**Emergent everyday ethics in infrastructures for smart care: phase 1 (researchers and developers)**

N.B. This is a semi-structured interview and hence questions will be delivered in an order that is as natural as possible within the flow of conversation with a view to encouraging the interviewee to use their own framing concepts rather than imposing a specific framing upon them. The interview guide below contains the key areas to be covered and a series of prompts to be used as and when necessary to encourage the interviewee to talk in more depth about the issues of concern.

**Interview guide: researchers/engineers/developers**

The aim of this interview is to explore the various kinds of dilemmas and challenges that arise around innovations in smart technologies for dementia care, and to understand those from the perspective of the various professionals and lay people involved. In the interview I’d like to explore your specific role within this field and understand more about how it looks from your perspective. We will be talking specifically about ethics later in the interview, but I’d like to start by getting a better idea of the work that you’re doing.

**Introduction**

Could you tell me about your involvement in smart technologies for dementia care – is there a specific project or projects that you are involved in within this domain?

For each project mentioned (or choosing, with the interviewee, the most useful and relevant project to focus on in the interview): Could you tell me a bit about the project and what you are aiming to do? *What stage is the project at? How did you get involved in the project? How does the project fit with your previous experience – to what extent is it a new departure for you? Is this a collaborative project? If so, what is the composition of the wider team that you are working with – other scientific fields, other institutions, other professions? How much do you interact with those other people on a day-to-day basis? Does the project happen in a series of stages or phases, and if so, what stage are you at now, and what comes next?*

**Scientific/technical/professional challenges**

What do you see as the key innovative steps or difficult problems to crack in getting this project to work?

What problems would you be particularly proud to solve or (for academic researchers) what aspects would lead to publishable insights in your field?

What challenges, hitches or dilemmas has the project faced, in your experience? Are there instances where the project hasn’t run as smoothly as you’d like? *I’d like to focus on this issue of challenges in some detail - can you tell me about some examples of those difficult challenges – (for each challenge that the interviewee identifies) how did you realise there was a problem, how did you get through it and who was involved in that? What would you say are the sources of the challenges? (If the interviewee finds it difficult to answer, offer the possibilities that you might say that it was difficulties getting technologies to work as required, or lack of knowledge or expertise, or challenges of collaboration, or various kinds of human problem error or misunderstandings). Did any of the challenges that you have faced make any fundamental difference to the course of the project, or did the project stay pretty much as it was originally conceived? Have any of the challenges been unexpected, or unexpectedly difficult?*

Has anything turned out to be unexpectedly straightforward? Why do you think that might be?

**Professional background and ethical frameworks**

How would you describe your professional/academic background? Is that the same as the context that you are working in now?

How would you say that ethics are understood in your field? Do you have any formal training in ethics? What kind of ethical review or scrutiny would someone working in your field expect a project to undergo? Is that what happened in this project? *(Prompt for more details about how and where and on what criteria the current project underwent ethical review and whether there were any hurdles in getting through ethical review, if the interviewee knows. If the interviewee is involved as an ethical reviewer or similar capacity, explore with them the expertise they bring to that role and their perception of how that expertise is drawn on in the process of ethical review).*

**Ethics of AI and care ethics**

I’d now like to ask you some specific questions that are focused on keywords from writings about the ethics of Artificial Intelligence and ethics of healthcare. These tend to be very broad concepts so what I’d like you to do is to tell me something about what the concept means to you and how you think it might apply in the context of this project. This isn’t supposed to be a test of how well you know formal ethics, more of a think-aloud exercise on how aspects of the current project strike you as relevant or not. In each case I’ll tell you the word and give some broad examples of what it means in the context of AI and healthcare.

*Beneficence* (AI and healthcare as a contribution to human good)

*Non-maleficence* (do no harm and avoid risks due to mis-use, privacy infringement)

*Autonomy* (balancing human and machine-led decision making and supporting human autonomy and ability to reverse machine-led decisions)

*Justice* (equality, fairness, avoidance of discrimination, promotion of equality)

*Explicability* – includes intelligibility and accountability (understanding and holding decision-making processes to account – to understand potential for good or harm we need to know what it is doing. If there is a negative outcome, we need to know whose role it is to respond).

Can we pause and reflect on these now – is this the kind of evaluation that you’ve ever done in relation to this project? Do you find it useful and if so why, or why not? Who should do this kind of evaluation, and when? Do you think it’s possible to meet these ethical standards?

Does this project raise particular ethical challenges because of the use of machine learning? *Why might that be? Do you have any thoughts on how we might deal with those ethical challenges?*

Does this project raise particular ethical challenges because it takes place in the context of dementia care? *Why might that be? Do you have any thoughts on how we might deal with those ethical challenges?*

**Futures**

How do you see the future of the innovation that you’re working on?

Who might want to use it and who might not? *How widely do you see it being used? Will there be any challenges as it rolls out more broadly? Are there any potential ethical challenges that come for healthcare professionals, people living with dementia or their carers when the innovation is used on a wider scale? Do you think there is anything that we can do to anticipate and mitigate or avoid these ethical challenges?*

What would your advice be to someone considering becoming a user of smart technology for dementia care? What should they think about and is there anything you would want to warn them about?

**Follow-up interview invitation**

I’m keen that this research get a sense of the ways that ideas about ethical dilemmas and challenges develop over time. Would you be willing for me to contact you in about 8 weeks time to ask if you’d be available for a short (15 minute) catch-up on any new issues that you have encountered in that time? This would mean that I’d need to keep your contact details until then in order to send you an invitation. Of course, if you’ve changed your mind at that point there is no obligation to go ahead.

**Closing thanks**

Thank you very much for your time and your careful consideration of my questions. I just want to remind you that you have the participant information sheet giving all of the information on data storage and retention and my contact details. I’ll be removing your name, institution and project title from the transcript of this interview. Could we agree now a pseudonym for you and a suitably generic job title to capture your role without identifying you?

I’m happy to answer any questions you may have at any point. Is there anything you’d like to ask now, about that, or about my research more broadly?

**Interview guide for follow-up interviews**

*Begin by checking the participant’s recollection of the existing consent in place and confirming that they are happy to proceed on that basis.*

We last spoke x weeks ago, talking about some of the challenges of work on smart care for dementia, from the perspective of your involvement in x project. This follow-up interview is intended as a quick catch-up to explore any issues that you may have thought about or encountered since we last spoke.

Has the project gone smoothly since we last spoke? Have there been any challenges, hitches or dilemmas? If so, how did you realise there was a problem, how did you get through it and who was involved in that? What would you say are the sources of the challenges? (*If the interviewee finds it difficult to answer, offer the possibilities that you might say that it was difficulties getting technologies to work as required, or lack of knowledge or expertise, or challenges of collaboration, or various kinds of human problem error or misunderstandings*). Did any of the challenges that you have faced make any fundamental difference to the course of the project, or did the project stay pretty much as it was originally conceived? Have any of the challenges been unexpected, or unexpectedly difficult?

Has anything that you would consider an ethical dilemma arisen? Is there anything that would map onto the ethical principles that we spoke about last time – I’ll remind you of them, they are beneficence, non-maleficence, autonomy, justice and explicability.

Finally, have you had any other further thoughts about what we discussed last time? (Prompt if needed – we talked about whether there are particular ethical challenges posed by smart care for dementia and we discussed how you saw the future for this technology).

[After the first follow-up interview]

Thank you so much for this catch-up. It is so useful to have a perspective on how people’s thoughts develop over time. Would you be willing for me to contact you in about 8 weeks time to ask if you’d be available for another short (15 minute) catch-up on any new issues that you have encountered in that time? This would mean that I’d need to keep your contact details until then in order to send you an invitation. Of course, if you’ve changed your mind at that point there is no obligation to go ahead.

[After the final follow-up interview]

Thank you so much for this catch-up. It has been so useful to carry on talking and find out how people’s thoughts on these issues develop over time. This is the last formal part of your involvement in the research but, as I’ve explained in the Participant Information Sheet, I will be producing various outputs from the research and I will be happy to share that with you if you email me in due course. I’ll also be sending out invitations to some focus groups towards the end of the research to people who have consented to have their details kept on file for that purpose.