



Parliamentary and



Scientific Committee

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Noise, Sound and Acoustics

More than just a Nuisance

Whether we like it or not, we are constantly surrounded by noise, sound and acoustics; and it affects us more than we may think. This topic is perhaps thought of as very simple, but under the surface lies a wide variety of uses and applications, as well as some possible problems. From underwater acoustics and noisy drones and air source heat pumps to medical ultrasound and quiet electric cars, this discussion meeting took an in depth look into this topic and why a healthy “soundscape” is important to our mental and physical wellbeing.

This topic encourages conflicting opinions; what some may deem as an annoying noise, others may not even notice. A simple example of conflict arose around the discussion of eating at a restaurant; we are encouraged to spend time together and engage in conversation which creates noise, but does the restaurant then become too noisy and vibrant to enjoy your meal? The level and type of sound that people can deal with is subjective, but too much and high volumes causes stress as the brain tries to filter it out. As the objective in a restaurant environment is to enjoy the food and company, ideally a balance needs to be maintained. The subjectivity surrounding the types and

levels of noise can make the task of maintaining a balance much more difficult.

Loud and annoying noises can sometimes be unavoidable and are a by-product of our society, but can these unwanted sounds affect our health? Studies have shown that prolonged exposure can contribute to issues such as sleep disturbance and cardiovascular disease. However, sound can also be viewed in a more positive light in terms of health and wellbeing. It has the ability to change how we feel, and our bodies can respond to our environment. Birds singing, waves on the shore and wind in the trees are examples of sounds that are pleasing to the ear. These can act as a nutrient, aiding improvement of mental health and wellbeing. However, regulations have been weakened around the controls of noise, with the Environmental Bill setting the course for the future without mentioning noise or soundscapes. So far, the opportunity to identify and protect these natural high-quality soundscapes, in places like National Parks, or urban pocket parks remains just that. More uses of acoustics to improve physiological health are being studied, including the use of high frequency soundwaves to treat brain tumours in a non-invasive way.

Science and technology have taken huge steps forward over the recent decades, with our understanding of how deal with noise and use sound positively constantly increasing. This ever-growing area of research requires new regulations to catch up with the new and developing knowledge. Drones and air source heat pumps are becoming more and more popular, however alongside all their benefits comes the price of generating noise pollution, an issue which, alongside air pollution needs to be regulated, especially around built-up areas with a large number of residents. On the other hand, there are the challenges presented from quiet electric cars, which could be perceived to pose a threat to traffic safety. One solution is to engineer the cars to make an artificial, directional sound loud enough to alert pedestrians but be quiet enough as to not be a nuisance to those near-by. Another area to consider regulating, is the use of underwater acoustics in order to minimise the negative effects to marine life.

Regulations surrounding noise in planning and the quality of soundscapes appear to have been neglected, despite being an area of utmost importance. Plans for buildings and houses should have a greater focus on noise, which could be enforced by the Government. With 50% of the population currently living in urban centres, with a predicted increase to 75% by 2050, this issue requires urgent attention from Parliament.

There are so many aspects to noise, sound and acoustics, meaning there are a lot of job roles needing to be filled within this growing sector, that has been estimated to contribute at least £4.6 billion to the UK economy. However, there is currently only around 400 students studying acoustics at University in the UK. The low uptake of this

subject is causing a further increase to the skills gap. The number of students taking these courses is relatively low, which combined with the strain on the departments makes a fragile base to provide tomorrow acousticians. In order to achieve growth of interest and uptake of acoustics degrees, the Government could work with Universities to launch a publicity campaign to highlight the wide variety of opportunities within this topic, alongside the great prospects for cross over training within different areas of Science as a second career.

The ever-increasing areas of research within noise, sound and acoustics brings a large number of things to consider. The Government will have to keep up with the fast pace evolution of technology. In particular, the Environmental Bill must be revised with more attention on noise and soundscapes. Also, with noise affecting us where we live, rest, and play, a greater focus on our mental and physical health is vital. However, the main problem in need of fixing is the lack of University students studying acoustics, as without this the skills gap will continue to increase. This discussion meeting has been a small start to the future of opening eyes to the depths of noise, sound and acoustics.

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P&SC Discussion Meeting in Partnership with the Institute of Acoustics, 'Noise, Sound and Acoustics', 24th Feb 2020

