Sound | Part A

Digital sound is all around us, from the voicemail prompt on your phone to the hip hops latest hit that comes to you via an MP3 player, or streamed to you via a DAB radio or played on your 7.1 surround home theatre system.

There's still people who praise analogue warm sound and play their vinyl records. Surly they've lost the plot?

Both analogue and digital refer to a way of storing information for manipulation and future retrieval. That information is usually either visual, such as photographs, video, handwritten and typed up documents or audio like music, speech, radio broadcasting and so on. Analogue uses the properties of light or electricity to create an imprint of the original, for example a phonographic record. On it sound waves are turned into changes in electricity which are then cut into the vinyl. When this trace or imprint is then turned back into electricity, or mechanical energy it sounds similar or analogous to the original recording.

Sound in particular is a wave moving through the air. Now the air itself doesn't move but the pressure point is moving along, kind of like fans amusing themselves on a stadium by standing up and then sitting down in waves around the pitch. A disk of thin material, called a membrane located in a microphone picks up this wave and its pressure and like a tiny windmill generates changes in voltage that are then picked and amplified electrically. Then, often many miles and years away, this electrical energy is released and sent to speaker cones which move back and forth very quickly, producing the sound we hear. There are other ways to generate and capture sound waves, without microphones – analogue synthesizers use direct changes in voltage to create pretend sound waves that never existed in the first place.

Analogue doesn't analyse the information, it just blindly copies it, usually to a very high degree of fidelity, which is truthfulness to the original, if the quality of media is there. Expensive to run, to make, to modify, analogue recording has 'generational loss', in other words it's like photocopy of a photocopy of a photocopy of a photocopy.

It uses expensive materials: film, paper, chemicals, tape, vinyl, and it has physical limitations it require a lot of storage space like books in a library, it requires a lot of wavelength – digital television can fit 10,000 channels in the space taken up by 600 analogue TV channels, and the same goes for radio