

Journal on the Art of Record Production

ISSN: 1754-9892

Mixing As A Performance: Creative Approaches To The Popular Music Mix Process

Brendan Anthony

Issue 11 | Creative Practice, Mixing, Mixing as a Performance, Popular music, record production | March, 2017

Introduction

The recording studio has been described as an extension of the artist's creative arsenal for decades, for example, Brian Eno's concept of using the studio as a compositional tool (cited in Cox, Warner: 2005). Eno's revelation suggests that the studio is similar to a musical instrument and therefore possesses compositional properties. If this is true, then performance practices should also extend to the capabilities of the recording studio. *Mixing as a performance* involves a creative practice where the recording studio is the mixer's instrument; during this process, audio technology is manipulated by the mixer in a performance-like process to create desired artistic outcomes. However, mixing involves both sonic refinement and mix as a performance processes, and it is hard to imagine a mixing scenario where these do not co-exist. This paper is intended to address perceptions of creative agency that surround modern technology's influence on mixing, and in particular the mix as a performance process.

There is much scholarly research into technology's influence on record production (Pras, Guastavino & Lavoie: 2013) and, as a result, since the development of the DAW [1], record production and mixing has become a process now used by amateur and semi-professional producers. The development of digital technologies and the Internet has led to a delocalisation of the recording studio (Théberge: 2004) and the producer's role has been reinvented (Burgess: 2008), as people who would be better classified as popular musicians rather than professional mixers complete and release many recordings. This mass democratisation of the mixer's role has made popular research tools such as Internet blog sites, including Tape Op Message Board (2016) and GearsLutz (2013), relevant to professional mixing perceptions.

These sites are filled with discussions suggesting quality mixing practice is the result of either technological purchases or such mysterious and elusive skills that render mixing professionals akin to musical *Jedi Knights*! Perhaps this is true, as Izahki writes, “It is for their sheer creativity—not for their technical brilliance—that some mixes are highly acclaimed and their creators deemed sonic visionaries” (2008, p. xiv). Izahki’s provocation therefore supports the theory that great mixes may in fact be creative in nature and not completely dominated by the use of technology. Therefore, this paper has an underlying research statement: *mixing is more than the sonic refinement of audio signals—it also involves a creative process (mixing as a performance) that satisfies the mixer’s musical and emotional connection to the song.*

It is important to understand this paper suggests no hierarchy between mix as a performance, and sonic refinement practices—perhaps look at it like icing on a cake. The icing being the final creative layer of the mix that adds that special element. This reasoning places creativity at the forefront of great mixing practices, and, contrary to some perceptions, creativity in this sense may not be a mystical quality that comes from an unquantifiable place. McIntyre (2015) develops upon Csikszentmihalyi’s (2006) “field of knowledge” platforms to present a foundation for understanding creativity in record production. This is based on creativity’s interrelation with tradition and innovation to produce novelty; creativity in the mixing process is similar to this approach. Mixing involves tried and tested sonic-based practices [2] these are traditions, and they have been handed down from producers to aspiring assistant engineers for decades. Without these, there would be no innovation. Creativity allows the mixer to innovate and go beyond tradition, and this results in mixes that possess novelty. In a time when many mixers are focused on how to achieve sonic appropriateness in the mix (tradition), perhaps creativity via mixing as a performance (and, as a result, mix novelty) is what sets one’s work above industry competitors. I learnt mixing as a performance in the 1980s, as part of my apprenticeship at Sydney’s Rhinoceros Studios, and developed and adapted the process in the following 26 years as a record producer. Prior to the development of the DAW, this is how much creative practice was handed down in the music industry. It formed the training regime for large recording facilities and ensured the education of staff in many different skills by a large variety of producers and engineers.

As an industry professional that is transitioning into academia, I often inform my research with my practice. Therefore, in this paper I aim to explore the practical applications of mixing as a performance with modern technology. This will modernize the topic’s relevance with existing work via theoretical and practice-based contexts. To do this, I will start by providing examples that support the idea that the recording studio can be used like an instrument, and that this approach can facilitate a mixing as a performance process. This will lead to a discussion of creative theories and origins of the mixing as a performance process and some personal first encounters I have had. Critical listening will also be discussed, and a diversification of that process will be identified prior to the presentation of a practice-based, autoethnographic case study. The case study will include video footage of my professional mixing practice. Within these videos, many mixing processes are analysed and broken down before a step-by-step guide to achieving mixing as a performance is tabled. Finally, the paper will conclude by discussing roadblocks to mixing as a performance and addressing sensory and creative theories that relate to the development of optimum mixing processes with current technology.

This autoethnographic study at times may appear to come from a subjective perspective—my paradigm of mixing. This is intended as scholars such as Chang (2008) stress the importance of integrating the personal into academics, Ellis (2011) suggests autoethnography is “meaningful, accessible, and evocative research grounded in personal experience” (p. 274). Autoethnographers combine characteristics of autobiography and ethnography “they study a culture’s relational practices, common values and beliefs, and shared experiences...ethnographers do this by becoming participant observers ... by taking field notes” (Ellis: 2011, p. 275). This type of approach is adhered to within the research videos following. Similar to McRae’s (2009) narrative approach of becoming a bass player, I will describe the experience of mixing as a performance whilst using the various forms of technology that are embedded with the use of the DAW. I will support theories with findings from fellow practicing industry professionals and triangulate the approach by contextualising research from many areas. It will be argued here that optimum mixing practice is in fact, a personalised process where the mixer must find what is best for the individual. This is subjective in nature, and in fact, may be very different for us all.

The Recording Studio: A Musical Instrument

“In the studio technical decisions are aesthetic, aesthetic decisions are technical, and all such decisions are musical” (Frith & Zagorski-Thomas: 2012, p. 3). This statement exemplifies a modern understanding of the recording studio and this paper’s contestation regarding creative agency—the recording studio is an extension of the mixer’s creative arsenal. So where did this understanding come from? Kealy’s (1979) work is an early example that discusses the studio as a musical instrument. He writes “The rock musician views the studio equipment as practically another instrument. As a result, the occupational ideology for sound mixing changed: work previously considered merely technical now became artistic” (p. 18). More examples include acclaimed ‘dub’ producers like King Tubby and Lee ‘Scratch’ Perry’s performance based studio production practices. As Don Letts describes, “What they did was take the mixing desk and make that into an instrument” (Natal: 2008). More closely aligned to mixing, producers such as Flood describe changing the mix by performing with the faders on the desk when working with U2 (cited in Bennett: 1997). Hugh Padgug also recalls “playing the SSL board like an instrument, jumping back and forth between channels” (cited in Milner: 2010, p. 170). Others, like Mixerman, link a performance process to musical stimuli: “mixing is neither a linear process nor a technical one. It’s a musical process, and as such, a mix is something that one performs—like an artist” (2010, p. 15).

To contextualise the mixing as a performance process with more traditional theories of performance [3], psychological research by Van Zijl & Sloboda (2011) and Vines, Krumhansl, Wanderley, Dalca, Ioana, & Levitin (2005) has suggested both the performer and listener have an emotional connection during a musical performance. These phenomena are contextualised by mixing professionals like Chris Lord-Alge (CLA) who suggests the mixer should “try to have an emotional connection to the song” (Full Sail University: 2012) and Mixerman who states that mixing involves listening for musical and emotional results (2010).

Perhaps then, emotional transference is a desired result of mixing, and following this reasoning, this paper will argue that the mixer’s creative practice must assist a connection to emotional concepts whilst mixing. The mixing as a performance state achieves this, and therefore, some of these more performance-based creative processes will be discussed in detail later in this paper.

Mixing As A Performance: Origins And Development

Mixing as a performance finds its origins in the ideology that the recording studio is an instrument and can be performed with; subsequently the sound mixer became someone responsible for delivering an artistic interpretation rather than a sonic representation (Kealy: 1979). Following on from this, in his paper 'All hands on deck' (2011), Alan Williams discusses the pre-automation origins of mixing as a performance [4]. This involved band members performing the mix with the engineer on the analogue desk in a completely linear fashion. An analogue tape machine played the song from beginning to end without stopping, and mixing participants had their own tasks to accomplish on the console as the mix went down in one continuous performance. In my early days as an assistant engineer at Paradise Studios in Sydney, I often mixed in this fashion: moving around the un-automated Harrison console with the band, playing the mixing desk by moving faders, equaliser pots, and auxiliary sends, all in real time. While Williams (2011) suggests the art of mixing as a performance was lost with the arrival of automation, perhaps a more appropriate analysis would be that the performance state in an automated mix down is simply transformed into a more overdubbed performance. The constant similarity between these automated and non-automated mixes is a performance-based creative practice—playing the audio technology like an instrument when possible. With the introduction of automated systems, the new technology enabled the mixer's ability to stop, go back and 'drop in' on inadequate performances, presenting the producer with a more detailed palate from which to create.

Similar to a comparison between live recordings and overdubbed recordings, the overall 'feel' [5] of the mix will also be definitively different between automated and non-automated mixes. Faced with this, the mixer needs to decide what type of creative process best suits the music, the song, the recorded sound, and the artistic goals of the production. With the proliferation of the DAW, mixing can become a much more scrutinised process, subsequently, popular music risks becoming overpowered by technology's ability to over-criticise the human-like qualities of mixing.

Practice Makes Perfect And An Embodiment Of Movement

In 1990, I was fortunate to work with Chris Thomas (The Beatles, Pink Floyd) on INXS's album *X* at Rhinoceros Studios, Sydney, and Air Studios, London. Thomas was one of the first producers I noticed moving around the studio in a manner that was more akin to a musician. I guess you would call it an embodiment of movement. He would caress equaliser and auxiliary pots and punch them in and out with vigour. His body would rock back at times as if he was getting an electric shock every time he did something, and these movements were in reaction to what he heard or perceived.

So how does Thomas's movements suggest a performance was in progress? Simon Frith has suggested that popular music can be "a physical as much as mental experience" (1996: p. 141) and the benefits of kinaesthetic imagery and movement during musical performance is explained further by Lotze (2013). In fact, Dechaine (2002) suggests that the body is never separate from the music, the performance or meaning and McRae (2009) argues there may be a more permanent nature to our performance actions here: "the relationship between our bodies, technology, and identities are always connected with multiple layers of meanings, and we carry these meanings with us always as part of our bodies" (p. 149). There is extensive amounts of research that supports the use of movement with performance, and this approach

is very much in line with the embodiment of movement that I saw in Thomas while he was playing the audio equipment. As the assistant engineer on *X* I got to watch Thomas mix for approximately six months, and this is where I learnt that mixing as a performance was based around practiced techniques.

Over various post-session drinks, Thomas would often pass on to me how he liked listening to the music and feeling emotion from what he heard. I was initially confused, as essentially what he was doing on the SSL were traditional engineering processes: equalisation, compression, effects, delays, and level automation. I was trained at a university in music technology and all I was taught regarding mixing were these more sonic refinement practices. It was during this time that I began to understand that Thomas had been making records for decades, and the engineering side of it was already a practiced or 'learned' application, similar to a guitarist's knowledge and practice of the pentatonic scale. The repetitive practice of the pentatonic scale becomes learned to the guitar player, so the scale becomes second nature—instinctual. This enables performers to improvise and express themselves creatively, using tradition (the pentatonic scale) and creativity to generate novelty. I soon realised a mixing as a performance creative practice can be developed if the mixer takes the time to practice and learn all associated engineering techniques to improvise with. Tony Maserati (2015) supported this theory when he spoke at the 10th Art of Record Production conference in Philadelphia, and I remember his testament that suggested mixers must practice until they become so highly skilled in engineering practices that these techniques become second nature. The continual practicing of engineering and critical listening processes sets up the perfect opportunity to achieve the mixing as a performance state.

Critical Listening: Sonics, Music, And Emotion

Academics have recognised that mixing requires critical listening approaches that "hear beyond the technology itself and into what is being expressed musically" (Hugill: 2012, p. 66). Taking that to a finer level, perhaps critical listening then involves "listening for inclusion or absence, statement, song form, tracks, arrangement, mix, FX—and overall, the sense of an individualised approach" (Draper: 2013). Both of these examples are conceptually sound and use recognised terminology, but I would like to drill down further into the term *individualised approach*. In this instance, I refer to previous literature this paper has presented from Van Zijl & Sloboda (2011), Vines et al. (2005), Mixerman (2010) and Full Sail University (2012) that all support the notion that mixing also includes listening processes more aligned to deeper musical and emotional outcomes. As CLA states "Don't try to figure out mixing, try to figure out the song" (Pensado's Place: 2012). In this instance, the mixer requires more than a sonic understanding of the recorded material, perhaps a relationship to the song itself, its lyrical meaning, and the intended artistic, social or cultural goals. As Tony Maserati says:

I spend time listening to the music, trying to understand the artist, what they're trying to say in the song, and I make decisions about EQ, levels and the overall sonic experience based on...where I think they want to be (Tannoy: 2014).

What Maserati is suggesting here is that the sonic manipulation of the mix is a reaction to the artist's influences, and these social, cultural, or musical stimuli may all stir emotions. Emotional connection is again inferred by Maserati when he states, "I find the elements that exemplify what the song is about and the energy that I think the song should have" (Tannoy: 2014). The term *energy* used here contextualises a deeper connection to a more creative listening process, and a performance-based process is something that is used for the purpose of feeling emotion (Van Zijl &

Sloboda: 2011). The actuality of mixing as a performance process could be compared to a performance by a guitarist; as the guitarist adapts vibrato, intonation, and note selection during an improvised performance, the mixer adjusts musical combinations of pitch, timbre, dynamics, and musicality by adapting balance, spatiality, compression and tonal interactions. Ed Seay (Garth Brooks) gives an example here:

Or if the acoustics are just sitting there and they're not really driving the thing, and they need to...sometimes playing with compression on the acoustics or auditioning different kinds of compression make it sound like 'boy this guy was into it.'... It's just basically playing with it and trying to put into it that undefinable thing that makes it exciting (Cited in Owinsky: 1999, p. 60).

Note the terms 'driving the thing', 'playing with it' and 'undefinable thing'. A lexicon definitively connected to a creative practice, dare I say 'the vibe', but nonetheless, definitively suggesting the mixer should play with the technology until the sound evokes excitement.

Determined to have some practice-based evidence of the mix as a performance state with modern technology, I recently began videoing my mixing sessions, and these videos are suggested as primary sources and reputable examples of the mix as a performance process. I must admit that at times during the videoing of these mixing sessions I was aware the camera was on, but I have meticulously gone through the footage and selected mixing instances where I was off in my own little world mixing, not consciously thinking the video camera was rolling. As this is an autoethnographic study, the following two videos are presented as examples of the mixing as a performance process in action; they serve no purpose in comparing the quality of differing mixing techniques. To aid in contextualising this resource, I have added various thoughts and ideologies behind the mixing process, and these should be treated as such—creative licence.

Video Example 1: Caligula's Horse

'Turntail'

At one stage of this progressive rock mix, I wanted to add the texture of an analogue tape delay to the lead vocal in the outro choruses, and I wanted the delay to float in and out of the mix musically, enhancing some sounds the vocalist was creating and leaving others alone. Whenever possible, I like to use a fader for automated volume rides. I believe I get more 'feel' from the tactile properties of a fader rather than drawing dots with a mouse. This creative practice allows me to enter the mixing as a performance state. If you watch the related video you will notice my right hand on the control surface [6] automating the level rides as the track plays.

<https://www.youtube.com/watch?v=y9Wx4YMGzoM>

Video 1: *Caligular for journal*. B. Anthony (2016).

I was surprised to see how animated I was during mixing. I too, have adopted what can only be described as an embodiment of movement. Another observation that occurred later was that there were over 200 volume reference points written by using the fader during automation (see Diagram 1) and the complexity of the volume automation is such that it would be almost impossible to replicate by inserting dots with a mouse.

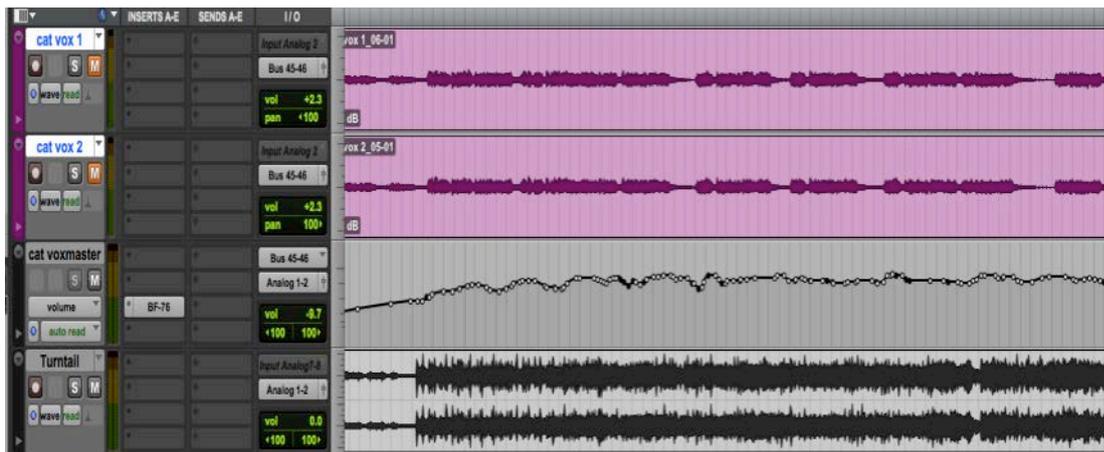


Diagram 1: Volume ride automation

This automation of level rides is an example of the mix as a performance process. The performance was musical and instinctual—it was performed on a fader, not drawn with a mouse as dots and lines. The video shows that this was an overdubbed performance. When I wasn't happy with the rides, I would stop and drop the performance in, but as such the feel of a linear performance was never completely lost or dominated by the DAW's capabilities.

With the proliferation of the DAW, line drawing with a mouse has become abundant, and the traditional mixing as a performance practice —riding faders— is being neglected. Whilst performing these volume rides, instead of thinking purely of engineering practices, I was listening to the music and feeding off the emotion I was perceiving. It was as such an improvised process, and I was mixing specifically for a musical result: something that sounded, and perhaps more appropriately, felt good.

Video Example 2: Aquila Young

'Vagabond'

This alternate folk track required a driving rhythm sound that needed to contrast sonically with the distortion and ambient elements in the song. My intention was to promote the lush artistic depth the artist had achieved in production. During the mixing process, the equalisation, compression, effects, and balance were all done in a performance state when possible. This was a collection of instinctual actions, and although I was aware of sonic details, I was also listening musically, using my musical influences to guide my emotional reactions with instinctual mixing processes.

<https://www.youtube.com/watch?v=tDlqfJUy1BI&feature=youtu.be>

Video 2: *Vagabond for Journal*. B. Anthony (2016).

I mentioned above using my musical influences to guide my reactions. This approach carries weight with musicians and was taught to me early on in my apprentice days. Musicians are always listening to music, and, as Schippers suggests, “This idea of an ‘aural library’ has resonance in relation to musicians” (Cited in Draper: 2013). It helps musicians work memories of sounds, music, and textures into the work at hand. It informs creativity and is a form of tradition from which innovation may emerge.

Like musicians, mixers are particular about how their instrument is set up. Many mixers have a type of ergonomic design in place with their studio, something that promotes a sense of flow when working. All producers will have varied preference in this area, as Icelandic producer Valgeir Sigurdsson suggests: “Going from Pro Tools to an analog console was like playing a piano and then ... your guitar—pretty annoying when you had a flow going” (cited in Brown: 2008).

In ‘Vagabond’, you will notice I move across my studio (instrument) with ease, equalising then balancing, sending a tom to reverb and/or compressing it, all within the space of 30 seconds or so. The knowledge and experience the mixer has with their instrument (technology) has an enormous effect on the possibility of generating a mixing as a performance state. Herein lies a small problem: the massive amounts of technology available to the mixer.

The amount of technology available to mixers is so vast that mixing systems can vary greatly in setup. Yet I would like to propose that a performance-based mixing process is possible with all mix systems and for all mixers, no matter what equipment is being used. It is important that the mixer is comfortable within their mix system and is able to enter a mixing as performance state when necessary. Mix system design is a result of the mixer’s history: their training has developed a field of knowledge. Csikszentmihalyi (1996) discusses how a field of knowledge establishes a foundation from which creativity may arise. Therefore, appropriate mix system design is a personalised process, as the vast nature of possible mix systems suggests that it is impractical to think any one mixer would feel comfortable on all types of technology. While technology’s influence cannot be denied, and mixers should continually increase their field of knowledge to ensure their potential as a multidiscipline professional, an obsession with technology may compromise the quality of a mix, similar to Bennett’s provocation on the proliferation of *anti-production* [7] in the 1980s (2010). What is of importance to this paper’s theme of creative agency, is how certain technology influences the individual mixer’s potential for a mixing as a performance state.

My background as a mixer began in the 1980s when I was trained on Auditronics, SSL, Neve, and Harrison analogue consoles. I was also trained in how to use analogue tape and then, as technology developed, I learnt digital technology and hard disc recording and the internal processes of the DAW. As a result, I feel most comfortable in a hybrid [8] mix system that includes a vast amount of vintage technology. As a mixer, I adapt my system to be both ergonomically playable and sonically suitable to my mix outcomes. Following is a step-by-step approach to which all mixers can attempt to achieve a mixing as a performance state.

The Steps To Mixing As A Performance

Step 1: *The acquisition (learning) of engineering skills and the continued practice of many forms of critical listening.* This enables the mixer to not think of 'how to', but to 'just do', for auditory, musical, and emotional satisfaction. Porcello (1998) describes a similar process in his paper 'Tails Out', suggesting that the proficient engineer can "balance the technically effective with the musically affective" (p. 488), and should perhaps listen in a manner where the effective —sonic refinement—does not dislocate or overwhelm the affective —moods and emotion.

Step 2: *To become familiar with the use of many forms of technology, inside the computer or box (ITB) and outside the box (OTB).* If the mixer has the field of knowledge to use and perform with many forms of technology, then the desired sonic and artistic outcomes of various popular music genres can be met.

Step 3: *The mixer should have obtained appropriate mix imagery from the artist's rough mix and references.* This informs the mixing process as to what equipment and procedures may be necessary to aid the development of sonic and musical outcomes. Setting up a mix system prior to mixing enables the mixer to remain in a performance state and do minimal non-performance practices like plugging in equipment or setting up auxiliary sends in Pro Tools whilst mixing.

Step 4: *The mixer needs to have faith in their own ability.* I was very fortunate to work with CLA on Ian Moss's album *Matchbook*; CLA is a very confident individual. In many conversations after we had finished work, CLA would often discuss how the producer (mixer) must believe that when they are put in a creative situation they will make decisions that will be for the betterment of the song. CLA suggests that as a mixer you need to have "faith in yourself and faith in what you do" (Pensado's Place: 2012). I believe mixing is a profession that requires what could be described as spiritual approaches: theories that include Eckhart Tolle's (2004) *The Power of Now* and Deepak Chopra's (1994) *Seven Spiritual Laws of Success*. This is a personal journey, and one that pushes individuals to investigate what is, in fact, one of the hardest challenges in life—to understand the truth of who we are as individuals.

This type of approach has been highlighted by production greats like Rick Rubin who said, "The more time you spend being quiet and looking in, your intuition grows and you trust it more" (Blatt: 2014). It allows individuals to act and work as they should, within an understanding of what is right for them. CLA works like this. He is the ruler of his domain, he says and acts however he feels necessary to get the job done, and he knows himself and his abilities very well (Full Sail: 2012). I remember asking CLA, "How do you know you are making the right decisions?" He replied, "If I don't know I am right, how can I expect others to believe it?" CLA uses a specific mix system that is designed and adapted for him personally, this allows him to be supremely confident that he will replicate success time after time. If the mixer uses a personalised mix system, it will encourage the manifestation of a mixing as a performance process.

Roadblocks To Mixing As A Performance

This research intends to explore the mix as a performance state within the context of current technology and since the proliferation of DAW systems excessive use of the computer monitor is common. As a tertiary educator for 18 years, I am constantly approached by students proclaiming, "Look, it doesn't sound any good does it!?" This obvious conflict in terminology—*look* it doesn't *sound* any good—suggests that many aspiring professionals are blocking performance practices by engaging non-

optimal processes. As Williams (2012) suggest “The visual display captivates, demands attention... this irresistible force is more of a distraction than a tool”. The following video represents examples where the display and associated production techniques minimise the opportunities for a mixing as a performance process. This is not intended to demean more plugin-based sonic refinement, it is simply that physical activity—like that used during a performance— pump endorphins through the body and in general may be perceived as a more enjoyable experience.

Video Example 3: Creature Kind

‘I Heard’

This alternate folk/rock act required a lot of additional production prior to committing to the final mix; such is the modern mixer’s job at times, especially when working on self-produced bands. The band’s references were vintage sounding, distorted at times, and full of ‘colour’ [9]. When I listened to the band’s rough mix, the tracking did not have this quality: it sounded clean and clear, and therefore, during the mix I was aware some more production-based practices were required, and these at times would use extensive computer display use.

<https://www.youtube.com/watch?v=4N0GQbz3rFk&feature=youtu.be>

Video 3: *CK for Journal*. B. Anthony (2016).

So why is this not a performance? Perhaps elements of it still are, and in reality an appropriate musical and sonic result was still the outcome. However, I hope it is evident that there is a lack of flow in my manner and movement compared to the other two videos played previously. As a mixer, any techniques that require the extensive use of a mouse and involve predominantly looking at the screen do not feel like optimum mix as a performance processes to me. Preferences like this can be attributed to many reasons, but auditory perception and tactility are two important areas that warrant investigation.

Musical Sensory Perception

The computer screen as part of the DAW facilitates an efficient way to achieve many record production techniques, but how does a sight-dominant process integrate with musical sensory perception? The overuse of the display can produce confusing auditory responses to the mixing as a performance state. There is no single language centre of the brain, nor is there a single music centre. Listening to music is a complex combination of motoric, auditory, and emotional activity (Sacks: 2008). Listening to music uses the sub cortical structures of the brain. Tapping along physically, or in your mind, uses the cerebellum timing circuits. Emotions felt by music involve primitive, reptilian regions of the cerebellar vermis and amygdala (Levitin: 2006).

What is important for all mixers to understand is that “we listen to music and often close our eyes to minimise the distraction of unnecessary visual stimulation...and thereby enhance perception of music” (Dack: 2013, p. 276). Therefore, visual stimuli can overload the brain in what is a listening-dominated practice. Perhaps, then, for some mixers the overuse of the display may take the mixer to a less musical sensory practice and, by doing so, promotes a lesser quality outcome.

Tactility And Personalised Systems

Human beings are living in personalised paradigms of existence, with preferences in many different forms of equipment, including cars, sporting equipment, and mobile phones, and these preferences can be related to the tactile nature of the equipment. Mixers can also develop a sense of preferred tactility for their mix system. Many mixing processes use a variety of tactile devices, which include the mouse, pan pots, buttons, and encoders, to name a few. I have a preference for faders, knobs, and pots as a result of my training on analogue consoles. Different mixers, as a result of individualised training methods, may feel at home using different pieces of equipment. My higher education audio production students who have been around computers all their life, argue blindly that they feel comfortable and creative with the tactility of a mouse and operating completely within a DAW system.

Future mixers like my students are moving forward with new technology, new methods, and new ways to accomplish new results, and perhaps by nature of continual association, some are capable of experiencing a mixing as a performance state when mixing completely ITB. There is no global mixing solution that will work for all, but it should be something the mixer develops over time: a personalised process and something that is a result of their training and part of their paradigm of record production. In this instance, the mixer's knowledge of equipment and how to use it aids their ability to not think of concepts of 'doing', but perhaps connect on a deeper level to the music and the song in an attempt to feel emotion. The mixing as a performance state is the vehicle from which the mixer can connect to the music on this level. This leads us to ponder: what is the mix trying to communicate to the listener? Sacks suggests the listener often has "a profound emotional reaction to music" (2007: p. xii).

I would like to suggest that to deliver emotions to the listener, the mixer needs to place themselves or their consciousness in a place where they are open to emotional responses. Similar to a musician performing, the mixer should involve those senses during the mixing process—mixing as a performance. There is so much more to achieving optimum mixing results than purely mixing for sonics—something more akin to a holistic approach that also includes musical and emotional transference. I refer back to my research statement: *mixing is more than the sonic refinement of audio signals—it also involves a creative process (mixing as a performance) that satisfies the mixer's musical and emotional connection to the song.*

This paper has argued that in order to manifest a holistic approach to mixing, a performance process may be added to many mixers' creative practices. All mixers can develop a system that manifests a mixing as a performance state. What is of importance is that the mixer is capable of entering that performance state by dropping pre-conceived misconceptions of sonic refinement superiority. Audio engineering skills are important skills, but they are learned skills and can be recalled instinctually. By adding creativity by way of an improvised mixing as a performance practice, the mixer may increase artistic outcomes of the recording. This creates a mix that is perceived by the mixer from many realities during its conception, including musicality, sonics, and emotional transference.

There are a vast number of concepts, and discourses in this paper that due to matters of scope, have not been fully investigated. These include: mixing states of 'just do' versus 'how to', the importance of the mixer's emotional and spiritual connections to the music, and discourses on creativity and innovation. These theories are tied together by a deeper connection to music and mixing, one that

spawns from the unification of musicality, emotional transference, sonic refinement and mix as performance processors. I look forward to unpacking these further in the future as they are justified by scholars such as Dechaine (2002) when he states: “Music perhaps fuses our bodies our senses and our minds (p. 85). Kealy (1982) who suggests mixers can be “highly oriented to the musical aesthetic” using as Moylan (2002) suggests “the recording medium to enhance artistic expression, especially in music” (p. xvii).

Conclusion

The mixing as a performance state is a specified process, informed by academic theories that involve the innovation on tradition—knowledge of sonic refinement techniques— and the use of creativity to produce a mix that possesses novelty (McIntyre: 2015). In this paper I have discussed areas of creative agency— how the mix as performance process has developed with technology found in the modern recording studio. It has been made apparent that there is much to consider with the use of the computer display, the mouse and practices that include a tactile experience. I stand behind the theory of having a deeper connection to the music as a mixer and that the mixer must have faith in their ability to create in the moment. They must trust their training, as this is a personalised process—far removed from the “all hands on deck” approach to mixing evident in the control rooms of pre-automation times. Yet both of these processes evolve around a similar concept— performing with audio technology in the studio. Let’s hope the new breed of mixers can learn this approach and adapt it to their individual needs of tactility and auditory perception, using modern equipment that promotes optimum outputs and is marketed as the way of the future. If so, perhaps those connected to a holistic mindset of music, technology and emotion will stand a chance of being described as mixing *Jedi Knights* or, more realistically, become the next CLA or mixing immortal of the future.

References

Bates, E. (2009) Ron’s Right arm: Tactility, Visualization and the Synesthesia of Audio Engineering. *Journal on the Art of Record Production*. 4. [Online] Available at <http://arpjournal.com/1358/rons-right-arm-tactility-visualization-and-the-synesthesia-of-audio-engineering/>

Bennett, S. (2010) *Examining the Emergence and Subsequent Proliferation of Anti Production Amongst the Popular Music Producing Elite*. Doctoral Thesis. University of Surrey. Available via British Library
Ethos: <http://ethos.bl.uk/OrderDetails.do?did=1&uin=uk.bl.ethos.531384> [Accessed: March 2015]

Blatt, R. (2014) How Super Producer Rick Rubin Gets People to do their Best Work. [Online] Available at: <http://www.forbes.com/sites/ruthblatt/2014/04/28/how-super-producer-rick-rubin-gets-people-to-do-their-best-work/#5e7f82533225>

Brown, J. (2008, August) Mixing Outside the Lines. *Mix Magazine*, 32 [Online] Available at: <http://search.proquest.com.libraryproxy.griffith.edu.au/docview/196922115?accountid=14543>

Burgess, R.J. (2008) Producer Compensation: Challenges and Options in the New Music Business. *Journal on the Art of Record Production*, (3). [Online] Available at: <http://arpjournal.com/producer-compensation-challenges-and-options-in-the-new-music-business/>

Chang, H. (2008). *Autoethnography as method* (Vol. 1). Walnut Creek, CA: Left Coast Press.

Chopra, D. (1994) *The Seven Spiritual Laws of Success: A Practical Guide to the Fulfillment of Your Dreams*. San Rafael, CA: Amber-Allen Publishing and New World Library.

Cox, C. Warner, D. (Ed.). (2005) *Audio Culture: Readings in Modern Music*. New York, NY: Continuum.

Csikszentmihalyi, M. –

(1990) *Flow: The Psychology of Optimal Experience*. New York: Harper Collins.

(1996) *Creativity: The Psychology of Discovery and Invention*. New York: Harper Collins.

Dack, J. (2013) Collage, Montage and the Composer Pierre Henry: The Real, the Concrete, the Abstract in Sound Art and Music. *Journal of Music, Technology and Education*. 6(3). pp. 275-284

DeChaine, D. R. (2002). Affect and embodied understanding in musical experience. *Text and Performance Quarterly*, 22(2), 79-98.
doi:10.1080/10462930216609

Draper, P. (2013) On Critical Listening, Musicianship and the Art of Record Production. *Journal on the Art of Record Production*(8). [Online] Available at <http://arpjournal.com/2630/on-critical-listening-musicianship-and-the-art-of-record-production/>

Ellis, C., Adams, T., & Bochner, A. (2011). Autoethnography: An Overview. *Historical Social Research / Historische Sozialforschung*, 36(4 (138)), 273–290.

Frith, S. (1996). *Performing Rites: On the value of popular music*. Cambridge, Mass: Harvard University Press.

Frith, S., & Zagorski-Thomas, S. (2012). *The Art of Record Production: An introductory reader for a new academic field*. Burlington, VT: Ashgate Publishing.

Full Sail University. (2012) *GRAMMY-Winning Mixer/Audio Engineer Chris Lord-Alge at Full Sail University*, [Online] Available at <http://www.youtube.com/watch?v=BGUcBhbyoF4>

Gearslutz. (2013) The Reason Most ITB Mixes Don't Sound as Good as Analog Mixes. [Online] Available at <https://www.gearslutz.com/board/new-product-alert/1067824-chris-lord-alge-audio-legends-mix-course-1-available-now.html?highlight=how+to+mix>

- Hugill, Andrew. (2012) *The Digital Musician*: Second edition, New York, NY: Routledge.
- Izhaki, R. (2008) *Mixing Audio: Concepts, Practices and Tools*. Oxford: Focal Press.
- Kealy, E. (1979). From Craft to Art: "The case of sound mixers and popular music". *Sociology of Work and Occupations*, 6(1), 3–29.
- Kealy, E. (1982). Conventions and the production of the popular music aesthetics. *Journal of Popular Culture*, 16(2), 100–115.
- Levitin, D. (2006) *This is Your Brain on Music: The Science of a Human Obsession*. New York, NY: Penguin.
- Lotze, M. (2013) Kinesthetic Imagery of Musical Performance. *Frontiers in Human Neuroscience*. (7) Article 280. doi: 10.3389/fnhum.2013.00280
- Maserati, T. (2015) Symposium at the 10th Art of Record Production Conference, Drexel University, Philadelphia.
- McIntyre, P. (2015) Tradition and Innovation in Creative Studio Practice: The Use of Older Gear Processes and Ideas in Conjunction with Digital Technologies. *Journal on the Art of Record Production* (9). [Online] Available at <http://arpjournal.com/tradition-and-innovation-in-creative-studio-practice-the-use-of-older-gear-processes-and-ideas-in-conjunction-with-digital-technologies/>
- May, R. (1975) *The Courage to Create*. New York: W.W. Norton & Company, Inc.
- McRae, C. (2009). Becoming a Bass Player: Embodiment in music performance. In B.-L. Bartleet & C. Ellis (Eds.), *Music autoethnographies: Making autoethnography sing/making music personal* (pp. 136-150). Bowen Hills, Qld: Australian Academic Press.
- Milner, G. (2010) *Perfecting Sound Forever: An Aural History of Recorded Music*. London: Faber and Faber
- Mixerman. (2010) *Zen and the Art of Mixing*. Milwaukee, WI: Hal Leonard Books.
- Moylan, W. (2002) *The Art of Recording: Understanding and Crafting the Mix*. Boston, MA: Focal Press.
- Natal, B. (Director) (2008) Dub Echoes. [Documentary]. UK: Videograma. Available at <https://www.youtube.com/watch?v=wPVDrKiNVg4>
- Owinski, B. E. (1999). *The Mixing Engineer's Handbook* (B. Owinski Ed.). Vallejo, CA: Mix Books.
- Pensado's Place. (2013) Mix Engineer Chris Lord-Alge. Pensado's Place #80. [Online]. Available at <http://www.youtube.com/watch?v=pqZHOrj1VjQ>

Porcello, T. (1998). 'Tails out': Social phenomenology and the ethnographic representation of technology in music-making. *Ethnomusicology*, 42(3), 485–510.

Pras, A., Cance, C., & Guastavino, C. (2013) Record Producers' Best Practices for Artistic Direction—From Light Coaching to Deeper Collaboration with Musicians. *Journal of New Music Research*, 42(4), 381–395.

Pras, Guastavino & Lavoie. (2013) The Impact of Technological Advances on Recording Studio Practice. *Journal of the American society for Information Science and Technology*. 64(3), pp. 612-626.

Rose, J. (2009) Recording Studios Face Uncertain Future. [Online]. Available at <http://www.npr.org/2009/12/10/121304883/recording-studios-face-uncertain-future>

Runco, M.A. (2004) Creativity, *Annual Review of Psychology*, 55, pp. 657-87.
Sacks, O. (2007) *Musicophilia: Tales of Music and the Brain*. New York, NY: Random House Inc.

Senior, M. (2011) *Mixing Secrets for the Small Studio*. Abingdon, UK: Taylor & Francis.

Tannoy. (2014) Mixing Legend Tony Maserati: Mixing Methodology. [Online] Available at <https://www.youtube.com/watch?v=tIG1O8l4CgQ>

Tape Op Message Board. (2016) Gear Talk. [Online] Available at <http://messageboard.tapeop.com/viewforum.php?f=16>

Theberge, P. (2004) The Network Studio: Historical and Technological Paths to a New Ideal in Music Making. *Social Studies of Science*, 34(5), pp. 759–781.

Tolle, E. (2004) *The Power of Now: A Guide to Spiritual Enlightenment*. Novato, CA: New World Library.

Van Zijl, Anemone G. W., Sloboda, J. (2011) Performers' Experienced Emotions in the Construction of Expressive Musical Performance: An Exploratory Investigation. *Psychology of Music*, 39(2), pp. 196-219.

Vines, B., W, Krumhansl., Carol L., Wanderley, Marcelo, M., Dalca, Ioana, M., Levitin, Daniel, J. (2005) Dimensions of Emotion in Expressive Musical Performance. *Annals of the New York Academy of Sciences*, 1060 (1)

Williams, A. (2011) Unpublished paper presented at the 2011 conference of the Society of Ethnomusicology, Philadelphia, PA.

Discography

Caligula's Horse. *Bloom* (LP album). Inside Out: USA. 2015.
Ian Moss. *Matchbook*. (LP album). Mushroom: Australia. 1989.

INXS. X. (LP album). Warner: Australia. 1991.

Notes

[1] DAW: A digital audio workstation.

[2] These would include balancing, equalisation, compression, and the use of effects to enhance spatiality.

[3] Traditional theories of performance in this instance refer to performing a musical work to an audience.

[4] Automation: the use of a computer system to reproduce level changes throughout a mix.

[5] *Feel* is a word to describe the musical or artistic characteristics of a recorded song. This is often determined by the musician's performance and the recording practices used during recording.

[6] A control surface is a human interface device which allows the user to control a digital audio workstation or other digital audio application.

[7] Anti-production is a postulation that highlights the negative influence technology can have on creative record production outputs.

[8] A hybrid mix system consists of analogue and digital equipment and combines the use of analogue and digital summing.

[9] *Colour* is a term used in the audio industry that defines sonic characteristics that pieces of audio technology may impart on sound.