



Brass Instruments

Future Brass Instrument Technology

Trevor

A collection of absolutely brand new Besson brass instruments. I think it's obvious that technological innovation has been at the heart of the story of the development of brass instruments. But it's important to remember that these developments must be seen within a broad historical context and within an equally broad musical aesthetic. It's also essential to remember, that these developments have been aided by three important partners - composers, performers and inventors. But what of the future?

Because it's difficult to think of an invention that has occurred in the last two hundred years that has been as fundamentally important as was the introduction of valves in the 19th century. Now some people may say that we don't need a lot more technological invention because most of the music that we listen to or perform today was written in the past – the music of our own time is the music of all time - but perhaps a new musical sound world beckons and is just around the corner. A sound world that will require new types of music, new types of brass instruments and new technologies to support them. Professor Murray Campbell of the University of Edinburgh doesn't dismiss that as a possibility.

Murray

One of the most interesting possibilities is the development of computer technology. As in the 19th century mechanical invention was the driving force, in the present time of course the driving force is really the incredible increase in the power of computing and that has now got to the stage where it is possible to programme a computer to solve the physical equations which describe the way in which the lips behave and the way in which the lips interact with the air column of a brass instrument in real time. What that means is that you can actually get sound out which corresponds to that particular set of parameters which describe the instrument and you can change one of these parameters - for example the parameter which corresponds to the fingering of the pistons in the trumpet, or the way in which the lips are pressed on the mouthpiece. You can change these parameters and instantaneously or practically instantaneously the computer will respond by changing the sound out put. Now we don't yet fully understand these equations of physics, which describe these things and that's the present goal of our research is to understand them better.

But with that better understanding there's this rather fantastic possibility that a player might be able to have a set of interfaces which might not correspond to a real brass instrument, it could be a keyboard, it could be just waving your hands in the air in front of some sensors, some how or other anyway you could control the parameters of this computerised instrument and the computer would generate the sound. So it's a kind of imaginary instrument but the computer makes it real.