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**The precarious double life of the recording engineer**

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**Abstract**

This article draws upon a series of focus groups and interviews with recording engineers at various stages of their careers. Using these data the article explores the way that recording engineers balance artistic sensibility with the logistics and precision of engineering. The piece shows that the term ‘recording engineering’ represents a highly varied set of practices, and that this variation can be understood through an examination of the balance between artistry and engineering found in the recording engineer’s background and biography, in their technical know-how and in the recording relations that they mediate. The article argues that in order to understand cultural production we need to understand how, both individually and collectively, recording engineers find the balance between art and engineering that enables them to fit into hierarchies, to present themselves as legitimate to different audiences, to manage interpersonal relations and to maintain their role in the recording process. Here this balancing act is described as the precarious double life of the recording engineer. As such, this exploratory article begins to open-up an understanding of the influence that recording engineers have upon the contemporary cultural soundscape.

**Key words**

recording engineers, cultural production, sound, recording studios, tacit knowledge.

**The precarious double life of the recording engineer**

Reflecting on his time in the band The Seahorses, the well-known guitarist John Squire made the following comments on the recording process:

‘Tony (Visconti) was great in the studio. He’s a musician himself and plays all sorts of instruments; the producers I’ve worked with in the past all came through engineering and didn’t have a musical background, whereas Tony could converse in that language. There were no situations where, when a song comes off the rails, the producer just says: “It’s not ‘right’; can you do it again?” And again, and again…there were no abstract terms like that’ (Robb, 2012: 431-432)

Squire’s descriptions are useful in pointing towards what might be thought of as the precarious double life of the recording engineer. This precarious double life might be understood to exist as a result of the tension that is created as the recording engineer balances their practice at the lines between artistic sensibility and logistical or technical know-how.

John Squire is clear in his preference, he likes to work with a producer that has an affinity with the musician rather than the engineer. His previous experiences were of producers who, having worked through the studio hierarchy from recording engineer to producer, had at some point lost (or had never actually developed) their sensitivity towards the musician and to the artistic process. Instead, the quote suggests, the engineer’s detached technical approach, as Squires perceives it, means that they talk in what he describes as abstractions. They don’t, as he puts it, talk the ‘language’. In other words the musician finds an affinity with the part of the recording engineer that is ‘artist’ rather than with the part that is ‘engineer’. The recording engineer, it would seem, is valued for their technical skill – their ability to place a microphone, to set up amplification, to manage effects, to wire up studios, to place sound dampening sheets, to capture sounds, to handle software plug-ins, to get sound levels consistent, and so on – but is also expected to be artistically sensitive and oriented to the realisation of artistic vision. Here we find the tricky and precarious balancing act that defines the recording engineer’s practices.

It is to this balancing act that this article is dedicated. Here we use a set of empirical resources to explore how recording engineering is formed and shaped by this double life, this mix of the artistic with the technical. This, we suggest, is crucial to understanding the recording engineer as an entity within cultural production processes. Further to this, we also argue that an understanding of how these individuals maintain this balance is vital in understanding the hierarchies of production and the organisation and relations of the spaces in which the sonic properties of our cultural landscapes are determined. Of course, we might note from the outset that all forms of engineering are likely to contain some creative or artistic elements. It is hoped that some of the observations made here may also pertain to other forms of engineering. However, in the case of the recording engineer we find that this balancing act is particularly pronounced as a result of the expectation that they work directly with artists in capturing the creative process.

Before moving on to discuss what we describe as this precarious double life of the recording engineer, the article begins with a brief overview of the project from which it draws its analytical resources. From this contextual backdrop we then show how this balancing act plays out in the practice of the recording engineer. These discussions show how balancing artistic sensibilities with orderly engineering skills is crucial to the mediating relations of which the recording engineer is a part. In other words, being able to successfully imbricate these dual roles is crucial to how the engineer is perceived and to how they relate with those that they are recording with. What these insights also reveal is that the role of recording engineer is far from a unified or clearly defined endeavour. Instead we find that different engineers work towards a different mix of skills, and, as such, recording engineering can be seen as a quite fragmented and wide-ranging set of practices that fall under this broader umbrella term. Central in understanding the scope of recording engineering, we argue, is a focus upon what part artist and what part engineer make-up each of the individuals involved in this occupation.

**The recording engineer and the project**

Given the potential scale of their influence, it is surprising how little is actually known about recording engineers by those outside of the music production community. We might spot a recording engineer names in the small print of a record sleeve, and some engineers have, on very rare occasions, achieved some notoriety for their distinctive contributions to classic albums – an example of this might be Bruce Swedian, who achieved some fame in the early to mid 1980s for his engineering work on Michael Jackson’s *Thriller* album (Senior, 2009). Recording engineers though mostly remain in the shadows of cultural production. Recording engineers, as hidden figures of cultural production, have been central to the processes of sound recording in prominent media forms such as music, TV, film, radio and the like, yet they have received little attention – much like the lab technician who famously came to life through the laboratory based research of science and technology studies researchers (for two classic examples see Latour and Woolgar, 1979 and Shapin, 1989). In many ways recording engineers, as they fit into studio-based hierarchies, can be thought of as concealed agents making often unknown contributions to the sonic properties of culture. We know little of how their knowledge is formed, of their sense of community, of their mediating role in production processes, of their technical skills, of their sense of identity, of their work or their qualifications. Beyond some moments in which aspects of their work has been captured (Kealy, 1979; Porcello, 1991; Horning, 2004), there has been no sustained research into recording engineers and their practices. Generally the attention, particular in documentaries and journalistic descriptions, tends to be drawn towards the slightly more visible practices of the record producer (see Muikku, 1990). This, we feel, is an important omission when we consider the centrality and ubiquity of the contribution of the recording engineer, particular with regards to the material processes of the recording studio. This article draws on a project that attempted to fill these gaps in our knowledge and understanding of the recording engineer as a hidden figure of cultural production.

The project itself involved consultation with around 200 recording engineers at various career stages. Some were students learning the craft of recording engineering (it should be said that these were on very different degree courses, more of this in a moment), others were teachers of recording engineering, and others were active engineers and producers. Some of the individuals included in this final category had engineered or produced albums for internationally renowned popular music acts. These consultations largely took place over an eight-month period. Most were conducted in the form of focus groups, with a small number of individual expert interviews. In response to the project we also received written biographies from four additional recording engineers, these were co-opted as further data for the project. The focus groups and interviews focused on various aspects of recording engineers and their practices, these included questions on their sense of identity, their sense of community, their role in recording, the form of work and employment they experience, amongst other topics. These were conducted in a number of locations across the UK.

**The balancing act**

One of the most striking features of these consultations was the centrality of the artist/engineer balance in the practices and self-presentation of the recording engineer. One experienced engineer described this as ‘walking the cusp’. This balance was clearly an important part of the cultivation of identity in this group of people. It became a means for separating a sense of identity from the broader recording engineer community. From the outset we also noted that different terms were used to define the type of recording practices we were looking into (such as ‘sound designer’). This very uncertainty about the label of ‘recording engineer’ is in fact further suggestion of the complexity and variegation at its heart.

It is worth noting here that back in 1979 Edward Kealy wrote of the transformation of ‘sound mixing’, which was then conflated with ‘recording engineering’, from a craft to an art. Kealy’s article touches upon some of the same themes, but Kealy describes this as a shift from one set of practices to another. Here we discuss this as more of an ongoing balancing of different types of knowledge in the practice of individual recording engineers. So, rather than a more general shift we see these more as being a set of changes that are negotiated on an individual level. Here this balancing is treated as an ongoing presence in the life of the recording engineer rather than being a linear movement between eras of recording engineering practice. Given the apparent importance of this balance to the identity of the recording engineer, their place and position in the recording engineering community and to the way that they are valued or able to relate to musicians and the like, this seemed an important observation that required further elaboration. And it is to unpicking this issue that we focus the remainder of this article. To this end we focus on the way that this balancing of artistic sensibility and practical technical engineering occurs across three specific but very closely related aspects of the practice of the recording engineer. These relate to the *biography* of the recording engineer, the *technical know-how* that feeds into practice and the *recording relations* of which they are a part. We now focus on each of these in turn.

**Biography and background**

Let us begin by saying that in reality, of course, what we find is not a dichotomy demarcating the artist from the engineer. Instead the discipline of recording engineering is located across a wide spectrum with a polarising split between those who see recording engineering as being about technical forms of engineering and those who see it as an art form. With many placed in various positions across this spectrum. A key element in this spread is the background and biography of the individual recording engineer. Recording engineering is divided by what Andrew Abbott (2001) calls ‘fractal distinctions’. These are the internal fences that demarcate territory and that make something like recording engineering much more chaotic and heterogeneous than we might anticipate. In the way that an academic discipline like sociology might divide across an interest in qualitative or quantitative forms of analysis, so we can see recording engineering splintering across different commitments to more engineering type approaches or towards more artistically orientated approaches. There is a strong sense of difference at the heart of recording engineering. Perhaps this is because the authenticity of the engineer is challenged by the need to deploy artistic sensibilities, and on the other hand the legitimacy of artistic sensibilities may be challenged by the orderliness of engineering. As a result of this tension there is in fact very little agreement about what a recording engineer should do, how they should do it, with what values, with what qualifications or with what purpose. The result is that recording engineers are made-up of various mixes of artist and engineer.

The variety of pathways that are taken in to recording engineering are part of the reason for these underlying differences. Some come from more traditional engineering backgrounds and have degrees in computer programming, in electric or mechanical forms of engineering, whilst others come from a musical background. In the case of those with a musical background, it is common for an understanding of the engineering aspects of recording to come from tacit accumulated appreciations of how things work, rather than from more formal resources. Even if we look at the types of qualifications geared towards recording engineering, we find significant variations between courses that are effectively designed as engineering qualifications and those that are taught in music or even media studies type departments. The Tonmeister qualification stands as an example of a qualification in which music is made central to recording engineering. The Tonmeister is distinct from more engineering focused BScs. The Tonemeister programme, which originated in Germany, aims to provide an in-depth education in both ‘technology’ and ‘music’, and in the way that these ‘work side by side in any recording or broadcasting’ (Borwick, 1973). This qualification then is a material embodiment of the attempt to embed the balancing act we are describing here. And there are of course various forms of accreditation for these numerous qualifications. These are often used as a marker of symbolic value that becomes a proxy for indicating which courses produce, as one interviewee involved in these accreditation processes puts it, ‘oven-ready’ recording engineers.

We could spend another article detailing the differences in these qualifications, and indeed our discussions with these recording engineers revealed numerous pathways into recording engineering. The important point here is that recording engineers are a product of the tensions between artistic expression and engineering ingenuity. Their biographies map onto these existing pathways, which in turn already weave between the apparent polarities of this double life of the recording engineer. What our interviews and focus groups indicate is that the practices of the recording engineer, and indeed the sense of identity of these individuals, is often forged by the pathway they have taken and by the qualifications they have chosen, and importantly not chosen, to take. As such the biography of the individual recording engineer is forged by the existing structures in the discipline and, therefore, by its embedded differences and tensions.

One shared impression of the pathway into recording engineering is that it is a choice of career that tends to be motivated by artistic creativity and an interest in music, gaming, film or perhaps a more general interest in techno-cultures. The impression is that the choice to enter into recording engineering is not a commercial or financially driven decision. This presents some interesting synergies with other types of work that can loosely be understood as belonging to the creative and cultural industries (Hesmondhalgh, 2006; Hesmondhalgh & Baker, 2011). With the promise of creative and autonomous forms of work that allow self-expression and self-realisation providing a strong attraction (Gill & Pratt, 2007; Hesmondhalgh and Baker, 2011: 39-44). These attractive factors, it should be added, have been described as the promise of this type of cultural work, which, in turn, enables people to live with the precarious working conditions, long hours, and other forms of affective bodily and emotional responses that come with the uncertain working patterns typical of the creative sector (Gill & Pratt, 2007). We have to remember that the biographies and backgrounds of recording engineers are shaped by the wider recording and cultural industries, which we know are experiencing some tough times (see for one example Leyshon, 2009). These tough times will inevitably play out in the lives of individual recording engineers. Andrew Leyshon’s (2009) vision of the ‘software slump’ might well become a software slump in these individual biographies, shaping the type of work they get, their experience and the role they are expected to perform. Despite these conditions, the promise of expressive, creative and autonomous work endures. In the case of the recording engineer though, this points to a layering of precarity, with them conducting this precarious balancing act of artistry and engineering under the conditions of often quite precarious and unstable labour.

In tracking the biography of the recording engineer we also track the foundations of the balancing act that they perform whilst also revealing where the recording engineer is positioned, or positions themselves, on the spectrum we have outlined. The individual biography is a product of the existing differences in the field and of how these differences become material boundaries to be navigated. In the biography and background of individual recording engineers we have the origins of the different types of balancing act that are occurring, and these then produce varying senses of value, legitimacy and authenticity in different parts of the recording community. The focus on engineering is valued by some, whilst being more artistically or musically focused is more valued by others. The latter can see the former as lacking a feel for the music, whilst the former can see the latter as lacking a required depth of technical know-how. These senses of value have a long and complex history in the recording engineering sector. As do debates about whether recording is actually a recognised form of engineering.

**Technical know-how**

As the above suggests, the biographical background of the individual recording engineer is fostered amongst different types of knowledge and qualifications. These, we have suggested, form around pre-existing differences within recording engineering. This type of difference, based upon the balance of artist to engineer, plays out in the technical know-how of the recording engineer as they practice their craft. Asked about this type of division one recording engineer told us that their work:

‘falls in-between two camps and this is what I find very fascinating about the work that I do. It’s that on the one hand I can be a sonic artist…a sound designer if you will, and then the delivery of my artistry however must conform to strict guidelines because of the way that it is distributed and transmitted has to fulfil certain criteria. You know, there are conditions of quality which are both subjective and objective…So it does require you to intervene as a human being to ensure that constraints are met whilst preserving the sonic art and the sound design.’

For this recording engineer, that balance comes where the engineer is expected to find ways of enabling the creative processes whilst simultaneously ensuring that technical standards are adhered to. In some ways then the technical part of the engineer is required here to know the conventions and limitations of the technology and to allow the creative processes to work within these more rigid material boundaries – can a microphone capture this? Are we able to combine these sounds? How can we gain this effect? How far should we place the microphone? Can the sound move around the room? And so on. Of course, we might then speculate that different engineers will see these conventions and constraints differently depending upon their own sense of identity as a technical recording engineer or as a more artistic collaborator.

What becomes clear is that technical know-how is considered to be an important part of the recording engineer’s make-up. Indeed, traditional engineering skills are prized – particularly when balanced with cultural and artistic know-how. The types of knowledge that are prized can be based upon different concoctions of technical training and the type of tacit knowledge that can only be accumulated through the use and experience of recording processes. As Horning (2004) has previously observed, these forms of tacit knowledge can be crucial to the sense of identity and authenticity of recording engineers. Horning argues that:

‘Although the recording engineer’s dilemma has changed over time, from limited control over the behavior of sound to perhaps too many options for manipulating it, the need for tacit knowledge has not diminished, even in the technologically sophisticated recording studios. Despite the ever changing technological landscape of the recording studio, the growth of formal training in engineering, and the continued evolution of technology individual skill and artistry in record engineering continue to be valued as the technology and practice of recording continually shapes, and is shaped by, the musical landscape.’ (Horning, 2004: 725-726)

It would appear that this observation still stands, with recording engineering going beyond textbook understandings of the technology and into the material practices of which they are a part. This is a kind of experiential and intimate understanding of how technologies, from valve amps to studio software, actually implicate the final product. This understanding is central to the role of the recording engineer, as Horning argued, and to the way that recording engineers are presented, valued and understood.

The recording engineer’s role is seen as practical and logistical. As one experienced engineer described, the role of the recording engineer is one of ‘enabler’. The point here being that the recording engineer is there to exploit the technical capacity of the equipment and to make things happen in the recording process. The expectation, the engineers suggest, is that the recording engineer makes the recording process work, this expectation is one of the pressures carried by them. As the following excerpt, from a recording engineer and producer who has worked with a number of well-known pop artists, illustrates:

‘The first thing that anyone…will learn is what they *can’t* do, where they can’t go or where they’re on dangerous ground. Our job is a time based one – you need to get the recording at the time when they can perform it and the most important thing is that you get *that* recording. If you can get that recording sounding fantastic, then that’s the next step up. If you can help the artist to get into a position where they can perform it fantastically and it sounds fantastic, that’s another step up but fundamentally you have to get the recording.’

The first expectation is based upon the pressure to capture the recording. However advanced the recording processes becomes, the pressure remains to capture that sound in that moment. The role of ‘enabler’ in the recording process clearly requires a detailed, or at least functional, understanding of how the equipment works and what its limits are. With some recording engineers also preferring to have knowledge of what goes on ‘under the bonnet’. This knowledge is used then to manipulate these technical possibilities, to play with constraints and to understand why certain outcomes are generated. Again, technical know-how of different sorts becomes a defining factor for the engineer, with the pursuit of detailed technical understandings used to differentiate practice.

The expectations and pressures on the engineer vary, with one experienced engineer noting that today ‘there are too many safety nets with post-production’. The forms of knowledge here are shifting, it would seem, from the moments of production to the reflections of post-production. This hints at a general shift in knowledge from the more material positioning of microphones and the use of predominantly physical devices, to digital and software based forms of technical know how in the virtual studio. The same engineer compared this postproduction based engineering to the banking system, suggesting that too much emphasis is placed on what the technology intuits. This points towards the use of algorithms and visualisations in shaping the creative process. Here we can see that music production and recording engineering has moved firmly into what Kitchin and Dodge (2011) have called ‘code/space’, as software and code come to define and make possible various recording processes. Music recording spaces, like most contemporary spaces, require software code in order to function. Increasingly working with such software code is a central part of the role of the recording engineer.

The issue that crosses these various forms of recording engineering knowledge, be it analogue, digital or software based, is the way that recording engineers relate to the technology they are working with. It is at this point that we should be clear that the engineering part of recording engineering can also be a creative process. Which in turn points towards the presence of different types of creative practices in the role of the recording engineering, be it artistic or engineering based creativity. If we first return to the knowledge of the underlying workings of the recording technology being used, it was explained in a focus group that one of the benefits of having such a working knowledge of the technology is that the full possibilities of using the technology can be explored. This, as it is suggested, is the ‘engineering side’ of the role. But we can add another layer of creativity to this, which is that such ‘under the bonnet’ knowledge is used by recording engineers to see how the technology can be misused. That is to say that this level of technical know-how can be used to explore the unintended uses of the technology, to experiment and to stretch the capacities and apparent boundaries of the technologies. Thus revealing the creative side of engineering. Here we can imagine, based on these focus groups, how the artistic vision of the recording artist might be realised by the engineer’s ability to manipulate what is technically possible. In this instance the recording engineer as ‘enabler’ is not simply working within the parameters but is also active in shaping these parameters so as to achieve the artistic vision of the artist. This fundamental understanding of the technical capacities of the materiality of the recording process allows the artistic sensibility of the recording engineer to align itself more closely with the performer (which we will return to in a moment). The focus groups revealed that the job of the recording engineer, or of the ideal recording engineer, is not to be led by the technology, or to be limited by ‘the grid’ as one recording engineer helpfully put it, but to combine this with a ‘feel’ for the recording.

The above distinction was made through an anecdote about the use of a drum loop on a recording. The drum loop used did not match neatly with the software grid. This was pointed out to the engineer in question, who suggested in response that they try putting it exactly on the line and see what it sounds like. The recording engineer’s point was that the drum may not have fitted neatly into the software grid but that it sounded right where it was. This focus group then continued by discussing the value of sounds, such as voices or instruments, being placed earlier or later than they ‘should’ be, which they called ‘phrasing’. This was used as an example of how the performance could be lost if the recording process was too defined by the technology. This would be to lose the ‘feel’ required by recording engineers. As a further illustration of this use of feel we can turn to Jörg Wuttke’s (1999) descriptions of the use of ‘feeling’ in the apparently simple act of positioning a microphone, this act, he suggests, occurs somewhere ‘between physics and emotions’. As Wuttke (1999: 1) puts it, ‘[r]ecording engineers are obliged to make the connection between the realities of physics and the world of feeling attached to music’.

What this points towards is the observation that recording engineering is *engineering with feel*. Recording engineering is based upon the development of a creative sensibility that is not just about the form of the art being recorded but is also a creative appreciation of the technology being used. It is suggested that one of the problems facing recording engineering is the potential loss of this feel and the increasing dominance of the technological grid. The problem with this, it is claimed, is that the processes might become ‘dehumanized’ or that the performance and performative aspects of recording might be lost (for a discussion of this in the case of laptop musicians see Prior, 2008). Again we can imagine that striking a balance here will be about maintaining the artistic aspects of the recording process without them becoming dominated by the newly developed and developing technological possibilities. We see here that recording engineers, as with other spheres in which software and algorithms are shaping practice, are carving out the need and value for maintaining human agency and judgment (both from an artistic and an engineering point of view).

These technological challenges to agency are not something that is entirely new. If we look back to Thomas Porcello’s piece from 1991, we find that four recording engineers were interviewed about the ethics and implications of sampling technology in their work. In the ‘discourse’ that Porcello describes we see that the technical understanding of the device is filtered through an appreciation of what the sampler means for the ownership of music or for the musicians themselves. This reveals that this technical know-how has historically been based upon the feel for the role as well as for the technology. The recording engineer is at the forefront of the implementation of such technological developments into cultural production, and is therefore also at the forefront of the negotiation of the technologies as they challenge social and cultural boundaries, values and norms. It has even been suggested, at around the same era as the developments in sampling technology, that these types of recording and remixing technologies were altering creative relations and that the engineer ‘can be viewed as an artist distinct from the original musician(s), no longer a collaborator…but an independent creative force’ (Tankel, 1990: 42). Our focus groups suggest something different though, they suggest that recording engineers are far from being independent artists, but instead they see themselves as being part of a set of creative relations, they express the desire to be an embedded facilitator in the collaborations of the recording process. It is to this issue that we now move.

**Recording relations**

In his classic book *Art Worlds* Howard Becker (1982) described the complex ‘cooperative networks through which art happens’ and the importance of the way that the division of labour is organised in artistic production practices. One of the features of recording engineering that reappeared in the discussions was the way that the recording engineer is a central part of what might be thought of as the relations of recording. Sometimes these take the form of quite hierarchical organisational structures, with clearly defined roles, in other cases the dynamics are more fluid and contingent. What is clear though is that the recording engineer becomes something of a mediator in these recording situations, with some evidence to support Edward Kealy’s (1979) observations with regard to the different ‘modes’ that the recording engineer switches between (elsewhere these modes are described as the different ‘roles’ that are required, see Horning, 2004). These modes fit into the different aspects of the collaborative relations of the recording processes. They fill the ‘gaps’. This switching of modes affords the points of contact that make the collaboration work.

In the focus groups the recording engineer is spoken of as ‘the link’. This is particularly true in studio situations in which the recording engineer becomes the person that acts as a communicative hub between the various individuals involved in the process. In his study of reggae sound systems Julian Henriques (2011: 116-117) concludes that engineering is the practice of ‘middling’, caught as they are in a responsive corporeal loop between the performer, the technology and the audience. Here we begin to see how the various mediating responsibilities of the recording engineer converge as they link these social connections together and as they act as technological ‘enablers’. The recording engineer then works as a mediator between people and technology and between the various individuals involved in the recording process. Various levels and types of mediation occur in these spaces, with the recording engineer at the centre. This is where the social and cultural flare of the engineer, and their empathy for the art, mixes with an understanding of the role, the hierarchy and the technical materiality of the space. All these mediating relations are balanced by this capacity to understand and to have an engineer’s eye for what is possible.

As one established engineer and producer explained, the recording engineering is different from other engineers because of the large part of the job that is based on working with people, understanding these people and helping them to capture the sound they want. Many other forms of engineering, they suggest, are focused more on the electrical or mechanical object and the associated problems. Whereas, in the case of recording engineers, they claim, the focus is more split between the people they are working with and the engineering problems they are faced with – and let us not forget the wider commercial and corporate pressures placed on the management of the creative process (see Hesmondhalgh and Baker, 2011: 92-95 & 206-210). The implicit suggestion here is that the recording engineer needs to focus outside of the engineering problems and towards an understanding of the social and cultural context of the people they are working with and for. They need to find the balance, as ‘the link’ in these relations, between an appreciation of the artistic vision being communicated and the transfer of these ideas into engineering based appreciations of technological, material and financial limits. ‘However inventive our imaginations might be’, Wuttke (1999: 9) suggests, ‘it would be foolhardy to flaunt the fundamental laws of electroacoustics in pursuit of our goal’. It is interesting to note that Wuttke, pointing to the associated issue of self-presentation and legitimacy, indicates that anyone who flaunts such rules will be viewed with ‘suspicion’ – again an indicator of the markers of authenticity and legitimacy in the sector. This is where the social relations of the recording process mesh with the technological and material properties and capacities of the space.

At the centre of these human-human and human-technology relations, the recording engineer is expected to find the balance between artistic expression and engineering possibilities. As another experienced engineer put it, ‘there is a lot of psychology’ in the recording engineer’s role. But we might also add that there is also a lot of sociology, or maybe social-psychology, as the recording engineer attempts to grapple with cultural trends and wider socio-technological influences shaping the artistic direction of those they are working with. The recording engineer attempts to navigate and negotiate artistic vision and practical possibilities. It is interesting that this is often spoken of as being a team-based process that is founded on trust and understanding. We perhaps do not often associate such skills with engineers, and it perhaps does not fit too well with the more simplistic vision of the recording engineer as the person who simply measures the distance from the amp to the microphone. Instead we see the social features of the recording relations that spread the role of the engineer beyond technical know-how and into the realm of mediator or, as it is described, ‘the link’.

It is interesting to note though that there is still a kind of power dynamic in these relations. Recording engineers, who describe themselves as needing to have ‘no ego’, largely define their role as being that of providing a service for the performers. It is ‘their recording not mine’, is a dominant motif. Here we return to the vision of the recording engineer as enabler, but we can begin to see this as being illustrative a version of the classic concept of ‘emotional labour’ (see Hochschild’s, 1985; Hesmondhalgh and Baker, 2008; and for an account of emotional labour in the recording studio see Watson and Ward, 2013) – again something that we perhaps do not usually associate with engineering. The recording engineer works hard to ensure that the performer or artist is comfortable and happy with the recording whilst attempt to realise their vision and manage their expectations of what is actually possible. Some recording engineers indicate that they are happy to push artists but that the recording belongs to that artist, with a clear line of ownership, and that their job is to capture or make real what it is that the artist wants to create.

The aim is to get to the point, it is suggested in one anecdote, where the artist concludes that the recording is exactly how they ‘heard it in their head’. Part of arriving at this ideal point is that the recording engineer needs empathy with and an understanding of the artist and the sound ‘in their head’, so that they are then able to capture it. The recording engineer is central to the process, yet at the same time they attempt to make themselves go largely unnoticed, a kind of enzymatic contribution to the production process. Realising the artistic vision of those being recorded requires the recording engineer to be a mediating presence in these recording processes, and to also be active in the social connections and relations of the recording environment. This is depicted as being a central aspect of this form of labour. We can see at this point how closely aligned the material *and* immaterial forms of labour that make-up recording engineering can be. The management of the material recording process maps closely on top of the immaterial labour embodied in the negotiation of interpersonal relations.

**Conclusion**

The recording engineer leads something of a precarious double life. At the heart of this is a delicate balance between an artistic sensibility and the order and technical know-how of the engineer. The balancing act is afforded by an understanding of both the subjective and objective qualities of sound (see Wuttke, 1999: 2). Wuttke (1999: 1) warns, rather forebodingly, that ‘one can be led astray by mixing together objective and subjective concerns in an unthinking manner’. This is further illustration of the vision of the ideal engineer as being a ‘thinking’ and ‘feeling’ node in the recording set-up. This has been described by Henrique (2011: 65-73) as a process of ‘fine-tuning’ or ‘compensation’ which occurs in the capture of sound across a set of technological, bodily and social relations. The recording engineer needs to balance this ‘feel’ for the recording with an eye for objective technical limits.

We can see that getting the mix of these two components is crucial not just in the recording process, illustrated by John Squire’s preferences with which I opened this article, but also in the way that recording engineers are understood by other recording engineers and by the industry more generally (and even by engineers more generally). The acceptance of those being recorded, along with acceptance amongst the ranks of recording engineers, appears to require some careful self-reflection on the part of recording engineers as they decide how to pitch themselves to the recording community and to those artists and producers that they might want to record with.

The sense of the fluid and sometimes contingent role of the recording engineer was summed up by a final year Tonmeister student who observed that:

‘there is a title missing in our process of recording. If we say we have our producer, who is dealing with the artistic side, and our engineer then there is a hole, perhaps, where a ‘technician’ could be: someone who has good mic technique or knows exactly what to do to get a good sound but doesn’t understand the nuts and bolts exactly of the devices that they’re using. So perhaps the role of the technician and the engineer has kind of merged into us almost, and perhaps that’s why we have this slight ambiguity as to whether…engineering is inherent in the practice or whether its been annexed, and the two roles merged.’

There is a sense that the recording engineer fulfils quite a few gaps in the process and becomes, as we have already described, the ‘link’ and the ‘enabler’. Making social and technical connections, making things happen, responding to the organisational, personal and material requirements of the process. Recording engineers fit different types of gaps and come with different forms of know-how. Perhaps this is representative of the wide-ranging skills needed from recording engineers, and the various expectations that are placed upon them. For these reasons recording engineers cannot be thought of as a simple category of people working at the same type of job, rather recording engineering is relatively heterogeneous and varied in its scope. We cannot simply think of a recording engineer and expect to know what they do, even if we are relatively up to speed on sound recording. Rather we need to think of the range of activities that make up recording engineering as a related but variegated set of activities. The very role of recording engineering requires flexibility, both interpersonally and technically – sometimes placing microphones, sometimes writing or coding software plug-ins, sometimes in a studio, sometimes recording on location, sometimes recording classical music sometimes pop, sometimes sequencing sound effects, the list goes on.

What we hope we have shown here is that recording engineers cannot be reduced to a single type of individual playing a single type of role in cultural production. Rather the recording engineer is an umbrella term for a variety of practices that cover a range of values, techniques and forms of knowledge. Understanding the tensions and synergies in the balancing act between artistic sensibility and technical know-how is one way into a more detailed and nuanced understanding of the role that recording engineers play in shaping our soundscapes (for more on the power of recording engineers use of technology in shaping sound see Horning, 2004). We have shown here how this balancing act defined the biographies and backgrounds of recording engineer’s, the technical know-how that informs their practice and the part that they play in the relations and organisation of recording.

Of particular note was how recording engineers engage in an interplay of material and immaterial labour of various types as they fill their multiple roles of handling equipment on one hand, whilst managing interpersonal relations and the *feel* of the recording process on the other. In many ways the recording engineer is a representative example of contemporary forms of work in the creative and cultural industries, particularly as they come to interweave immaterial and emotional forms of precarious labour with a practical and orderly approach to material practice (Gill and Pratt, 2008). In this combination they become mediators, the link, the enabler, central as they are in various human and technological relations. They need to show the empathy to understand a creative vision and have the technical know-how to operationalise that vision.

More broadly what the recording engineer forces us to do is to question the broader distinctions between artists and engineers, they show how, by balancing these two apparently distinct realms, we might find different forms of creative expression emerging. Perhaps we need to return to the origins of some of these distinctions to see how creative forms of expression in engineering and art were not considered to be as separate as they are imagined today (perhaps partly as a result of the entrenchment of disciplines, and of the increasing institutional and governmental separation of the arts and humanities from the sciences and engineering). If we look back at something like Heidegger’s (1993: 317) famous work on technology, there are pointers indicating the similarities that might be found in the historical conceptions of the practices of ‘bringing-forth’ into existence, or ‘poiesis’. Heidegger’s work indicates that the separation of artistic knowledge from more technical forms of knowledge is a more contemporary phenomenon. Richard Sennett’s (2008: 81-118) descriptions of the incorporation of ‘machines’ into ‘craftsmanship’, provide similar historical questions about the separation of artistic from engineering based forms of knowledge. In the case of the recording engineer, we find embodied individuals whose craft works across such seemingly insurmountable distinctions, and thus speaks directly to these historical observations.

Far from being an inert presence this article demonstrates that the recording engineer is a powerful mediating presence in cultural production. Despite their powerful presence in shaping our cultural soundscape they are usually overlooked. This might be a product of the type of work that they do to keep themselves as a self-proclaimed ‘invisible’ background presence. These hidden figures of cultural production, as creative enablers, are central to managing artistic processes as they translate these into material outcomes. They filter what is desired through the constraining features of the technologies. It would seem that the precarious double life of the recording engineer is actually quite powerful in shaping the things that we hear, but this power is still implicit and enmeshed in the largely concealed spaces and practices of cultural production. It is hoped that this article has made some progress towards uncovering the conditions that define recording engineering and which ultimately then shape our cultural soundscapes.

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