

Somewhere Along The Timeline

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A PERSONAL PERSPECTIVE ON THE DEVELOPMENT OF RECORDED SOUND

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The development of any technology involves various stages in the timeline, from early gestation through to periods of stability and then advancing senility, as the original concept appears to become lost among seemingly frivolous and pointless developments. Somewhere along that timeline is a peak, where everything seems to come together and the results are as good as they will ever be.

So where was the peak for the recording and reproduction of audio in the home? Some would say from the late 1950s to the mid 1960s. Certainly, good quality recordings from this era have an immediacy, realism and a touch of magic about them which seems lacking from many modern recordings. But how can this be, given the significant advances in electronics and audio technology made since that time? The answer lies tangled up with a number of factors, some of which are more to do with culture, understanding and attitude, than technology *per se*. For time does not just affect technological development, but society itself. Moments pass, and are forgotten, but capturing those moments was what drove much early audio development. But that original reasoning was overtaken by commercial interest and, some would say, greed and manipulation.

In the early days of recording, the big, green BTR 1 machines from EMI were beautiful pieces of engineering whose very appearance inspired awe. Using them for recording inspired performances by equally inspired musicians, would have been a privilege that only a select few would experience. Those few would equally treasure the beautiful precision engineered microphones at their disposal, and spend time learning how to get the best from them.

Once everything was set up, the recorder would be started, the signal given to the conductor, and the magic of the performance would be captured on the tape, with minimal intervention from additional electronics. Consequently, even the processes involved in cutting a master disc and then stamping copies, did little to mask the magic. As monophonic sound turned to stereophonic sound, some highly skilled sound engineers discovered that Alan Blumlein had been right back in 1929 with his ideas for binaural sound.

With just two microphones, configured as either

a coincident pair or a near coincident pair (plus variations such as the Decca tree), a beautiful, three dimensional soundstage could be captured which provided a very accurate and natural sound image. An orchestra sounded like an orchestra, just as you would have heard it in the concert hall, complete with all of the intricate phase relationships between instruments as they were played, and the natural reverberation of the concert hall itself. If replayed at home through high quality loudspeakers, a very passable illusion of the original event could be captured.

Fast, efficient speakers such as Lowther *Aconstas* or the early Tannoy dual concentric designs, possessed the necessary transient response to help make the whole orchestra sound convincing. Choirs too and, of course, what worked well in the classical field also worked for jazz and other musical forms. All of this could be achieved with relatively low powered valve amplifiers.

Many yearn for the return of those earlier golden days of audio, but alas they can never return, no matter how much money we throw at the idea. We simply cannot recreate the 1950s and 1960s excitement of assembling or even building one's first real high fidelity system and being able to play some of those wonderful early recordings. So what has gone wrong?

Rapid developments occurred in both recording and replay technology, driven by the need for manufacturers to keep the supply chain moving faster and faster. On the recording side, some record labels were not content to create a merely accurate sound; rather they wanted to create an impressive sound, which the upcoming high fidelity enthusiasts could use to demonstrate the salient features of their particular system.

Many engineers felt that they could abandon the purist Blumlein concept of phase-correlated stereo channels and simply place a microphone close to each instrument, if it was a chamber group, or use a spaced array for an orchestra. Thus, mixing desks, which had hitherto been simple items used solely to balance the final sound, became more complex affairs with increasing numbers of channels; from four, to eight, to twelve and so on.

Tape recorder manufacturers soon grasped the potential for creating multi-track machines to match these more complex methods of studio production.

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Four, then eight, then sixteen and, eventually, forty eight or more tracks, the idea being to record a single instrument, or a group of similar instruments, onto separate tracks, and then balance the relative sound level of each instrument afterwards. An artificial stereo impression could be created by panning the signal from each track to either left or right or somewhere in between, thereby creating an artificially panned soundstage, which could then be mixed down to two-track stereo.

The subsequent recordings were labelled as stereo but, of course, they were not stereo as originally theoretically conceived. Nevertheless, this multi-track technique became the norm for both classical and popular recordings and the public bought these 'artificial stereo' records by the million. Another proposed benefit of this approach was that mistakes could be corrected more easily by re-recording a track or any part thereof, without disturbing the rest of the recordings. While this may initially sound appealing, it meant that recordings would start to sound even more artificial, moving further and further from the concept of a live performance.

On the replay side, a big change was heralded by the appearance of the transistor. It allowed higher powered amplifiers to be made available at lower cost, and banished the necessity to configure and maintain a valve amplifier accurately. A few early transistor designs, running in class A, could sound superficially impressive and did offer a subjectively tighter control over low frequencies than valves. However, less expensive models, running in low bias class A/B quickly appeared and started to create a different sort of high fidelity audio market. More accessible perhaps, but also more compromised as regards to sound quality, for many sounding grainy and two-dimensional.

Similarly, less expensive, less well engineered turntables started to appear to support this new market. Open reel tape recorders were eventually joined by the new FM radio as sources, and while loudspeakers became generally smaller and more easily housed, they also became less efficient.

All might have progressed at a steady pace but then a tsunami arrived from Japan. Properly engineered amplifiers and open reel tape recorders were suddenly available at a much lower prices, and the everyman era of high fidelity began. But was it really high fidelity? And if so, fidelity to what? We had impressive sounding recordings, by now heavily manipulated with a plethora of studio processors, high specification amplifiers and other components, but were we enjoying the same quality of illusion of a musical performance in the home? Sometimes

perhaps, if a fine performance on one of the specialist, purist record labels was being played.

Then yet another metamorphosis occurred, as middle range high fidelity equipment virtually disappeared and we were left with either low quality, cheaply made, all in one systems, sold through department stores and mail order catalogues, or hideously expensive, so called, high end audio which, in many cases, was no better than the middle range that it replaced, but was wrapped up in nicer looking boxes and sold at premium prices, often to wealthy celebrities and businessmen who simply wanted to buy expensive products. The industry obliged with amplifiers that cost more than some houses, partnered by similarly priced source components and loudspeakers. Was this high fidelity? And to what objective?

And now, we have another major change, in which the portable audio sector has split into two, like a dividing cell. One half is concerned with relatively low quality, compressed audio files played on smartphones and low cost portable audio players, often *via* rather low quality in-ear earphones. The other half of this dividing cell has evolved in the opposite direction, creating high quality, high priced portable digital audio players that, if partnered with suitable high quality headphones, can play lossless audio files at both CD quality and higher than CD quality, usually referred to simply as hi-res. Is this high fidelity? Well, it can certainly be high quality, but much depends upon the original recording. If the recording, high resolution or otherwise, has been made following the multiple microphone, multiple track, mixed down to two track artificial stereo paradigm, then in my opinion it will certainly not provide high fidelity to the original performance.

So, have we blown the attempt at replay realism completely? Not necessarily. There is hope in the form of specialist record labels who are returning to simple microphone techniques and creating great sounding recordings, using the best of modern, digital equipment. It is also interesting to see the return of a coherent recording technique called ambisonics, albeit primarily for film soundtracks at the moment. However, on the domestic replay side of things, we seem to still be wandering in the wilderness, punctuated by ridiculously highly priced, weird and shiny constructions, and littered with anonymous looking black boxes full of pointless features and controls which I consider has little to do with the reproduction of high quality audio. The seasoned explorer will still find a path through, but he will need all of his experience and hard won skills to do so.

