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LEARNING TO LISTEN WHEN THERE IS TOO MUCH TO HEAR: MUSIC PRODUCING AND AUDIO ENGINEERING AS 'ENGAGED HEARING'

Abstract

This article examines how music producers and audio engineers learn to listen in the context of a very particular form of musical work. Ethnographic interviews provide data on their acquisition of skills, strategies they devise to remain engaged with the physicality and aesthetics of sound, and the socio-cultural and psychological dimensions of their work. It comments in particular on the multi-skilling brought about by the technological changes and economic imperatives informing the cultural production of popular music.

> Music, after all, is not notes and tones, but the deceptively difficult act of listening. (DeLaurenti, 2005: 6)

Paul Carter (2004: 43) has suggested that 'listening is engaged hearing'. In this article, I recount and analyse how some Australian music producers and audio engineers learn to listen when there is arguably too much for them to hear. From the initial stages of auditioning material to recording sessions or live performances to editing and mixing, they have to focus repeatedly on the sounds of music. How do they remain engaged with the sounds? How do they acquire the skills to differentiate between hearing and listening? What are some of the challenges posed by particular styles of music, different recording spaces or diverse creative milieux? What strategies do they devise to keep 'fresh ears'? As part of my ongoing interest in music production in regional Queensland, I have interviewed producers and engineers who shed light on these issues of working with sound. The intent of this article is to understand better how practitioners — and music researchers — perceive and reflect upon the aesthetics, practicalities and physicalities of listening and hearing as key components in the cultural production of popular music.

Of particular interest in the context of this special issue is how the interviewees have 'multi-skilled' in the course of their working lives. As a matter of course, they may be called on to perform, produce, engineer, mix, master, design, market and promote their projects — and also deal with the psychology of performance and cultural diversity in the workplace. This expansion of roles is partly out of economic necessity. It is also partly because digital technology — with its many audio and musical applications and possibilities (Alten, 2002; Jensen, 2006) — now provides access to high-quality, miniaturised equipment that may obviate the need for the

specialists who once determined the division of labour for music production and audio engineering. As a result of these technologically driven changes, there has been not only an evolution in creative processes but also a concomitant expansion of places and spaces where music can be recorded or presented. In the production and engineering work that Nigel Pegrum, Mark Fuccilli and Glen Chamberlain do — and how and why they do it — the interviewees are personalised examples of these broader processes at work in Australia and elsewhere.

Listening and hearing are used here in the double senses of sound vibrations and also socio-cultural vibrations — that is, the ability of music producers and audio engineers not only to engage with a wide range of natural and synthetic sounds (Theberge, 1997) but also their socio-cultural facets (Feld, 1990; Baumann and Fujie, 1999; Meintjes, 2003). From an economic point of view, they must also engage with the realities of creating a musical 'product', a cultural artefact informed by the complex processes underlying the industrial production of popular music (Keary, 1979; Hennion, 1989; Jones, 1992; Negus, 1992; Chanan, 1995; Sandstrom, 2000; Zak, 2001; Greene and Porcello, 2005).

The impetus for the research

A general impetus for this research arose from my personal experiences as a producer and engineer. Over the last six years, I have been involved in producing over a dozen commercial and community CDs of Torres Strait Islander, Aboriginal and Fijian secular and sacred music, as well as engineering recordings of music, soundscapes and interviews. A more immediate impetus was a hip hop project with Torres Strait Islander recording artist Patrick Mau (2006). Whilst producing — and enduring what I perceived initially as a relentless and interminable onslaught of loud bass and drums — I came to realise that I did not really know how to listen to the music or to the sounds and sentiments of the genre; I was too often only hearing them — or worse, deriding some of the conventions of the genre.

In order to produce a satisfactory end-product, I had to learn to listen — really listen (Handel, 1991) — and not just hear. I also had to engage with the aesthetics of the genre. The experience set me thinking about how producers and engineers acquire the skills — and sometimes the stamina — to deal continually with sound: its physicality, its aesthetics and its socio-cultural complexities. This article is not about my personal experiences, but rather the experiences of two particular types of audio-based cultural workers: music producers and audio engineers. They profoundly influence not just the music we hear — in their role as mediators of musical sounds — but also how we make meaning via sound and its accompanying sentiments (Feld, 1990).

The interviewees

The interviewees inhabit an art world, which Becker (1982) typifies as comprising the many people whose activities combine to produce something they define as art. They have shared understandings that are expressed in common practices and commonly used artefacts. In the context of this article, sound is arguably one of those artefacts (Martin, 1995).

The interviewees were chosen because they specialise in particular kinds of producing or engineering in regional Queensland — the context of my ongoing research. Nigel Pegrum works as both a producer and an engineer across a variety of venues in northern Queensland; Mark Fuccilli works primarily with live sound, but also as an instructor in a tertiary music program in Cairns; and Glen Chamberlain works mainly producing and engineering for community choirs and theatre productions in Bundaberg. Because they work in regional areas, they have to deal continually with a mix of musical styles and performance contexts and must be broadly conversant with each.

The questions the interviewees answered explored the 'when, where, why and how' of their profession, and also its aesthetics, all filtered through personalised experiences. In the remainder of this article, I explore in turn views expressed in each of the three interviews. They are broadly representative, but make no claims to comprehensiveness: each interviewee gained his skills through trial and error, and none had formal training in music production or audio engineering. Taken together, they all work at what Drobnick (2004: 10) refers to as the 'nexus of sound, art and culture'. The supposition here is that, by learning to listen and not just hear music, they create art, and concurrently create culture within their art world.

Nigel Pegrum

Nigel Pegrum was interviewed at his studio, Pegasus Studios, in Cairns after a 13-hour day of mixing; consequently, he was able to comment cogently on matters beyond the aesthetics and physicalities of producing and engineering. He acquired his skills while performing and recording with the UK folk-rock band Steeleye Span in the 1970s and 1980s (Neuenfeldt, 2005). As well as touring internationally, they recorded numerous albums and worked with top producers of the era such as Gus Dudgeon (Elton John, David Bowie, Joan Armatrading), Ian Anderson of the group Jethro Tull, and many engineers in the then burgeoning 'London scene'. Nigel started at about seven years of age, experimenting with tape recorders and by 22 was assisting on recording projects in London. As well as playing drums on sessions, he also did the menial studio tasks of making tea and cleaning up. One change that impacts substantially upon studio practice is the multiskilling now required. He observes:

> I guess one of the biggest differences between the way things were run maybe 20 years ago in studios and the way they're run now is that there were nearly always three people doing the job which is now done by one … In the days of analogue [recording] one would have a tape jockey sitting at the 24 track machine running it backwards and forwards; an engineer sitting at the mixing console; and a producer who would be the go-between between the artist and the technical crew. The technical crew didn't really have to have an awful lot of musical knowledge. They were really just there as technicians. In the BBC we used to call them 'balance engineers' because that's literally what they did and nothing else. (Interview)

Consequently, 'listening' is now more problematic, given the full range of responsibilities a producer/engineer such as Nigel must assume.

When it comes to the aesthetics of audio, Nigel differentiates between hearing and listening. He relates an informative anecdote about the differences and their personal impacts:

> I have always tried to explain to [my family] about the way that I perceive music, whether it be the car radio playing or some music in the background when we're at dinner in a restaurant … I'm afraid through 25 to 30 odd years of doing [audio engineering] it's impossible for me 'to hear' music anymore, up to a point. When it's on I have 'to listen' to it, which makes me terribly anti-social because if there's something being played in a restaurant — and especially if it's live music, which of course interests me anyway — I have to listen to it. And I become therefore totally a social outcast because everybody else is having his or her conversations and I'm listening to the music. Another downside is that if the music is piped music and is bloody awful it puts me in a bad mood because I can't rule it out. I have to listen to it. (Interview)

He suggests a similar environment in art, where 'an experienced artist or art critic can see every brush stroke off a piece of art work, whereas the rest of us stand back and go "Oh, isn't that a pretty picture!"' In his case, with music, 'whereas the majority of people go "Oh, isn't that a pretty tune!" I'm afraid I'm listening to the kick drum sound and probably what microphone they used on the acoustic guitar.' (Interview)

It is particularly during the process of mixing that learning to listen is crucial. Here Nigel differentiates between sounds in sundry ways, such as frequencies, pitch, timbre and also the aesthetics of a particular genre of music:

> Mixing really is an amalgam of all of those factors. Of course, certain musical instruments sit in certain frequency ranges. And often, in fact nearly always, in the studio we are accentuating the frequencies of the instrument that we need from it to do the job to create an even sense of highs and lows within the mix. (Interview)

By way of example he notes the role of an acoustic guitar:

> If you're recording a singer-songwriter and the track is nothing but the acoustic guitar and a vocal and in some cases these days a kind of little beat-box thingy … you can equalise or work on the acoustic guitar for it to fill the entire audio spectrum. And the listener doesn't need any frequency to be increased to give them a sense of completeness … [Another situation is where] an acoustic guitar [is] in the middle of a rock track with bass already filling up a great void at the lower end — possibly even electric guitars filling up an area somewhere between the bass and the higher frequency of the acoustic — [then] all we need from the acoustic guitar is the sparkle and therefore we deliberately equalise out the sections of the guitar we don't want. (Interview)

Such an aesthetic decision often has to be explained to artists or musicians unfamiliar with the challenge of listening to a mix, not just hearing it:

> [When an acoustic guitar is] soloed — that is, just the instrument [heard] alone — [it] may sound very thin and scratchy. This is something that I have to explain time and time again to band members who want every instrument to sound full and rich [just] like they hear it when they're sitting and playing their own instrument. It has to be pointed out to them repeatedly that we're creating almost a false picture [when mixing]. We are just using the areas of the sound that we need to fill in the gaps of our full spectrum result. So we are falsifying. (Interview)

Finally, Nigel has learnt to listen closely in the studio, especially because he enjoys recording acoustic instruments:

> Something I always try to do [is] 'listen' to the instrument. I know so many engineers [in UK studios] would just get their assistant to bung a microphone at the instrument. They'd still sit at the desk and they'd listen to the sound coming through the speakers and they'd go, 'Oh, yeah I do this and this and this' … I'm afraid I always get up from my position in the control room and go out into the studio and I'll always put my ear close to the instrument because that's where the microphone generally is going to be. [I get] a lot closer than the average listener. The average listener is going to be, let's say 4 or 5 metres away, and in a concert hall a much greater distance than that. But we are in a studio situation and generally we will mike fairly closely. So I put my ear close to the instrument roughly where we're going to be placing the microphones. And then I also kind of hover around and do a little pow-wow dance around behind the player as well and hear what the instrument's going to sound like from different perspectives. (Interview)

As Nigel Pegrum's comments demonstrate, for him 'listening' is different from 'hearing' and experience has helped him to differentiate clearly between these two modes of engaging with sound and to devise strategies to do so. As someone who learnt his trade during the analogue tape era of the 1960s and 1970s when there was a strict division of labour in the studio, he has also had to learn to perform the different roles he had only observed previously. However, multiskilling means he can now run a successful, award-winning studio in a regional centre by himself, exhausting as that may be.

Mark Fuccilli

Mark Fuccilli is Head of the Music Department at the Technical and Further Education (TAFE) facility in Cairns. His teaching and freelance work as a music producer and audio engineer revolve around sound. He learnt piano as a child, taught himself saxophone and performed as an instrumentalist and singer in touring rock bands in the 1980s. His interest in audio arose from his own band experiences, 'experiencing bad audio a lot of the time, it got me thinking, "It's not a mystery. It's not some sort of thing that couldn't be improved".' Being

unable to hear himself singing in foldback wedges and hearing other bands being mixed badly encouraged him to learn for himself by beginning to engineer and to buy sound equipment.

Like Nigel Pegrum, Mark differentiates clearly between hearing and listening, although prior to the interview he had not really conceptualised listening as 'engaged hearing':

> When you're engineering something — be it in the studio or live — you have to get into an engaged listening sort of mode. I think it's a lot to do with the way you set yourself up to be in that situation. (Interview)

He also notes that hearing is not the only sense he needs to engage:

> There is definitely a visual aspect to it. You need to know what you're seeing on a mixing desk as well. I can walk to a mixing desk and pretty much know what I'm going to be hearing by what the meters are doing, what the pots and the faders set-up is. (Interview)

Consequently, an essential goal is 'that the sum of all the parts is actually going to fit together and work … a lot of the thing about blending the sound comes down to experience and having listened and knowing what those sounds should be' (Interview).

Mark has learnt through his many projects in remote Indigenous communities in north Queensland to factor in socio-cultural aesthetics of sound that arise in the context of 'world music' (Stokes, 2004). He provides instructive examples from Torres Strait Islander and Aboriginal music practices and aesthetics that are to some extent socio-culturally determined (Neuenfeldt, 2001; Costigan and Neuenfeldt, 2004). With Torres Strait Islander music:

> The *warup* [or *buruburu*] drums and shakers [*kulaps* or *gor*] need to be blended [loud] and mixed [a certain way]; even the female backing voices … It's a cultural tradition. It would be pretty hard to come along not having any knowledge and get the right sort of mix … Having listened to a lot of that music and being involved in it, [I] know how it should be set up to get the message across or to tell the story that needs to be told. (Interview)

Unlike many conventional live performances that Mark engineers, the biannual Laura Dance and Cultural Festival on Cape York Peninsula in Far North Queensland has unique challenges. There is a very specific community mandate to preserve and present traditional Aboriginal music and dance. It is also staged outside at a traditional bora ground, quite a way out of town and at a camping site with minimal infrastructure. Mark's comments are of interest because they detail some of the many socio-cultural aspects of sound to which he has learned to listen that include the need for multi-skilling.

Mark recalls one instance where he had to listen intently to solve the mystery of a rogue sound. It is a good example of multi-skilling, in this case being an electrical as well as an audio engineer:

> I remember hearing this really strange sound through the PA system. [At the time] we were playing [a music CD] through the speakers, so straight away

> you think, 'What is that sound? Is it the water truck over there?' You really do have to differentiate what it is you're hearing. Then, 'Is our CD player playing up or something like that?' So you switch the CD player off, then all of a sudden you hear the sound again and then [you] go listen in the headphones. It's not in the headphones. You go close to the speaker stack and you realise it is coming out of the speakers … I thought, 'This is not going to be good for the electronics' so [I] shut everything down … and stuck a meter [into the power supply]. And I could see it fluctuating from 240 volts down to about 180 volts. At 180 volts all the digital electronics are going to [malfunction] … some of the stallholders had jumped onto the [low level] power [grid] and they had blenders, coffee urns [and deep fat fryers] … There's a lot of variables in live sound that can be thrown at you; then it's a case of being able to pick up what it is, focusing in with your listening onto what it is that may be a problem. (Interview)

In the context of engineering live performances, Mark has developed strategies to deal with physical and audio fatigue:

> Your ability to listen and focus indefinitely has to do with how fresh your ears are and how fresh you're feeling. Fatigue can play a big factor in that. You can start to zone out if you've been sitting at a mixing desk without a break for 12 hours. [When audio and physical fatigue sets in] perhaps you take a couple of the sounds for granted because I suppose it's a psychological thing as well. You may think you're still listening, but maybe what you're doing is just hearing, because you're just going through the motions. (Interview)

For Mark, differentiating between hearing and listening is something he has learnt to do. It is also an ethos and modus operandi he tries to pass on to his students by teaching them that:

> You can't just go along and think you're going to go and do an important audio show and have a little hear of what's going on. You've got to go along and really focus in and listen to the various components and all the variables in terms of the audio system and in terms of logistics of the set up, in terms of what the room throws at you … You have to be listening because otherwise you're not really mixing and you're not really doing audio. (Interview)

As Mark Fuccilli's observations reveal, the need for multiskilling is often accompanied by situations where his own cultural background did not provide the contextual or aesthetic clues needed to create a socio-culturally appropriate audio mix. Learning to listen — and not just hear — requires paying attention to how other cultures perceive and thus prefer their cultural practices to sound.

Glen Chamberlain

Glen Chamberlain runs a music store in Bundaberg as well as producing and engineering, mainly for community-based projects. After training initially as a

civil engineer, he has worked in audio for over 30 years as part of his lifelong involvement with music and sound. Whilst studio-based producers and engineers such as Nigel Pegrum usually deal with professional musicians and singers, Glen has often worked with non-professionals. Consequently, he has had to strive to educate them to listen to their musicianship or singing rather than just hear it, without discounting their efforts or dampening their enthusiasm. He has had to encourage them to 'think in sound' — an aspect of audition and performance that is vital, yet often unexamined (McAdams and Bigand, 1993).

Glen's initial training in music was gained in a family singing group, and later as a trombonist. The latter training in particular has helped develop his skills as an acute listener:

> I think learning to play as an ensemble player as a trombonist helped me enormously to learn to listen. You not only had to play your own part but you had to be sympathetic to the rest … if the balance of the arrangement worked out that somebody over there was now playing with you, you had to fit in with that. It might have been a cornet playing here or it could have been a euphonium [playing] there and you had to be listening to that all the time. So I think in anything that I do in recording or mixing those have been very, very important areas of learning that I now just naturally [do]. (Interview)

Recording choirs can be particularly challenging. The expectations of a choir — how they think they should sound when recorded — is an aspect that Glen has had to address when they have heard, and want to emulate, other choirs' recordings but have not really listened to them:

> We did a trial album [with a local youth choir] and then a real album … That was a bit of an eye opener in that they were giving me CDs of other choirs that were nationally acclaimed, but had an enormous budget for their recording. And [the youth choir] thought that's what it should sound like. We tried to do it [but] I eventually said, 'Is that what [the well known choirs] sound like when you go to their concert?' [They said], 'Oh, no.' I said, 'I think the parents of these [Bundaberg] kids want a recording that sounds like their kids when they go and sing.' So we changed our approach a bit and we tried to get it as natural as possible. And the comments when they launched the CD at one of the big combined concerts where these other top [choirs performed] was that people were coming back and saying, 'That CD is just like I heard you kids doing it.' So [consequently] I felt we had achieved something there. (Interview)

When mixing live sound, Glenn has had 'ego issues' arise that required patience, an essential attribute in dealing with community groups in particular:

> [A key strategy] is having patience with the performers and using a bit of trickery sometimes: [for example] where somebody is absolutely certain that they need more [of something] in their monitor. You know they've got enough and you don't argue. You say, 'Yeah, it should be right now'

> and you make out you're twisting [some knobs on the mixing desk]. [They often say] 'Oh, that's much better' and you've done nothing. (Interview)

In these types of situations, Glen suggests that 'you've got to try and sort out what's a real request and what's an ego request' (Interview).

Glen recounts at length an unpleasant experience with a community 'Battle of the Bands'. It is a good example of the audio challenges that can occur at such community events:

> Mixing for [the Battle of the Bands was an] absolute horror … Everyone wanted to be as loud as they possibly could and you had so much on-stage sound that if you didn't watch it, it was impossible to get the vocals over that. They wanted to use all sorts of distortion effects on bass and so forth, and you just had to throw your arms up in the air. There was no way you could do it … [Sometimes] we'd do a sound check and then somebody would turn up [for the show] with a 400 watt bass amp that somebody had lent them that wasn't there in the sound check. (Interview)

However, Glen came up with a solution:

> We experimented [for] several years where we gave every band a quarter of an hour sound check. They all had to use certain basic instruments that were on the stage. When we'd set the mix for them, and the levels of their instruments, we had little charts made up of the settings. And a guy went and marked the points on those amps when they agreed they were happy with [the sound]. When one band went off and another came up he went round [again] and he set all those to what [that band agreed upon]. It was the only time that we had any sort of show. They were getting something that was under control. (Interview)

For Glen, the community work is of value beyond the fact that sometimes 'it sells gear' in the music store:

> It's a community involvement and something that I can do for the community. It keeps me in touch with people in the community and I like the creative part of it. I like achieving something with it. It certainly puts you in very close contact with people that you may only have a very passing contact with in other cases. So it builds up some good relationships, but I enjoy music or otherwise I wouldn't be in the game that I'm in. And it's some of the areas I've been almost thrown in. I probably wouldn't have chosen [sound engineering] but you know when the opportunity and the challenge are there and I've achieved something, then [I'm satisfied]. (Interview)

Glen Chamberlain's recollections of diverse recording contexts exhibit how he has had to train not only himself but also community-based groups to listen to, and not just hear, the music they are making. Because he sells audio equipment, he has developed a wide range of technical skills. However, the skills to deal with people, their egos and aspirations are equally important, and he has had to learn those aspects of producing and engineering popular music by trial and error, in similar ways to Nigel Pegrum and Mark Fuccilli.

Conclusions

The observations of Nigel Pegrum, Mark Fuccilli and Glen Chamberlain demonstrate clearly that listening can be differentiated from hearing in relation to Carter's suggestion that 'listening is engaged hearing' (2004: 43). They are all 'professional listeners' who have also had to learn to hear cultures (Erlmann, 2004) and adapt their technical work practices accordingly.

What do the interviewees reveal in their reflections on learning to listen when there is too much to hear? First, how do they acquire the skills to differentiate between hearing and listening? All the interviewees stressed that their multiskilling was gained by trial and error and by putting in many hours, making mistakes and learning from them. Their work ethos was epitomised by being ready for whatever audio challenges might arise, especially in live situations. By comparison, the studio was more of a controlled audio space, although there other factors came into play. For example, understanding the psychology of performance and the physicality of prolonged audio concentration were crucial to getting good results. This combination of flexibility, adaptability, preparedness and diplomacy typifies the demands of creative work in the digital era.

Second, how do they remain engaged with sounds and keep 'fresh ears'? All the interviewees have devised strategies to remain engaged. They do it by focusing variously on different aspects of sound and instruments such as timbre, tone and frequencies. They also know they must take time away from what they are listening to so intently and simply hear other sounds. However, this is difficult when they must perform multiple roles encompassing all or most aspects of music production and audio engineering.

Third, what are some of the challenges posed by diverse styles of music and different socio-cultural contexts? All the interviewees have worked across a wide range of music styles and also dealt with socio-cultural diversity in the workplace. They have had to learn to recognise not only the audio aesthetics of those styles but also the socio-cultural imperatives that inform some performance contexts.

Finally, whilst audio is arguably aesthetically subjective, nonetheless they all feel there are some objective criteria. They all speak of a 'good' mix or a 'balanced sound'. They are well aware of what Becker (1982) refers to as the artistic 'conventions of presentation' of their art world. Nigel Pegrum, Mark Fuccilli and Glen Chamberlain are all passionate about music; that passion has inspired them to learn to listen to and not just hear the music they produce, record and mix.

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