Ethics in System Design

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Ethics and Technology

Ethics or moral philosophy

- How we should live to live the good life (what is the good life?)
- What kind of society we should have (how to distribute goods and burdens?)
- How we should treat others?
- Ethical principles: autonomy, responsibility, care, avoiding harm, balancing benefits and burdens
- Ethical issues connected to IT: monitoring and surveillance, transparency, literacy, liability

- Hans Jonas: 'The Imperative of Responsibility: In Search of an Ethics for the Technological Age' (1979)
- Argued for the ethical importance of finding ways to better predict the effects of new technologies as a way to strengthen and improve our decision making about their design and use:
  - 'the indefinite future, rather than the contemporary context of the action, constitutes the relevant horizon of responsibility. This requires imperatives of a new sort. If the realm of making has invaded the space of essential action, then morality must invade the realm of making, from which it had formerly stayed aloof ...' (Jonas 1984: 9).

- Technology design as becoming increasingly embedded
  - in the technology itself and the social and organizational protocols surrounding its use
  - in the specific embodied histories, capacities and social identities of particular people.
- We can recognise that some solutions to design problems are better than others because they enable human action differently. Some solutions enhance the possibilities for human agency, others diminish it.
Ethical issues arising in use

- Home care technologies
  - ‘One’s home as the place where people feel best’ - would elderly people really want to receive blood transfusions and chemotherapies at home (Ruddick 1994)?
  - Which aspects of a task can be entrusted to technologies or to informal caregivers?
  - How does life change, not just for the patients, but also for their informal caregivers?
  - Under which circumstances may they initiate measures, which are legally reserved to physicians?
  - To what extent can informal caregivers be held to account for the consequences of errors when interpreting and operating complex technologies?
  - How to deal with low levels of education, anxiety, and physiological depression which may deter patients from benefitting from AT?

Challenges

- Strong ethical concerns
- Patients embedded in complex networks of informal/formal carers and institutions - how is this network affected; how can new actors be integrated (e.g. call centres, maintenance technicians); what kind of new dependencies are created?
What ‘real’ homes are like
(Lesley Axelrod et al, JAT 2009)

Smart home adverts

Sam’s house

Kitchen = bathroom

Sitting room = bedroom

Aesthetics and appearances matter
“We do not want our homes looking like a clinic or a hospital” (Blythe et al, 2005)

Monitoring and surveillance
Transparency - do people know what is recorded for which purpose
Recording of data that are not of direct relevance for the purpose
How do we engage with participants?

- Sharing of responsibilities and trust building as a matter of ‘practical politics’ in a PD project (Büscher et al. 2002)
  - Prerequisites: membership, space for imagining, willingness to make a project work

- The need for ‘informed consent’
  - Project outcomes usually open, a project may fail
  - Sensitive issues may arise
  - Handling conflicts between perspectives and loyalties may need to be addressed
  - Vulnerable and frail participants (children, people with disabilities, refugees, etc.)

- Example 1: Designing a tool for severely ill children to express their feelings (Bratteteig et al. 2010)
  - Healthy children as substitute - their input was used as an inspirational resource rather than a ‘serious’ design option
  - Ill children were protected, their perspectives and experiences excluded

- Example 1I: Testing of toileting facilities for people with disabilities
  - How to deal with sensitive topics, avoid risk of embarrassment, how to ensure safety in the test situation, etc.
Who do we engage with in PD?

- Community projects, complex, highly politicized contexts
  
  “those who are younger or very old, female, of low status groups and/or poor, deprived, disabled and weak will tend to be left out unless care is taken to find them and bring them in” (Chambers 1999)

- Issue of “voluntary and unconstrained participation” (Byrne & Alexander 2006) - how do we find participants in a community project?

- ‘Right to participate’ may be limited by political power, organizational and professional boundaries
  
  e.g. Collaborative urban planning (Wagner et al. 2009)

- ‘Norms of deliberation are culturally specific and often operate as forms of power that silence or devalue the speech of some people’ (Young 1996)

- Distinction between ‘representatives and constituencies’ (Pedersen 2007) - ‘double loyalties’ (e.g. the need to demonstrate ‘promising results’)

Is giving voice to marginalized people or people who inhabit residual categories a moral obligation of Participatory Designers?

Cambodian children with prosthetic legs (Sofia Hussein 2010)

Vannak wrote that he would like to have a prosthetic leg that:
  . Has a big enough foot
  . Has the appearance of a living leg
  . The liner soft and thicker than now
  . The outside socket is not too tight
  . From the ankle down please make it like a natural foot.’
How do we represent participants and their work?

▶ The production of representations as critical to PD

▶ Example I: Litigation support in a law firm (Blomberg et al. 1996)
  - Work of coding as invisible to lawyers in the firm (‘And then, ideally, you hire chimpanzees to type in From, To, Date’)

▶ Example II: Nursing classification system developed ‘bottom-up’ (Bowker & Star 1999)
  - Category ‘Humour’: Aspects of work made visible that are highly personal and contingent - questions of cultural sensitivity (‘picture a forbidden authority figure dressed only in underwear’)  
  - What to make visible and in which ways?

▶ Mobile and social technologies
  - Enable new forms of participation and opportunities for design to be completed in use, e.g. (Hagen & Robertson 2010):
    - While gathering data about one’s own lives one may also document the lives of others
    - Anonymity, ownership of data, safety (for example if there are children involved), privacy and consent
    - New options: using mobile diaries as well as hybrid exploratory prototypes that help propose and experiment with different design options in ad-hoc, and therefore easily changeable, ways
Managing complex IT projects - the oncology case

ONC4
New self-developed system

ONC5

ONC1 Pilot

ONC2 Pilot

ONC3
Elaborate old system in place
Unsuccessful competitor in bid
Expected to share expertise

User Group

Physicians

Nurses

Local IT

User Group

Vendor

AH
Central hospital organization
Standardization
Cost control

Project group 1
IT management
Central technical requirements

Project group II
Physicians from ONC
Define requirements

Physicians

User Group

ONC3

ONC2

ONC1

ONC4

ONC5

SW company
Digging out the (ethical) issues

Issues of transparency
- Lack of communication between IT and physicians: local IT experts where not involved from the start of the project - misunderstandings among physicians concerning system requirements and interface, HW costs
- Nurses invited to attend the user meetings but it remained unclear how they might be affected by the implementation of the new system
- The roll out of another IT project in support of care documentation was taking place its status far more advanced - how should nurses decide which system will meet their requirements best?

Issues of literacy
- Vendor and project management asked physicians to provide specifications of working routines and work flow - they lack the experience and skills required for writing a useful requirements document.
- A key requirement – easy retrieval of lab results – was formulated in a rather general and vague way - this led to misunderstandings when translated into technological solutions by IT experts.

Issues of standardization
- The central hospital organization is interested in standardizing data reporting (for the sake of ‘comparisons’)
- Lack of attention to social detail embedded in styles of representation and work flows

Issues of work ethics
- The system has been designed exclusively from the physician’s perspective although nurses will presumably have to work with it too – how can their perspective be included?
- Physicians do not get compensatory time off for their collaboration in the implementation process
- Lack of attention to issues, such as
  - complicated login procedures into parallel systems
  - maintenance and updating of drug catalogues and protocols for chemotherapies
Designing in and for use

‣ Changes
  - In the political and policy-making context
  - In the nature of technologies
  - Of contexts of technology use: leisure, museums, community services, and the collaborative design of services and products

‣ Mobile and social technologies
  - While gathering data about one’s own lives one may also document the lives of others
  - Anonymity, ownership of data, safety (for example if there are children involved), privacy and consent

‣ “They fired off cellphone text messages urging colleagues to resist pressure from factory bosses. They logged onto a state-controlled Web site — workercn.cn — that is emerging as a digital hub of the Chinese labor movement. And armed with desktop computers, they uploaded video of Honda Lock’s security guards roughing up employees”.

Employees of Honda Lock in Zhongshan, China, took photos with their cellphones during a walkout last week. Many images were posted to the Internet. (New York Times, 16 June 2010)
Conclusions

- Ethical analysis in Systems Design
  - How to ‘act well’ in new situations involving new technologies, new objects of design and new contexts

- Key questions (Volkmar Pipek)
  - Do users actually have decision power? If so what kind?
  - Does a design method, tool or process recognize and encourage participants’ abilities to learn?
  - Does a design method, tool or process guide designers and researchers to analyze and develop their interests and attitude towards participants?
  - Does a design method, tool or process include participants’ evaluations not just of what is being designed but the design process itself including the opportunities for and process of participation?
  - Does a design method, tool or process deal with a justified loss or change of design focus; for example when participants identify problems that require non-IT solutions while the process was initiated to design IT?

- Strengthen ethical case discussion
  - Develop a corpus of cases to be used in design planning and design thinking

- Broaden strong focus on technology design so it can drive the human-centred design of social change