

Interview with David Prendergast on “Mediating Between Technology and People in Smart City Transformations”

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Published online: 28 February 2018
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Dr. David Prendergast is a social anthropologist, musician and photography enthusiast. His research over the last 20 years has focused on later life-course transitions and he has authored a wide range of books and articles on ageing, health, technology, and social relationships. David’s doctorate, completed in 2002 at Cambridge University, was published as a monograph ‘From Elder to Ancestor, Old Age, Death and Inheritance in Modern Korea’. David subsequently worked on several major projects at the Universities of Cambridge, Sheffield and Trinity College Dublin, including a history of the British Colonial Wildlife Conservation, paid home care services in Ireland, and an ESRC study into death, dying and bereavement in England and Scotland.

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David joined Intel in 2006 as Social Science Lead in the Digital Health Group and Principal Investigator in the Technology Research for Independent Living Centre. In 2011, he moved to Intel Labs as User Experience Lead and helped set up and run the Intel Collaborative Research Institute for Sustainable Connected Cities with Imperial College and University College London until 2015. In recent years David has focused on directing Urban Living Labs and ‘Internet of Things’ research testbeds in London, San Jose and Dublin. David left Intel in 2018 in order to return to his anthropological roots.

David has also held the positions of Visiting Professor of Healthcare Innovation at Trinity College Dublin and External Examiner to the Design Ethnography MSc at Dundee University. His most recent volume ‘Ageing and the Digital Life Course’ edited with Chiara Garattini was named a CHOICE ‘Outstanding Academic Title’ by the American Library Association and was described as one of ‘the two most fascinating books on aging in the 21st Century’ by the Huffington Post.

Fortune Magazine named David a ‘hero of the 500’ in 2014 for his involvement in helping establish LauraLynn House, Ireland’s first children’s hospice.

BISE: David, as a social anthropologist, you approach the phenomenon of digital transformations from a different angle than IS research. What fascinates you about the effect of IT on human relationships and social cohesion?

Prendergast: The history of human civilizations has been shaped by the relationship between society, technology, and environment. For instance, buffalo jumps have been used for over 6000 years by indigenous plains people, such as the Blackfoot in Canada. They reshaped the landscape with hundreds of cairns, drive channels, and disguised runners that would gradually change the course of the herds and force them at full gallop over a cliff where

they would be dispatched by waiting warriors. The carcasses would later be efficiently processed by a nearby camp, conveniently situated by a confluence of rivers and trading networks.

The invention of both gunpowder and the printing press rewrote political, geographic and military boundaries. New methods of glass manufacturing helped enable revolutions in science and medicine, and in my own research area in Korea, the development of new irrigation techniques dramatically increased rice production and led to a population explosion that changed social customs, inheritance law and family practices. From the Industrial Revolution and Cotton Mills of Lancashire through to what Klaus Schwab, founder of the World Economic Forum, rather grandly calls the Fourth Industrial Revolution, it is not just fascinating but critical to reflect on how society shapes and is shaped by the inventions and innovations generated by human ingenuity. Taking Schwab as an example, simply begin to consider the emergent social implications of “new technologies that are fusing the physical, digital, and biological worlds, impacting all disciplines, economies and industries, and even challenging ideas about what it means to be human.”

BISE: Much of your recent work focuses on ageing in a digital world. What challenges and opportunities do you see in this context resulting from smart city transformations?

Prendergast: Shifting population dynamics in the EU-28 will see the proportion of its population aged 65–79 grow from 13.6% in 2015 to 16.5% in 2030 and 17.2% by 2050. Even more dramatic will be the doubling of those aged 80 + from contemporary levels of 5.3% to 10.9% of the European population by 2050. Imagine that, nearly 11% of the European population aged 80 years or older. Yet we are paying relatively little attention to preparing our societies for the coming age wave. It will bring both opportunities and challenges. I still don't understand why the heterogeneous category of ‘older people’ receives so little attention from policy makers, city planners or businesses. Older adults in Europe have a combined spending power of 3000 billion euro and in the past two decades consumer spending among those aged 60 + rose 50% faster compared to under 30. We are going to have to redefine our ideas of what constitutes old and pay greater heed as researchers, governments and communities. Technology is going to help, but it is, and can only ever be, a partial solution. In terms of smart cities, one of the key themes I built into the Intel Institute for Sustainable Connected Cities was making the invisible visible. By this, I was not merely interested in mapping underground cables or visualizing microscopic air quality particles, but also in how to understand and improve the hidden lives of city dwellers, and especially our older populations. When we

design for ageing-in-place, we need to think beyond the bricks and mortar of the home, to how we can successfully age as part of a community. Safe flexible transportation systems are incredibly important. A truly smart city thinks about the variegated needs of its citizens. As an ethnographer who has interviewed hundreds of community dwelling older adults, I have witnessed the hardship caused by loneliness and social isolation. Another pressing issue, as the 15–64 year old population substantially decreases from 67 to 57% in Europe, will be the reduced numbers of ‘invisible’ family carers. In the UK alone, six million caregivers are currently estimated to be saving the British NHS £119 Billion. It is only logical that we need to find ways to tangibly support such caregivers as well as leverage the potential of the older population itself. We need to keep thoughtfully considering and discussing our health and social care systems, the role of the family, hybrid models of care, including companionship care. Most of all, how do we keep people engaging as active members of society? You'd be surprised at how few older people truly perceived themselves as old. This normally comes after a terrible life course change – a bereavement, a bad fall, a critical health event or when someone feels like a burden. People need to feel they are leading useful and meaningful lives.

BISE: There is an ongoing discussion about the ‘digital divide’ between more and less tech-savvy people, which is often related to a divide between the old and the young, as well as between rich and poor people. With the focus on smart cities, are we enforcing another divide between urban and rural areas? How could we make the benefits of digitization accessible to everyone?

Prendergast: Technologists often view the world in fairly simple, power neutral terms. The ambition, not always achieved, tends to be to design technologies such as edge devices, cloud infrastructures and end to end Internet of Things' platforms, to be modular, scalable and transferable across contexts. From this perspective, many of the things developed for a city should be also useful for a smaller town or village. This said, of course inequities do exist. I usually prefer to think in terms of designing for communities rather than strictly cities, though there is advantage, not least in terms of purchasing power and access to infrastructure, when working with city managers and departments. In fact, to alter the lens slightly, I would suggest we deconstruct the idea of the ‘urban area’ as well. There are many groups and communities in urban areas that stand outside the discourse and focus typically associated with ‘smart cities’. It was for this reason, that Intel Labs colleagues of mine in London became involved with the H2020 Organicity project. The aim of this was to create a high-quality urban IoT platform and make it available for use by groups such as start-ups, social and environmental

innovators, and SME's who would not normally have the resources or technical expertise to engage. I think many more experimental, educational, and enabling initiatives like this are required, in both rural and urban areas.

BISE: From your experience, what are some best practices for achieving people-centric smart city transformations and what are things to avoid?

Prendergast: I think smart cities should be approached from a transdisciplinary perspective. That is, we should utilize the skillsets and worldviews of many disciplines to tackle 'wicked problems' from a variety of angles. The key word here though is 'problems'. A city is an incredibly large and complex organization, or rather collection of organizations to deal with. Top-down approaches seem to frequently spawn top-down technology-driven solutions. Personally, I prefer asking the question to stakeholders 'what is a particular need or issue you want to address?' whether they are city managers, stadium directors, park keepers, or garbage collectors. This helps focus the conversation and provides a manageable set of boundaries within which to plan research, design prototypes and test in the real world. A second practice I advocate is conducting as much ethnography or in situ observation as possible before locking down your design or engineering requirements. Try to understand the layers of the problem set as well as the work flows, processes and limitations of its different stakeholders. Also at this stage, consider whether the local challenge is something that is also an issue in other cities and markets. As a social anthropologist, I spend a lot of time talking and working with different 'publics' or communities of geography and practice across a particular

environment. The interesting thing about cities of course is that 'people' as a unit of analysis may be a private citizen, a city employee, community group, or business, to name just a few possibilities.

BISE: The BISE community has a long history of investigating socio-technical systems, historically often in a business context. Over the past years, however, there have been more and more calls for research with a societal impact, and the digital transformation of urban life is just one of the areas in which such an impact is possible. Having worked and engaged with the community, where do you think lie the greatest potential contributions in addressing this societal grand challenge?

Prendergast: Engineering community on different projects for at least five years now and I think we have all been delighted with the synergies and outputs from a collaboration between our disciplines. An ethnographic approach helps to unpick complexity and understand nuance whereas I greatly value the rigor, systematic thinking, and modelling capabilities that BISE scholars and Design Science can bring to the table. Working as I often do in 'Living Labs' and IoT Testbeds this is particularly useful once an artefact such as a prototype or change in a socio-technical system is introduced into the equation. In fact, two of my recent projects, 'building an IoT capability maturity framework for Smart Cities' and 'exploring how to design autonomous vehicles for older adults' were greatly enhanced by having BISE postdoctoral researchers and thinkers working on them.

BISE: David, thank you very much for your time and for this interview.