

Reflections on Older People in Relation to ICT-AI

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Abstract: The rapidity of innovation in ICT/ AI generates issues on the role of older citizens in understanding, accessing and using these new technologies. Co-creation, system reliability, ethical issues such as social justice and inequalities, monitoring and data privacy, freedom and autonomy, safety, security and liberty, and the various dimensions of accessibility that need to be considered, need to be carefully considered by innovators and policy makers. Resources are being given to research and practices to support the health and well-being of older people but to be successful will need to include them.

1 INTRODUCTION

The extraordinarily rapid speed of technical innovation through the digital revolutions of ICT and AI in the past decades has left many older people excluded from or ignorant of these developments. The implications from the implementation of ICT/AI innovations are yet unknown.

The digital revolution saw the introduction of the mobile phone in the 1980s, mobile computers 1981, the internet and world wide web 1990, Google 1998, the smart phone in 2007, tablets 2002 and the iPad 2010. The dates indicate the rapidity of changes impacting on social interaction, business, the state and the citizen. The 4th Industrial Revolution currently underway extends well beyond communication to robotics and AI, nanotechnology, quantum computing, the Internet of Things, biotechnology, Blockchain, 3D printing and autonomous vehicles. The large variations in the ages, educational level and experiences of older peoples impacts on their access to and use of digital technologies. (EC 2018). Inadequate and rapidly changing data and, for those over 74 years, missing data, means there is inadequate information on older people's use and experiences of ICT.

The socio-economic context for the introduction of ICT/AI includes increasing life expectancy not matched by an equivalent growth in healthy life expectancy, continuing urbanization of world populations, and globalization in commerce, production and communications. The dimensions of

such changes generate high complexity in management and for future planning, while contributing to inequalities in access, knowledge about and usage of ICT/AI particularly evident amongst older people.

2 HUMAN – COMPUTER INTERACTION

2.1 The Critical Importance of Co-creation

Technological ICT/AI innovations designed to help older people have all too often not encouraged an active and reflexive role for older citizens. While EU funding research programmes increasingly mention co-creation with users and professionals, this is not always understood by technical designers and professionals as providing extra value in innovation. Assumptions that older people are technophobes arise from ageist attitudes presuming older peoples' incapacity to deal with modern life, the lack of public support for later life learning and the absence of peer support. Older people may also be ageist but may also be hesitating in the adoption of technical and ICT innovations for reasons that arise from their very different and varied perspectives and life histories.

2.2 System Usability and Reliability

While smart phones and tablets have simplified ICT usage, other aspects, in addition to costs, stop older people using them easily, including a lack of confidence, a lack of social and technical support in using them from ICT buddies, and the fear of breaking them or rapid redundancy.

As organizational systems, both in the public and private sectors, become increasingly based on ICT, older people never trained or with no access to the technology become increasingly excluded. They must rely on their children or paid help e.g. digital tax declarations in Greece. So, although services overall may be more efficient and better, many older people become marginalised and more dependent on others. Older people with cognitive problems and cognitive decline also become increasingly excluded.

What about those who do not wish to use ICT? Do they get excluded as citizens if they refuse to use the technology? Technologies which contribute to infantilizing or disabling the older person rather than supporting him/her, and those taking away or supporting a maximum degree of their autonomy are unhelpful. There is also a kind of risk associated with misuse: if the user relies very much on technology, there comes a point when s/he is basically giving up certain of his/her abilities and skills: laziness is a risk with physical and mental consequences.

2.3 Justice, Fairness and Inequality

ICT and AI generate new ethical problems for societies that add to existing moral and value dilemmas for humans. There has been a large increase in many EU countries in economic inequalities (Eurostat 2018) since the 1980s. Many older people are particularly aware of this, making them more sensitive to the insecurities faced by younger generations and local communities. AI and robots are displacing human workers in many jobs. On line shopping, for example, kills many local shops and in some areas, this leads to a reduced sense of community and jobs available for their families and neighbours. (Knowles, Hanson 2018) Supermarket check outs in many countries require the shopper do the work of checking out their purchases. Banking is increasingly on line requiring less paid workers in the community.

Thus, older people are right to point to the uneven gains that accumulate in the development of new technologies which leads to their hesitation about their easy and unproblematic adoption. Growing economic inequalities, greater job insecurity, tax avoidance, with their impact on relative wages and

thus social risk, are issues that are being discussed, though not necessarily acted on, at a very high level. (World Economic Forum, 2019). We do not know what the implications are for the future, until now perhaps risks have affected the more vulnerable, but AI and ICT will be continuously disruptive for organizations and jobs. However, they also offer the possibility that ICT/AI-human interaction will improve, that ethical issues for citizens concerning the relationship between AI and humans are confronted and that citizens become increasing co-advisors in research and development (Stallcatchers, 2018). Some forms of AI will impact on the care and support of dependent older people, and this will require communities of practice which will be in consultation with older people and their carers. Ethical issues include what is to be done when people no longer have good cognitive capacities impacting on their legal capacities to make decisions. Perhaps AI will be better at making some kinds of ethical decisions concerning self-determination than self-interested, tired and irritable humans? However urban living, the increasing indication of isolation and loneliness - perhaps especially though not exclusively among older people, - suggests that technology, while able to help in some respects, cannot replace human care and human contact, and what I believe we all need – a physical touch and hand to encourage, reassure, comfort and support us. Even if AI turns out to be better at diagnosis and some kinds of treatment, the human support people need when in crisis and pain cannot be replaced by Facebook, robots, AI and its likes - though there is a role for these too.

Health technologies for monitoring health conditions e.g. heart, kidneys, ultrasound, are often developed in the private sector e.g. Apple Watch, with high costs for purchase or subscriptions, suggesting that inequities in accessibility to health care could become worse for the poorer in the community unless a NHS underwrites their cost as a way of improving public health and decreasing acute and long term care costs.

3 MONITORING

3.1 Privacy and the Ownership of Data

Common problems that face us all, including older people, concern privacy in the use of our data. Technology to aid older people e.g. Remote Monitoring, Mobile Health Monitoring, leads to issues such as who owns the data when collected from individuals and sent to manufacturers, health and care services. Reports on AI in the healthcare sector (Maddox T., Rumsfeld J.S., Philip R., Payne O, 2019)

suggest that current laws and regulations are nowhere near sufficient to keep an individual's health status private in the face of AI development. It will be feasible for data to be misused and potentially sold on the open market. In the USA, companies e.g. health insurance companies, buy anonymous health data, but their business model is to find a way to attach names to this data and sell it even if this is unethical.

The EU has attempted to confront some of these issues via Data protection law and GDPR (General Data Protection Regulation) which gives some protection for an individual's privacy, identity, reputation, and autonomy, but this does not work with Big Data analytics and artificial intelligence (AI). These latter both draw non-intuitive and unverifiable inferences and predictions about the behaviors, preferences, and private lives of individuals (Mobile-Age, 2018). The European Court of Justice has also made clear that data protection law is not intended to ensure the accuracy of decisions and decision-making processes involving personal data, or to make these processes fully transparent.

3.2 Respect for the Autonomy and Freedom of the Person

It is difficult for any person to be adequately informed or to decide on how and to what extent s/he is willing to work with and provide data via ICT. Do we know how and in what ways ICTs/AI can and may invade our privacy and infringe our freedoms? What safeguards and mechanisms of control over their use can reasonably be put in place, carefully balancing security and freedom for each individual? In many European societies the value of being autonomous i.e. able to make our own decisions and choices as adults, is something we believe in and respect. But what happens when cognitive capacities decline? To what degree do we encourage autonomy even if this leads to dangers for the individual with dementia or Alzheimer type diseases? Thus, there are real dangers in feeling adequately in control of the technology being used, knowing when to say no, and not being abused by those developing the ICT/AI systems.

In a European Horizon2020 project, MATUROLIFE, in discussion groups led by AGE Platform Europe, there were a variety of definitions of the meaning of independence that unsurprisingly vary by individual, culture and age (MATUROLIFE, 2018). We are all interdependent but there is a danger that in some areas technologies may make older people dependent. While the current benefits of AI and ICT may be unclear, in the longer term a better use of them may be made. AI, although discussed in terms of diagnosis, offers possibilities in reducing the

current amount of time spent by doctors and health professionals in administration and allowing more face to face time and human contact. However, as citizens will we have to fight for the time and resources saved through the use of AI, to be spent in better "hands on" care of people, especially older people. Care in the home by home based AI interfaces e.g. for chronic illnesses, can provide real support for older people who need monitoring, but also the capacity to consult and receive reassurance about their health problems. This offers respect and freedom to some extent. Yet we are still far from such a system and integrated care systems are still rare in most Member States, while many digital technologies are at the experimental stage or already obsolescent by the time they are ready for deployment.

Longevity is generally positive if you have money, reasonable health and social networks. But what happens when partners die, children do not exist or are few and far away, when local urban community social life is limited, when public facilities and environments are unpleasant or dangerous or not designed to include older people who may be frail. AI and ICT cannot overcome existing socio-economic problems but should also not exacerbate them.

3.3 Safety, Security and Liberty

Can ICT and AI systems help overcome some problems that in particular older people face, in a safe and secure manner that does not deprive people of their liberty? The care of older people with diseases like Alzheimer is already problematic: how far should one supervise and monitor people who have significant cognitive problems? AI should be able to assist people in making their desired decisions e.g. to go to the local shop, buy the product they want, and get home and European innovative projects such as the Horizon2020 Frailsafe project attempt such support. All ICT and AI systems are based on programmes and hackers and malicious people can corrupt these. We already have a lot of experience of the misuse of various ICT technologies: cheats, liars, the mischievous and the greedy have always been with us e.g. false news, scams, identity theft. Trying to make systems safe and ensure that people are not cheated and abused in the use of ICT/AI will be a constant battle.

AI relies on its decision making mimicking the human brain and it learns from large sets of data resulting in algorithms. Known as a "black box", we can see what goes in it and what comes out, but not how the outcome was arrived at. (European Consumer Consultative Group, 2018). Currently we are very aware that humans make decisions based

often on prejudice and assumptions – prejudice and widespread ageism in many of our countries results in all kinds of inequalities from treatment protocols to banking loans and insurance. We manoeuvre these with difficulty but what will happen when AI makes the decisions and are even less transparent. In this sense AI generates new problems of freedom, the capacity to understand how decisions are reached and the liberty to appeal against them. By and large, lawmakers haven't decided what rights citizens should have when it comes to transparency in algorithmic decision-making. Our language adopted the term Kafkaesque to mean situations where individuals are threatened by remote and inaccessible bureaucrats and rightfully, we fear non transparent bureaucracy with power over our lives. AI needs to be built to provide "recourse," or the ability for people to feasibly modify the outcome of an algorithmic decision.

Nonetheless we will continue to use and develop AI that will almost certainly be valuable in dealing with social and health problems: AI does not get tired, sick, fed up nor does it forget: thus, it can act 24 hours a day to support humans, professionals and patients, with information and data. ICT systems as they currently operate appear to create an extra burden of administration for health and care professionals but within a reasonable period of time AI will become intelligent assistants supporting effective administration keeping records and saving time and effort. I doubt that anyone believes that AI should work alone in interacting with individuals with social and health needs. How to integrate and use AI for the benefit of all is very much under discussion. It is likely that AI within the next 10 years will revolutionise support to older people e.g. facilitating their empowerment, community inclusion, personal care e.g. in bathing and toileting, or just general support. All these are forms of work which can relieve professional and informal carers and even help avoid abuse.

A major point that will have to be made clearer for individuals, especially if they are cognitively confused, is whether they are talking to a person or a technology, a machine.

4 ACCESSIBILITY

Something can only be accessible if you are aware of it's existence and potential. Here we need a lot more education and intergenerational support and exchange. It will be valuable if everyone is aware of the questions, opportunities and risks associated in the use of technology. It also needs to be available e.g.

physically throughout the country in rural as well as urban areas. 5G apparently has a huge capacity to help access to AI and ICT technologies and programmes. The EU appears to be keen on free access to the internet to ensure non exclusion on that basis (European Commission, 2018). This will help with something already mentioned – affordability.

4.1 Inclusive Design

One major difficulty is that introducing adaptations to houses to make them accessible for all with disabilities, whether these are physical adaptations, or digitally smart and inclusive, costs money. Overall older people are least likely to live in modern homes, occupying older housing stock, are more likely to live in rural areas, few have smart infrastructures and, importantly, they are least likely to be able to afford or be willing to install adaptations. Those with the most need for support e.g. older, frail women and those with multiple chronic health conditions, are often the least technically aware, and also have less disposable income. In many countries older people struggle with the cost of a tablet or smart phone and the subscription to the internet. Thus, there are doubts about the private purchasing of AI e.g. IoT, wearable technologies. They seem cost viable but will need to be linked to a paid for broadband system. The efforts by the EU to make broadband accessible to all is a big step forward.

Sensors are increasingly being used via smart phones, web cameras, tablets, and smart clothes to monitor motion in homes and in the community, thus providing useful interlinks with family carers and some professional health and care services. The cost of sensors is relatively low but the problem of ensuring they are non-intrusive and their data remains under privacy controls remains.

Considerable work at EU level is undertaken to ensure that web contents are accessible and that interfaces can be personalised for users. Standards exist in the industry with accessibility issues addressed via a Legal framework (eAccessibility + European Accessibility Act). All ICT and AI products and services will have to ensure they are accessible as well as secure with reference to protection of an individual's data.

4.2 Transport Accessibility

This sector is under rapid development both for public and private transport and is based on AI holding out potentially important help for the autonomy of older people who, if unable to drive, will nonetheless be able to move around not just in cities

but in rural areas where currently public transport is often uneconomic to provide.

4.3 Service Accessibility

On line shopping for the digitally able who are physically compromised will certainly help many older people but will represent a threat, already mentioned, to local services and communities. Older people tend to be more attached to their localities and marrying ICT and AI developments to local communities will need to be observed and considered. Digital literacy is key in this.

5 DISCUSSION

Behind all developments in ICT and AI must be clear human values to ensure the most vulnerable individuals, including older people needing assistance, are helped in retaining their functional and moral autonomy as long as possible. We need to prevent situations of vulnerability and avoid the isolation of the sick and vulnerable. Exercising the rights of older citizens requires that they obtain valid and understandable information enabling them to support their autonomy and decision-making capacity. There need to be established control mechanisms that prevent family members, professionals, directors of centres and services or others from making decisions that should be made by the elderly person. Finally, it is evident that we all need to have continuous training and support whether as end users, which may involve providing basic health and digital literacy, or as developers and healthcare professionals.

In AGE Platform Europe we argue for all Member states and the EU to disaggregate statistics to better understand the situation of older persons – rich and poor, rural and urban, healthy or unhealthy, dependent or independent. Older people are very varied in what makes their people's lives worth living, dignified and fulfilling and this must be under constant review.

New developments will change and possibly help many older people e.g. exoskeleton help in walking, ordinary glasses with a camera and data recognition, as used by pilots, which will enable the wearer to see someone's name and any essential data. The health linked watch to warn individuals of any untoward events and stimulate physical activity and correct diet is already with us but not yet linked to our health systems. But each innovation has potential and not necessarily desirable consequence e.g. the medicalisation of everything through mobile apps.

We need to be cautious about expertise and knowledge and what we measure e.g. changing opinions and fashions over diet, cholesterol. This is an exciting time to live in but the inclusion of older people in debates on ICT-AI innovations can help in the essential reflexive process.

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