Hacking Early Childhood

Reflections by Lucy Bradbury

I attended the Hacking Early Childhood workshop – which came out of an editorial published in the Archives of Disease in Childhood at Newcastle University, with a sister workshop in Durban, South Africa, aiming to explore if technological advances undermine, or enable, early childhood development.

Although unsure what to expect from the two days, I was looking forward to seeing what came of collaboration between two very different sectors. The first, advocates for child health: paediatric clinicians and public health researchers to name a few, and the other, advocates for tech: computer science researchers and tech developers. The attendees were curated to bring a full range of opinions and contributions to the debate. The advantage of this range of representation became apparent as certain themes were explored, such as 'how can we give a voice to the children of today and tomorrow in a world of rapidly developing tech?'. I wanted to highlight some of the themes that emerged from the workshop that I personally identified with as being valuable.

Central to the debate was recognition that technology is inconspicuously advancing at an exponential rate, faster than development of policy and regulation. Without recognition of this fact, there is the potential for negative, and unforeseen, impacts on children and society in general. Children are being swept up in an ocean of technological advance, with no say, or influence, in what affects them, and their early development. Participants expressed the unease that the early childhood development community are 'behind the curve', their awareness needs to be raised and a conversation needs to be started.

To ensure that the developing 'tech' world keeps the child in mind, we need to know what children want, and most importantly hear it from them. Many of the workshop attendees felt that currently children are not seen as 'individuals' with influence in decision making - their relational autonomy is not recognised. Perhaps ironically, there is scope for tech to help change this. The workshop discussed the idea of a 'tech-creche' where 'tech' could be used for play but also to harness the wants and needs of a child. Games and toys could be created to facilitate expression, design, and creation, thus empowering the child and driving the direction of innovation.

Throughout the workshop we were encouraged by our facilitator – Keith Logan - to 'think like a human' in order to solve the *real* problem. The real problem being the threat of technology to early childhood development, and so we needed to think like a child. Representatives from 'Children and Families Newcastle' - Sally Nolan and Marie Huscroft - helped us achieve this by helping us picture what life is like for a child growing up in the local area.

When defining 'tech' it's important to remember that children's experience of 'tech' is not the same as ours - the adults – experience of 'tech'. For them, artificial intelligence products such as 'Alexa' may simply be another voice of authority, a source of knowledge, or a smartphone as an interactive friend. With their beautifully naïve and curious minds, children are naturally more accepting of the 'tech' world – perhaps we could learn from them. We should at least keep perspective and attempt to see the world through the child's lens when analysing the pros and cons of 'tech' innovation.

Within view of the workspace were two social housing tower blocks which became a reference point for many of our discussions. The brutalist architecture served as a reminder of the social deprivation that is experienced by many children growing up in Newcastle. This was reinforced by the accounts we heard from the health visitors. Health inequalities in the Northeast are a stark and growing problem. Participants gestured to the tower blocks and remarked 'but what about the children living over there?'. To almost every scenario and idea discussed, we came back to health inequality. 'Tech' has the potential to drive health inequality, dividing rich and poor children further apart, or, with strategy and planning, it

has the potential to narrow the divide. Frequently, early childhood development suffers as a result of social deprivation and with that, the trajectory for the child's future is influenced. If tech can be used to combat this, then innovation should be welcomed.

On hearing of the experience of Newcastle's health visiting service, we wanted to create an 'app' to directly support families and in doing so, support an overstretched service. The result, was *Alva* – a virtual health visitor and companion which uses artificial intelligence to guide parents through parenthood and support early childhood development. Development of applications such as these are realistic expectations of what is to come in the near future. Another idea explored was that of 'tech'

supporting the child protection system; a system which, in the UK, currently struggles to adequately protect vulnerable children and their families. Some of the attendees are currently working on the design of 'wearables'. Could 'at risk' children be mandated by the state to wear a monitor of their home environment and exposures? The discrete device could have GPS tracking to ensure babies are sufficiently mobile, microphones to pick up concerning noises and even the ability to monitor nutrition status and thus identify early signs of neglect. The idea of such a scheme raises obvious practical and legal difficulties, not least the spectre of 'big brother'. It was therefore met with resistance from some participants, and rightly so. However, such concepts have value if only to promote debate and encourage broad thinking of how tech can solve some of the most intractable problems society must face.

For all the real practical and ethical objections to 24/7 'surveillance' of a child, it is undeniable that a 'wearable' would make the child 'visible'. So often, as we all know, overstretched social care resources mean that neglect and abuse can go unseen and unnoticed until it is too late. Tech could provide an answer, ensuring early intervention when children are at risk.

We also visited the Gita robot on campus, a robot with the potential to transform the lives of the elderly- a population, in many respects, as vulnerable as young children. Again, the robot makes the elderly more 'visible' by following the person around wherever they go, attracting attention from bystanders. We were told that similar innovations are being developed for disabled children which children without disability can use and enjoy. Thus, facilitating inclusive interaction and friendships between the two.

Before attending the workshop, I was ambivalent, even sceptical towards technology and the significant space it already occupies in children's lives. I feared that it can take away what it means to be a child, infringe upon human connection, and threaten natural development. Although cautiously optimistic, I am more open to the potential opportunity's 'tech' innovation can offer, particularly in supporting early childhood development. I sense this feeling was shared by many participants, and this was the beginning of a conversation to build awareness and shape further discussion on technology's direction of travel.

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