Ethics of implementation

W.B. Mortenson (Convener), *The ethics of gerontechnology: From intervention study to implementation in practice. Gerontechnology 2010;9(2):142;* doi: 10.4017/gt.2010.09.02.073.00 **Participants**: *L. Normie (Israel), R. Savage (Canada),* and *W. B. Mortenson (Canada)*. **ISSUE** New gerontechnologies are continually being developed, but one of the main challenges with any innovation is difficulty in anticipating the possible negative consequences associated with use[1]. Therefore, with each new technology, ethical issues surrounding (i) research into its efficacy, and (ii) its use in practice need to be carefully considered to ensure the 'right' moral and scientific outcomes are achieved. **CONTENT** The papers presented will describe the ethical issues inherent in research with, and implementation of, new gerontechnologies; in particular, issues of autonomy, beneficence, nonmalfeasance, justice, confidentiality and informed consent. **STRUCTURE** Drawing on case studies abstracted from European Commission financed projects under the 6th & 7th Framework Programmes, Lawrence Normie will identify limitations of the official EC guidelines to address many of the more subtle, ethical issues concerning safety, privacy, dignity, and freedom of choice for older subjects during field trials of technological interventions. Based on his review of the literature and initial pilot data, Robert Savage will describe some of the anticipated ethical concerns of potential users of ambient assistive technology, which includes integration of innovations in telehealth, stand-alone assistive devices, and smart home technologies. Drawing on data from a mixed methods research project of wheelchair users in residential care facilities, Ben Mortenson will identify ethical implications that surveillance and governance technologies, such as chair checks and radio frequency identification tag-based alarm systems, have for the autonomy and the dignity of residents. Following the individual presentations, Ben Mortenson will lead a discussion focussing on ethical issues associated with intervention studies and the implementation of gerontechnology in various settings, with the aim of identifying strategies and guidelines for best practice. **CONCLUSION** Gerontechnology is morally neutral - it is the manner in which it is employed that has the potential for harm or for good[2]. By critically addressing the ethical implications of gerontechnological innovations, this symposium is intended to facilitate better gerontechnology research and application.

References
1. Rogers EM. Diffusion of innovations. 5th edition. New York: Free Press; 2003
2. Welsh S, Hassiotis A, O'Mahoney G, Deahl M. Big Brother is watching you – the ethical implications of electronic surveillance measures in the elderly with dementia and in adults with learning difficulties. Aging and Mental Health 2003;7(5):372–375

Keywords: ethics, user trials, best practice
Address: Simon Fraser University, Vancouver, BC, Canada; E: wmortens@sfu.ca

L.R. Normie. Ethical management of older user participatory trials for new technology: Special considerations for best practice. Gerontechnology 2010;9(2):142-143; doi:10.4017/gt.2010.09.02.074.00 **Purpose** Article 6 of the European Commission's Seventh Framework Programme (FP7, 2007-2013) states that all research activities carried out with FP7 support must comply with fundamental ethical principles[1]. To be sure, copious official directives and guidelines exist concerning the role of ethics in European Union research[2]; moreover, strict ethical supervision of projects is conducted under the EC's auspices, through independent ethical review committees, which deliberate in virtually all cases where ethical implications are evident. However, specific guidance is unavailable for the treatment of older citizens who participate as subjects in EC-supported research and development projects in the

domain of information and communication technologies (ICT). This paper assesses the overall effectiveness of, mainly ad hoc measures, currently employed by the European Commission, with respect to the ethical management of ICT research projects it supports under the action plan of 'Ageing Well in the Information Society'[3], which are intended to provide acceptable, or reasonable, protection of older persons' interests during their participation in evaluation of new technologies. **Method** A comparative hierarchical case study analysis[4] was performed on the published results of five projects in the 'ICT and Ageing' theme of the 6th and 7th Framework Programmes[5]. In addition, available results and recommendations from recently completed and in progress EC-supported studies[6] on the ethics of ICT for older people were interrogated for both concurring and conflicting recommendations, regarding best practice in research, including a critical appraisal of their feasibility for application in the field. **Results & Discussion** The technology and ethics studies performed by the various groups endorse earlier research in the field[7], suggesting that interim technological advances were accurately anticipated with regard to their ethical impact. However, despite comprehensive coverage of the various issues relating to the ethical examination of gerontechnology research, my analysis concludes that the same studies largely have fallen short in specifying prescriptive procedures that can be usefully applied to cross-disciplinary ICT research and development projects for ageing-in-place. I propose a novel schema for the systematic formulation of research project ethical requirements that meet detailed user and functional requirements, within the particular context of the older person as the technology beneficiary.

References

1. Official Journal of the European Union 2006;412:1-41
2. http://ec.europa.eu/research/science-society/index.cfm?fuseaction=public.topic&id=22; retrieved January 24, 2010
3. http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52007DC0332:EN:NOT; retrieved January 24, 2010
4. Verschuren P, Doorewaard H. Designing a research project. Utrecht: Lemma; 2009
5. http://cordis.europa.eu/fp7/ict/programme/challenge7-ageing_en.html; retrieved January 24, 2010
6. Mordini E, Wright D, de Hert P, Mantovani E, Wadhwa KR, Thestrup J, Van Steendam G. Ethics, e-Inclusion and Ageing, Studies in Ethics, Law, and Technology 2009;3(1):article 5
7. Rauhala M, Topo P. Independent Living, Technology, and Ethics. Technology and Disability 2003;15(3):205-214

Purpose An Ambient Assisted Living system refers to an integration of telehealth, stand-alone assistive devices, and smart home innovations[1]. Such a system has the potential to assist older Canadians with the ability to remain in their homes and age-in-place. **Method** A grounded theory approach is being employed in this study and data is being collected by way of semi-structured interviews with research participants[2]. Criteria for inclusion in the study includes being a community-dwelling senior, over the age of sixty years and living in southwestern British Columbia. Additionally, participants must be experiencing at least one chronic condition and/or mobility restriction. Upon developing a baseline conceptualization of the meaning of home with these seniors, a movie clip depicting an Ambient Assisted Living environment will be displayed. The open-ended interview format will continue, whereby participants will be asked to visualize and describe how they feel such a system may impact their own meaning of home. **Results & Discussion** Sixsmith has commented on the importance of taking a user-driven approach in the development of new technologies such as Ambient Assisted Living[3]. The present research will shed light upon an important and overlooked area of concern, regarding the impact such a system may have upon the end-user. The study will also inform ethical issues salient to the development of these rapidly emerging technological systems.

References

1. SOPRANO; 2008; http://soprano-ip.org/; retrieved January, 2010

2. Charmaz K. Constructing Grounded Theory: A practical guide through qualitative analysis. London: Sage; 2006

3. Sixsmith A, Mueller S, Lull F, Klein M, Bierhoff I, Deleaney S, Byrne P, Sproll S, Savage R, Avatangelou E. A user-driven approach to developing Ambient Assisted Living systems for older people: The SOPRANO project. In Soar J, Swindell R, Tsang P. Intelligent Technologies for Bridging the Grey Digital Divide. Hershey: IGI Global (in press)

Purpose   The use of gerontechnology is intended to improve health and well-being. Many aspects of gerontechnology, however, remain unquestioned. One of the criticisms of assistive devices is that, as they are intended to restore normalcy, their use may downplay issues about how society fails to accommodate difference[1]. Similarly, in residential care, surveillance and governing technology may enable individuals to live more safely but may also have the potential to create practices that classify individuals as either able or disabled, normal or other and that have additional adverse effects. **Method** Drawing on data from an ethnographic study of residents who use wheelchairs in residential care facilities, a cross-sectional study with 119 residents from 11 facilities in the Lower Mainland of British Columbia and from recent work in disability studies and critical gerontology, this paper explores some of the implications that surveillance and governance technologies have for wheelchair using residents in these settings. **Results & Discussion** Almost all residents in these facilities used wheelchairs as a primary means of mobility. Of residents with cognitive impairment, 14% had wheelchairs that could not be self-propelled, and 42% had a seat-belt that could not be self-released. The use of waist restraint devices is troubling, given their potential for asphyxiation[2] and their questionable efficacy in reducing injuries[3]. To prevent some of these residents from leaving proscribed areas in their facilities, radio frequency identification tags were used to lock doors and prevent elevator use. The intent of these devices was to prevent residents from wandering, but these devices also restricted their access to facility activities in other areas of the building and stopped some residents from enjoying the facility grounds. Chair checks and bed alarms were pressure sensitive devices that sounded an alarm when a resident -identified at risk for falls- tried to stand up independently. Although these devices represent a preferable alternative to the use of restraints, the sounds they emitted were often an annoyance to residents and were sometimes not responded to by staff, who were busy with other residents or who failed to hear the alarms among the din of other facility noises. Although the use of these surveillance and governing devices was intended to increase resident safety and to reduce staff workload, their use may (i) have contributed to resident deconditioning and marginalization and (ii) been ineffective due to low facility staffing levels. New surveillance and governance technologies offer unprecedented opportunities for monitoring and control of residents. Limiting the mobility of residents, however, not only contributes to their stigmatization and isolation but also may reduce opportunities for them to express their embodied personhood and thus contributes to their erosion of self[4]. It is ironic that facilities that are created to house individuals who will not be supported in the community then fail to accommodate the needs of the diversity of residents in their care.

References
1. Moser I. Disability and the promises of technology. Technology, subjectivity and embodiment within an order of normal. Information and Communication in Society 2006;9(3): 373-395
2. Kontos PC. Ethnographic reflections on selfhood, embodiment and Alzheimer's disease. Aging Society 2004;24(6):829-849
3. Capezuti E, Brush BL, Won RM, Wagne LM, Lawson WT. Least restrictive or least understood? Waist restraints, provider practices, and risk of harm. Journal of Aging and Social Policy 2008;20(3):305-322
4. Tilly J, Reed P. Falls, wandering, and physical restraints: A review of interventions for individuals with dementia in assisted living and nursing homes. Alzheimer's Care Today 2008;9(1):45-50