording, being more commited, in pre-emption of reduced timescales whilst mixing.

Digitization has changed record making, as a creative community we accept this statement with little objection, even 1st year students of mine who have never worked outside the digital domain display a general awareness that what happened in the wider context of record-making in the past (independent of genre) was different, that the technology that they engage with now is more portable and less expensive. It's well documented that people can produce tracks of 'releasable quality' anywhere, with limited means, and disseminate them more easily than ever before. Often you'll see references to this democratization as part of an artists press release as a signifier of a DIY aesthetic.

It took a long time for the recording studio as we know, or perhaps more accurately 'knew' it to evolve: here we have a 1920's Victor records 'direct to disk' session, with an ensemble arranged unconventionally to suit the peculiarities of the recording medium.

Decades of development leads us to the 'analogue heights' of the 1970's.

And with the advent of digital recording and editing there was a process of assimilation of new technologies, supplementing those of the past.

Here's Trevor Horn at Sarm.

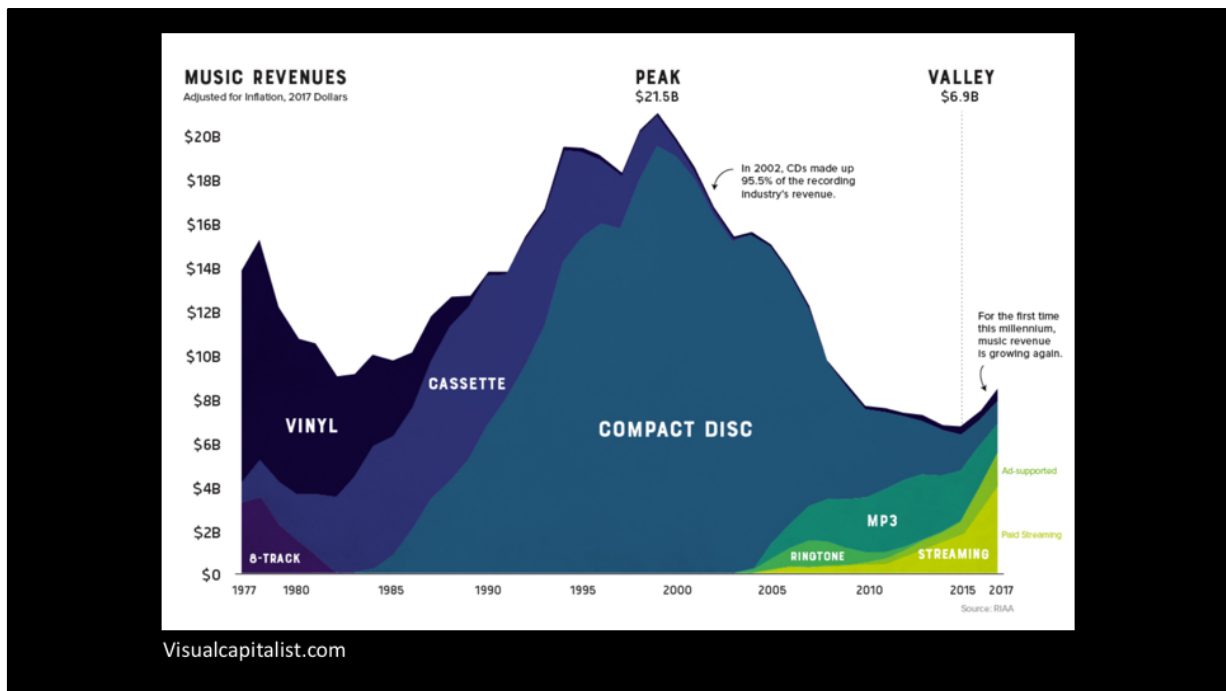And a mid 90's studio complete with an obligatory rack of ADAT machines.

Here's Sarm again in a later incarnation.

And an image of Chris Lord Alge's hardware rack.

These commercial recording facilities were (and continue to be) expensive for everyone concerned, the initial outlay for equipment was immense, they drank electricity and needed constant technical attention in order to function in a professional capacity. By definition, this meant that technical 'down time' was unacceptable, and this functionality (comparable both financially and in terms of unionization to the film studios of the era) was enabled by significant revenue generated by the sale of physical products, as illustrated:

SLIDE

MUSIC REVENUES
Adjusted for Inflation, 2017 Dollars

PEAK
$21.5B

VALLEY
$6.9B

In 2002, CDs made up 95.5% of the recording industry's revenue.

For the first time this millennium, music revenue is growing again.

VINYL

CASSETTE

COMPACT DISC

8-TRACK

MP3

RINGTONE

STREAMING

Ad-supported

Paid Streaming

Source: RIAA

Visualcapitalist.com

This infographic, and there's no shortage of similar ones, illustrates the extent of the dip in overall revenue drawn from the sale of recorded music. Whilst it's arguable that revenue streams available to performing artists have broadened, you would be hard pushed to find someone working in the recording industry who feels that this significant dip in income, which would eventually flow through to them, hasn't affected their working practice; record-makers are expected to fulfill multiple roles simultaneously and commercial facilities struggle to make ends meet solely through music recording, diversifying into post production or podcasts as a result. The beginning of the deep trough coincides almost exactly with when I started to work as a producer / engineer commercially…

What regular revenue enabled, through a process of trial, error and refinement was a professional studio topography which was designed to actively support performing musicians. Ensembles and bands were required to perform in unusual architectural situations, often wearing headphones and often individually rather than simultaneously, but in order to mitigate these 'alien' technological incursions, and to paraphrase Le Corbusier, the recording studio became a 'machine to make music in', guided by a necessity to support artistic objectives and made possible by technological developments driven by commercial revenue.

The airplane is the product of close selection.

The lesson of the airplane lies in the logic which governed the statement of the problem and its realization.

The problem of the house has not yet been stated.

Nevertheless there do exist standards for the dwelling house.

Machinery contains in itself the factor of economy, which makes for selection.

The house is a machine for living in.

Le Corbusier *Towards a new architecture 1993*

Here's the origin of the Le Corbusier quote, a re-iteration of the sentiment; 'our need will be the real creator'

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Large scale recording studios developed with creative commitment at the core of their function; in them musicians, collaborating with engineers and producers searched out unique 'sounds' which resonated aesthetically with the musical material being performed. From the 60's through to the early 90's artists monitored off a tape machines sync, or repro head, hearing what the recording medium heard, building a sonic landscape close to that of the finished product. Over time in these new creative environments the boundaries between constructs - the 'music' and the 'sound' - fell apart, an instrument's presentation (it's timbre, dynamic and spatial characteristics) became as intrinsic to what we would describe as the musical 'primary artifact' as the notes and rhythms. And Initially all of this happened in real time; musicians performed their parts with a 'finished' sound audible to them.

A multi-microphone, reverberation heavy, aggressively compressed drum sound was 'printed' to as few channels of analogue tape as possible, you *had* to be economical and work quickly in order that your creative vision might come into being.

Discreet recordings were balanced in terms of volume and placed in the stereo field, the mix was often a quick process because the aesthetic complexities had been thrashed out beforehand. To the contemporary studio practitioner this process can

feel daring or dangerous, but although driven primarily by technological restriction why wouldn't the process have developed in this way, it is analogous to the way a conductor works with an orchestra, a photographer with their subject?

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Prior to recording, a musical performance was most often regarded as an abstraction of a composers intentions or a rendition of a piece passed down through aural tradition, no one interpretation would be regarded as definitive.

Record-making was one the first of the electrically facilitated artistic practices to explore the possibilities non-linier-time. Increasing track counts and the creative potentials of tape based overdubbing, changed perceptions of what a record could be; from a document of one particular ensemble performance, to a carefully crafted 'primary artefact'. As Brian Eno observed:

By turning sound into a plastic material - manipulable in space and time - it drew the process of composition closer to the processes of the plastic and visual arts. The Impressionists in their paintings had aspired to "the condition of music," envying its ability to be both abstract and emotionally engaging. Meanwhile, much of the musical composition of our century has drawn closer to the condition of painting or sculpture"

Brian Eno (2000)

Above is a Q+A from the UK publication Sound on Sound

There's nothing technically wrong with this advice, but in my opinion, there's something vital missing from the discussion; where does the performer figure in the conversation, how might tracking with compression enable them to perform into the mix, to feel more comfortable, react to the soundworld which they're ultimately going to be presented within? There's a sense of fear, a sense that the tracking process is not the place to make important aesthetic decisions.

I began to be serious about creating music in the mid 90's, and away from the traditional guitar band formats that I played in, technologically mediated music was initially a fairly solitary experience. I learned to programme and overdub on a computer / tape hybrid system in various bedrooms, I was a composer / producer with very few engineering skills. Performed parts were not only edited to form 'composite masters', I was writing through editing. I wasn't formally educated in music or engineering and relied on publications such as sound on sound for guidance, over time I developed some rudimentary technical skills. When I did eventually find myself in an educational environment – working as a studio caretaker / technician initially – it seemed that here too, the prevailing wisdom was to track 'clean' and

realise the mix aesthetic at a later date.

I made some records in a rather 'piecemeal' manner, they were time consuming and – regardless of the results - not necessarily always 'fun' for the bands I was working with. Sometimes band members seemed confused about where they were up to in the overall process; I might have had a clear vision, but I wasn't able to sonically articulate it early enough in the process to get everyone 'on board' all of the time. This was partially down to my lack of experience but also a result of my sense of separation between the recording and mixing processes. I wouldn't record or monitor aesthetically supportive reverberation or compression, not just because I didn't feel confident enough in my own ability to make the right decision, but because it just didn't seem part of the record-making culture local to me. Certainly in the early days of my practice there were also technical limitations, I often worked away from a traditional studio environment and without the latency free DSP systems I'm afforded now. When I was in a traditional studio it was in short bursts, the focus was on getting all the constituent elements of a part down fast, editing and deciding exactly how it ought to sound, later…

In the late 2000's I began working closely with a fledgling Jazz Label, Gondwana Records in my home city of Manchester. It was through my engagement with this musical form, by then one of the least technically mediated experiences of my career, that I started to appreciate the needs of musicians in a recording environment more acutely. These performers preferred not to wear headphones, to play in an acoustically supportive environment, to self balance through their proximity to each-other. They established their soundworld immediately, reacting sensitively to the space and each-other, and although I was again capturing these performances with nothing in the way of hardware processing, limited to originally 8, then 16 channels, my initial balances were extremely close to a 'finished' mix. In a session, the playback of a 'rough mix', would inspire confidence in the technical process.

As ephiphanic as this experience might have been I had no desire to burn my synthesizers or destroy my computer. Alongside jazz and contemporary classical I was deeply immersed in popular and electronic music and I wanted to transpose the immediacy of these sessions, the instant gratification upon playback, to my work in this area.

Through lengthy mix processes I had begun to understand what sort of signal

processing I was regularly implementing in order to address technical issues of dynamic range and frequency distribution but also to transform the aesthetic 'reading' of a track. I regularly turned to outboard processors, printing reverbs and delay's, modulation effects and parallel saturation. In particular I found myself re-amplifying sounds into interesting acoustic environments.

Here's a Faulkner array in a stairwell above a pub where I had a mix space, I used this technique a few times for processing drums.

And a large room above an older makeshift studio of mine which I again used to use as a reverb chamber whilst mixing.

More recently I've taken this to another level of complexity by building surround reverb chambers, captured in binaural. Again, this is a mix process.

Please refer to the video GoGo Binaural Chamber EDIT.mp4 in the Figshare Collection "Art Pop Intersections"

This was a well funded project, GoGo Penguin's A Humdrum Star for Blue Note Records; It took a full day to print individual reverb stems for all of the instruments across all of the tracks on the record. This was one of the few processes which we didn't print in real time.
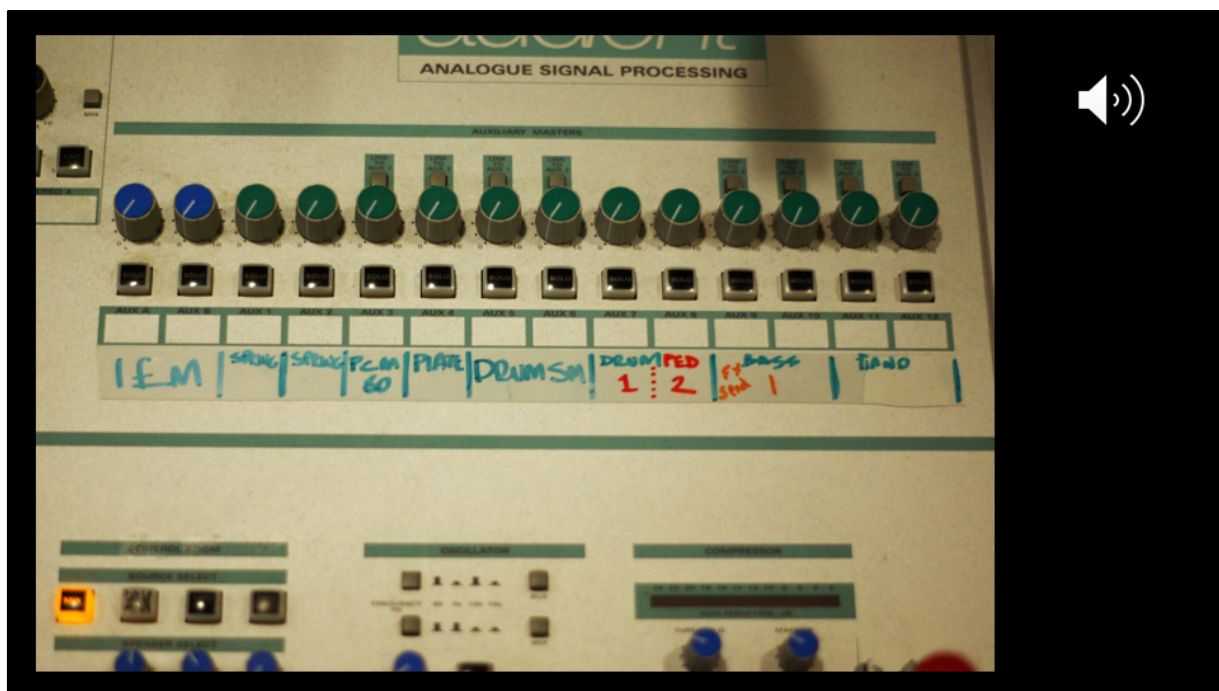
This is an image of the way we worked with auxiliaries whilst tracking the album, we have:

Sends to spring reverbs

 a Hardware digital lexicon reverb

An EMT 240 goldfoil plate

Stereo 'drum smash' compression

And two channels of distortion and modulation from guitar pedals

Please refer to GoGo Penguin's "Strid" - A Humdrum Star (Blue Note Records 2018) – in this clip you hear drum processing from the distortion pedals but also an odd underlying texture which is the piano piezo pickups running through a ring modulator.

All of these process were audible to the band as they performed, they played into the sonic environment we we created and reacted sympathetically to it.

This footage is from a session led by the drummer Gaz Hughes playing Art Blakey arrangements, the working title for the project is, you've guessed it, the Gaz messengers…

It was a low budget self funded project in my own acoustically dry facility Low Four. I wanted them to feel spatially supported whilst playing and decided to construct a reverb chamber which I could track in real time. I could feed any instrument into the chamber via auxiliaries. Here's the piano;

Please refer to the Figshare item "Gaz Hughes Reverb Chamber" in the collection Art Pop Intersections.

And here's the full band, you can hear that I've built the chamber mix, combining the performers in one acoustic space, this was fed through to their headphones and I made sure there was good line of sight between all of the performers to support improvisation. I wanted to recreate the feeling of performing in a supportive acoustic environment but with the greater control of working in a studio such as this. I knew that printing reverbs, deliberating endlessly over the balance at a latter date, would be prohibitively expensive with little audible difference to just taking the plunge. It

perhaps took 30 minutes to set up the chamber but it would have taken a great deal longer to print in real time, per mix, and I wouldn't have been able to do that until any edits were completed.

Please refer to the Figshare item "Gaz Hughes Tracking" in the collection Art Pop Intersections.
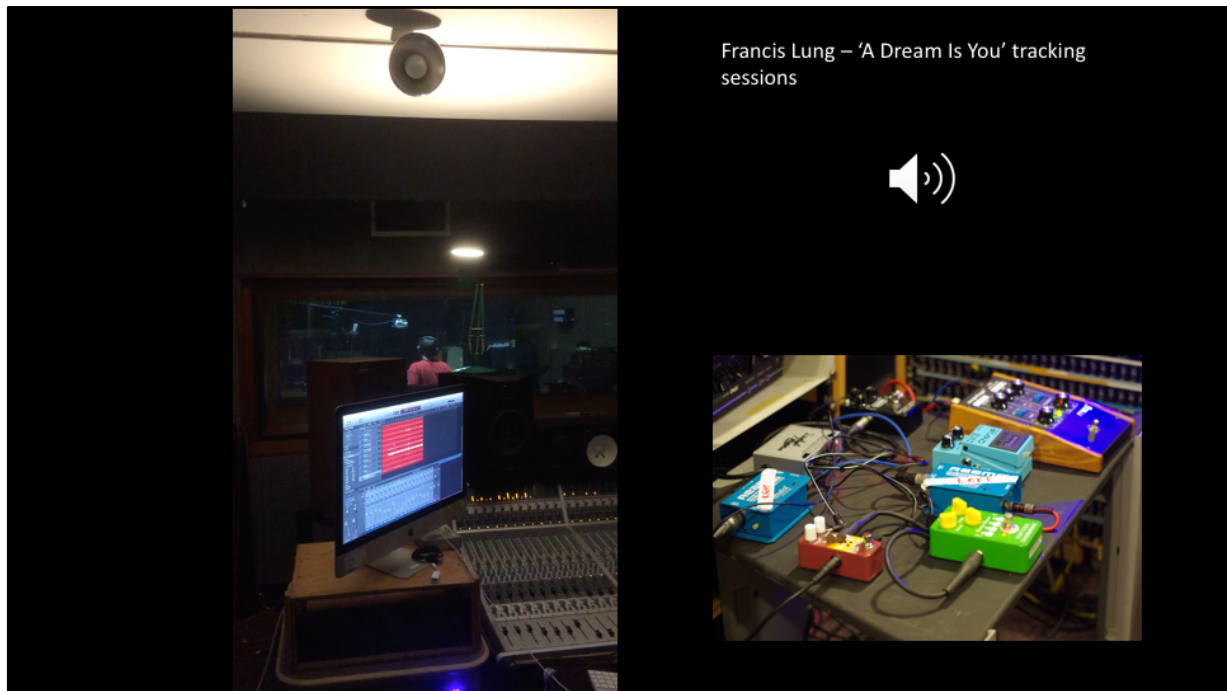
Here's a Francis Lung session where we were tracking drums, bass and guide vocals simultaneously, the singing bass player is just out of shot behind me in the control room. You can hear plate reverbs, analogue echo from a guitar pedal and analogue compression whilst they're performing.

Please refer to the Figshare item "Francis Lung Drum Tracking" in the collection Art Pop Intersections.

To conclude…

I'm not proposing for a minute that what I'm doing here is radical, I'm trying to illustrate that my own studio practices, and those of my peers have been heavily influenced by technological developments which contrived to delay creative decision making, and that dwindling access to large recording facilities, where more assertive practices were perhaps maintained, served to allow 'pro-sumer' and home studio practice to steer pedagogy.

Beyond the scope of this presentation I've been interviewing some of my peers, the guys above operate commercial studios in and around Manchester, they're of a similar age to me, and younger, and I'm gathering together their reflections regarding their decision making processes and the way changing technologies influence their practice. I hope that this might result in a snapshot of the creative culture local to me.

> **How often do you work with hardware whilst mixing and how do you integrate it, does this ever present any difficulties?**
>
> Henry: It depends on the budget of the mix and what system I'm using for the mix. Recently I've been doing much more in the box, but then I'm still processing hardware reverbs, just for one thing that's not a digital process, reverbs and delays really are just so characterful.
>
> George: It really depends on budget and time constraints, because there's always the nagging potential of a recall. That has implications, you have to do in in real time, and find that time in what can be a busy studio schedule. But I think the benefits sonically outweigh the headaches on the logistical side, so I'm always game.
>
> Phil: It's normally hardware reverbs, springs, and some hardware boxes, also little guitar pedals. You have to bounce things in real time, which can be a pain when you're running off things like stems, also for recall convenience. Cause everyone expects everything now these days and to be easily tweakable; it's not always easy to get mixes back up when you've got lots of outboard on the go.

Here's a quick example of some of the data I'm gathering (above)

We should as teachers perhaps attempt to culturally resituate the purpose of the recording studio, like a visual artists workspace we should see it as a place where we go to be bold and assertive at every stage of the record-making process, we should arrange them physically with this in mind. Universities such as this and my own are sometimes required to step in to protect and archive ideas when, for many reasons, they might become obscured or unwittingly outmoded.

As record-makers we are loathed to release work inferior to that which was produced in the past. I know that my practice has developed in unforeseen ways in reaction to financial and technological uncertainty; Knowing that generally recording budgets are getting smaller I observe myself 'front loading' important aesthetic decisions along the production journey to save time, more often than not these decisions 'stick' improving both musicians performances and the energy between all the collaborators in the studio, again, "our need will be the real creator".