

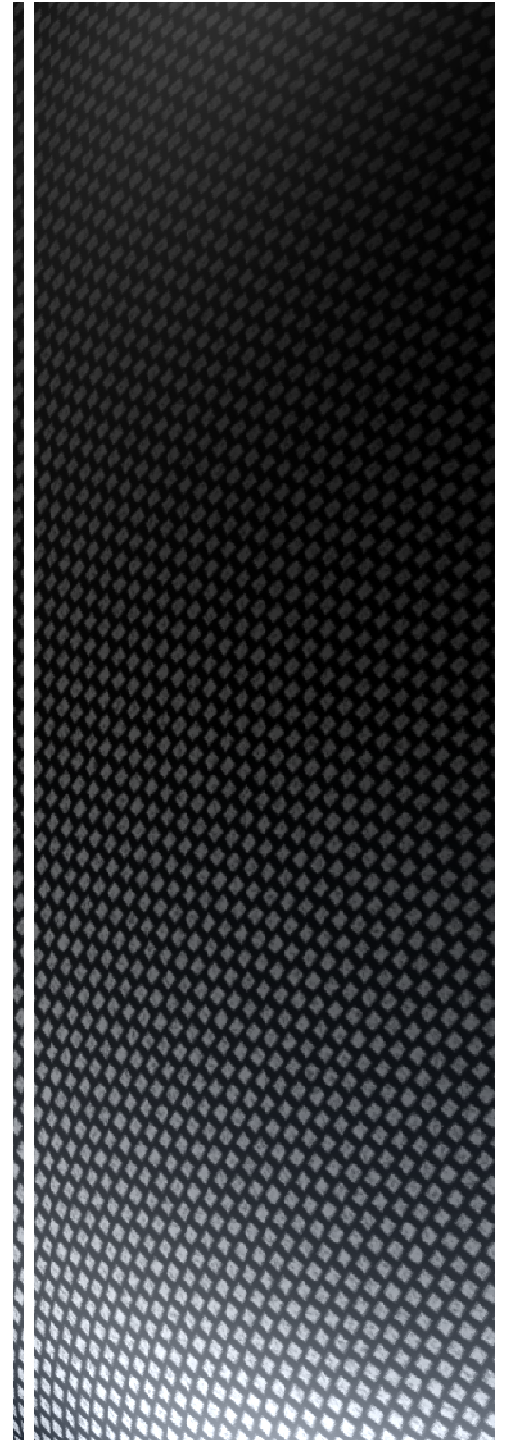
security
information technology
health care

what kind of vulnerability do we want?



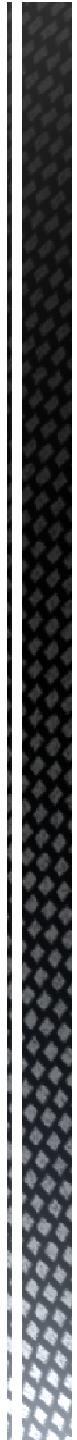
mark coeckelbergh

[university of twente]



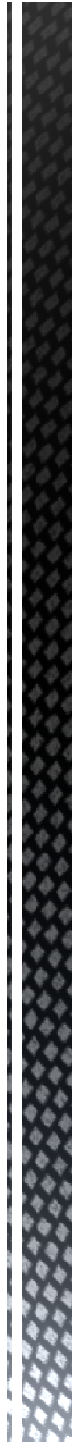
- background
 - research on technology and vulnerability [Springer book, forthcoming in 2013]
 - research on health care, information technology, & robotics
- this paper
 - robots and smart phones in health care
 - security and vulnerability
 - non-dualist, holistic approach
 - example: care for the elderly

introduction



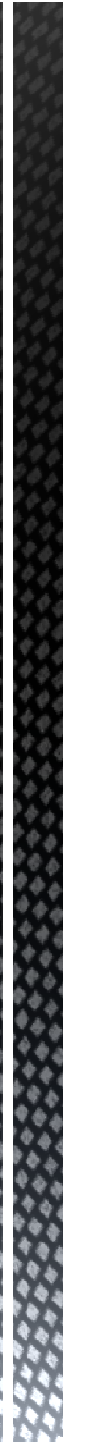


health care &
information
technology



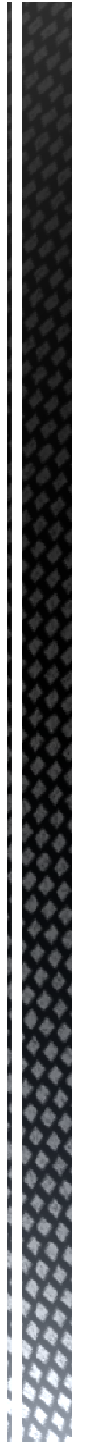


health care &
information
technology



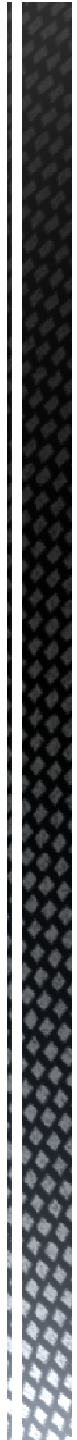


>>> security
questions



- electronic patient records
 - example: Dutch Electronic Patient Record System
 - example: Google Health, Microsoft HealthVault, use of existing social networks such as Facebook and Google+

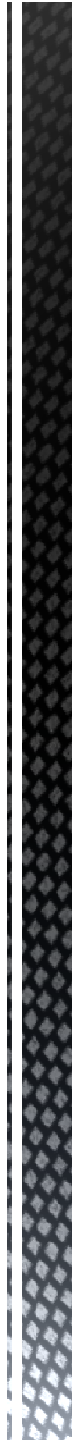
health care &
information
technology



- Google Health was a personal health information centralization service (sometimes known as personal health record services) by Google introduced in 2008 and announced for withdrawal in 2011. The service allowed Google users to **volunteer their health records** – either manually or by logging into their accounts at partnered health services providers – into the Google Health system, thereby merging potentially separate health records into **one centralized Google Health profile**.
- Volunteered information can include "health conditions, medications, allergies, and lab results". Once entered, Google Health used the information to provide the user with a merged health record, information on conditions, and possible interactions between drugs, conditions, and allergies.

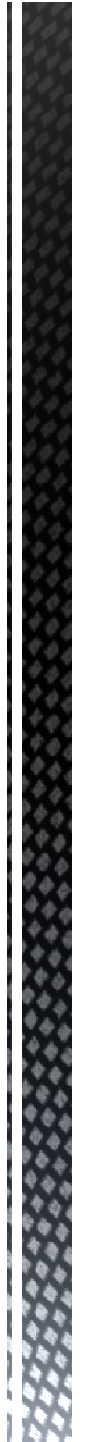
[Wikipedia]

example of a
centralized
electronic health
record



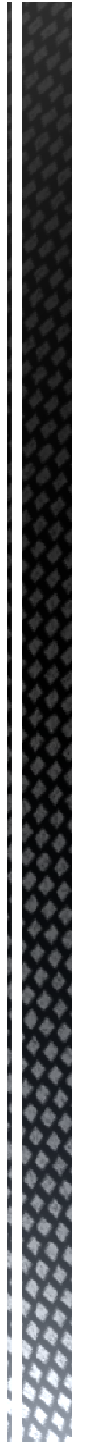


my data!



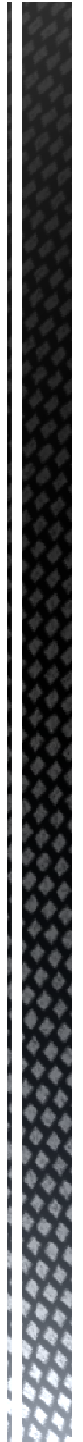


health care &
information
technology



- telecare and social networks
 - example: HELPSoS Social Telecare Platform
 - example: use of smartphones and the future of health care

health care &
information
technology



What we offer our members, their family and care providers?

Health Management -

HELPSoS' Health Reminders service provides a simple and efficient way to manage medication, doctor appointments and immunization reminders, while family and caregivers can track noncompliance by their loved ones.

Wellness Care Call -

HELPSoS' Daily Care Call service helps monitor seniors on a daily basis; our automated on call monitoring service keeps seniors from isolation, while updating their day to day status on health and emotions, and notifying family and caretakers as required.

Emergency Notification -

HELPSoS' Emergency Notification service provides a one-touch quick and easy method to notify family, caregivers, neighbors, doctor or staff at the time of personal crisis. The HELPSoS emergency solution enables loved ones to easily notify multiple pre-designated contacts simultaneously using their home or mobile phone.

Social Platform

HELPSoS' senior social and care platform incorporates care giving and communication features; our platform provides seniors and their network of family and caregivers the ability to stay connected. We offer tools to help share pictures, stories and activities together, create blogs, calendar management, bulletins and more.

Benefits

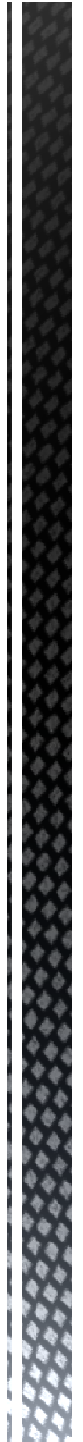
- > Free cost to our members and their network of family and caregivers
- > Easy web setup, please contact us if you would like assistance with your setup
- > Telecare services works with any phone and requires no additional hardware or software
- > Promote compliance and improve health outcomes
- > Help manage individualized medication and health activities
- > Reduce medication related errors - ensures taking the right drugs, right dose, at the right time
- > Send medication refill request notification to family, caregiver or your pharmacist
- > Keep family and caregivers anywhere in the world informed on how you are doing, with our Wellness Daily Care Calls
- > Simple emergency notification system using one's home or mobile phone
- > Helps family and caregivers stay connected remotely

Source: http://www.helpsos.com/solutions_for_individuals.html

example of a social telecare
platform: HELPSoS

- modern medicine
 - groups, population
- new medicine
 - personal technology > data > individual treatment

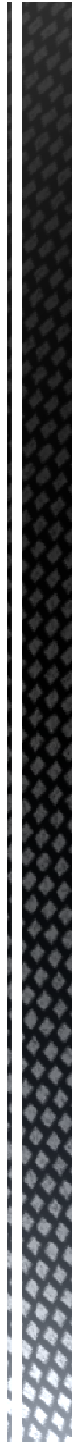
smart phones,
social networks
& the health care
revolution



- By applying biosensors to the body, we can measure any physiologic metric—blood pressure, glucose, oxygen concentration in the blood—and send the data wirelessly through smartphones to doctors. That means you have this panoramic, high-definition, relatively comprehensive view of a patient that doctors can use to assess and manage disease, and that patients can use to help maintain their health and direct their own care. [...]That is the essence of digitizing a human being. For medical purposes, it's getting all the essential data, and it will be the information to radically transform the future of medicine

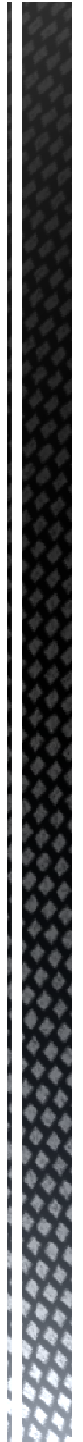
[interview with Dr Eric Topol, The Wall Street Journal April 2012]

the future of
health care?



- security
- privacy
- equity & justice
- quality of care

ethical issues in eHealth

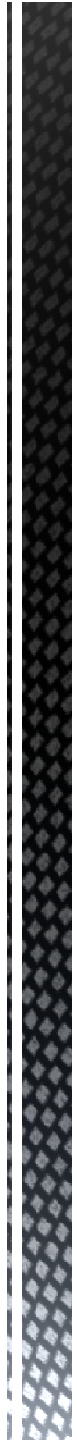


... there's a pervasive sense that our use of technology has become a wedge between doctors and just about everyone else: Nurses. Other doctors. Worst of all, our patients.

(...) No one describes this more elegantly than doctor and author Abraham Verghese, who has lamented the rise of the "iPatient." For Verghese, the iPatient symbolizes the adoption of technology to a level that is eroding the foundational elements of the profession, like the physical examination. He decries trainees spending vastly more time at computer stations looking over their 'virtual' patient [the collection of progress notes plus lab and x-ray data, not an avatar] than giving face time to the sick person down the hall.

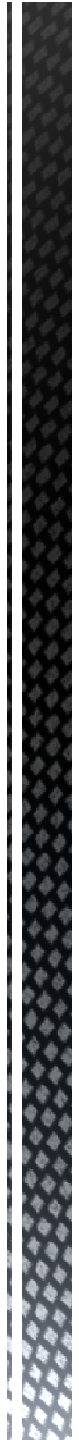
[‘Are Computers Getting Between You and Your Doctor?’, the Atlantic June 6, 2012]

ethical worries:
example



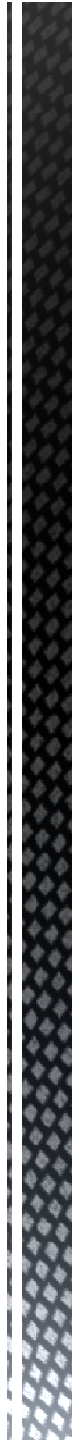
- security
 - electronic patient records with personal information
 - sharing between patients, health professionals, others?
 - telecare
 - research and personal information

health care &
information
technology



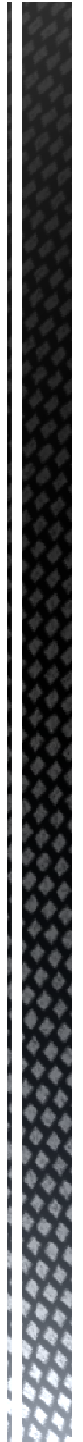
- data protection
 - vulnerability of data
- system protection
 - vulnerability of system (e.g. robot)
- related to privacy issue
 - vulnerability of my personal, private sphere
- vulnerability of the patient

security ethics &
health care



- ethical principles
 - privacy, autonomy, dignity, care, ...

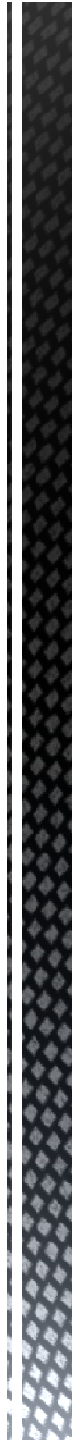
standard
approach



- capability approach, information technology, & health care

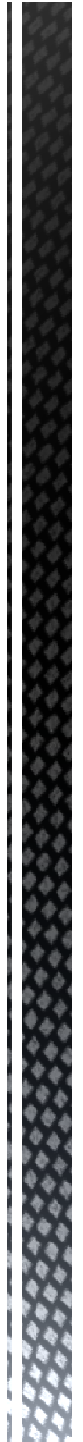
- using Nussbaaum: human dignity, capabilities, & information technology (Coeckelbergh 2010, 2011)
 - dignity > capabilities
 - technology should enhance the patient's capabilities
 - life
 - health
 - emotions
 - practical reason
 - affiliation
 - play
 - political participation
 - ...

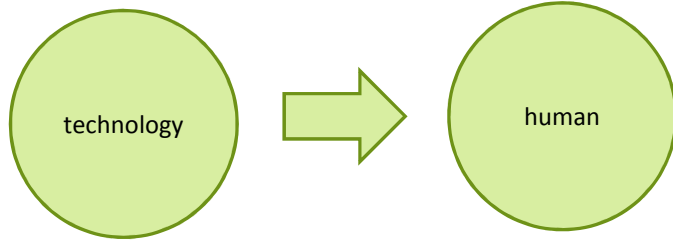
example



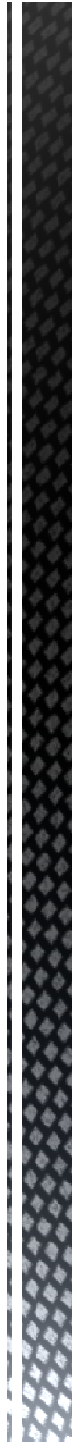
- limited understanding of human-technology relation
 - dualist view
 - weak relationality
 - technology as a tool

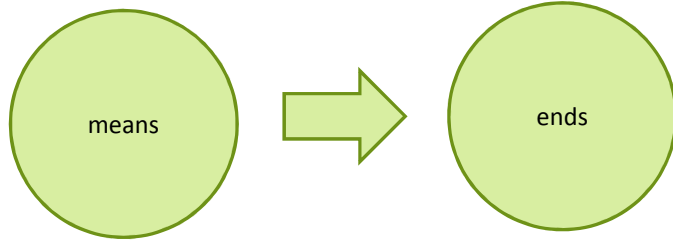
problem



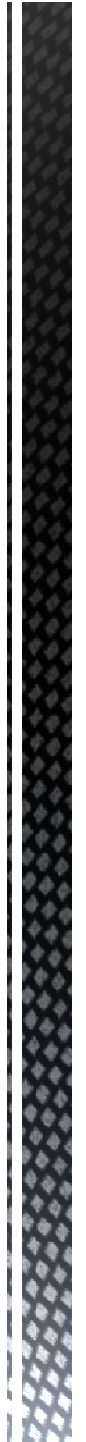


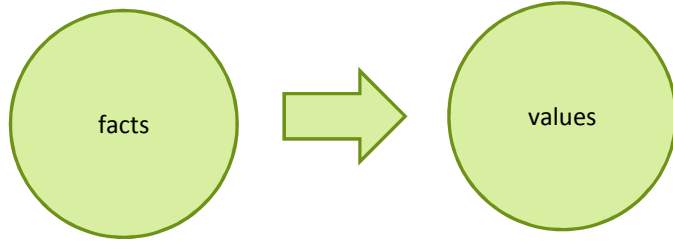
problem



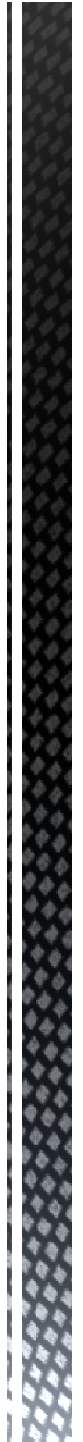


problem



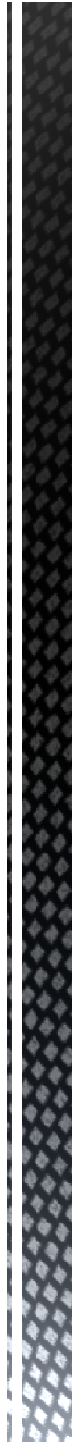


problem



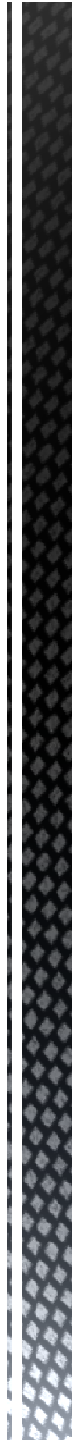


towards a non-
dualist approach



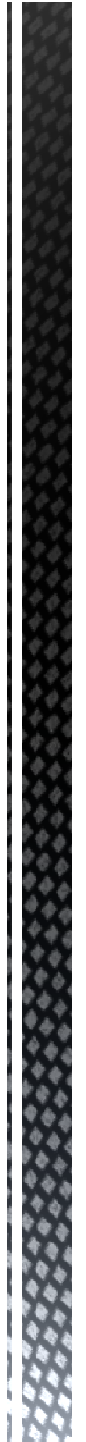
- towards
 - non-duality human-technology
 - strong relationality:
technology/environment constitutes what
the human is
 - we are always already vulnerable + we
make ourselves vulnerable

towards a non-
dualist view



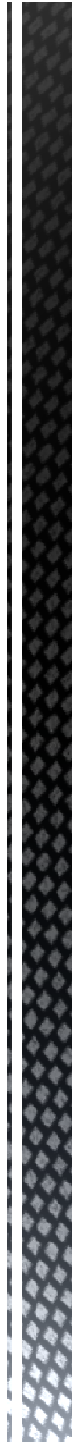
- problem of vulnerability

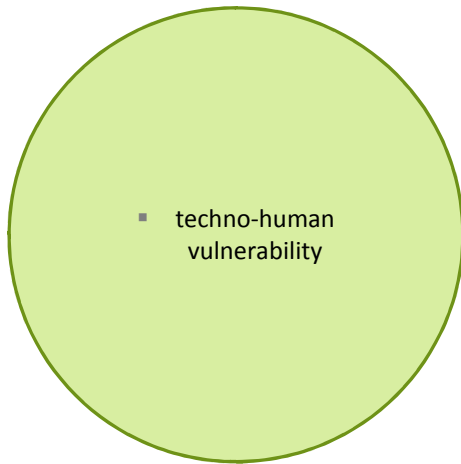
focus



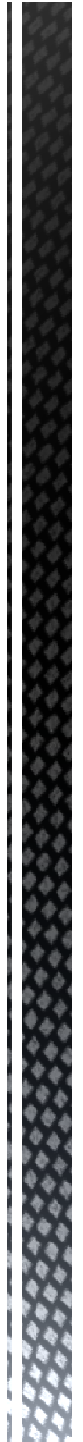


vulnerability
[standard view]





vulnerability
[new view]

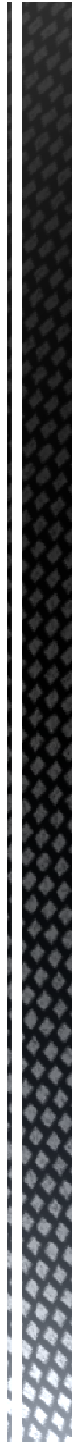


- aim at full security and invulnerability of system and of human

versus

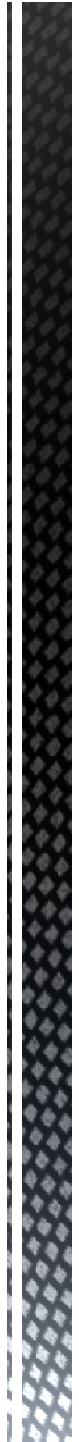
- evaluate particular changes to techno-human vulnerability

two tasks



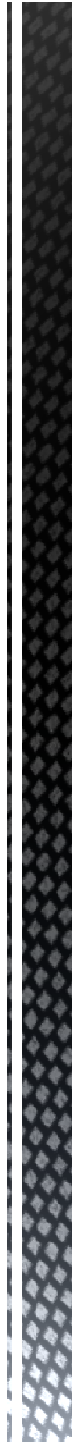


security old style



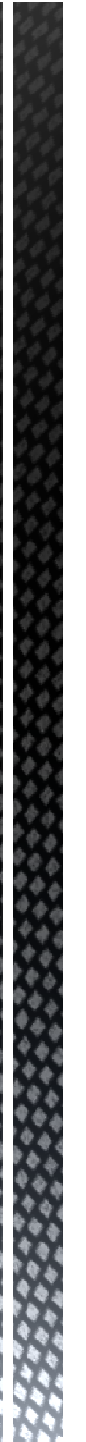


security old style



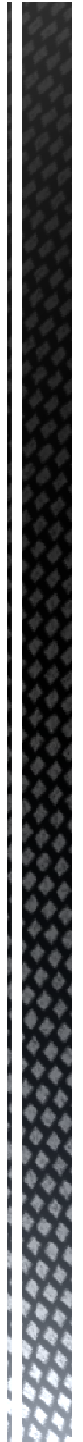


security old style



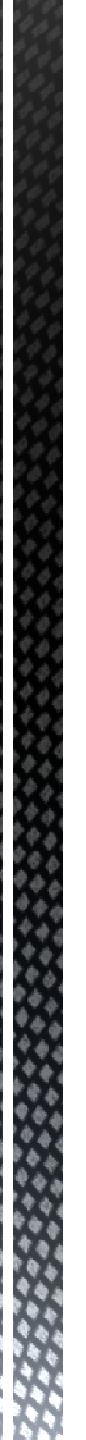


security old style



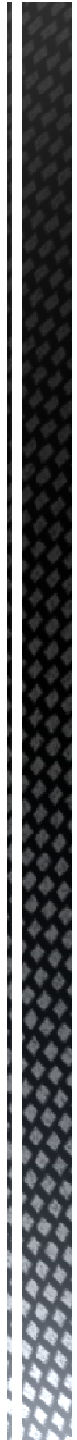


security new style



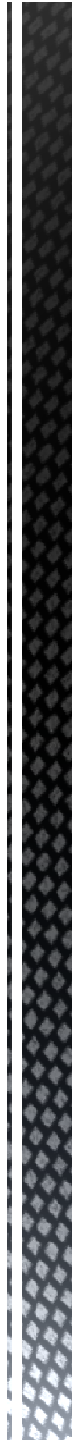
- ... it is increasingly unrealistic to assume that a computer can be kept free of malware, and we must build systems where legitimate software is able to coexist with malicious software. The challenge is to construct a system that permits a user to use the computer and have their data and actions uncompromised, yet also permits malware to be present and functional. We call such a computer not secure, not insecure, but cosecure. [Aycock, Somayaji, Sullins 2010]

cosecurity



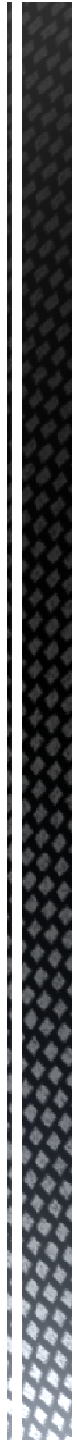
- we can also apply cosecurity concept to health risks & elderly care
 - even if we are ill or old, we might be able to get on with our lives (to some extent) – or at least this should be the aim
 - absolute health seems unrealistic
- more generally, even if we are not infected, even if we are not ill, we have to accept that humans are always vulnerable and that exchange with the environment is also a precondition for life (if we hide in the castle for too long, we starve)
- in my book: existential approach: being-in-the-world and being-at-risk: as we engage in the world, we put ourselves at risk

living with
vulnerability &
risk



- how to avoid risk?
versus
- how to be at risk?
 - what to do = how to put myself at risk
 - as user of technology
 - as social being
 - what kind of risks
 - never risk-free
 - how to cope with risk

two questions

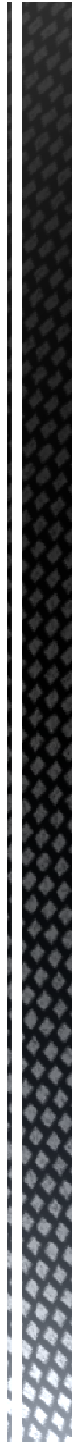


- impact vulnerability technological system on vulnerability elderly person (patient)

OR

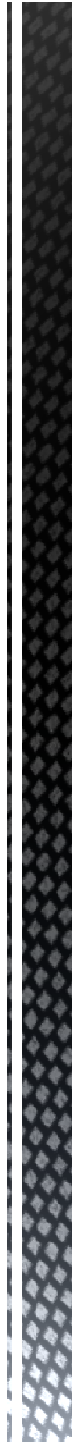
- changes to techno-human vulnerability

elderly care
practices



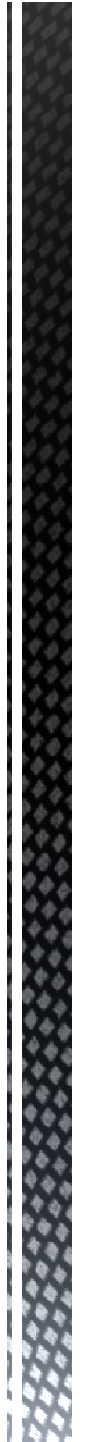
- standard approach: assess vulnerability of these technological systems
 - are my data safe?
- alternative approach: study and evaluate changes to vulnerability of the elderly-with-technology

analysis



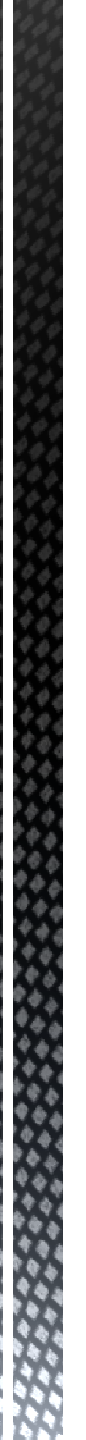


elderly people
and ICT



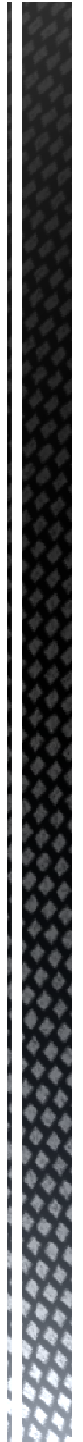


the elderly of the
future



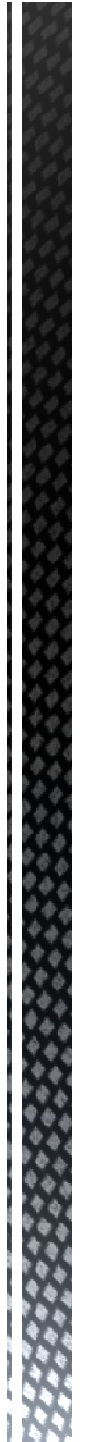
- human/body – technology
 - experience of the body / the lived body
 - the phenomenology of vulnerability
 - experience of the body mediated by the technology

humans &
technology



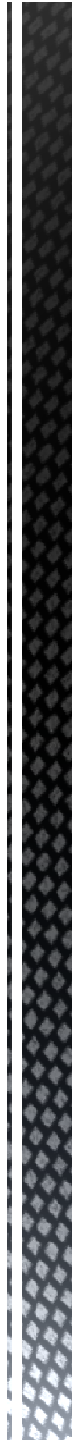


cyborg security?



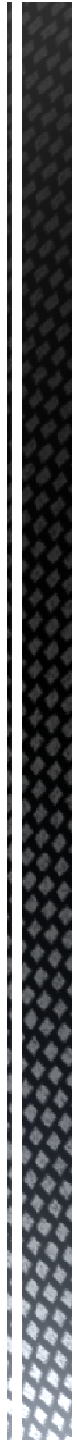
- old definition of security
 - freedom from risk
 - new definition of security
 - how to be at risk
 - as a patient, with this body rather than another, with this age, with this disease, etc.
 - as an elderly person
 - as a user of a particular technology
 - as a member of on-line/off-line social networks
- (simultaneously)

implications for
security of elderly



- dignity, yes, but not in isolation:
 - vulnerable existence with others and with technology
 - elderly persons
 - all of us
- holistic approach to vulnerability and security
 - do not consider medical, technological, and social vulnerability in isolation
 - technical and social security, financial security, political security
- learning
 - developing security habits, getting used to live with certain risks, coping with these risks
 - happens mainly *before* old age
- community
 - make sure people already know how to live with the technology, are already embedded in communities, already acquire 'security' know-how

implications for security of elderly

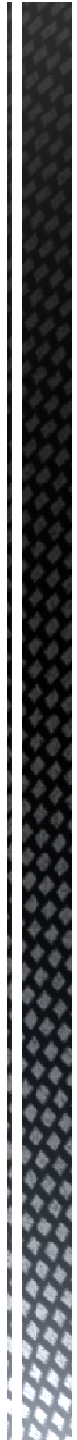


- hiding in your castle
 - individual isolation
 - with a gun, with a firewall, with anti-virus software, hiding in the panic room
 - emotion: fear
 - creates mistrust and aggression > less security

versus

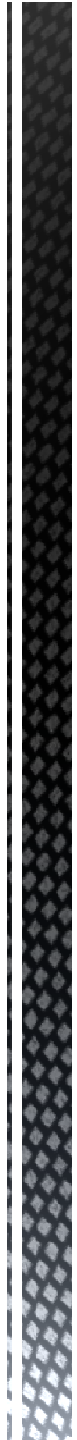
- knowing how to live in a more secure way
 - knowing how to use technology in a more secure way
 - knowing how to communicate
 - knowing how to live with others
 - knowing how to build community
 - knowing how to cope with ageing
 - knowing how to cope with illness
 - knowing how to make your way through the world (online/offline)
 - how to live in this age
 - creates trust
 - creates room for human flourishing (also at old age)

security skills

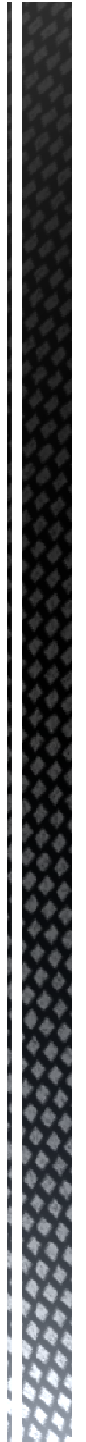


- security
 - origin of the term 'security' (Lat. *securitas*)
 - freedom from care, concern, worry
 - ethical imperative: close and lock your door, make sure you have a gun, defend your privacy, autonomy, hide in a safe room, etc.
- beyond security: care and cure
 - not 'securitas' (being se-cure) but 'cura', cure
 - Lat. *cura* (1) : care, concern, worry, trouble (see also Heidegger: *Sorge*) is part of what it is to be human and to grow older
(to care about)
 - Lat. *cura* (2) to care and to cure, heal
(to provide care for)
 - ethical imperative: care, cure, and be careful (= full of care)
 - presupposes/demands openness, activity, engagement

beyond security?

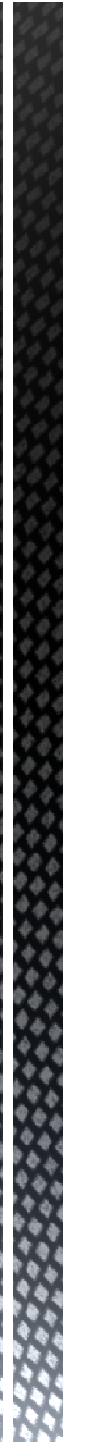


>>> conclusion



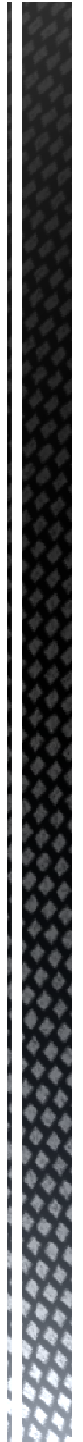


being careful,
with technology





being careful,
with technology



- m.coeckelbergh@utwente.nl

thanks!

