Brian Lock

Sound production in composition

Perhaps one of the defining characteristics of contemporary classical music composition, from our standpoint, could be the lack of technological intervention. Perhaps it could be that classical music must, or should be entirely acoustic. Just opening a dictionary of 20th-century music, completely arbitrarily on different pages, the first ten composers are; Gorecki, Tavener, Rihm, Lutoslawski, Nyman, Segerstam, Skempton, John Williams, Knussen, Messiaen, not one of them has used technology, in any significant way. Acoustic instruments and the orchestra itself though have been subject to technological intervention, largely in the field of music written for media but also in various types of pop music. In this paper I'm going to explore some of the production techniques used in film, and in some pop music, particularly as applied to 'classical' orchestras and instruments and 'classical' compositional techniques. In the second part, I'm going to explore why the production techniques used in media music seem not to have been imported by classical composers or made any serious impact on the compositional agenda.

So, let's begin this exploration of production techniques applied to acoustic instruments in the writing of film music. It seems to me that perhaps the most immediate and obvious way that production techniques have been applied to classical ensembles and traditional 'classical' acoustic instruments in the realm of film music, has been in the area we would normally call something like orchestration, instrumentation or colour. Firstly, the most obvious technique must be the use of ensembles and instruments that in no way could be presented 'live' in a concert hall. They could not be presented live as the balance and mixture of instruments would not work with certain instruments would be drowned out and so on. A good, and extensively used example of this, is the acoustic guitar playing happily along with a symphony orchestra. Here's an example of that from a cue to a film score that I wrote called *The Land Girls*. If we just look at the score first it's plainly obvious that this could not work at all if played as the concert piece.

[Audio example 1.OST album The Land Girls, *TRACK 6.Transparency of score.]*

Of course, if you are going to have one instrument separate from the others why not have some more, why not create sound worlds from ensembles that would be completely impossible if played live? By impossible, I mean in the sense of going against classical techniques of orchestration concerning balance and blending. Such thinking of course gives rise to highly imaginative instrumental/timberal combinations. There are many hundreds of examples of such music, but, I think the following cue, taken from *American Beauty* by Thomas Newman provides a very clear example.

[Audio example 2. OST album American Beauty, *TRACK 19.]*

Of course, whilst these examples fall under the realm of colour and orchestration and ensemble, technologically they also fall under the areas of separation in recording and /or overdubbing, in other words, these compositional possibilities come directly to us and are enabled by techniques of recording.

Let's just take a look at how a group of instruments is normally recorded to achieve a satisfactory or ‘real life’ balance. An ensemble is most likely to be recorded with microphones near to each set of different timbre generating instruments and some microphones recording the overall ambience, or blend, or room. This combination of microphones creates the best possible scenario for capturing the standard classical balance of a performance. Of course, this system is designed to allow significant intervention on the part of the sound engineer in terms of mixing. For classical recording, the objective is to create the experience of the music as if the listener was experiencing the performance live, in concert. And it is this method of recording that has been exploited to allow the degrees of separation that we have already discussed. It is the exploitation of this into compositional terms that enabled the first of today's examples, my piece with guitar, which was able to be recorded with a degree of separation and therefore not drowned out.

Another important part in the recording system is ‘effects’; it's here that we find things like reverb and delay. Such effects have always been the subject of experimentation by media composers, but in some, the exploitation of effects has become part of the characteristics of their own individual voices. In the next example I would like to play by Zbigniew Preisner, although maintaining a conventional and minimally technologically intervened orchestral balance the resulting recording is processed with a reverb of a time delay and compression that is impossible to find naturally.

[Audio example 3. Zbigniew Preisner, OST album Rouge*, TRACK 9.]*

The next techniques I would like to talk about, I used in a cue for the film *The Gambler*. I wanted, and the film director had asked for, a piece of music full of tension and one which would reflect the push and pull of anguish and addiction in the head of a roulette player. To fulfill this brief I decided to take the orchestra out of its natural ambience and set it into a highly artificial and strange one, thereby evoking the required mood and atmosphere. To further enhance this effect, I decided to process several of the string lines in different ways. Again this creates a highly artificial sound world and one which I hoped would therefore prove distressing. I wanted each of the individual section lines to be separate from each other to enable different processing on each line. So, I made full use of so-called overdubbing techniques. I recorded the bass parts first, then divided cellos into two sections and recorded them separately, then the violas and so on. I think it would be true to say that the orchestration of the piece has significantly parted from what we understand by that traditionally, and what we really have here is a technique of orchestration utilising remixing, cutting, resynthesis, and sampling which took place after the parts had been recorded individually. In other words, orchestrating with sounds rather than representations of them. You will also hear that certain tracks are being manipulated after the recording, while in others, sound manipulation devices and effects, are being used as part of the compositional technique, in this case, obviously, delay. This piece, I think, also provides a good example of compositional technique being merged with techniques that would normally have been the preserve of the producer and also compositional practice being influenced by technology. I say this, because from experience, getting orchestral sections to tune themselves to overdubs can be difficult. If there is any thing that is not quite in tune the next section to overdub will play out of tune against it. This is somewhat like Chinese whispers with each stage becoming more and more removed from the original. Recording these overdubs would

traditionally have been the preserve of the producer, but now that they can be so complicated and time-consuming the composer normally takes this into account in his writing.

[Audio example 4. OST album The Gambler*. Track 3.]*

Much has been made in the literature around recording of the effect of the microphone on the voice. It seems to me though that the influence on instruments has worked in similar ways. In the example you just heard I wanted intimacy and closeness with the instruments to highlight the effect of claustrophobia. By using very close microphone placement we were able to hear musicians scraping and bashing strings close up. These sort of microscope recording processes, zooming in and out, are pretty much standard practice in media in pop music but non-existent in classical. There's no reason at all why such techniques can't be used in classical composition but there are some practical problems. For example, live processing of an instrument like a harp can not be easily achieved as part of the harp will be closer to microphones and other parts further away. One way around this, of course, is to use an electric harp, but that takes us into the world of practical problems of performance.

Media composers, and pop music writers, on the whole even more so, pay huge attention to the creation of the sonic materials that they use. This can take many different forms, most commonly though, significantly manipulating material that the composer may already have, samples and sound files, etc, or making the material from scratch, synthesis and recording. This obviously sets him apart from the purely acoustic composer who specifies, say a clarinet, and then really has no further control over the sound. Furthermore though, and this I believe is the really interesting bit, is that sound manipulation for media composers, and, as I say, even more so for pop writers, is significantly, manipulation of a sound over time. Again to take the example of the clarinet, the only possible parameter that the composer can alter is the dynamic shape, with the inclusion of crescendo and diminuendo marks etc. A film composer, however, will go to no end in manipulating his sound material. It could be something as simple as taking the attack off of the sound envelope.

Let's just listen to an example, from the recent TV series *The Apprentice*, where all the instruments remain obvious in timbre and the music is obviously classically ‘conceived’ but the attacks of some of the sounds have been altered.

[Audio example 5. Music from The Apprentice*.]*

This example illustrates well classical or traditional compositional techniques coupled with technological mediation. In fact though, if this piece went slightly further either way, in terms of classical compositional techniques, or in terms of technological techniques, we would see the piece slip into one or another camp where particular aesthetics of techniques govern. For example, in technologically mediated music, when a sound changes over time a whole new layer of concern and interest is created and this is also brought to bear in the process of composition. These include needing to thin out the material around such manipulations and more generalised effects like the rate of harmonic change needing to be slower. The most important though is probably the movement of the sounds themselves, and composing with their inherent characteristics and qualities. This of course forms no part of acoustic composition at all. And here, I

believe, is one of the essential reasons why there has been so little transfer of ideas between classical type composition and electronically mediated composition. Music in which electronically mediated production techniques have become part of the compositional technique is essentially a largely different way of thinking in and one in which composers who are acoustically based do not have access to.

Of course, live processing and using these techniques for album productions of classical type music is entirely possible. What we have here though, I believe, is a significant cultural construction of what composers understand by composition. It seems to me, that on the whole 'classical' composers view themselves as those who manipulate notes on paper. Film composers, pop composers/writers, see themselves first and foremost as people who manipulate sound. This brings us onto another point, to consider exactly what even a composer is. From my experience, for those who write acoustic music based on paper, where the score is the central object, this seems almost a nonsensical type of question. Of course, it's obvious what a composer is, someone who writes something on paper, has it performed, and then writes something else. Writing, publishing, paper, performance and representational recording are the defining criteria. On the other hand, people creating other sorts of music, particularly those involving electronic mediation, seem to find it much harder to describe who they are. For example, I heard someone say recently "it takes a lot more than just being able to write a tune now to be a composer; you have to get the feel right, the sound right, the vibe and the atmosphere", that was incidentally a composer of music for ads. Such statements, it seems to me, significantly widen out what comes under the auspices and definition of composition as we normally understand it. To get the sound right, the vibe and the atmosphere, would perhaps traditionally have been the realm of the producer or conductor. But, if one is manipulating a sound, through delays and reverb say, and is using that as the basis of compositional material, where does the production stop and the composing start, or was there really any production here in the first place? Even someone working at home with a sequencer and some samples is effectively going to be composing/producing, even if, what they're doing is later taken to a professional production studio.

Let's also look at a couple of examples of where I believe the incorporation of production techniques is a least making some input in music which could largely be described as classical. Possibly the most serious attempts at combining technology and the symphony orchestra in a concert hall setting, is where the technology is used to increase the sonic palette, so that all sounds become usable, as in film or electro-acoustic music. Of course, in film music this has been part of the technique for a long-time and has become the trademark of certain composers. An obvious example is the orchestra synchronised and blended with synth sounds in the scores of Hans Zimmer. Let's just listen to a short example of that.

[Audio example 6. OST album Hans Zimmer, Gladiator*]*

In the concert hall and theatre a successful example is the composer Heiner Goebbels. Let's just hear another short example, from his piece *Surrogate Cities*, where he combines a sampler playing in real-time with an orchestra. Incidentally, I must say that I've heard this piece played live and it sounds substantially different from the CD

recording. The requirement and need for pieces of 'classical' music to be played live is a serious inhibitor to composers introducing advanced production techniques.

[Audio example 7. Heiner Goebbels, Surrogate Cities*.]*

In terms of production, so far, I have concentrated primarily on concepts and techniques of 'sound'. As far as composition is concerned though technology has thrown up more than just paper and pencil as a method of composing. It has, as we have seen, also significantly eradicated the distinction between composition and production. To make a properly balanced assessment we therefore need to also look at equipment and technology aimed primarily at composition, this includes sequencing, drum machines, and music notation packages and so on. The relationship between technology and compositional thought is evidently extremely complex, and that between one form of it, composer, pencil and paper, has been written about from endless perspectives, that between composer and software and compositional techniques and practices less so. Let's just have a look at some of the techniques between composer and sequencer.

Sequencers were originally solely recorders of MIDI information. Even in-putting some basic pattern in MIDI form into a sequencer is already enough though to quickly open up and shatter traditional notions of composition and resulting sound worlds. There are obviously numerous ways in which a piece of MIDI information can be manipulated but perhaps some of the most obvious would be to transpose a MIDI fragment up and down and well outside normal instrumental ranges, the result, if the linked-up samplers could cope with it, would be new, novel sound worlds. The same sort of fragment could be repeated endlessly, at different intervals, played with a piano sample, and the resulting music might be something musically interesting though could never be played live even by a virtuoso pianist. Most important for our purposes though is that the sequencer, like much of music technology, has been based on concepts from multitrack recording. Firstly, this is important in that a composer can experiment with a fragment of sound material with effects, and it's this material combined with this effect as one, that then becomes the primary material for composition. Secondly, the method of composing inherent in multitrack processes is one of layering. It is this that has led to entirely nonrepresentational sound spaces and balances.

Do we really have a distinction here though in terms of notes, written material, whether on paper or in a sequencer? Classical composers may be concerned with hexachords, writing complex rhythmic counterpoints and notation of extended instrumental techniques but many of these techniques, are of course, well dealt with by computers. The problem though, is that sophisticated note patterning techniques are not compatible with real-time manipulation of sound. If we added together contemporary composition and real-time manipulation of sound the result would simply fall outside what we could recognise as meaningful composition. As a result, much sequencer based media music, for example, tends to have very little note patterning involved, what traditional music theorists would term 'development', or what for pen and paper based composers is the stock of their trade. To put it another way, classical music is perceived as having 'movement' and 'development', normally achieved harmonically, and sequencer based music, has very little of this, instead preferring that role to be covered by real-time sound processing. (I should add here that I know that there are many ways of composing with technology and many types of appropriate technology, I have chosen

the sequencer because it is by far the most used and by far the most influential technology.)

I do not believe it is any accident that sequencer generated composition has become the main method by which film and media music is written, and not pen and paper. When I wrote my first film score I was somewhat shocked that the director was describing music to me in terms of feelings. For me, a classically trained musician, such ideas of describing music, using adjectives and talking about atmospheres, had been eradicated. Of course, this is how most people, i.e. non-musicians think about music. For them, it is first and foremost to do with emotions, moods and atmospheres. The techniques of written note interrelationships embodied in classical composition do not score highly on most people's systems of evaluating music. The result is that media and pop music, with all their rhythms, references, strange sound worlds, robotic patterns, nonwestern instruments, nonrepresentational spaces and everything else have come to largely define what most people understand as music. This has left the traditional orchestra, sometimes, as nothing more than a symbol to evoke a sonic past, most obviously as seen/heard in period dramas. So, to conclude this section, it seems to me, we have two extremely important and yet interrelated differences here, between the classical agenda and the media/pop/technological: sound verses written note and the concept of musical movement.

How problematic are these differences though? Well, there would be problems in bringing media and film music compositional production methods to bear on classical music, but it seems to me, on face value, that the results would actually be extremely interesting. As a way to trying to explore this, I thought I would use my new composition, a *Concerto for Clarinet, Microphone, Camera, Two Computers and Small Ensemble* as an example. I'm not going to tell you so much about how I wrote the piece as my experiences surrounding it. The context and challenges involved, I suppose, are all quite obvious really and nothing unexpected, but nevertheless, I believe highlight cultural and institutional priorities that probably will not be easily broken or soon altered. In fact, I would go as far as to say I think we could be working in an interesting period where institutionalisation could perhaps be felt to be assessed as holding back compositional innovation. The most obvious problem with ‘classical’ pieces, with any form of technological intervention is, how are they going to be published? Such music falls distinctly between two publishing phenomenon and traditions, one of which is where the music is encapsulated and exists primarily in the shape of the score on paper, the other, in which the music exists almost entirely as sound and is presented as a CD album. Of course, music combining classical/notated elements and sound could, and should have a score, but in commercial terms it is an extremely hard sell as sequencer files, samples and recordings would also need to be provided. Also, after a first performance who is ever going to play such music again? Glenn Gould may have may have had admirable aspirations towards trying to create perfect performances and leaving it at that, most musicians do not; they need music that is easily playable, does not require extra equipment and lies firmly with in their technical and personal comfort zones. Further, there are difficulties in marketing and promoting such music. Electronic techniques that might be perceived as coming from pop music largely exclude compositions from Radio 3 and Classic FM. In other words, there is very little outlet. Any hint of electronics within the classical world is often quickly and depressingly latched upon. Recently I was reading a review of a middle ranking composer in the Evening

Standard, who has written a piece with electronics to which the reviewer noted “this will ensure that the composer will remain on the fringes of music making activity". It seems to me that 19th-century values really are the criteria by which many even educated musicians evaluate the art form. For example, I have seen musicians when asked to perform with a specific technique, to obtain a particular sound, required because the music would later be processed with effects, burst into tears and later explain "I studied all these years to make a beautiful sound and now you want me to do this, I don't understand it".

This brings me on to the first of my conclusions from this afternoon's paper. Education; situations like the above with the crying violinist, will only be alleviated when music technology, composition and media music studies have become fully integrated and fed down through the music curriculum. At the moment, we have a situation where even educated musicians are not able to deal critically with music that has been technologically intervened and are even more prickly about it when they feel that the intervention is taking place in some sort of music that could in any way be described as ‘classical’. In terms of the academic agenda, I think that the above example of the violinist again provides a possible departure point for rethinking in the field of performance practice, especially in relationship to technology, and I would also contend that whole swathes of critical musicology including multimedia, film music studies and pop music studies would be significantly enhanced and broadened by taking account of the impact and the use of technology on composition. One wonders though, in a period when textural criticism and analysis have the high ground and compositional techniques and creativity the lower, if this situation really can change significantly. Bottom-line, of course, is that the educational construction of music has firmly pushed classical avant-garde composition with it's ideas and definition of musical development/movement and sound-world down one route and pop musicians and media composers down the other. This institutionalisation means there really is little room or place for anyone interested in both. Again, perhaps it's no coincidence that very few film composers or music producers have come through the higher education system in this country or abroad.

To conclude, it's certainly true that we are nowhere near exploring techniques offered by digital technology in classical music composition. Digital technology though, it seems to me, has exactly the same relationship with compositional thinking as other technologies have had. In exactly the same way that twelve note music has been enabled by notation and paper, much of the music I have played today has been enabled by computer software. There are very few composers, if any, who could write music by ear and instinct in a serialist style. We know this from sketch studies, where manuscripts seem to be full of mistakes and revisions. So, in other words, it is the user and technology relationship that shapes composition. Equally, we can see poorly put together music in pop and media where long drones of pre-existing samples and drum loops are used to support otherwise poor musical ideas. Other results of technologically based composition can include: little harmonic development, few countermelodies, virtually no counterpoint, even though composers are using multilayering techniques. This is a difference, in thinking. On paper, a composer is thinking of the way in which the lines come together, on multitrack based systems composers tend to think of each track separately and then go back and alter them in reference to the others, this makes the standard counterpoints difficult to create.

Because of such differences much more critically aware thought for technologically based music needs to be used, particularly in education. The current critical tools are based on notated music and are inappropriate and reinforce prejudices. For example, it seems to me that there is some extremely high quality and imaginative music that is starting to explore the whole area of sound production and classical based composition. This music is found usually in original scores for television, but even more interestingly, in music written for commercial production libraries. This area of course is one which is traditionally ignored as being of little value. It seems to me we are now at a point though where technologically based composition\production techniques and thinking are starting to be, and can be, viability explored within a classical context. The exciting thing is that there are obviously whole new compositional possibilities and sound worlds ahead of us.