Masters of sound

15/11/2017 Yasuhisa Toyota is the most successful acoustician in the world. Andreas Henke, CEO of the high-end audio company Burmester, met up with him for an experts' discussion about the quest for the perfect sound.

Yasuhisa Toyota is in the Grand Hall of the Elbphilharmonie Hamburg. Its walls, which are made out of a total of over 10,000 sheets of gypsum fibreboard, were designed by Toyota and his team. The individually microshaped depressions are designed to disperse the sound perfectly.

A group of visitors stands on the stage below. From the midst of the group, a woman belts out Leonard Cohen's "Hallelujah". Yasuhisa Toyota, 65, watches the scene from one of the upper echelons of the Elbphilharmonie Hamburg, recording her on his smartphone – because that is exactly what the Japanese designer aspires to achieve with his concert halls! To move and inspire people, to enthuse them for pure music. Toyota has designed the acoustics in some of the most spectacular concert halls in the world, including the Casa da Música in Porto designed by Rem Koolhaas, the Walt Disney Concert Hall in Los Angeles designed by Frank Gehry – and, indeed, his latest work, the "Elphie". It's obvious that this modest man loves music, but that's not the only reason that he and Andreas Henke, CEO of the legendary Burmester audio company, hit it off straight away. The best acoustician in the world and the

head of the first port of call for all things high-end audio had not met before, yet they soon discover that they share many things in common. Toyota explains his elaborate gypsum fibreboard design for the Elbphilharmonie, while Henke talks about his idea of good sound – and how he implements this with his company. It turns into a conversation about the love of music and the eternal, hopeless quest for the perfect sound.

Andreas Henke: Mr Toyota, can you still listen to music while relaxing, without analysing the sound quality?

Yasuhisa Toyota: No, not really.

It's the same for me. The sound in restaurants, for example – it's usually pretty terrible!

I agree. But tell me, you also produce sound systems for cars. Doesn't the engine noise bother you?

That depends on how the engine sounds. (Laughs) But seriously, even at home, very few people have a completely soundproofed music room. Isolated sounds, such as footsteps or doors banging, are much more disruptive than the fairly constant sound of an exhaust system. If you become fully absorbed in the music, your brain can block it out pretty well. And our customers are on the road a lot and often on the phone, therefore they require the best voice quality. Or they just want to be uncontactable for a few minutes and soothe their soul with great music. Some even write to us and say that with so much hustle and bustle going on in the house, they sometimes go into the garage to listen to music. I can imagine that your life is similar: Do you travel by car a lot?

When you live in Los Angeles as I do, it's a necessity. Although I tend to prefer absolute peace and quiet in the car.

True peace is rare in our business anyway. After all, you have shaped the sound of some of the most famous concert halls on this planet. Even if you call Los Angeles home, you must travel a lot...

Too much, if you ask my wife. I always say: My second home is an aeroplane. (Laughs) I'm usually travelling for about half the year. But right now, it is even more extreme. That is, my wife now counts the days when I'm at home. In January, it was just a handful, in February even fewer... Take my trip this month, for example: I am travelling all the time – Paris, Hamburg, Munich, London! Working on projects, talking to architects. There is simply a great demand for good acoustics at present – particularly in Europe.

Europe is, of course, also the home of classical music. I am always shocked how little classical music is still sold. But that means I'm all the more delighted that more and more people are going to concerts. People obviously have a great longing for authentic sound and do not want compressed music that clogs your hearing, tests your nerves and makes you forget how instruments really sound. We were not born for computer music or zero-one processes. Socially, I find it a worrying trend, but it is a strong argument for our very natural and "live" sound — at least that's what we hear time and again. You must

also feel that there is a great desire for the "the real thing" at present, right?

It is certainly the case, nowadays, that much more effort and money is being invested in the business of classical music. And even if the individual projects are not directly related, the one obviously gives wings to the other. We did the Hall in Copenhagen, then in Helsinki, we worked in St. Petersburg… And each project inspires the next, and of course the latest project must always to be grander and more spectacular than the previous.

Do you have a favourite hall?

What a question! Let me just tell you the following story: A few years ago, on January 1, my phone rang. It was Valery Gergiev, the conductor and artistic director of the Russian Mariinsky Theatre. He was with the Latvian conductor Mariss Jansons at the time, and there had probably been some drinking going on. The two had been having a discussion: Gergiev was of the opinion that the acoustics in the Sapporo Concert Hall were the best, while Jansons, on the other hand, preferred the Kawasaki Symphony Hall. I designed the acoustics in both and the gentlemen wanted to know: "Yasuhisa, which is better?" So I simply asked: "Valery, tell me: How many children do you have?" He understood what I was saying straight away. (Laughs) Are you familiar with the Hall in Hamburg, the Elbphilharmonie?

Unfortunately not yet. Today is the first time I have been here. But I've been in some of your other halls before. And I'm very curious to see the "Elphie", because I can only imagine that your work with the floor plan of this hall must have been incredibly difficult. You can try to estimate it simply according to a few physical principles: Even if a conductor is happy with the acoustics from where they are standing, it does not necessarily mean that the perfect sound also travels to position XY…

You've hit the nail on the head there. That is a major challenge, because it's actually impossible to achieve an identical sound in all places. But for me, it's an incentive all the same. And it makes me particularly happy when people come up to me after a concert, and each of them says: "MY seat was the best!" Then I know that I've done a good job. People always want me to tell them: What is the perfect sound?

It doesn't exist, any more than the perfect painting does. The perception of perfection is subjective and always fleeting, only temporary. I don't think much of claims to absoluteness.

And you are absolutely right there. In the end, it is your personal feeling that decides whether you find the sound fulfilling and satisfying. And of course everybody has very different tastes.

Nevertheless, the public expectation of you must be huge. Although, anyone who understands anything about acoustics will say that achieving 100 per cent sound everywhere is not possible.

That's true. There are different sound experiences within each hall, and each position has its own special qualities. I therefore also recommend that people listen to concerts from as many different positions within a hall as possible.

Particularly as it also depends on what is important for the guest: One wants to be able to see the conductor, another has a penchant for the first violin...

Right, and that is certainly different compared to your work in the audio sector. In a concert hall, you can focus much more on a particular part of an ensemble. In general though, I think it is good that different halls also have a different sound, that you can have a different experience in Vienna than in London. Ultimately, this has always been the case, but people didn't usually travel as much in the past and therefore didn't have the opportunity to make comparisons. I presume it is similar in your work: Each manufacturer has its own sound philosophy, which follows different tastes.

Yes, that's correct. And while customers can choose from a wide range of options for their systems at home, nowadays they are bound to two or three sound systems when they decide on a particular vehicle. But we try to reconcile our ideas and the wishes of the customer. This means creating different sound modes for different preferences, musical genres or driving situations – all in a fairly clearly defined auditory space. It is different in the home sector, as we do not know what the customer's home environment is like. Does their home contain a lot of glass? Do they have parquet, stone or carpeted floors? 50 per cent of the sound quality depends on the décor! In this respect, in the automotive industry we have the same advantage as you do: We know the space and can use this specification to optimise the listening experience. So do you always have an idea of the perfect sound in your work?

Well, with my work, the result depends very much on the cooperation with the architects. But the short answer is no, I don't have a fixed ideal picture of acoustic design. For me, it's not always about creating a particularly bright or dark sound. If you really want to pinpoint the style of my work, then it would probably be this: I want to achieve the most neutral, natural sound possible.

And this is not always popular in the current age, in which people have become so accustomed to special effects...

That may be so. But that's exactly why I like classical music and good jazz. In fact, I like any music that does not require electrical support. Unfortunately, even musicians have now grown very accustomed to it. Last year, for example, I was invited to India, and it was supposed to be very classical, local music that was being played – at least that's what I had expected. But then everything was blasted through loudspeakers, and the drums sounded so overbearing. I didn't like it, but the louder it was, the happier the musicians were.

So your concert halls are designed for pure musical enjoyment?

I definitely want to create the most neutral places possible. Halls that the respective conductor can interpret best for themselves, and not, say, halls that are particularly suited to Mozart, for example. I want to inspire, not define.

How precisely can you predict the sound of a room at the outset?

Not at all. I find time and again that most people have very little understanding for my profession. They are uncertain: Is it art? Is it a technical job? Or is it is half and half? I am sometimes not even quite sure myself how I do what I do.

I know that feeling. I think it does indeed have a lot to do with art, because we are giving an art form, music, a specific expression, a character. For you, the architecture also comes in to play. You have many scientific questions to consider, but then so too do sculptors, painters or photographers.

I always say: Of course we must work with the latest technology and scientific knowledge. But the main thing we need is a strong feel for the subject matter itself, a sense of the art. We use computer programs, but no matter what we construct, the most beautiful hall is nothing without music. And music is an art form. My work cannot be expressed in figures.

And ultimately, it is also the task of a conductor and his orchestra to uncover and work with the strengths – and perhaps even the weaknesses – of the concert hall.

Absolutely – it is a combination of so many factors. I often compare my work to the profession of a doctor. Doctors were around long before x-rays were invented. Today they are commonplace, but if you've not had any medical training, you won't be able to identify very much on an x-ray image. And then came the invention of the MRI! The profession itself has remained the same, but the technology has changed it greatly. And to interpret the findings correctly is something else again – namely also a matter of experience.

Especially as, in spite of all the technical advances, one should never lose the craftsmanship and the personal feeling of working with and feeling traditional methods. After all, we do not do all this for computers and measurable values, but for people who want to experience music.

Exactly! Because it goes without saying: no matter how much devices can do, they cannot do everything. And that's the approach that we follow as well. No computer can tell me how the design has to be in the end. This is my very personal decision.

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