I'd like to thank BCS and the University of Gloucestershire for this opportunity to speak tonight.

I'd like to talk about some of my research tonight and the people who feature in it.

The title of my talk is 'people as infrastructure'. To me this signposts a shift in my own thinking. As someone who works with and in the broad area of technology my view of the world is technocentric. I see the world formed as an infrastructure comprised of digital 'objects'. However, through my research I acknowledge that thoughts, feelings and emotions of human people could and possibly do create a form of structure or network. For example, - through pleasure such as 'liking' – a sensation collectively enables people to emotionally understand something as having special meaning for them as a group. Or, as I have found in my own research, where people who enjoy being in a particular place derive a shared meaning and memory of it that connects them over time even when they are physically far apart. This temporal production of space often occurs through a use of technology where images, thoughts and feelings, music, video and typed words are available. In such a way there is an informal emotional network – an ecosystem of the senses that is outside or beyond the actual technology infrastructure itself.

In relation to place - I have published on this – my research with graffiti artists showed how particular places and behaviors linked people and helped them produce space emotionally. In doing so graffiti artists themselves became a form of infrastructure. I developed the concept of a 'senseplace' inspired by the work of Henri leFebvre. A paper I am currently reviewing for publication has studied 'AR' graffiti and found that it promoted social interaction, a connectedness to the environment and spatial perception. Again we can see the formation of some sort of human infrastructure separate from the technologies.

So... my talk tonight takes an off-center view of technology and I'd like to talk about research I have carried out and at the same time use some concepts and theories from sociology and talk about digital technology and people as infrastructure. So we have a shared understanding tonight - I am using the word technology as a broad umbrella term to mean all the everyday computers, digital devices, systems and applications in our everyday lives.

My reason for taking a somewhat sociological perspective is to move away from my own techno-centric view as I have said and too much of a theoretical focus on the technical. I want to try and step outside of my own techno-bubble and look from a different viewpoint. I have found space for a more sociological perspective in the study of technology.

What I want to try to do tonight is model a cross-disciplinary and outsider way of thinking that is inspired by thinking like Karel Capek's 'if dogs could talk', James Lovelock's 'Gaia theory', Paul Stamet's '6 ways mushrooms will save the world' and Suzanne Simard's 'trees communicate with each other'. These people, who I regard as thought leaders, show how we can take a sideways glance at a world we normally look at face on.

So – to my research - I have worked on 2 funded research projects at Sheffield University that looked at the ways in which young people thought about digital technologies specifically in relation to AI, privacy and data. Although there were technical aspects to the project, We were not concerned with the devices themselves or how they were used but focused solely on what students felt and what emotions were in play.

Through workshops with students in schools during 2022 and 2023 we ran a series of interactive creative sessions over two days. We found out that students were indifferent about the educational technologies themselves but very keen to have a voice in how these technologies were used on and about them in school.

We explored ideas such as facial recognition, location monitoring, rewards and sanctions, profiling and monetization.

We found that the students formed a collective perspective and shared many emotions when it came to school and technology. What I began to see was again the ways in which technology began to cast people as a form of infrastructure outside of the technology itself. Alongside the technology there was once again this idea that human people connected emotionally and sensorially. But I would pose the question what does this mean going forward in relation to the world they inhabit?

Slide: It is easier to imagine the end of the world than it is to imagine the end of capitalism

With Swansea University I worked on a project that explored how people used buy now pay later platforms. These are basically credit systems that act like banks and allow people to purchase items and pay back over a time period and where they can manage payments and scheduling. (Think Klarna) We found that some people sometimes used these platforms in a self-harming way placing themselves in emotional peril and strife but which could also be exciting and exhilarating – here we saw risk taking behaviour. The people opting to use these types of platforms adapted their behaviors and developed new behaviors that in the real world were emotions and the senses produced by the digital space. We saw that platforms like this also actively promote the idea of an 'ecosystem' through technical features such as messaging, likes, comments and so on. The idea of a human infrastructure is designed in. Designed for affective responses that bond people within a digital space.

There are patterns and ideas evident which Zigmunt Bauman, Ulrick Beck and Jock Young have described. These are very interesting ideas and the authors are jump off points for further reading. Ideas they cover include punitive cultures, identity, deviance and disorder. I see links here to data science, artificial intelligence and governance.

[Slide] Sometimes a disappearance can be more haunting than an apparition.

In a 2017 research project I deployed a suite of voice assistants into secondary school classrooms for teachers and students to use. The hypothesis was that these powerful AI devices could liberate information and challenge pedagogical approaches – ultimately flattening any knowledge hierarchy. Ai voice assistants should empower students (and perhaps teachers).

What I mean by this is that I wanted to see if access to a huge information source changed how education occurred. To some extent this was possible – students responded positively and engaged with the devices much more than teachers seeking information continually.

The research found that the devices did have some impact. But during this time I was also observing many other lessons as a comparison. Unfortunately, this was an equally interesting avenue and proved very fruitful. In these other lessons, I found that many students were silent in lessons, many asked only questions that were related to exams or tests and this led to evidence of a type of performance-oriented talk. I also established that there was a pedagogy of performance. It seemed that things were organised around testing and examinations with not much room for engaging with knowledge more broadly. A prescribed body of knowledge was the norm and the facts and truths within it were unchallenged and created a particular way of thinking about the world. What became evident was what was NOT being studied and what had disappeared in terms of knowledge.

I wrestled with the idea of an epistemicide and its impact on how people relate to each other globally. What I saw in the micro-environment of the classroom was a method of using corporate devices for a global

advancement of specific canons of knowledge and culture that ignore other perspectives or cultures, and which spread a particular way of thinking and behaving.

[slide] "Globalisation is associated with the worldwide spread of nothing"

I am currently working on three research projects which involve the people side of technology.

The first project aims to develop a method for detecting synthetic text and how large language models improve themselves to assist humans. Using a huge corpus of human-authored texts we asked a range of LLMs to generate synthetic text based on human authored titles and abstracts. We are currently anaylsing the data.

In the process of this project it was interesting to see the evolution of LLMs and the various ways in which they behave and cause humans to behave. What was of interest to me was the ways in which over time I came to regard the LLMs as a real point of contact. I emotionally allowed an LLM to become part of my network – a space where colleagues, authors, family and friends all contribute – my shared emotional space. Synthetics now interact with me and I find myself relating to them in human ways.

The second research project is also focused on LLMs. I am part of a research team composed of criminologists and sociologists and we are looking at how particular voices (of subcultural groups) can or cannot be represented by artificial intelligence, again using LLMs. The aim is to see what is possible with a trained LLM and its capacity to recount folk tales and cultural biographies as an educational tool using authentic voices. We are looking at the literature and the technology and only this week we were astounded by how easy it has become to generate a very short 20 second voice snippet, upload it and clone it and then have an LLM generate 'original' text which is then dubbed to speech. We have also found a commercial product that will now lip sync this LLM clone voice to a video of that person. The point being that we may be able to capture marginalised voices and enable them to be amplified – this extends beyond the physical replication to the ideas, culture, values and belief and knowledge of these voices. In short it allows us to potentially create a synthetic (person) whose voice, opinions and beliefs are relayed in a culturally authentic way and 'who' would be a legitimate member of a subcultural group (of humans).

A third project is a Bristol shop based exhibition of artefacts from technology including objects like malware, exploits, brandalism, subvertising, counter-narrative multi media – video, music and so on. I am curating this and it is a collaboration with people and their ideas. In such a way I am trying to create a human eco-system or a form of infrastructure that draws in the general public also to share in the experience and spread ideas. The location has been rented and date selected and it is at the idea stage and a call for abstracts is going out soon.

"Plants are attuned to one another's strengths and weaknesses, elegantly giving and taking to attain exquisite balance. There is grace in nature and its complexity."

I would like to close now and am conscious that I have somewhat meandered through a lot of ideas loosely connected to the title of the talk. But I hope what you have been able to see is how I am trying to think about technology in a new way for me, how I have tried to research technology from a human perspective and how I am only beginning this journey! Woven throughout tonight has been how people are learning and experiencing technologies and that this might show us not only what technologies we think we need but allow us to question beyond this what we as humans might need for our emotional and spiritual development.

I hope my talk has given you an insight into my world and that we might for this short time have shared something and formed our own temporary human infrastructure.