

## **Digital Ageing Futures: Codesigning with older adults for digital inclusion**

*Larissa Hjorth, Jacob Sheahan, Bernardo Figueiredo, Diane M. Martin, Mike Reid, Torgeir Aleti, Mark Buschgens*

### **Abstract**

In the COVID-19 pandemic lockdowns (2020-2021), all facets of life were rendered digital—health, work, schooling, and logistics. In this phenomenon, not only did digital inclusion become synonymous with social inclusion but inequalities were also amplified—particularly in the case for older adults (65 years and over). Contemporary older adult cohorts represent one of the most diverse and divergent spectrum of digital media users (Maccora et al. 2019; McCosker et al. 2020)—spanning from technological savvy to non-users. As the first cohort of older adults to age *in* and *through* data in a data-saturated world, their understandings and experiences can teach us much about the possibilities and limitations of new media.

This paper draws on a study funded by the Australian Communications Consumer Action Network (ACCAN) in which we collaborated with the University of the Third Age (U3A) community to explore perceptions and practices of technology use and risk. Through mixed methods including surveys (426 ppl), interviews (22ppl) and then codesign workshops (5 workshops, 76 ppl) we identified and explored key barriers and ways to support to uptake. In particular, we focus on the five codesign workshops in which we deployed the persona (i.e. representations of digital experience) to help build nuanced tools for implementation. Here we are interested in the role codesign workshops—digital and face-to-face (f2f)—play in how we can address issues around digital uptake.

**Keywords:** older adults, codesign, ICTs, digital literacy.

### **Introduction**

The World Health Organization (WHO) has declared 2021-2030 as the decade for healthy ageing (UN Decade of Healthy Ageing Action)—arguing it be a priority for governments, civil society and international agencies (2020). According to the *Ageing Well Report* (2020), ageing well has 8 attributes—positivity, purpose, respect, socially connection, keeping up in a changing world, financial / personal security, health autonomy and mobility. Digital technologies can play a key role in ageing well (Maccora et al., 2019; Rosales & Fernandez-Ardevol, 2019; Sawchuk & Crow, 2012; Sawchuk, 2019; Sawchuk et al., 2019; Neves &

Vetere, 2019; Waycott et al., 2019; Baldassar et al., 2006; Baldassar & Wilding, 2020) and in imagining “aging futures” (Dalmer et al., 2022).

During the pandemic, for instance, we saw how digital technologies became central in many of the ageing well attributes (XXXX; McCosker et al., 2020). For example, how a lack of digital literacy resulted in a higher risk of social exclusion (COVID-19 special report, 2020; Hjorth, 2022; XXXX; McCosker et al., 2020). More research is required to better understand this diverse and complex demographic, their wide spectrum of digital literacy skills, and how technology in particular links to ageing well (Maccora et al., 2019; Comunello et al., 2015; Marshall, 2018; Waycott et al., 2019). In a data saturated and pandemic world, there has never been a more urgent need to develop new sustainable models for ageing well (Ibrahim 2020; COVID-19 special report, 2020; Ageing Well Report, 2020)—especially through *creative use of emergent technologies*.

In Australia, the uneven literacies and access to digital media has created exclusion for some (Thomas et al., 2018; ADII, 2020). According to the National Seniors Australia report, older adults represent a diverse group of technology users—from technologically savvy to non-users (Orthia et al., 2022). And yet the report identifies that much of the barriers operate around ageism (Orthia et al., 2022). McCosker et al.’s (2020) social impact evaluation of the Australian government-funded program, *Be Connected*, identified three categories of older adults’ engagement with technology. These include: emerging, evolving and accomplished engagement. Their report highlighted the need to support the development of older Australians’ digital skills, safety, and confidence, to enable them to participate fully in the digital society. Research into the role of digital media for social connection by older adults has started to unearth everyday innovations behind ageist stereotypes about technology use (Hjorth et al., 2020; Neves, Waycott & Malta, 2018; Hjorth & Lupton, 2021). Understanding the complex configuration of digital media practices—to challenge stereotypes about ageing and technology as well as capture the uneven literacies—can help codesign more effective models for enhancing ageing well. As Duque et al. argue through ethnographic technique, automated media provided by Digital Voice Assistants (DVA) enrolls older people in a “dialectic relationship”—opening up possibilities and potentialities in everyday life (2021, 1189). Building on this lived experience methodology, this paper seeks to ask: *how can we codesign around digital ageing futures in nuanced ways?*

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mixed methods including surveys (426 ppl), interviews (22ppl) and then five codesign workshops (with approximately 20ppl in each) we identified and explored key barriers and ways to support to ICT (information and communication technology) uptake. In particular, we focus on the codesign workshops in which we deployed the persona (i.e. representations of digital experience) to help build nuanced tools for implementation. Here we are interested in the role codesign workshops—digital and face-to-face (f2f)—play in how we can address issues around digital uptake.

Codesign has become a very familiar work used in various different contexts with numerous meanings. In many cases such as policy, codesign is used to refer to a consultative process. However, for participatory design researchers, codesign has its origins in collaborative, iterative processes which seek to actively explore power relationships and often tacit meanings. As Avram et al. (2019) note, contemporary codesigning in data saturated worlds requires acknowledging platform capitalism by shifting the emphasis from sharing to caring. As platform algorithms shape how we experience digital media, there is an increasing importance to reflect upon these power relations—both exploitative and empowering—when codesigning. As Ann Light and Yoko Akama (2014) argue codesign should “structuring social relations as a kind of care”. That is, being mindful of the power relationships and concerns and not trying to step in and solve it for the participants. Drawing on the important work around care as a social relationality and ethics by Annemarie Mol (2008) and Maria de la Bellacasa (2017), Avram et al. (2019) argue reconceptualising care as a practice, technique and way of being in the world can help to inform more nuanced models of codesign.

In order to address codesigning digital ageing futures, this paper firstly begins with an outline of literature on codesigning especially for older adults. We then discuss the summary of the project, its methods and collaborative modes with U3A. Then we explore the limits and possibilities of codesigning workshops to implement nuanced recourses and tools for ICT uptake and the implementations moving forward when thinking about digital media and older adults.

### **Codesigning with Older Adults**

Participatory modes of research offer opportunities to both enhance our understandings of certain cohorts through authentic means and consider the political implications of seeking to design with others. Notably, codesign methods enabled scholars to engage older adults in collaborative processes as valuable partners while also navigating the barriers unique for those in later life, with most approaches exploring needs and ideation, prototyping, or pilot testing

(Sumner *et al.*, 2020). Within this context, codesign has formed as a promising technique for supporting older participants with low levels of education and limited experience of ICT use, with examples of it reducing barriers and enabling such individuals to identify critical aspects of services and products for development (Almeida-Ferreira, Veloso and Mealha, 2017). However, such benefits need to be understood alongside the unique power dynamics that come with facilitating, as Dawn Sakaguchi-Tang and colleagues (2021) highlight how unbalanced interactions form through limiting negotiation or collaboration within design activities, requiring us to think critically about our engagement with others.

This negotiation of participation by older adults through participatory means continues to provide a critical juncture around the ethical tensions of representing others and how configurations of participation influence such outputs. HCI researcher Jenny Waycott and colleagues (2017) focus upon this notion of ethical ambiguity through the process of seeking to ‘give voice’ through a collaborative storytelling, offering a critical lens into how various stakeholders influence and even transform findings such as shared stories into curated communication pieces. They ultimately call for increased transparency with participants and in the communication of research around the processes themselves and how individuals are involved. This responds to a broader inconsistency that Jennifer Sumner and colleagues (2020) have found in how codesign is undertaken due to the flexibility of the method, whether it is the number of steps or rounds of iteration, or the various combination of workshops, focus groups, interview and observational techniques employed. Scholars are now exploring how differing configurations of participation influence the versions of ageing which are enacted and materialise through creating with older adults, requiring an awareness of not only the subject matter but also the political and methodological understandings of codesign (Fischer, Östlund and Peine, 2021).

These nuances become critical in the context of codesigning with older adults, which routinely involves the development of technologies and digital initiatives which provoke additional complexities around empowering meaningful outcomes and enabling learning. In drawing upon lived experience, codesigning with older adults has seen a focus on ageing and technology towards realising interventionist opportunities. (Leonardi *et al.*, 2008; Almeida-Ferreira, Veloso and Mealha, 2017; Mikus, 2018; Havukainen *et al.*, 2020). Such examples of engaging seniors on topics of information and communication technologies (ICT) evidence the provision of a diverse set of activities to enable multiple ways of participating, combining rapport building and adaptive practices to empower joint inquiry and shift power balances (Ostrowski, Breazeal and Park, 2021). A key aspect and outcome of codesign which also

intersects with this notion of empowerment is the mutual learning that accompanies this research, in which all stakeholder come to form new insights and understandings through exploring the experiences of each other (Fischer et al., 2021). Within the context of older adult's everyday experiences with digital technologies, Björn Fischer and colleagues (2021) noted how mutual learning saw participants not only inform researchers of their perspectives on how using technology to 'connect' often was not just in relation to their significant others, but also documenting the various apps or techniques mentioned by other participants.

In engaging with these matters of concerns, the configuration and representation of participation alongside the valuing of mutual learning and understanding the ethical and political dynamics at play, this research seeks to build reflexivity and new contexts into codesigning for older adults regarding perceptions of ICT risk. Evidently, there are combinations of workshops, focus groups, interviews, and direct observations that have been employed, with our interests in modes of participation that engaged with storytelling through lived experience. As this research is part of a wider project which had been able to survey a large cohort of older adults on issues of perceived risks and digital literacy, our own workshops could be informed by these insights.

Considering this context, we formed around a *scenario personarrative method* (Vallet et al., 2020), that can provide narrative and insight into the lived experience of people beyond other methods of focus groups or usability walkthroughs (Fuglerud et al., 2020). This involves building a typology of personas and navigating them through thematic and narrative-based scenarios. Through this we allow for "multiple views of an interaction" and "diverse kinds and amounts of detailing" allowing participants to use their own experiences and perceptions to help guide the development of complex interventions through the personas and scenarios that they create (Valaitis et al., 2014). By enabling our older participants to add qualities and 'enrich' these personas and then map their navigation of multiple scenarios, we can explore whether this configuration offers opportunities for mutual learning, and what representations of ageing it forms. We explore this and more in our *Shaping Connections Project* as discussed below.

### ***Shaping Connections* Research Program**

*...as an older person, you can go one of two ways: you can take up technology and go with it and learn with it, or else you can hide from it. People like that don't realise what they're missing out in life.*

As participant 79-year-old participant Judy notes, digital media and data has become synonymous with everyday life. Our project sought to explore what this reality means for many older adults as they unevenly come to digital media for various reasons and motivations. The *Shaping Connections* research program was established in 2019 as a collaboration between researchers and the University of the Third Age (U3A). The program sought to investigate how technology use supports older adults' connectedness and enhances social inclusion and participation. This project brought together academics and stakeholders with expertise in consumer behaviour, social marketing, consumer culture theory, and design innovation management.

In 2020 the project was funded by ACCAN to explore ICTs risks with the U3A community. Coinciding with the pandemic—which saw some of the world's longest lockdowns in Melbourne (Australia)—the project had to pivot many of its methods to digital despite the fact that most U3A community preferred face-to-face (f2f) activities. U3A is an international network of affiliate learning centres designed to promote lifelong learning and social connections amongst older adults, retired or semi-retired. Each group offers different classes and activities, which until COVID, were face-to-face (f2f) but more recently moved primarily online during the pandemic. The centres share skills, resources, guides, and information to its members and encourages connections with local communities and organisations. Offerings range from physical fitness to desk-based classes, language studies, art and craft classes, and social activities. Moving U3A's classes and activities online highlighted issues surrounding digital literacy and perceived risk for older adults. Yet beyond access and skills for online classes, larger issues affecting older adults and their social inclusion have become more apparent.

Codesigned with U3A this project focused on understanding older adults' lived experiences, practices, and perceptions of risk around ICT use and intervening in current knowledge and implementation strategies. The multidisciplinary and multimethod project followed a four-stage process: *Explore/Quantify, Understand, Co-create* and *Disseminate*. We not only sought to capture the perceptions and practices but also understand the barriers to ICT uptake and how this might be challenged. It is important to note that the project was initially designed before the pandemic, and hence methods and timelines changed due to the lockdowns. Specifically, during the pandemic lockdowns the significance of ICTs in all aspects of life became apparent. Thus, the need to intervene in the perceived barriers became a crucial aspect of the research.

In the state of Victoria, Australia, we experienced one of the longest COVID-19 lockdowns worldwide. This impacted all aspects of older adults’ lives, underscoring the need for research that not only *identifies* but also creates *interventions*. In the next section we describe the context for the research design and methods. We then reflect upon the codesign workshop methods in particular as a way to challenge digital ageing futures and enhance empathy, understanding and change.

## Methods

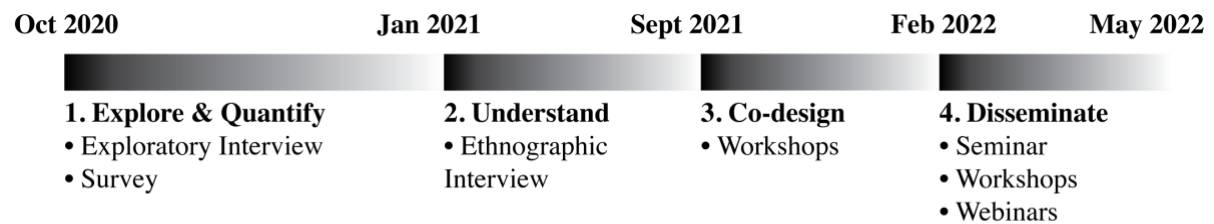


Figure 1: The Four Stages of the Project

As a forementioned, the project followed a four-stage process: *Explore/ Quantify*, *Understand*, *Co-create* and *Disseminate*. The project began in 2020 as the pandemic started to unfold globally. The pandemic meant that various methods had to be redefined and with much delay given public health mandates and lockdowns. The study was conducted in Victoria, Australia. The capital of Victoria, Melbourne, experienced some of the longest lockdowns from March 2020 to November 2021 (262 days).

The first stage, *Explore and Quantify*, incorporated mixed methods—22 video interviews, followed by 426 paper and online surveys. This first stage began with exploratory (22) interviews which were adapted into 15 video vignettes of older adults’ ICT risk perceptions (March 2021), followed by the surveys (June 2021, both digital and hardcopy to consider access). In this stage, we explored the language, contexts, and meanings associated with risk perceptions and ICT use and quantify the types of perceived risks associated with ICT and their influence on ICT use and engagement in the digital economy.

The researchers codesigned this project with U3A leaders to determine the best solutions for increased social and digital inclusion. This type of participatory design is vital to create solutions that are perceived as relevant, helpful, and valuable by end-users and stakeholders, building on their current efforts to engage older adults with ICT (XXXX). Moreover, co-design increases the uptake of solutions as co-designers take ownership of solutions. A recent survey report from National Seniors Australia outlines how “embedding co-design in a genuine and

ongoing way, in various forms and in various settings, directly challenges ageist norms and assumptions and mitigates against the most pernicious impacts of ageism: disempowerment, lack of control and autonomy, loss of rights” (Orthia et al., 2022, 1).

This first stage had a series of outputs sought to engage audiences and publics in different ways. The report was shared on the Australian Policy Online (APO) to disseminate to policy makers and stakeholders. The report explored the target audience’s language, experiences, quantified findings of risk perceptions, and influence on older consumers’ participation in the digital economy. The codesign workshops, the focus of this paper, allows the production of shareable artefacts for the community of practice—U3A and beyond.

The initial phase of exploratory remote interviews was conducted from November 2020 to January 2021 and involved 22 respondents from the U3A Victorian Network. Respondents were recruited via email and phone and were first inducted and prepared in short pre-interviews during which demographic and ICT perception data were collected. Subsequent semi-structured interviews focused on different types of perceived risks alongside topics of safety and care ranged from 30 to 90 minutes. Interviews were video recorded for data analysis purposes. The content was also used to produce vignettes to be deployed for the co-design workshop stage.

Given physical distancing regulations imposed during the COVID-19 pandemic, we designed all qualitative interviews to be done online or over the telephone (an alternative to include those unable or unwilling to go online). These semi-structured interviews were designed to explore pre-selected themes. Analysis of interview data provided respondents’ own language and meaning the items operationalised for quantitative analysis using a survey (Stage 1b). Using appropriate language has been identified as a challenge in older adult’s uptake of ICTs (Maccora et al., 2019). It assures the accuracy of shared meanings by using respondents’ language in the survey. In addition to language use, it is also vital to understand who (or what) influences perceptions of risk. Although risks are related to the degree of inter-family and inter-generational support for ICT use, negative stereotypes of older adults and technology are also commonplace. Older adults with access to younger family members may receive support, but the same family members may fuel insecurity through stereotyping and thus increase risk perceptions at the same time.

The interviews of 22 Victorian U3A respondents were recorded and transcribed. Thirteen were women, and eight were men—four respondents self-reported as culturally and linguistically diverse (CALD) persons. The cohort was between 59 and 85 years old, with a mean age of 71.8 and a median of 71. The interviews directly inquired into perceptions of ICT and detailed analysis based upon these subcomponents. This analysis resulted in several



vignettes for each, as several quotes were collected around a specific aspect of the risk type. Analysis of interview transcripts involved initial risk coding and later thematic categorising of responses. Categories based on the perceived risks were used to develop various subcategories that present barriers for older adults in making full use of ICT. These categories were formed from the initial literature review that highlighted the complexity of the concept of ‘risk’ and identified several subcomponents (Mitchell, 1999). The findings confirmed under five areas of risk:

1. **Psychological risk** (i.e., fear of making a wrong choice)
2. **Financial risk** (i.e., fear of wasting money)
3. **Functional/Performance risk** (i.e., fear of the product/service not working correctly)
4. **Social risk** (i.e., fear of negative opinions from significant other individuals on the product/service)
5. **Physical risk** (i.e., fear of the product/service being a threat to the individual’s health).

Based on the literature, the research team analysed these 22 exploratory interviews with U3A members and sorted their responses into the five broad categories of perceived risks associated with ICT. These interviews led to a range of risk perceptions subcategories developed into short, curated vignettes edited from recorded interview materials. Across the five risk perceptions categories chosen (*Psychological, Financial, Functional/Performance, Social, and Physical*), 22 distinct risk subcategories were identified, including the perspectives of three to four respondents in each. Personas were then designed around the outcomes from the surveys and interviews, which were then deployed in *Co-create* dimension through codesign workshops.

In the next section we explore the through the five codesign workshops with the U3A community. These workshops consisted of the following amount of participants—WK 1 (12ppl), WK 2 (14ppl), WK 3 (13ppl) and WK 4 (29ppl). We reflect upon the learnings from the workshops which took both online and f2f dimensions and what we might take forward as we move towards an increasingly ageing and data saturated future.

### **Workshop Design**

The workshops were orientated around two codesign session in which a persona is ‘enriched’ by participants and then placed into various thematic situations to deal with. This approach to research, through co-design means, is well understood in literature: that personas can provide narrative and insight into the lived experience of people beyond other methods of focus

groups or usability walkthroughs (Fuglerud et al., 2020). Critical to our project and purpose, personas can be based on collected data, such as extensive surveying and ethnography conducted in Stages 1 & 2—though Kristin Skeide Fuglerud et al. does indicate the challenge of condensing quantitative information into a few personas while maintaining statistical representativity. Complimenting and enhancing the co-creation of a persona is scenario mapping/thinking, which places said personas into present or future scenarios, again drawing on our key insights to provide specific domains and environments to navigate (Saadati, Nocera and Clemmensen, 2021). Scenarios allow for “multiple views of an interaction” and “diverse kinds and amounts of detailing” allowing participants to use their own experiences and perceptions to help guide the development of complex interventions through the personas and scenarios that they create (Valaitis et al., 2014).

### Online Workshops

Due to the ongoing and changing pandemic conditions—as well as concerns for participants safety—the initial workshops were conducted online with members of U3A. The first, prototypical workshop, was held over two days in 3-hour blocks with Mentors and Teachers from U3A that were considered ‘tech-savvy’. Due to this audience, the workshops were intended to offer a rich digital experience, by utilising a collaborative online Whiteboard Tool call Miro. By using pre-design templates which offered participant groups basic personas (their name and age, a brief backstory, and levels of digital literacy, perceived ICT risk and health) and several risk-themed scenarios to navigate, we sought to help participants learn the Miro Tool and engage in the co-design more ‘effectively’.

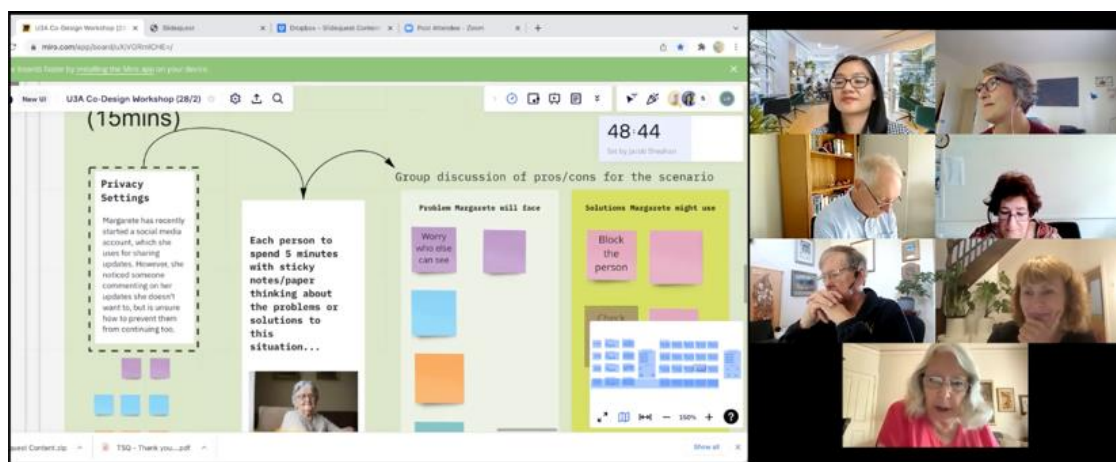


Figure 2: screenshot from WK 1

### *Workshop 1: Mentors (12 ppl)*

Conducted over the 20-21 January 2022 with 13 U3A mentors, the first day involved a training session with the Miro tool, followed by the persona enriching in three breakout groups. We quickly learnt that the Miro tool at the centre of our workshop was not as intuitive to pick up as we thought, with many of these technically-savvy ICT users struggling to understand and manage the tool. The facilitators were able to manage these issues through utilising a scribe to support those who were not able or confident enough to write down their responses. The Persona activity itself saw a strong discussion around the provided basic persona, as each group responded to questions regarding the technical and health-related aspirations of this imaginary individual, drawing on their own experiences teaching classes and engaging with U3A members of various levels and abilities.

The second day saw many groups return to the less ‘interactive’ mode of scribes documenting the discussion, though some participants were either skilled enough to make their own notes, or had taken their own time to learn this new tool. The scenarios activity which was the focus of that day involved completing 5 scenarios, in which participants needed to consider the issues the persona might face, their competence in dealing with them, as well as where they might get support from. Responses were then categorised by the participants and facilitators as either technical (actions), cognitive (thinking) or socio-emotional (feeling), as process of analysis that was not so effectively received.





			
<b>Dawn, 68 years old</b> <ul style="list-style-type: none"><li>• High Digital Literacy</li><li>• Low Perceived Risk</li><li>• Medium Health</li></ul>	<b>Joshua, 84 years old</b> <ul style="list-style-type: none"><li>• Low Digital Literacy</li><li>• High Perceived Risk</li><li>• Low Health</li></ul>	<b>Margarete, 75 years old</b> <ul style="list-style-type: none"><li>• Low Digital Literacy</li><li>• Med. Perceived Risk</li><li>• High Health</li></ul>	<b>Timothy, 84 years old</b> <ul style="list-style-type: none"><li>• High Digital Literacy</li><li>• High Perceived Risk</li><li>• Medium Health</li></ul>

Figure 3: Workshop Personas

### *Workshop 2: Online with Miro scribes (14 ppl)*

Taking the learnings from Workshop 1 in which technologically savvy participants (U3A tech mentors) struggled with the Miro application, we then organised for each group to have a

facilitator and someone who transcribed the conversation onto MIRO. This meant that participants could focus on the personas and discussion rather than being pre-occupied by using new software. This workshop was hosted over one day (5 hours).

#### *Workshop 3, 4, 5: Face to Face (13, 29, 8 ppl)*

These workshops could be hosted face-to-face (f2f) which enhanced the engagement and dialogue. While masks were worn to ensure public safety was adhered to, these f2f workshops were more engaging as they allowed participants with a diversity of digital media perceptions and practices to contribute meaningfully without being hindered by technological intervention. This workshop was hosted over one day (6 hours) at their local U3A site. Being in a familiar space together also encouraged trust and increased participation.



Figure 4: U3A community engaging with the workshops at U3A

#### *Workshop Insights and Participation*

In reflecting on the online and in-person workshops, we consider how personas provided an important vehicle for engaging older participants in the often-complex topics of ICT use and perceived risks of technologies. First, we highlight how this method supported participants to consider personal and contextualise aspects of ICT issues, helping humanise such situations. This was apparent in the initial workshop, when engaging the tech-savvy mentors of U3A, we saw participants were drawn to enrich the personas as if they were their students, however, our framework involved them having examine not only technical but also the cognitive and socio-emotional facets of these imaginary individuals. Due to this process, participants reflected on how instrumental the lifestyle and historical contexts of such individuals were to realising their skill levels and intentions with their devices. The later workshop with a broader group of U3A members reaffirmed this contextual process. Participants focused on how familiarity developed

with practicing to navigate ICT issues, making what devices an individual had key to opportunities to learn and play, and ultimately improving their skills.

In addition, we documented how providing a spectrum of personas with varying low to high levels of digital literacy was key to enabling participants to articulate clear delineations and consistencies in the opportunities and challenges posed to older adults. For example, across multiple workshops, participants described how the higher literacy personas would aspire to use their skillsets as a multipurpose platform for expanding their activities, whereas the lower tier personas remained focused on increasing social connection and becoming more comfortable to use devices to everyday things. By comparison, barriers in personal traits such as impatient or memory loss, in the high cost of technologies, and in the location of personas, such as the reduced online access and device availability for regional individuals, were constant across the spectrum, offering important insights for both older adults and the organisations that seek to support them.

Finally, it is important to note how the enrichment process evolved through the workshop sessions, and how this refinement was key to engaging and empowering culturally and linguistically diverse (CALD) attendees to participant and highlight the unique issues they face. The earlier workshops, with U3A membership, involved providing personas over various ages and background, though all were predominantly of Australian origin and had names which reflected this. Such 'pre-filled' data was important to helping connect workshop participants with the personas, however, this did not always have the desired effect.

In our first workshop in-person with members of the Wollert community, we worked with a group of older Egyptian immigrants to reframe and adapt the given persona to reflect their reality—in which they actively changed its name and background. The resulting enrichment highlight how a CALD experience of ICT use and risk could differ to others, such that we saw it necessary to provide an additional to CALD personas, alongside the removal of pre-filled persona names, in the later sessions. This had two important outcomes: one, we were able to affirm for CALD participants how valuable and important their lived experience was, and more broadly, enabled all groups to assign a name through the enrichment process and aid them in invest further in the process.

These insights affirm how central mutual learning is in the codesign process, and how valuing nuances throughout workshop can support the personalising and humanising the ICT of older adults. Across our insights, personas formed a vehicle through which not only older adults but also those which support them with technology were able to articulate the possibilities and limits to senior's media practices. As we highlight, a persona-scenario approach involves

not only learning from participants, in developing contextual understandings of ICT use, but also for researchers in developing personas that participants can relate to. This method offers has been seen by Fuglerud and colleagues (2020) to enable deeper insight into the lived experience of people, which our work also indicates: through learning of the opportunities that higher digital literacy can offer, documenting financial and location-based barriers that exist across, and enabling CALD participants to articulate and explore the unique issues they face. Ultimately, we see how being attentive to the nuances of codesigning with older adults was invaluable in characterising the personal and environmental factors older adults must navigate with ICT use.

### **Conclusion: Ageing in and through Data**

In this paper we have explored the possibilities and limits around how can we codesign around digital ageing futures in nuanced ways. As the digital and social become entangled, so too do ageing and futures. Increasingly we need to explore what it means to think critically about these overlays and how we need to rethink our methods accordingly. As “unprecedented” events such as the pandemic and natural disasters become commonplace and mundane, we need ways to codesign together for more thoughtful and sustainable futures. As the first generation to age *in* and *through* data, older adults today can provide much insight into future issues around technology and ageing well.

Conducted through pandemic lockdowns whereby many older adults were forced to use digital and online media, the *Shaping Connections* project explored many perceptions and practices with the U3A community. The study presented methodological learnings about the limit of online participation for non-tech savvy users as well as the power of personas for enhancing empathy. As Hjorth et al. (2019) suggest, as the relationalities between digital and social become increasingly entangled, more research based on lived experience is required to highlight how real-world problems (and their solutions) for older adults, families and their communities happen in the intersections between the engagement, risk, and empowerment. Deploying creative and alternative methods for research engagement and dissemination can play a key role in if research findings are taken up (Miller, 2021; Hjorth et al., 2019). In particular, for consumer rights, finding different ways to give voice to experience is crucial.

Through the discussion of codesign workshops, this paper has sought to think through some of the challenges and possibilities for researchers, especially relating to older adults and digital media. We need to offer more nuanced models that acknowledge the diversity and richness of older adult’s digital media engagement spectrum from non to tech savvy users. As

data further saturates our everyday lives, we will increasingly need creative, codesigned and speculative ways to think through the possibilities and limits of the digital across various literacies, subjectivities and spectrums.

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