Metaverse, Metachorus:

Virtual live music performance in Second Life

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Abstract

Music and technology have, from the first instruments to the reshaping of music which has occurred since the advent of the internet, had a close relationship. Enabled by technology, virtual environments, like Second Life, can be utilised to mediate live music events and allow musicians to transmit performance, bringing the nature of liveness into question.

Related to this practice of virtual performance is the concept of 'musicking' (Small, 1998), whereby all contributions, be it by listening, dancing or playing, are considered to be acts of participation. This paper argues that virtual live music events in particular, become less entertainments and more acts of collaboration.

The practice of virtual performance also comes under examination, not only by situating live music within a new technological context, that of Second Life, but by documenting the ethnomethodologies employed by virtual musicians, and assessing the role of the virtual performer as artist, participant and practitioner.

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Introduction

In *The Anthropology of Music*, Merriam (1964) writes that 'the ultimate interest of man is man himself, and music is part part of what he does and part of what he studies about himself' (1964: 16). Similarly, Powers (1990) considers music to be a result of 'thought processes that give rise to the panhuman expression of humanity, the natural or cultural things of life' (1990: 17). This project is an investigation into aspects of a relatively new form of musical behaviour, live performance in virtual environments.

For the purposes of this research a virtual performance, considered to be a live musical event delivered via Second Life, features a simulation of the musician or musicians, and is attended by remote audiences in the form of avatars. Various approaches and methods of practice are considered, as are the roles of audience and performers - collaborators in this activity.

The nature of the live in relation to virtual performance is also examined. Auslander (2011) in his lecture *Digital Liveness*[1], when discussing live television broadcasts, states that *"performers and audience are temporally co-present, in that the audience witnesses the performance as it happens, but they are not spatially co-present".* When speaking of live recordings he says that *"the audience shares neither a temporal frame nor a a physical location with the performers."*

I propose that virtual live music performance represents a new paradigm in liveness; the virtual spatiality of Second Life provides a venue for an event, unlike live broadcast or recording, but the temporal nature of a performance is indeterminate – it is different for each and every attendee; it is a new, mediated form of liveness.

Utilising in-world participant observation as the primary research method, as proposed by Boellstorff (2008), and reinforced with face-to-face interviews and observation in consideration of Golub (2010), Turkle (1995) and Suchman (2007), this project examines the relationship between musical and technical practice, and investigates the temporal, the live and the collaborative as aspects of virtual performance.

Interrogation, via the works of Gell (1999), Ihde (2007) and Auslander (2008) among others, serves to offer insights into virtual performance that are primarily concerned with the practitioner and the act of creation. Other data, gathered via surveys and from official sources, offers a backdrop to this research.

Chapter 1: Key Aspects of Virtual Live Music Performance

1.1: Second Life and The Virtual

1.1.1: The Simulation

Second Life (SL) is a 3D, game-based, online virtual environment studied at length as an anthropological field-site by Boellstorff (2008). It is persistent (it remains running when the user logs off) and time, set from the clocks of the creators, Linden Research in San Francisco, passes. The 'world' of Second Life runs on arrays of servers in data centres, and frequently supports 50, 000 concurrent users[2]. Linden Research, or Linden Lab as they are colloquially known, were themselves studied in some depth by Malaby (2009): they opened SL to the public in 2003.

Second Life, which users access via free client software[3], consists of regions known as simulators or 'sims'. Each sim represents an area of virtual land sized 256 metres by 256 metres, and users move around this space as avatars, create objects, and run small programs called scripts. Sometimes, when an area contains too many objects (or avatars, or running scripts) indeterminate delays in server operations and client-side rendering occur: this is known as lag.

Land in SL can be owned by Linden Lab, sold directly to individual users (or 'residents'), or leased to land owners who can then sub-let it to residents. Some regions, or groups of regions, are themed by the residents, owners and landlords; many genres, including western, sci-fi, steampunk, and furry are represented, as are recreations of RL (Real Life) locations, like London, Berlin and Tokyo. Generic environments, such as 'beach front' and 'forest', have also been created.

Objects can be created in SL using a variety of methods. The main building system works

by combining sets of primitive shapes (or 'prims') and texturing their surfaces with images. These primitive shapes have an impact on the virtual land on which they stand, as each land parcel can only support a certain number (typically 348 prims per 32m x 32m plot). A later addition is the sculpted prim, or 'sculptie'. These are used by texture-mapping a prim with a file known as a 'bump map', which defines the shape. The most recent development in building is mesh modelling, whereby 3D models from CAD (Computer Aided Design) applications can be imported and used in-world. Mesh objects still have a land use value (this is only a representation of the load that the objects place on the server), but are a more efficient way of generating complex builds than are regular primitives. Many types of items have been created by SL residents, ranging from trees and houses, to spaceships, cars and musical instruments. Clothing made from objects (as opposed to just images) is also popular.

Virtual objects can be programmed to exhibit behaviours using a Java-like, in-world scripting language called LSL (Linden Scripting Language). These behaviours can range from simple types, such as movement, colour and texture change, and the running of pre-programmed animations, to fully functional artificial-intelligence or combat-gaming systems. LSL can also be used to access external data sources.

Second Life has an economy based on an internal currency, the Linden Dollar or L$, which is traded on the Lindex currency exchange[4] (the exchange rate is currently around L$250 per US$). The L$ can be purchased, or earned in Second Life by selling land, products or services; a common form of payment for virtual performers, is the voluntary 'tip', paid in $L. Gambling, though popular, was banned from SL in 2007[5].

These factors - the virtual space, the ability to create objects with behaviours, and the economic system – allow Second Life to be treated as a workable platform for the

simulation of a world-like environment. SL can also facilitate interaction, communication and collaboration through the residents representations (avatars) and their view of the world (agents).

1.1.2: The Avatar and The Agent

The avatar is the representation of the user within the virtual space, and is described by Murray (1997) as 'a graphical figure, like a character in a video game' (1997: 113). The avatar, as far as interacting with other users is concerned, is also the site of presence for a resident. Heim (1993) raises this issue, an important element in any study of the virtual, and questions it from the Heideggerian perspective: '[N]ow we are facing such things as “presence.” What does it mean “to be present,” somewhere, as a human being? Presence as the existence of an entity is a crucial question in the building of virtual reality technology' (1993: 30).

From another perspective, that of the user, the site of their presence within Second Life is called the agent. This can be thought of as the camera view, and is fundamentally different to the avatar; a resident can see their own avatar in Second Life via the the camera – the agent. It is from the viewpoint of the agent that actions are performed.

Avatars in SL, initially chosen from a series of default options, are highly customisable and many users spend time and money on their representation. The standard avatar can have the shape and colour altered in-world, and clothing and accessories can be purchased or made. Alternatively, entire avatars can be bought or created. Nusselder (2009) discusses this act of representation, and considers the avatar to be functioning as a mask: 'By picking an avatar, I can formalize certain tendencies (for example, eroticism, aggression, animality) that remain otherwise dark and obscure... avatars... function as masks that both

hide and reveal aspects of one's personality, mostly without the person being immediately aware of this' (2009: 91).

Another aspect of an avatars apparent 'being' is that of animation. Second Life has a series of built-in defaults, but animations can also be purchased or created by residents, using tools like Poser (a commercial application) or Avimator (an open-source equivalent). Animations are often built into musical instruments in SL, and many performers simply utilise these in their shows. Others prefer to create their own animations, as they are considered a vital component of performance practice.

The avatar is really only 'the resident' to others, whereas the agent is the source of action. An in-world presence can therefore be considered a hybrid of user, agent and avatar; an avatar may appear to be moving, building or performing, but is actually serving as a representation of the activities performed by the user, via the agent.

1.1.3: Playing Music in Second Life

Many musicians today have fairly complex technical set-ups. These take advantage of the cost reductions that have altered the landscape of music creation, and often utilise digital technology in the creation of sounds, and the recording and production of music. The recording studio (once an exotic place) is now, at the amateur level, often located in a spare bedroom. Some Second Life performers use simpler set-ups, maybe just a guitar and a microphone, but even this entails mixing the signals and feeding them into a computer. A certain level of technical competence is therefore necessary to successfully perform online, or in SL.

As well as the music technology, a computer running audio encoding software, such as

EdCast[6], is also required to perform in Second Life. The sound produced by the musician is encoded (to MP3 or a similar format) and streamed to a remote server; here a URL (Uniform Resource Locator, or 'link') for the audio stream is generated. Listeners then connect to this stream using an audio-player (such as WinAmp[7] or Quicktime[8]), or via the Second Life client software. The audio streaming server is not provided by Linden Lab or Second Life; these are third-party devices, rented by musicians by the day, week or month. The land within SL provides a facility to add the audio URL to the properties of the land plot, allowing the music to be heard. The performer also requires a computer running the SL client software (it is possible to run both Second Life and EdCast on the same machine; it depends on the specification of the computer[9]). This instantiates the musician's avatar within SL, whereby the show can proceed. The ways that the avatar and features of SL are utilised in performance can vary greatly, as discussed in *Chapter 3*.

1.1.4: Virtual Space and Place

A number of spatial environments exist in SL to facilitate virtual live music, ranging from recreations of historic music venues (such as CBGB[10]), to generic places such as festival sites, music clubs and stadia. Some performers prefer to build their own venues; others to seek existing environments, which are not necessarily designed for events, and subvert them to the purpose of performing.

Tilley (1994) describes how places are defined by the living existence of those who experience them, when he writes that '[t]he meaning of place is grounded in existential or lived consciousness of it. It follows that the limits of place are grounded in the limits of human consciousness. Places are as diffuse and differentiated as the range of identities and significance accorded to them. People are immersed in a world of places which the geographical imagination aims to understand and recover – place as contexts for human

experience... places are always more than points or locations, because they have distinctive meanings and values for persons. Personal and cultural identity is bound up with place' (1994: 15).

According to my informants, virtual places in SL can also be ascribed meaning in this manner. Some of them expressed love for particular environments due, in some cases, to the aesthetic qualities. Often though it is due to the events they have attended in a particular place, and the communities that are present.

1.2: Music and Performance

1.2.1: Music as Practice

The differences between the act of listening to music and the bodily practice of musical performance are summarised in *Musica Practica* by Barthes (1977): 'There are two musics... the music one listens to, the music one plays. These two musics are two totally different arts, each with its own history, its own sociology, its own aesthetics, its own erotic... The music one plays comes from an activity that is very little auditory, being above all manual' (1977: 149).

Manual activity, in the form of playing an instrument, is considered from the technological perspective by Ihde (2007), who writes '[f]lutes, simple stringed instruments, percussion instruments... all fall under a distinctive human-technology use I have... called embodied relations. By this I mean that the human or humans producing the music, do so through material artifacts or instruments' (2007: 254). Finnegan (1989) considers music to be, pre-eminently, a bodily practice. 'Music... is not essentially a cognitive code, and extends beyond the 'mind' to the 'body'. It is associated not primarily with words, but with rhythm,

movement, and overt physical enactment... a different and unique modality of human action' (1989: 340). In opposition to this idea of uniqueness, Miller (2012) considers music and gaming to be similar activities for a number of reasons: 'Musical experience... is so much like play. It is immersive, unfolds in time, and is intrinsically motivating' (2012: 226).

The practice of musical performance is a phenomenon that differs from music itself. The term music is necessarily vague; does it refer to the sound, the score, the act? To cite Cook, writing in Clayton et al (2003), performance is more than the result of interpreting a score: 'Fundamental to [the]... concept of performance is the idea that it generates meaning, rather than simply reproducing a meaning that resides elsewhere' (p.185). This implies that musical practice is as much an act in its own right as it is an attempt at reproduction.

1.2.2: Music as Technology

The playing of music has, from it's inception, been closely tied to the technical development of instruments. Ihde (2007) illustrates this in a discussion relating to mechanically controlled plucks or hammers, utilised in the harpsichord and the clavier: '[A]rguments broke out concerning the alienation of “pure” hand playing as it “degraded” into “mechanical” playing... Objections regarding the loss of expressivity, the loss of nuance, the “mechanization” of music, and the loss of “romanticism” occurred... I am suggesting that modern musical experience in contexted in a history-of-technologies setting in which instrument innovation plays a major role' (2007: 255). He also contends that music technology, in the most basic of electronic forms, the amplifier, has a transformative effect on music itself: 'Amplification “magnifies” sound, but unavoidably it also transforms it. All technologies are nonneutrally transformational, including musical ones.' (Ihde, 2007: 256)

Gell's thinking on this topic, in *The Technology of Enchantment and The Enchantment of Technology*, is interesting because he argues that technical practice is instrumental in the production of the artefact. He writes: '[w]e recognise works of art... because they are the outcome of technical process, the sorts of technical process in which artists are skilled' (1999: 162). This is directly opposed to the more familiar perspective on technique; the perspective that normally differentiates the artist from the artisan: '[t]echnique is supposed to be dull and mechanical, actually opposed to true creativity and authentic values of the kind art is supposed to represent.' (Gell, 1999: 178)

Music then is, largely, produced via technical processes and utilises, in most cases, technological artefacts.

1.2.3: Music as Art

The virtual performance event can be thought of as an artefact; one that creates a site of intersection between performer and spectator. When considering live performance as the process by which this artefact is created, Gell (1999) can be invoked once again. He describes his idea about the power of artefacts being an inherent property of their birth: 'It is the way an art object is construed as having come into the world which is the source of the power such objects have over us – their becoming rather than their being' (Gell, 1999: 166). In the context of live performance, this is implicit; the *becoming* is what the audience bears witness to.

Some of my informants expressed that their aim when participating in virtual performance was, in some form or another, a more complete piece of art than a music show. This is reflected in a piece by Stubbs (2009), when he writes of the concept of the complete

artwork, the Gestamtkunstwerk: 'Kandinsky was producing the first abstract watercolours at the same time as Schoenberg was doing away with tonality. Both men, in [sic] turned out, had dreams of a Gestamtkunstwerk, a theatrical piece perhaps, in which the spiritual qualities of the new music and painting of the 20th century could come together in glorious synthesis' (2009: 21).

The virtual environment allows for the creation of a Gestamtkunstwerk in a way that is unique - the webcast model of audio performance has expanded into the facilities offered by fast networks, 3D graphics, and game-based environments.

1.2.4: Music as Collaboration

When considering virtual performance and the collaborative nature of the performer/spectator dynamic, much of the relevant literature already considers this. Cook (1998) believes that 'artistic value lies in the experience of the spectator, who is no longer detached from the artistic process but becomes an essential participant in it' (1998: 77). Inwood (1997), though discussing visual art, concurs: '[A]n artwork... is not “self contained... It calls for an observer or interpreter' (1997: 117). The collaboration between artist and audience seems to be an important element in art as a whole; the act of experiencing an artefact is completed by the spectator.

Barthes (1977) considers the empathic relation between the performer and the spectator, reinforcing the concept of the collaboration that brings about the live performance event: 'The modern location for music... is the stage on which the musicians pass, in what is often a dazzling display, from one source of sound to another. It is we who are playing, though still it is true by proxy' (1977: 153).

Collaboration is an integral part of musical performance, be it as an act between

musicians or between performer and audience.

1.2.5: Liveness

The nature of the live, considered in depth by Auslander (2008), is articulated in his lecture *Digital Liveness* (2011)[1]: *"[H]istorically the live is an effect of mediatization, not the other way around. It was the development of recording technologies that made it possible to to perceive existing representations as live. Prior to the advent of those technologies... there was no such thing as live performance, for that category has meaning only in relation to an opposing possibility... the concept of live performance came into being not at the appearance of the recording technologies that made the concept possible, but only with the maturation of mediatized society."*

He talks of a new definition of liveness: *"[I]t may be that we are at a point at which liveness can no longer be defined in terms of either the presence of living human beings before each other, or physical and temporal relationships. The emerging definition of liveness may be built primarily around the audiences' affective experience. To the extent that websites and other virtual entities respond to us in real-time, they feel live to us, and this may be the kind of liveness we now value."*

The notion of technological intermediaries between performer and audience is not a new topic; Walter Benjamin wrote that '[t]he artistic performance of the stage actor.. is presented to the audience by the actor in person... The artistic performance of the screen actor, on the other hand, is presented to the audience via a piece of equipment, a film camera... It includes a certain number of movements that need to be recognised as those of the camera itself... The screen actor's performance thus undergoes a series of optical tests... The audience empathizes with the performer only by empathizing with the camera'

(2008 [1936]: 17).

Liveness is a concept that came into being only when it became apparent that there was an alternative and, with the uptake of new communication and broadcast technologies, liveness has a shifting definition. The mediation of liveness through these technologies has forced a change in the way we decide what is 'live' and what is not.

Chapter 2: Methodology

2.1: Methods

The fieldwork for this project was largely built around participant observation. As Hammersley and Atkinson (1983) write, 'the ethnographer participates, overtly or covertly, in people's daily lives for an extended period of time, watching what happens, listening to what is said, asking questions; in fact collecting whatever data are available to throw light on the issues with which he or she is concerned' (1983: 2). I have been attending live music shows and performing in Second Life (SL) for over six years, and have spent hundreds of hours in-world since I first logged-on in 2006. My knowledge of the SL live music community meant that finding informants was straightforward, and gave me some insights into issues such as the design of spaces, and the ethnomethodologies of virtual performance. I nevertheless chose to collect as much information as possible directly from informants, sometimes via discussions, or through the study of their technical and performance practices.

All informants names have been changed to ensure anonymity. This, by necessity, also entailed changing the names of their avatars and their bands where necessary. Regions and venues in Second Life have not been mentioned by name.

A large part of the data was gathered through in-depth, face-to-face interviews with three Second Life performers; these were conducted in various locations and, in one case, was accompanied by a session observing and filming a performance. In a second case a performance was observed and notes taken, but no recording was made.

In talking to and observing these three informants, approximately 10 hours of audio and video material was generated; this was used as the source material for the ethnographic

portraits included in Chapter 3. Furthermore, I conducted numerous interviews, in-world and via email and Skype, with various performers, builders and event attendees. I also attended the London SL meet-up in June 2012 to meet other residents and to discuss the music scene in Second Life, and went to twenty in-world music events during the fieldwork period. Other experiences of attending and performing SL shows has been drawn upon where required, but the majority of the material presented is not auto-ethnographic.

To gain some general usage information and opinion, two web-based surveys were employed - one for performers and one for audience members. These were designed to gain an insight into the processes behind performing in Second Life as opposed to RL (Real Life) musical performance practices and, in the case of the audience survey, to gauge how the attendees felt that SL shows compared to RL ones. I had ten responses from performers and twenty from event attendees. Several survey respondents agreed to follow-up discussions, some via Skype and some via e-mail or in-world communications. I also gathered metrics relating to SL event listings and music events, and live music at SL9B (the official Second Life 9th Birthday event). This data is presented in the appendix.

2.2: Methodological Issues

I consider Second Life to be a valid field-site, citing Boellstorff, who writes '[the] sociality of virtual worlds develops on its own terms; it references the actual world but is not simply derivative of it' (2008: 63).

It is important though to consider to *actual* alongside the *virtual*, especially given that my research was investigating an actual practice delivered via the virtual. Golub (2010), opposing some aspects of Boellstorff's method, writes '[w]hile Boellstorff is right to insist that Second life is a “legitimate site of culture”... and I believe in-game fieldwork to be a

legitimate method, I would resist Boellstorff's conflation of a valid methodological decision (to conduct research entirely in-game) with a wider epistemological one (to bracket out of analysis all other lifeworld contexts in which Second Lifers participate)' (2010: 24). Turkle (1995) makes the point that 'virtual reality poses a new methodological challenge for the researcher: what to make of online interviews and, indeed, whether and how to use them', and considered it important to meet her informants '..in person rather than simply in persona' (1995: 324). Hine (2000) argues for the validity of virtual ethnography, stating that '[a]ll forms of interaction are ethnographically valid, not just the face-to-face. The shaping of the ethnographic object as it is made possible by the available technologies is the ethnography. This is ethnography in, of and through the virtual' (2000: 65).

I consider the musical practice of my informants to be of vital importance, interested as I am in the intersection between this and their utilisation of Second Life to deliver live performance to an audience. It is therefore not possible to examine this solely within SL, but virtual ethnography is, nevertheless, an important and valid component of this study. Golub also notes that '[c]ompelling projects may have their origin in and be anchored to a particular virtual world, but this does not mean that the sociality, action, and cultural formations created by that project need to be confined to that world' (2010: 40). In the case of many of the musicians I have spoken to, virtual performance has in fact facilitated their musical practice within the actual, confirming Golub's thinking. Second Life, as a platform, is a legitimate area of study, but the people behind the avatars are the most interesting components of the system.

Chapter 3: Findings

3.1: Ethnography

3.1.1: Robert

I suppose the first clue as to what lies within is the alien 'schwa' sticker on the front door – the familiar face of the 'grey' alien from *The X-Files*; Robert's bookshelves are lined with science fiction and his South London flat is a kaleidoscope of colours. He welcomes me warmly and offers tea as we proceed to the back of the building. It is a pleasant room with a view of the garden, and is jammed to the rafters with computers and music equipment, with a brace of guitars on stands. As we drink our tea and he fiddles with one of his computers I ask him how all of this came about, the music and the method by which he chooses to make it: *"I started on piano as a kid, but gave it up when I was about 12. My brother got an electric guitar a couple of years later. I nicked it, and found I had an instant sense of rhythm; something I hadn't had on piano... I'd listen to bands on the radio and pick up a few Who or MC5 riffs. I'd string 'em together to make my own things."*

I first saw Robert playing in the early 1990's, and he was then, as now, a one-man band. A long-haired, tie-dyed figure brandishing a distinctive 'Flying Vee' guitar, he also had an intriguing rack of electronics and a board full of effects-units. He was playing a unique brand of 'space / prog rock' (to use the artists term). To render this vision even more surprising one has to picture the location; a pavement outside of Camden tube station. This early adoption of computer technology by a musician was unusual, but particularly so in the world of busking. I was fascinated by sampling and the use of electronics and, though I didn't speak to him at the time, his approach to musical construction and performance left a lasting impression on me. He tells me that he started busking in London in the winter of 1976: *"That summer I'd travelled around the UK going to free*

festivals. I arrived in London, absolutely broke. I got hold of a guitar and played some blues and stuff to earn money."

Keen to perform his own material, he started putting a band together and finally had something going by 1982: "*after various line-up changes and very few gigs, that fell apart in '86. I went back to busking, which was good practice. I have very little stage experience, but when you're out busking you've got a constantly moving crowd and you get the chance to chat between songs. Playing in Second Life is similar to busking."*

I ask him about his initial experiences with Second Life, and how he came across it: *"I found Second Life on the web by accident... I'd had a look at Active Worlds* [another virtual world platform]*, but couldn't connect* [emotionally] *with it for some reason... I'd played Sim City... I liked SL because I'm a Lego freak...I like making stuff, though I can't script at all. I don't have the time to learn."*

As an enthusiastic SL resident, Robert initially became involved as a builder of tree-houses. Until 2008 he had been involved with projects for 'furry' communities, largely based in woodland settings. Furries are SL residents whose avatars are animal-humanoid hybrids, often foxes or wolves; Robert prefers dragons. I posit that he isn't a furry but a 'scale-y' – he laughs. During his early years in SL, he had also been involved with region administration and support, but soon gave that up, as he found it too time consuming.

I ask him why he started performing in Second life specifically; there are, after all, other methods available for online performance, as well as the more obvious route of RL live performance. *"I do shows in SL partly out of convenience. You just turn all of the stuff on and off you go. In a real venue, you have to lug all the gear in, set-up, play your set as if it's your only concern in life, and then, immediately afterwards, break everything down and*

put it in its flight cases while the next band is climbing on-stage... SL is convenient... it is a wonderful focal point for composing material...I write material with the reason in mind to perform it for a live audience. I can either rehearse alone or I can stream it out to Second Life. It's got through to a few people... I'm going to play anyway. I need to keep it rehearsed. I like to keep it fresh."

Robert then informs me that he has to make dinner and prepare for his show later that evening. I turn off the recorder and let him get on, while having a nose around his studio set-up. It is, for a home studio, quite complex, consisting of three computers and a large rack of synthesisers as well as the normal mixer, effects units and MIDI (Musical Instrument Digital Interface) units. Two of the computers are there strictly to facilitate his Second Life performance, while the main one is for his MIDI sequencer software and audio encoder (for streaming the sound for his SL shows). He informs me that he also has a server in the hallway cupboard that runs the 24/7 internet radio stream that he also sends to his venues in Second Life. Robert is very attentive to the technical architecture of his Second Life set-up, to the extent that he allocates specific processor cores to specific functions when an event takes place (using a piece of software called 'Winlauncher', designed for this purpose). He tells me that he has, by trial and error, noticed different performance characteristics when utilising different pairs of cores; the entire procedure is detailed to the extreme. Even his set lists of songs are colour print-outs as opposed to the more typical scrawled-marker documents commonly used by bands. This is because Robert rotates the songs he plays frequently, both to avoid the audience becoming bored with the songs and to allow him to practice as much of his material as possible. He has a list of around thirty songs that he plays live, and usually plays two short songs (less than seven or eight minutes) and six long songs per show: "*I like to start with a short one to get the blood flowing and get into playing mode."*

After dinner, Robert concentrates on the final preparations for his performance; he tunes

his guitar and logs the four avatars that make up his virtual band into Second Life. After positioning them on the stage, he changes his shoes; footwear is important for users of effects pedals.

As the gig begins Robert greets the audience, some by name (visible as 'floating' text above the avatars), and launches into the first number. During the show I keep an eye on the nearest computer monitor (which is running the Second Life avatar for the keyboard player) and note that there are around eleven attendees present for the majority of the show, peaking at fourteen during the performance. The audience members greet each other by name and seem quite a friendly bunch but chat levels are generally low, presumably because they are engaged with the performance. As the music is instrumental the microphone is usually muted but, between songs, Robert activates it and speaks to the audience; he also reacts to new avatars appearing, greeting each of them by name. He then announces the title of the next song, mutes the microphone once more, and proceeds to play another tune. One avatar admits, in text chat, that she is listening but is doing her laundry while the show is proceeding. Another attendee suddenly announces that he has mistakenly been tipped, rather than the artist; he passes the money on to Robert's tip jar (which hovers before the stage) - this inspires two more audience members to make donations.

Mid-song, Robert says to me: *“The left-hand part is a bit loud on that... need to tweak it up a bit”,* referring to one of the sound-patches on his newest keyboard. He then launches into a flurry of hammered chords without missing a beat. After a couple more songs Robert introduces the various avatar band members to the audience, and gestures (in the real world) to where they would be, as if he actually inhabits the virtual stage.

The set comes to an end. It has been a good show. He thanks the audience and indicates

(verbally) that there are vending devices near to the stage where his albums can be purchased in-world. He makes a sale, and receives a thousand Linden dollars (around four U.S dollars). He makes six hundred Linden dollars in tips, indicating a fairly low average tip rate given the attendance. This is, unfortunately, not unusual in SL nowadays; in my experience many audience members don't tip anything.

He resets his radio stream playing and sinks into his chair with a sigh: *"Live is flying by the seat-of-your-pants. That was alright; I've done better. Let's put the boys and girls* [the four avatars] *out dancing".* He moves them from the stage and clicks the 'dance ball' object to set them going. He appears tired, even drained, but nevertheless starts fixing the synth level problem. The audience starts to trickle away after a few minutes, teleporting to other Second Life regions. Robert logs out.

Once the show is over the extent of the effort involved is apparent. He says: *"It's pretty intense doing this";* I ask him if it's all worth it, given the low levels of financial reward. He responds: *"I find playing music has a very positive effect for me. I feel more in tune with who and what I am. I seem to come alive. It becomes a focal point for everything else in life... Music is all-consuming."*

3.1.2: Sarah

Sarah's studio is housed in the largest bedroom of a local authority flat. It is very high up so the view from the single window is mostly of the sky. Occasionally a crow, pigeon or seagull flies past. Sometimes in the spring you can see kestrels; she thinks they nest on the roof. The building is concrete and the neighbour is deaf so it is, in many ways, an ideal place to create music. Despite the generous proportions the room is full; three large desks house various computers, effects racks and mixing desks. The floor is covered with guitar

and violin stands, drum machines, echo boxes and effects pedals and, most of all, cables. In the corner of the room the large built-in wardrobe is full of amplifiers, instrument cases, microphone stands and empty equipment boxes.

I set the recorder going and ask her to describe how she became interested in music, and when she started playing. Sarah started on violin at the age of twelve, she informs me, and performed in school orchestras until she was sixteen. After working in a record shop in Sussex for a while, she was recruited to play violin in a friend's band, and moved to London. The band was of the experimental / improvising type; she continues: *"We were into things like Can, and I was into Cabaret Voltaire... We jammed for hours onto 4-track tape... I shared a flat with the bass player and the keyboard player. They had both been in bands before...* [the keyboard player] *was very open. He liked a lot of the music that I liked... like Throbbing Gristle... all three of us were on the same wavelength."*

Sarah explains that her musical method at that time revolved completely around concepts of experimentation, as she abhorred conventional song forms: "*I got into things like building parabolic receivers... and we got into tape loops... you could splice* [cassette] *tape with a kit from Woolworths. I made some interesting loops. I liked the glitches when they looped... it was like a rhythm... I also had a contact microphone on my violin, which I stuck on a cymbal.* [the keyboard player] *recorded it and put it through his Roland Space Echo* [a tape echo effect] *and Dimension D* [a stereo chorus effect]*, and I put some chanting vocals on it."*

I ask her to tell me about her experiences of playing live before an audience: *"It was the eighties... a summer community festival... My second gig was in an old East End pub... we started playing, and I* [spontaneously] *started singing, which I really enjoyed... everybody loved it, they were all dancing... At the end the landlord turned up and asked*

how much money we'd taken... we hadn't realised, and let everyone in for free... I said I'd sort it out, so he went off. We got in the bus and ran away."

She offers me more tea, but I volunteer. I ask her to continue talking. She describes how she, and a group of musicians she knew, moved into a large house together. Around this time they also managed to get some free studio time: *"I spent a day or two learning to use the equipment... I leaned mic-ing and stuff... the studio guy hit on me, so I walked away from it. The band fell apart shortly afterwards... After a while I got a job, and met* [ex-boyfriend]*... Around then I played a gig with Ozric Tentacles at the 100 Club... I moved into* [ex-boyfriend's] *squat at that point, went to university to get my degree and then got a job, but really didn't play any music for years."*

I ask Sarah why this was, and she describes the period as being interesting musically; her boyfriend was into music and made mix-tapes of the newly emerging dance music from the radio, but he had a tendency of driving people away, including potential musical collaborators. After several years the relationship ended, and Sarah's interest in making music was rekindled: *"After I split up with* [ex-boyfriend] *I was on my own for a few months... I started hanging out with a band I knew, one of whom became my current boyfriend... He moved into my flat in 1995 and had some music gear, an 8-track reel-to-reel and a desk, but that had to go as his ex-band jointly owned it, so in 1996 I bought a PC to use for music... I started using a piece of software called 'Making Waves' for composition using samples, and we used Cubase* [a MIDI sequencer] *as well... I wanted to write more experimental music, though a lot of things came out more song-like than I intended... I like to create all of my own samples from scratch... I still use a lot of loops, like with the tape splicing I'd done before. I started playing violin a lot more again as it's my main instrument, and became the vocalist... It was very liberating."*

After becoming re-involved with music making, this time utilising digital technologies,

Sarah's band released several singles and albums over the next few years, largely using the internet to promote and distribute the music, but had not been inclined to perform live, largely at the beheet of her co-founder. I ask Sarah to describe how she moved back into live music performance: *"I joined a friends band in 2006 after hearing it on* [radio station]*... it was mad classical / progressive stuff... I got in touch with him via his website and he asked me to play violin on a short UK tour... I got an electric violin to do this, which also drove my own band into playing live, because I could try that in this other band and then bring it back to* [band]*... playing in the other band was really like being in a different avatar... it was really complex material... I did a pretty good job... Eventually it all fell apart, but it was mostly quite fun."*

With her appetite for live performance whetted, and her fellow band members playing along, I ask Sarah to describe how she came to find Second Life, and how her performance practice in the virtual environment began: *"I met* [SL friend] *through this other band... he was in the audience for a gig and was already performing in SL... my own band was starting to rehearse for some live shows at this point and I quickly realised that we should look into Second Life...* [SL friend] *was keen to help us... our first gig* [in December 2006] *was on his SL land... we got in and learned the basics, though it was all a bit strange... it seemed to be mostly porn and gambling... it was like the seediest part of the web. I saw the potential but then ran away for 3 months to mull it all over."*

And how did she envision her band operating specifically in Second Life? Sarah tells me that the band have plans in place for other kinds of event, such as game-based activities and highly abstract virtual performance installations, but to date the focus has been on the simulation of live performance. They try to enhance this by utilising the facilities that SL provides (such as like lighting, video streaming and particle features) but, essentially, the SL shows are not unlike their real-world gigs. In terms of the simulation of the band, they

each have an avatar, and their shows consist of three people/avatars on most occasions, but they have played with two and four members. Beyond avatars, they utilise bespoke animations that are choreographed to simulate live playing. They often use a video backdrop (which uses the same content that they use in RL shows). I ask her how they began to get on top of this act of simulation: *"We'd always thought of our band as 'multimedia', which sounds naff now, but in the early days it was an expression of what we wanted to do... something more than music... Years before I'd drawn some cartoon versions of us as a virtual band... this was way before The Gorillaz or Second Life, and* [in 2001 – 2002] *I'd been back to College and done an MA in digital animation... I'd had a go at 3D modelling during this, so I'd had some exposure to 3D worlds before SL... We'd thought about making a virtual 3D CGI version of* [band] *while I was at College, but that involved a lot of work... getting them just to walk is hard, let alone play instruments... you really need a whole team of people... Second Life was much more manageable... the avatars are there... you can make clothes, like playing with dolls... I hated dolls as a child, I was a tomboy... I laughed when I realised I was dressing-up the avatars like they were dolls... Working with prims also seemed much easier than 3D mesh modelling."*

Given her MA in animation I ask Sarah if this aspect was particularly appealing to her. She responds, saying that she appreciates the limitations place on the animator by Second Life. *"You're forced to work in a much more cut-down, essential way... most SL animations are too beautiful and too tailored; they're clichés... we saw it as a creative tool, an opening to make this virtual band we'd thought about years before, and we had all of the skills...* [boyfriend] *knew coding... We thought, 'we can play live here'."*

We talk about the specifics of the first SL gig. Her SL friend helped a great deal, both with encouragement and with practical assistance. *"He made me a violin, just like my actual one... then I had to animate the avatars... I tried Poser* [a 3D animation application] *but I*

hate everything about it... I found Avimator, which is free, and started using that... I made some clothes and we were all set to go... we started with the two of us for the first show, but then dragged our double-bassist/keyboard player in for our next series of gigs two months later [in early 2007]. B*y then we had made many more animations and built a proper stage set. It was much more complex, and we got a friend to run the animations for us."*

I'm aware that Sarah's band has their own venue, a bespoke build made especially for them, and I ask her about that. Did they build it themselves? *"No... I recognised what I wanted and knew there was no way on Earth I could built it, especially with an economical use of prims... texturing it would have taken me about a year.. we knew* [SL builder] *already and knew he was prepared to build something for us... it was obvious really... we just had to find the right thing... we set up a line of communication. I had quite an in-depth collaboration with* [SL builder]*, though he was doing all the work really, but I was sending him stuff... it was a client-architect relationship... it was really good... he produced something really amazing."*

Knowing that this venue is a copy of something that exists in the real-world, though not specifically a music venue, I ask her to explain this; is reality the trigger for their SL aesthetic? *"The real world performances were the starting point for our SL gigs... we're quite strict about the portrayal... the music is the most important thing and we want to show people what we're doing... we're a real band in SL... most other people are duos or solo performers... many are miming their avatars to other peoples music or are playing covers... we are a genuinely self-built band, though we get help from others when we need to... often they can do things much faster than us, like with complicated builds... The equipment is accurate... our instruments are, to a degree, copies of our real ones... we make effects pedals that we actually own... it's like when you're on stage... if you have a*

load of pedals it says something to people... it says OK, there's a kind of retro thing here, maybe a Sonic Youth thing here... even a Grateful Dead thing with their effects the size of houses. It's got a lineage and a musical history, and you're making a statement that relates to the music that you're playing. Nowadays, people recognise the tools that you make music with and make certain associations, in the same way that people hear a guitar riff and know the context of that, or what you're influenced by. It speaks as much as the music about what the sounds are that you're making."

Turning to the question of the band's avatars, and given what she has told me about the D.I.Y approach they take, I ask her how she goes about creating their in-world appearance and persona: *"I sometimes question how we present ourselves and try to think differently about it, especially in terms of of more abstract entities and how we'd interact with each other... our avatars are very much individually programmed... we are thinking about re-expressing ourselves subtly... I'd like to control how my band looks in real life, but I work with* [band members] *who are obstinate and opposed to that* [she smiles]*... in SL the whole visual thing is part of the whole... we design each gig... where are we played, what are we playing. The avatar skins are a crucial part of that, and I've started making those too... commercial skins are too like fashion models or something... they're too real, but they're not real. They're too perfect... we wanted to be slight misfits... square pegs in round holes... it's more interesting to be like David Bowie... a bit alien... it's like punk in its D.I.Y ethos... you're making the best of a limitation, and not trying too hard to be perfect... Musicians are entities. It's not just about music... live performance has always had a visual element and it's quite important that it works."*

And her own avatar? *"I am kind of 'meta' myself, but that's my avatar – not me... it's both.. it's my representation... I think 'I have to look cool' not '*[avatar] *has to look cool'...* [avatar] *is an entity that's not there when I shut SL... I don't have 'alts'* [alternative SL accounts

with associated avatars]*, but I login sometimes as the other band members... when I do that I'm very aware that I'm in the wrong body, I'm just not comfortable because it's not me... my avatar has taken on a life of her own... it's like having an alter-ego in a band, I don't think it's any different... you're not really yourself when performing... a good performance almost demands that you go beyond yourself in that way, so for me* [avatar] *is an entity unto herself... I don't see through my avatars eyes.. it doesn't matter how* [avatar] *sees the band, it's more important how others see the band... it's all a relationship... like, how the audience looks and how the band looks, like what we're all wearing... I'm always so busy when I'm in SL, I'm quite anti-social... maybe it helps create a mystique."*

I decide to wrap up the interview as it's getting late. I ask Sarah to sum up, if she can, why she and her fellow band members choose to continue playing in Second Life after more than six years. Is the venture profitable, or is it more for creative reasons? *"I always want to do more music than I can.. my job dominates a lot of time... it earns me money, and is a more fixed pathway... being in a band is not like that... having starved a few times I didn't want to do it again... it wasn't particularly romantic...* [SL is] *not a fantasy because you get real money and real people listening to you... it exists... even if it's only self-sustaining, that's better than the real world, where we can't sustain it without putting extra money in, not with the congestion charge, the van hire, the promotion, the abominable P.A systems... We have our controlled, studio environment and yet we can make live music and express ourselves visually, like in real life, but with extra bits we could never afford in real life... that's the art. It still hinges around the music. Without that, there's nothing."*

3.1.3: Steve

I meet Steve in a pub near to one of my old stomping grounds; he works in the media

industry in the city as a video editor, so I suggest a place I know. I arrive first, but Steve appears a few minutes later. I fetch beverages and snacks and we settle into a booth. The establishment is loud, with intrusive background music and shouting city-types everywhere and I pray that my audio recorder will be able to deal with it; after a few tests it seems to be coping.

Steve is the bass player in what I shall refer to as a Geographically Remote Musical Group, or a GRMG, with members located in Europe, the UK and the USA . Their performances are entirely mediated by technology; a loop-based, collaborative music tool called Ninjam. Steve hasn't met the other band members face-to-face, but plans to do so are afoot: *"I would like to meet them, but I don't know if it'll ruin it".* I have seen Steve's band several times over the years and, as it turns out, he has seen mine a few times too. He says: *"It's good to talk to someone who knows what I'm going on about."*

Steve started playing bass in the early 80's, aged 15. He can't read music, largely because he has dyslexia, so learned to play by ear. In 1982 Steve bought a Fender Precision when he started working full-time, and got involved in local bands around 1985, making videos for them and acting as a bass roadie. He later joined one of these bands when the bassist left. This split-up after 2 years (due to 'musical differences'), and by 1990 Steve had become a junior TV editor. He had no creative energy left for music, though he still practised at home: *"I got into electro type stuff... Maybe that's why I didn't play much music then. I didn't have enough gear to do that kind of thing".* Around 2005 he formed a band with work colleagues, frequently rehearsing and playing a couple of 'work-do' gigs, though this split up as people left the company.

In 2007 he entered Second Life at the request of his boss. He was asked to investigate the business opportunities for the media company he worked for; mainly he discovered

the SL music scene. He comments on this: *"There's a lot of one man or woman with a guitar... they don't do originals. I don't think there's a huge market for originals in Second Life".* Steve has strong technical skills, including software coding, so SL held no fears for him and he found it quite easy to become acclimatised. At the time he was going through a divorce and he comments that this may have partially driven his use, which was largely as a social tool at first: *"What I liked about SL was you could find what you wanted to be... it doesn't solve real problems... some people spend all day or all night on it, and it's not good for people... they can get obsessed with it... I did that a bit during my divorce."*

Steve attended a lot of virtual music shows as an audience member, and had seen his future-band play several times. One day, when they discovered he played bass, they asked him to join: *"I wasn't sure why they'd asked me, but I decided I'd give it a go".* After downloading Ninjam he was quickly up and running.

Steve tells me about the early days of his SL music practice in 2007-2008, when 'the shopping mall culture' (as he describes it) was prevalent. Large stores would be set-up with a token venue thrown in at the back of the plot. The music would function to attract people into the malls to buy virtual goods. Most people assumed no live playing was happening, and that the avatars were miming to recordings, so Steve's band ran live video streams to prove that this was not the case, seeking to authentic the liveness of their shows.

According to Steve those early years of Second Life and it's music scene offered opportunities for making money that have largely disappeared: *"[In] 2007-2008 the money stopped... my first year in SL, during the first 9 months of playing we made 5000 real* [US] *dollars... other people, playing 6 gigs a night, were making a living at it... we're lucky to make L$2000* [approx. $8 US] *a gig nowadays... the scene kind of fell apart... when the*

money went it got a bit weird... the culture of payment changed... we needed a musicians union or something". I ask him why he continues to play in SL if this is the case. He responds: *"You don't go into SL to make money now. I just do it to play and yes, it's nice when you get new audiences or whatever... I can just play, no lugging gear about or whatever...* [SL performer] *has back problems and can't play real gigs, but he could make a bit of money playing."*

The discussion turns to the nature of his performance practice. I ask him to explain what it's like playing a song with geographically remote band members. He tells me that it creates a certain abstract kind of playing experience, as nobody hears quite the same thing: *"The streams are in sync, but not in time."*

Talk turns to the other band members: *"*[the singer] *is also an artist... she does oil-on-canvas... I'm going to do album covers for each song... I made 20-odd art covers that I put in a scripted box at the back of the stage when we play".* He shows some examples of her work he has on his 'phone; some of them are very good and I say so. He continues: *"*[the guitarist] *had only been playing a couple of years before* [the SL band]*, and that's given him the confidence to play in real bands... I have developed an unspoken technique between me and* [the guitarist] *of building things up... I'll start, and he's intuitive to know what I'm doing... without ever speaking to him."*

I ask him about the use of other online forms; it turns out that they not only use Facebook and Twitter extensively, but also have multiple websites: *"There's a German website, and I have a website. At one point* [the singer] *had dot com, I had dot co dot uk, and* [the guitarist] *had dot de... The website has an embedded audio stream... it's useful when the sim* [region] *breaks."*

I pause the recorder and head to the bar; we require more sustenance. When I return I ask Steve about performing in Second Life; what does it have that real life performances don't? *"For the artist, SL gives you immediate feedback... you can get to know the audience and build a rapport... it's much more symbiotic* [than MySpace] *between the listener and the artist... People like to communicate with the artist... I can message you with a request and 10 minutes later you might play it... if you were playing in a pub you couldn't hear anything. In SL you can 'hear' what the people in the back are talking about. The whole joining in, the whole interaction. It never became what we thought we could do with it, the whole music scene, but I think it was very important for the audience to have that rapport with the artist, and you got to know them... You could 'friend' people really easily, and through tipping... you got noticed more if you tipped more."*

It's getting late and I don't want to take up the entire evening, so I wrap up the interview and we head for the tube. As we walk Steve tells about the array of musical equipment he owns, including fourteen bass guitars, and the various equipment forums he moderates: he comes across as a true enthusiast: *"SL gives me the opportunity to flick a switch, plug my bass in, and keep playing... Any money I make in SL I give to charity... I've put too much work into it to give it up, and I make enough money doing what I do... I'm doing music for the love of it."*

3.2: Virtual Informants

My other informants, both performers and attendees, were mainly survey respondents. Follow up conversations occurred in six instances; three with musicians and three with audience members. The following section details some of the key points that arose.

3.2.1: Conversations with Performers

When talking to performers, I was interested in the parallels between their actual practice and the methods they utilise when playing in SL. I asked all of my informants if their SL performances attempted to mimic their real world practice in any way, and received a broadly affirmative response; one informant stated that *"[t]here's very little difference between my RL and SL lives. The guitar I play in RL has been customized to be identical to the one in SL".* This is an interesting response, as it would seem easier to customise the SL guitar, but nevertheless a confirmation that SL and RL practices are closely related, at least in visual terms. Another informant insisted that *"[m]y RL set-up is instrumental acoustic guitar with the necessary amplification played sitting down. In SL it's just an attached guitar and a playing animation played standing up - so no not really, it doesn't attempt to mimic RL that much".* In this case then the SL version is of a similar configuration (i.e. acoustic guitar), but is not an attempt at an accurate rendition. From further discussions it became evident that this was the result of time and investment constraints, and a more realistic replication of his RL set-up would be his choice if the option were easily available.

One musician with a much more complex set-up told me about how he used the design elements of his SL equipment to reinforce the liveness of his practice: *"In the 'real world' I perform using several instruments and a looper, which allows me to record elements of songs on the fly and loop them. This is done 100% live each time and no elements are pre-recorded. That's something that I want the audience know, so they don't think they're*

hearing merely a backing track that I had waiting on my iPod. Consequently I have created a 'stage' that I bring with me to all shows that mimics my real world set-up."

Finally, an SL performer who had acquired a real world equipment endorsement had to ensure that his virtual instruments were true to the originals: *"I am endorsed by* [brand name] *guitars in RL... so my SL guitar is a replica of my RL gear."*

I asked all of my musician-informants to explain why they played in Second Life, and what they particularly liked or disliked about the platform. Largely it seemed to be a matter of convenience and promotion, though some also spoke of an atmosphere that seems unique to virtual performance; one person told me that *"it's much more intimate than RL, much more. The difficulties in setting up the technical requirements are annoying... but it's still a remarkable way to send your music live around the world."*

The straightforward logistics of SL shows, along with the global reach, appealed to many: *"I gig in SL to earn money... I like it, because it eliminates the RL gig logistics of travel & moving gear. Also, I play to people all over the world, and I can play my original material to an accepting audience"*. The notion of worldwide ubiquity was disputed by one informant though: *"In reality Second Life is not truly global. It has a large bias towards the Eastern and Central US time zones... Those who don't speak English that well are less likely to integrate with the range of live music and musicians or only support one musician that does speak their language."*

The creative aspects of SL performance are a major incentive for many performers, such as my informants Robert and Sarah. In some cases this is about the whole show, such as the informant who said *"I can experiment with the visual presentation".* In other cases, it is about the presentation of the music: *"As a lyricist, I like the fact that in SL your audience*

are all listening separately, a lot of them with headphones. In RL I seldom have people talk to me about lyrics after a show but in SL it is an ordinary experience."

One informant told me how SL had helped him to overcome serious obstacles and enabled his performance practice: *"I'm disabled and require a lot of equipment to perform. It is much more convenient to not have to move my musical equipment".* Others felt that SL provides a good training ground for the budding live performer: *"SL is a very free and low pressure place to develop, practice and have an international audience."*

There are, apparently, some downsides to performing in this way. One musician felt that something was missing: *"I cannot see and hear the audience for real".* Another told me that just utilising Second Life can be an issue in itself: *"The downside is that it's hard to get people to log into SL to attend my shows. SL has a very bad negative image problem."*

3.2.2: Conversations with Attendees

In the case of the audience members, I was interested in their RL gig attendance behaviour, as well as obtaining opinions about SL live music. I asked all of my informants why they attend SL shows and what they liked or disliked about them. I received a variety of responses, typical ones including the ability to control the volume, the ability to leave and return at any time, and the relatively low cost, even if tips are given. Some referred to the quality of the performers and the atmosphere at events; one person stated that: *"[s]ome of the musicians are flat out amazing. The performances are usually interesting and there is a strong sense of connection between the performer and the audience. It feels very personal."*

Different qualities led other residents to music shows: *"I like the social aspect and the*

chance to discover new music", I was told by one informant. Another stated that the main reason he liked SL events was because he enjoyed listening to live music from the comfort of his own home. Some attendees utilise the time they are dancing at events to converse with others. An informant told me that preferred SL shows to real-world music events because *"[i]t's easy to have textual conversations with other attendees, or in private messages. It doesn't distract others, it doesn't drown out the music, it isn't disrespectful, and it helps the collaborative experience."*

I then asked about RL live music events. Around a third answered that they don't attend them, largely for reasons of cost and inconvenience. Almost everybody I spoke to disliked the expense, one informant saying that *"I don't* [attend live shows in RL] *because there are very few to be had in my area, and they are expensive".* Another typical response was *"too much noise, cost too much, I hate standing in lines."*

The reasons people gave for attending RL shows were generally similar. One informant stated: *"I just enjoy the live music experience and the interaction of the performers with the audience that you don't get in recorded music"*. Another had similar feelings: *"I love music and live music is always more exciting, there is a kind of emotional stream between the performer and his audience."*

The 'liveness' of the event was noted several times, one person telling me that *"[t]here's an immediacy to hearing music live, to knowing that what you hear is being produced and amplified by the artists themselves, right in front of you"*. Another had similar feelings: *"These I go to more because they are an experience. Yes, good music is a positive, but it's the overall sensation that you simply cannot get from recordings or computers. There's a crowd, a living, breathing organism that reacts to the performer. Put simply, it's more."*

Almost everyone indicated that they consider SL live music to be a fundamentally different type of experience, one stating it quite clearly: *"Of course RL attendance is an entirely different and much more real thing... neither RL or SL experiences can replace the other. I love both."*

3.3: The Creation and Use of Virtual Space

The majority of music venues that I visited during this research were generic facsimiles of small- or medium-sized clubs, the most common type of SL venue. I have however, in the past, attended events in very different places; massive science fiction sculptures, for example, or shows played on derelict military hardware. My opinion is that the type and design of venue has a profound effect on the atmosphere of a performance.

This interest in the effect of spaces in SL led to a discussion with an informant, David, who is not only an experienced builder in Second Life but is also an architect in daily life. I first asked him how, as an architectural exercise, does Second Life differ from Real Life?
"The most obvious difference is freedom from the limitations imposed by physical reality... gravity... bathrooms... plumbing and heating and cooling... structure... SL architecture can be RL realistic, fanciful, futuristic, primitive, generic, abstract, or surreal. It really is up to the imagination of the designer as well as what limitations they set upon themselves."

Surely though, there are new types of limitation? What are these?
"*The biggest limitation created by SL and the one architectural designers will always have to contend with is Prim Count limit for a parcel of land...* [SL] *also differs in how you experience the space due to avatar size and camera position. Avatar size can influence the scale of doorways and structures... or vice versa since many avatars are scaled to unrealistic proportions in terms of height. A building built to RL scale might be unusable to*

an avatar unless they alter their size to suit the build. Camera position... informs how you move through a space... Moving your camera into first-person view will also alter your experience."

So he feels that space has to be treated differently in the virtual environment?
"SL provides many possibilities for creating spaces that can be experienced in new ways... even just by flying your avatar. However I've often found my favourite RL architects to be the ones who were confronted with the challenges of many limitations to their design... and they found a way to use those limitations to their advantage to create a great building with great spaces. Sometimes, I'll assign or create my own limitations as a challenge... Sometimes, despite the differences, users will still use spaces just as they would in RL. The saying goes 'Dots attract dots' and it's true [referring to the 'dots' on the in-world map that indicate the presence of avatars]*. We're often drawn to spaces that appear to be active while not lingering in empty or lifeless places... And last... just like in RL... 'If you build it, they will come' doesn't usually work. 'If you build it and use it and show other people how to use it... then they might come.' Interactive space (between the user and the build) is key and so is interaction (between avatars)."*

Finally, I asked David to consider the differences between designing an actual music venue, and designing one in Second Life. I asked him what the most important considerations would be for him if he was designing and building a music venue in RL:
"Acoustics (natural), acoustics (amplified), sight lines, lighting, fire suppression, protection, and emergency exits."

And a music venue in SL?
"1. Create a 'presence' for the performer. This may be a literal or figurative 'stage'. Something that distinguishes the performers from the audience.

2. Create a space with interactive elements for the audience: a space for avatars to dance... locations for avatars to sit and listen... interactive elements possibly... all of it supporting the performer(s).

3. Is it meant to portray a realistic RL type of music venue (like a pub or a theatre) or not?

4. Establish if it will portray a certain theme or concept or style.

5. Prim count (keep enough free prims for performer props) and Particles (be mindful of particle effect emitters... these can sometimes inflict client-side lag).”

The design of venues was a topic I also broached with several audience members, and I asked them what they thought the important factors were. Many referred to lag (the slow-down that occurs when a location has too many scripts running, or objects. It can also be caused by a surfeit of avatars). They proposed that venues should be constructed, primarily, to minimise lag and other factors were secondary.

Other informants considered venue design to be irrelevant, one telling me that, in her experience, *“most of the time, the people and venue fail to appear completely with a popular act... what matters is the music”.* This was echoed by another, who stated that *“I can move my camera viewpoint as I wish, so seating is irrelevant. Venue design may add interest, but is not an important factor.”*

A final group saw the design of the environment to be an important part of the show as a whole. An experienced SL builder told me that *“you want a venue that is attractive and which will enhance the overall experience and in a style that is in keeping with the type of music that is featured”*, while a regular show attendee considered the size of the venue to be of importance: *“I do not like small buildings or bright textures. The venue has to be spacious and give room to the audience for dancing and walking around”*. The creative potential of SL as an environment appealed to several of the audience members I

discussed venue design with, one particular person saying that *"[s]ome of my favourite venues are things that would not appear to be performance areas at all."*

3.4: Musical Activity within Second Life

According to my findings, musical events form the majority of activity within SL. I limited my searches to the official events listings, and noted the numbers of events by category over a 3 week period. This data (available in the appendix) shows that, out of 11 categories, 'Live Music' accounts for over 24% of the listings total, with over 600 events in this category during the fieldwork period. The other major music category, 'Nightlife and Entertainment' which includes dance clubs and DJs, accounts for just over 25%. Between them, these predominantly musical categories account for nearly half of all officially listed events.

There are some common operational methods that almost all of the musical performers in Second life share. Publicising shows, for example, is usually done through multiple in-world and online channels. Common methods in SL include notices to groups (a mechanism by which notices and live messages can be sent to opted-in residents), the use of the official events listings, and the placement of posters, or other display objects, in prominent virtual locations. Online methods include Facebook, Twitter, web pages, forums (such as the official Linden forums), email lists, and various web-based publications, such M3 (Matters of Music) Magazine[11].

Much of the live music in SL seems to revolve around the 'single-musician playing covers' model. To explore this perception, I attended 20 SL shows during June 2012. I noted the configurations of bands (where applicable), and the types of material being played. I also noted the frequency and size of tips (to both the performer and the venue). Of those 20

shows, 10 were selected at random from the official, in-world events listings; the others events were selected by responding to group notices and announcements sent directly by performers. This data is available in the appendix.

The official Second Life ninth birthday celebration (SL9B) took place during this research (between June 18th and June 24th), and the total number of music events during this period numbered 415, ranging between 40 and 73 per day. Based on observation, audience numbers tended to be around 30 per event at SL9B (which is held on specially allocated land, provided by Linden Lab, and is heavily promoted by the company); this is significantly higher than the numbers observed at the regular shows I attended, which tended to be between 5 and 20 attendees.

Chapter 4: Analysis

4.1: The SL Music Community

In *Technology as Cultural Instrument*, Ihde (1993) posits that 'technologies in ensemble are probably more like cultures than like tools' (1993: 42). The technical ensemble that comprises the system necessary for virtual performance is complex enough to bring forth a variety of practices and, via social activity based around these practices, renders if not musical cultures, then music scenes within SL.

Initially optimistic when I first discovered them, these scenes were largely instigated with a utopian back-beat; they were presented to me (by various promoters) as the saviours of a failing industry, much as the web was presented in the late 1990s. The main limitation of Second Life however, that of audience size, kept major league artists away with a few exceptions, such as Suzanne Vega and Duran Duran, described by Guest (2007: 222); the economics do not stack up for big record companies. Instead, a burgeoning milieu of amateur and new performers arose, some of whom (I was told by informants) started to play full time and made hundreds of US$ dollars per week. In some instances, record labels signed virtual musicians[12].

As mentioned by my informant Steve, much of the money left SL in 2007-2008 for a variety of reasons[13]. When this happened, much of the SL music community infrastructure disappeared. The audiences, though they had provided the musicians with tips and sales, had never paid for the land where the events occurred, or the time that they took to stage. A model of commerce more closely related to renaissance-style patronage had initially taken hold, with a select few individuals providing the resources and seeking to promote the platform as a business model for live music. These individuals effectively became the

portals through which external agents could access the SL music community and, as a result, tried to shape the community to fit this remit. Hollingsworth (1994) writes of renaissance patrons, claiming that '[f]ifteenth century patrons were not passive connoisseurs: they were active consumers... it was the patron, not the artist, who was seen by his contemporaries as the creator of the project' (1994: 1). This seemed, to my eye, to also be the case for music in SL; a new music industry, very much modelled on the old, had come into being.

After the worldwide credit crunch many of these 'patrons' withdrew from SL, if not entirely then financially, and venues and islands closed down. Post-2008, musicians who could previously charge a fee played for tips alone. Since then, to compound the problem, audience tips have also become less generous; many informants tell me that they now make around 20% of their previous revenues. These factors help to define the current shape of SL music, as in the Jazz scene in Ohio, described by Berger (1999) when he writes: 'In Akron jazz, fragmented meanings and fragile patterns of practice were the touchstones... the disappearing venues, and the dwindling audiences all made Akron's jazz scene a tenuous coalition rather than a robust musical community' (1999: 113). The virtual music *industry*, unlike SL musical *practice*, has failed. Second Life, though heavily hyped as the next big commercial platform[14], has proven to be less a place for commerce and more a space for creativity.

4.2: Virtual Performance and Liveness

During my time in Second Life as an attendee and performer, and through the conversations and discussions I have had with my informants, two main threads of musical practice have revealed themselves. Genre and ability notwithstanding, there is a definite collection of performers who are essentially amateurs; virtual performance is all

that they have done. Another group, largely composed of more experienced, performing musicians, have moved into SL performance to supplement their existing practice, though some have found that it has supplanted 'real' live gigs.

The vast majority of performers that I have seen or spoken to in Second Life, from either camp, have been attempting to simulate their actual live performance in some way when they play in SL. This can be achieved via the creation of accurate music equipment or by modelling other aspects of the show, such as the motion of the musicians or the content of the stage or backdrop. Note- or beat- accurate motion synchronisation is essentially impossible (due to the indeterminate nature of SL 'lag'), so all simulated performance motion is just that: a simulation. Only a cursory similarity to the gestures and movements actually being made by the performer is possible. Sarah's band, who utilise extensive audio samples and SL animations, signify the nature of this movement simulation more strongly than most in their song-based practice; animations are triggered to match musical events rather than the details of fine movements. The music is not closely followed by the avatars, but rather is matched on an informal 'scale of dynamics' for each performance action. The 'choreography', in other words, is defined by the impression that each musical section is designed to create. During improvisation, which accounts for roughly half of their Second Life shows, Sarah and her fellow band members are forced to resort to periodically changing, looping animations that are unrelated to the musical output.

With virtual live music performance, the holistic experience of the event is only available to the attendee; the temporal inconsistency introduced by the technology present in this architecture renders the concept of liveness differently. Each and every audience member experiences their own *version* of liveness. To illustrate this, consider the basic procedure for streaming audio from a music studio to Second Life:

1) Audio is sent to the encoding computer, which converts it to a streaming format.

2) The encoded stream is sent, via the internet, to a server.

3) The server distributes the audio stream to any listener who requests it.

4) The listeners computer decodes the MP3 stream to enable playback.

Every step listed above introduces some element of delay, ranging from the time taken to encode the audio, to the end-users computer decoding the stream; none of these delays are predictable in more than the coarsest terms. The location of the listener in relation to the server can also have a big impact, as a global audience will receive the audio data at different times to each other. When one also factors in lag, the notion of absolute time becomes moot. It is simply not possible to specify a quanta of time during an SL performance, as each attendee will perceive this quanta as occurring at a different point. The temporal qualities of live performance are also a major consideration when thinking of my informant Steve and his compatriots. Their collaboration server deals with inter-band communication (via text chat to synchronise the endings of songs), and accepts and aggregates multiple audio streams (sent by the client software installed on each musicians computer). It then delivers a mix of the results centred around the concept of a set number of musical measures, or beats, to the audience (complete with time delay), creating a virtual 'when'; a temporal point at which the band 'played' the piece.

The notion of a live, shared experience is modulated in a virtual environment by this indeterminacy, so liveness in virtual performance relies on a contract between the audience and the performer; the musicians will play live and transmit the data, and the members of the audience will believe it is live, largely because it is as live as is possible. To quote Auslander (2011)[1]: *"[D]igital liveness derives neither from the intrinsic properties of virtual entities nor simply from the audience's perceiving them as live. Rather, digital liveness emerges as a specific relation between self and other. The experience of*

liveness results from our conscious act of grasping virtual entities as live in response to the claims they make on us."

Why is this notion of liveness important in virtual performance? The perception of authenticity seems to be the root of the liveness issue in Second Life; several bands and duos who play in SL use their lack of backing tracks and totally 'unassisted' performance as a means to differentiate themselves from the norm within SL music; the lone musician or the 'karaoke' artist. Miller (2012) discusses the perception of musical practice in relation to gaming: 'Guitar Hero and Rock Band gameplay both invoke and apparently threaten some deep-rooted beliefs about authentic musicality, creativity, authorship, and performance. It might take a culture-wide reassessment of human musicality to vouchsafe wide agreement that what players do with music in these games should even count as "musical"' (2012: 86). The same reassessment may be occurring in Second Life, as virtual performance mirrors the repositioning of music that has happened post-*Guitar Hero.*

4.3: Virtual Performance as Artwork

Lunenfeld (2011) describes the computer as 'a dream device, the first media machine that serves as a mode of production, means of distribution, and site of reception. It is the twenty-first century's culture machine' (2011: xiv). For many musicians the new means of distribution enabled by virtual performance is paramount, for others it is creation and reception that drive their practice. During our discussions I put it to my informant Sarah that her aim, from the beginning, has been an integration of music, video and design, and that performance in Second Life is an expansion of this idea. It was in fact an attempt by the band to make a Gestamtkunstwerk; a total work of art, or a symphony for many senses. Performance in Second Life gave the opportunity to expand upon the ideas of multimedia and the total art concept, and could move them into the areas of the 3rd

dimension, and the social. She agreed and described a DVD-launch event which incorporated a specifically designed environment, a multi-screen video installation and bespoke particle effects, all made solely to create an environment for the music. In terms of the avatars, all designed and animated by Sarah, Murray (1997) has a view on the potential of these customisations: 'Even when avatars are crudely drawn or offer a very limited choice of personalization, they can still provide alternative identities that can be energetically employed... Virtual reality technology can offer a new kind of costuming and pageantry' (1997: 113). The avatars become another component in the total artwork, both in terms of the band and the representations utilised by the audience when attending events.

Similarly, as important as the music is to Robert and his SL project, the visual elements take equal precedence. He is a prolific builder and his style mirrors the genre of his music, with many of his stages being vast edifices that wouldn't be out of place on alien worlds. Also notable is his use of Second Life imagery in his production of his albums. Though he has always created his own album artwork, the last few album covers have been based upon SL screen shots of his band of avatars, stage set builds, or virtual landscapes. The possibilities for the creation of the fantasy universe that previously lived through his music alone, have allowed Robert to build the sites that feature in the narratives behind the pieces and, since his music is almost entirely instrumental, makes his overall vision more accessible to others. The entire event, from the adornment of the avatars and the creation of the environment, to the composition of the music and the accompanying live performance, becomes an animated audio/visual representation of Robert's artistic vision.

4.4: Virtual Performance as Collaboration

The unique nature of liveness, described previously, in virtual live music performance also speaks to the notion of audience as collaborator in such endeavours. Though this is an established concept in art (see *1.2.4: Music as Collaboration*), the collaboration between artist and audience is implicit in live performance and is, in my opinion, true in the field of virtual live music performance also. To quote Gértrudix and Gértrudix (2012), 'any user is a potential 'prosumer' and actual consumer, so in the sphere of music he/she becomes a performer... and spectator at the same time' (2012: 180).

A virtual performance event consists of a set of data streams that are aggregated and perceived by a Second Life resident while they are in attendance at a virtual performance venue. An audience member, represented by their avatar (representation) and agent (view), can then experience these combined streams as a coherent simulation of a live music event. No other person will experience exactly the same simulation at the the same time. Differences in graphics settings and hardware, and network speeds, mean that it is actually very unlikely that two audience members will see *exactly* the same thing at all. Given this, the attendees view of a virtual performance, via their agent in SL, will always be unique, and will always be the final step in the act of creation.

Addressing collaboration on a different level, and considering the virtual performance event as an artwork, my informant David's responses during our discussions relating to virtual space illustrate the architectural aspects of this. Physical and acoustic restrictions do not apply in SL; they are superseded by issues of creativity and aesthetic design. He talks of creating 'presence' for the musician, and therefore labels himself as a collaborator in the creation of the performance environment, and thus, the work itself.

4.5: Virtual Performance as Practice

The musical practice that most closely resembles the majority of SL virtual live music performances is that of busking, whose essential characteristics include:

1) Performances in public locations
2) Optional contributions
3) Singular musicians or duos. (*Very* occasionally larger bands)
4) Unaccompanied, or with a pre-recorded backing-track
5) A repertoire that consists, largely, of cover songs

One of the artefacts of busking that has been co-opted most obviously by almost all performers in SL is the tip jar, as well as some of the operational habits that go with this. Whereas the typical guitar-playing busker may use the instrument case (seeded with a handful of loose change), the SL performer will use a scripted object, designed to facilitate Linden dollar payments, often also containing some 'loose change' (in the form of a display of tips-to-date, and often the value of the last contribution) to stimulate the audience to pay up.

My informant Robert was originally a busker, and he noted the parallels himself. The transition from the street to the virtual seems particularly suited to his practice; all of his music, and much of it is extremely rich and complex, is composed and performed by him. He utilises synthesizers and guitars (his main instruments), and constructs his pieces painstakingly using computer-based tools; when Robert *actually* performs live, it is as a solo act. In SL however the 'band' consists of four avatars, two of which take Robert's musical roles of guitarist and keyboard player. The others mimic the 'virtual' musicians of drummer and bass player. Though his configuration is unusual in SL, it was much more so when he played on pavements instead of space craft. Given this, his use of SL as a

performance platform seems more appropriate than the street or tube station. His long experience with various technologies, ranging from hot-wiring synthesizers to building computers, meant he was well equipped to exploit Second Life when he found it and, as a result, his performance practice is enmeshed in the ethnomethodologies of the musician, the computer engineer, and the SL creator.

In the case of Steve's band, it can be said that technology has enabled the phenomena of the Geographically Remote Musical Group (GRMC), since networked musical performance of this type was all but impossible before the advent of the internet. Steve, a technically competent individual, found the transition into SL to be relatively easy and has mastered many aspects of digital audio and computer technology (though he claims that the guitarist is 'the brains' behind it all). He is another indicative example of the musician needing to master additional practices to enable performance.

Sarah's band utilise a very complex technical configuration. They often have three or four avatars on-stage, which require multiple computers, plus they utilise two other machines; one to encode the audio stream, and another to control the show via MIDI (Musical Instrument Digital Interface). The DVD-launch event, described in section 4.3, required over 200 separate MIDI commands which had to be inserted by hand into the control software, and featured an automated video installation; the whole show took over 100 hours to design and test. The virtual performance techniques that Sarah and her fellow band-members practice involve the creation of technology. This is far removed from the practices of most of SL performers, and is more in line with the complex stage and lighting systems utilised by major bands playing in large venues.

Conclusion

Miller and Slater (2000) write that 'a central aspect of understanding the dynamics of mediation is to “disaggregate” the Internet: not to look at a monolithic medium... but rather at a range of practices, software and hardware technologies, modes of representation and interaction that may or may not be interrelated by participants' (2000: 14). This is the stance assumed by this research; it is not a comprehensive survey of Second Life or of SL music, or a critique of this. It is, instead, an attempt to document practices, and examine the virtual live music performance as an artefact and an act of collaboration.

The virtual performer is an artist with a new modality; some embrace the concept of the total artwork, all create in a virtual-where and a fluid-when. Beyond the norms of static SL art-installations, of which there have been many, the live nature of virtual performance grants it this quality: any single moment, though indeterminate, is always unique.

Victor Turner once wrote that '[p]rophets and artists tend to be liminal and marginal people, "edgemen"... In their productions we may catch glimpses of that unused evolutionary potential in mankind which has not yet been externalized and fixed in structure' (1995: 128). Perhaps the 'when and where' of virtual performance happens in this liminal zone; the artefact comes into being, and the participants (the performers, the builders, the audience members) collaborate to produce the experience. Before the final rendering, they stand on the threshold of normal time and perception and await the indeterminate point; the point when the collapse of the data-streams into a definite moment occurs. The process by which it is born, a multi-faceted activity, is the artistic process. This act of solidification, of definition, is the work.

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3) SL client software: http://secondlife.com/support/downloads

4) Lindex Currency Exchange (requires login): https://secondlife.com/my/lindex/market.php

5) *Second Life Bans Gambling Following FBI Investigation* – Tech Crunch. Jul. 25th 2007:

http://techcrunch.com/2007/07/25/second-life-bans-gambling-following-fbi-investigation

6) EdCast software: http://svn.oddsock.org/public/trunk/edcast

7) WinAmp software: http://www.winamp.com

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Appendix: SL Events Data

I.i: Official Events Listings

This data was taken from the official, Linden website events listings (June 7th 2012 – June 30th 2012). http://secondlife.com/community/events/

Category	**Arts**	**Char**	**Com**	**Disc**	**Edu**	**Gam**	**Mus**	**Misc**	**NLE**	**Pag**	**Spo**	**Total**
Events	76	51	243	10	364	88	**605**	377	630	17	30	**2491**
%	3.05	2.05	9.76	0.4	14.61	3.53	**24.29**	15.13	25.29	0.68	1.2	**100**

Category Key:

Arts:	Arts and Culture	**Mus:**	**Live Music**
Char:	Charity/Support Groups	Misc:	Miscellaneous
Com:	Commercial	NLE:	Nightlife/Entertainment
Disc:	Discussion	Pag:	Pageants
Edu:	Education	Spo:	Sports
Gam:	Games/Contests		

I.ii: Events Chosen from Official SL Events Listings

These 10 shows consisted of 70% solo artists and 30% duos. In terms of material, 60% of these acts played covers exclusively, and 40% played a mixture of covers and original material.

#	Attendees	Ticket Price	L$ made	Material	Configuration
1	17	0	1850	Covers	Solo – vocals/acoustic guitar
2	10	0	no info	Covers and originals	Duo – vocals/mandolin
3	15	0	no info	Covers	Solo – vocals/acoustic guitar
4	17	0	2250	Covers	Solo – vocals/backing track
5	5	0	400	Covers	Duo – vocals/acoustic guitar
6	15	0	no info	Covers	Solo – vocals/acoustic guitar
7	16	0	no info	Covers and originals	Solo – vocals/acoustic guitar
8	34*	0	no tip-jar	Covers	Solo – saxophone/backing track
9	14	0	1000	Covers and originals	Duo – vocals/acoustic guitar
10	16	0	no info	Covers and originals	Solo – vocals/acoustic guitar

* This show was part of the official Second Life 9th Birthday celebrations (SL9B), an event which attracts large crowds.

I.iii: Events Selected from Group Notices

These events were selected by responding to group notices and announcements. They featured a slightly different set of characteristics; though still largely solo performers (50%) and duos (30%), 1 act featured 3 musicians, and 1 act featured 4. In terms of the music played, 30% of the performances featured exclusively original material and, in 2 cases, this was improvised.

#	Attendees	Ticket Price	L$ made	Material	Configuration
1	15	0	no info	Covers and original	Solo – vocals/acoustic guitar
2	38**	0	3300	Original	3 piece – vocals/violin/bass/guitar
3	29**	0	4250	Covers and original	Duo – vocals/drums/guitar
4	10	0	2000	Original (improv)	Solo – keys/guitar/electronics
5	21	0	2500	Original (improv)	Duo – keys/guitar/electronics
6	13	0	no info	Covers	Solo – vocals/acoustic guitar
7	14	0	1600	Originals	4 piece – guitar/bass/keys/drums
8	5	0	no info	Covers	Duo – vocals/acoustic guitar
9	12	0	no info	Covers	Solo – vocals/acoustic guitar
10	16	0	no info	Covers and original	Solo – vocals/acoustic guitar

I have seen multi-member bands playing in SL but they seem to be in the minority, largely due to the technical requirements, I suspect. The use of multiple band-members requires the provisioning of avatars for each member. This calls for multiple instances of the Second Life client application to be running which necessitates the use of multiple computers (it is possible to run multiple-clients on a single machine, but to do so requires a high specification).

** These events were part of a three-day music festival, which attracted large crowds.