Exploring Appropriation - Beyond Tinkering & Tailoring...

…design is not something that can be completed by the manufacturer of the machine.
(Austin Henderson, 1991)

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Outline -

- Approaching the "appropriation" debate ...

- A perspective from Informatics...

- Analytic construct vs. literary "trope" ?

- ICT Design issues - linking use/design

- Framing issues - against technological determinism - human/social actors

- Tailoring as a social process...

- HCI, CSCW, IS, PD, Ergonomics, Media/Cultural Studies, STS, Innovation Studies

- Why study appropriation (now?)

early days.. 1990's

Oksnøen Symposium, Norway 23-28 May, 1992

Customizing software systems: when, how, by whom, why not...

In computer systems development as well as in the use of computer-based systems we are using various kinds of means and tools such as methods, tools, descriptions, prescriptions, specifications etc. Generally, these means or artifacts are considered to be stable or invariant with respect to the actual work process to be performed. However, a closer look at everyday working practices almost always reveals, that **most of these artifacts have been changed since they were first installed: they may have been personalized to meet individual needs, they may have been modified to meet the specific demands of the problems in hand, and they may have been reconstructed to meet changed demands to the situation.**

Terms such as **tailoring, customization, adaptation,** etc. are used to characterize such changes of installed software systems. However, we need to apply a broader view in order to fully understand to complexity of making people and software systems fit together. We have to take into account also

- ways in which a system is being used

- changes in the physical embodiment

- degrees to which a system provides means for adaptation

- any combination of the above

"Dwelling in the Great Divide "

1993 - Paris Workshop: Social science research, Technical systems & Cooperative work (Bowker, Star, Turner, & Gasser, 1997)

Traditional divide between science & social science

Relations between humans & technology

Research Communities

- Human-Computer Interaction (1982->
- Participative (Systems) Design (1975->
- Computer Supported Cooperative Work (CSCW) (1986->
- Interaction Design (1996->
-    [STS]?

MIND THE GAP

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The Need for Articulation Work

- " Every real world system is an open system: It is impossible, both in practice and in theory, to anticipate and provide for every contingency which might arise in carrying out a series of tasks. No formal description of a system (or plan for its work) can thus be complete. Moreover, there is no way of guaranteeing that some contingency arising in the world will not be inconsistent with a formal description or plan for the system. […] Every real world system thus requires articulation to deal with the unanticipated contingencies that arise. Articulation resolves these inconsistencies by packaging a compromise that 'gets the job done,' that is closes the system locally and temporarily so that work can go on. "

Gerson, Elihu M. and Susan Leigh Star (1986): Analyzing due process in the workplace. ACM Transactions on Office Information Systems, vol. 4, no. 3, July 1986, pp. 257-270.

Appropriation

- from Latin, *appropriare,* the act of making one's one..

- in design contexts, wish to distinguish from user *adaptation to technology...*

- human improvisation....the norm, not exception...in workplace...

- User/Society is an *active* agent in transforming artefact...

- against *technological determinist view* ...
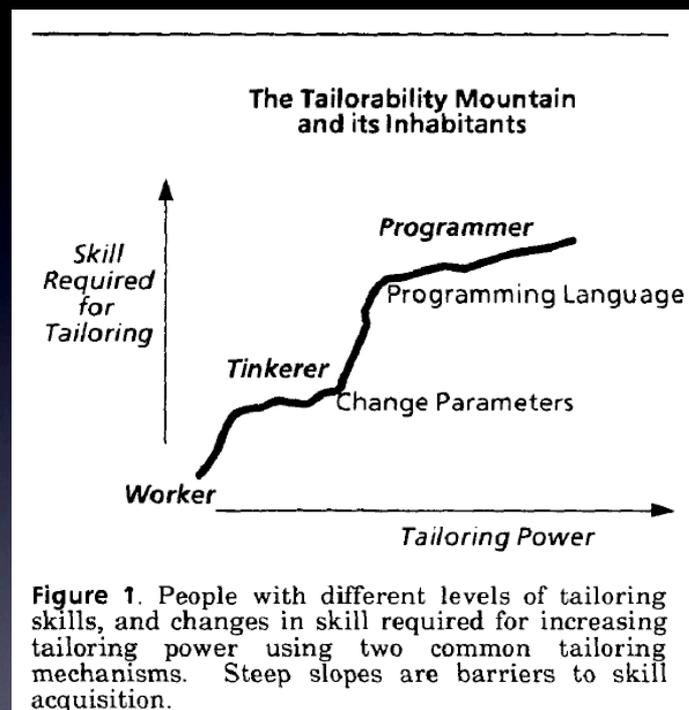
a view from HCI..

Tinkering/Tailoring activity of users...

- often more superficial changes...

- allow for local, situated, shaping...

- Tailoring as a social practice...

End-User Programming (EUP)

- ..more substantive changes

- never became mainstream topic...

Example: EuroPARC *Buttons*

The Tailorability Mountain
and its Inhabitants

Figure 1. People with different levels of tailoring skills, and changes in skill required for increasing tailoring power using two common tailoring mechanisms. Steep slopes are barriers to skill acquisition.

MacLean et al CHI 1990

HCI- extending CS/ IT perspective...

from Austin Henderson's (1991) chapter

a development perspective on ICT design: -

"from technology to technology being used by people
ftom technology being used by people to people using technology
from people using technology to people working
from generic people working to particular people working in particular situations
from a process done by a corporate design team to a process carried out by many people
in many capacities
from a process that happens once for a product to a process that continues happening
over the lifetime of the product's use
from a process that ends in use to a process that repeatedly moves from use through
understanding to new designs and better use
from a process pertaining to a single product to a process that addresses the applications
and practices that will continue, appropriately adjusted to accomodate it, when a product
is replaced with another one."

Dix (2007) Guidelines for Appropriation
(for software designers)

- "allow interpretation

- provide visibility

- expose intentions

- support not control

- plugability and configuration

- encourage sharing

- learn from appropriation"

Tailoring as Social Practice

- Mackay notes:" Software does not remain static when it is introduced into an organisation. People in the organisation evolve their individual patterns of use, share them with each other, react to external changes, both technical and non-technical, and sometimes pro-actively modify the system to produce significant innovations."

- In the field study, Mackay shows the importance of the social environment in affecting the use and development of Lens, with a local expert exerting considerable influence, as well as information sharing going on among the participants - sharing of rules developed by one person and then picked up by others, even without any explicit support for such sharing in the system itself.

Changing Frame - PD - Continuing Design in Use

- breakdown of Designer-User divide

- Participative Design tradition...

- Users as Expert craftsmen using tools

- continual re-design in use...

- e.g. Henderson & Kyng (1991) *There's no place like home: Continuing design in use.*

- mixing of PD& HCI themes, issues...

Rabardel et al.

- Francophone cognitive ergonomics tradition

- *Instrument* concept - artefact +utilization schemes developed by human actors

- rich conceptual vocabulary...design-for-use / design-in-use

- Rabardel, Folcher, etc...detailed field studies...actual practices...

- not taken up by Anglo-American HCI/ CSCW tradition (yet!) ....

- [I, and others are working on this, e.g ECSCW2011 paper]

CSCW

- concern with local practices..

- articulation, adjustments, fitting-in, shaping....

- inevitable need to mold technology into shape in particular settings...

- how to support design in use

- notion of "design for unintended use"!

- modularity, open source, extended observation of uses(s), etc...

- modularity, openess, visibility....

Potential Dangers...

- Early HF example - need for operators to share "common view" of problem, situation in safety-critical contexts

- personal "tailoring" of interfaces - dangerous!

- in larger CSCW contexts - need to ensure operating protocol not "violated" - limited space for local adjustments....

A view from Information Systems

- meld of technical and social science

- Design Science Research - the inverse!

- Jennie Carroll - simple appropriation model...

- Claudio Ciborra - a new vocabulary

Slow realization of importance of human practices...

Claudio Ciborra (1998) in his book *Teamwork & Groupware*
(See also his later *Labyrinths of Information* book (2002)

Phenomenological account of implementation processes - new language to descibe use of systems
   in organizations

Drifting & Learning
"What "groupware "is" can only be determined *in situ*, where the matching between the
plasticity of the artefact and the multiform practices of the actors involved takes place"

Appropriation & Care
Appropriation can be looked at as a form of taking care of the innovation "fallen" in its context of
use.

Hospitality & Ambiguity

The strange case of Design Science Research in IS !

Hevner et al. (2004) DSR article ..
:"we do not include people or elements of organizations in our definition nor do we explicitly
include the process by which such artifacts evolve" (p 82).

a critque!   Hovorka & Germonprez in Pekkola (2010)...
"Current structural specifications and guidelines for design theory fall short of creating
theories that account for the end-users' reflections, tinkering, and subsequent tailoring of
information systems

The focus in literature on the structure of design theory and what guidelines must be
followed has obscured and undervalued an important phenomenon we should include in
design and in design theory: human activity. DSR is becoming dominated by a functionalist
perspective which privileges method (design science) and structural form (anatomy of
design theory) over understanding and support for the behaviours of the actors who will use
the artifacts. "

Innovation/Diffusion Studies

- Macro-level of analyses of technical change

- Diffusion - Adoption framework (Rogers,)

- "early adopters"... mass acceptance..

- determinist frame...

- emerging critique

- little scope for human actors..

STS approaches

- change from diffusion to "domestication"

- human / social actors shape technology

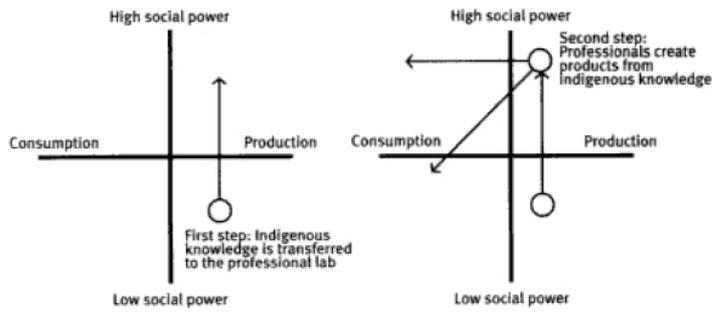- field studies of domestication practices...

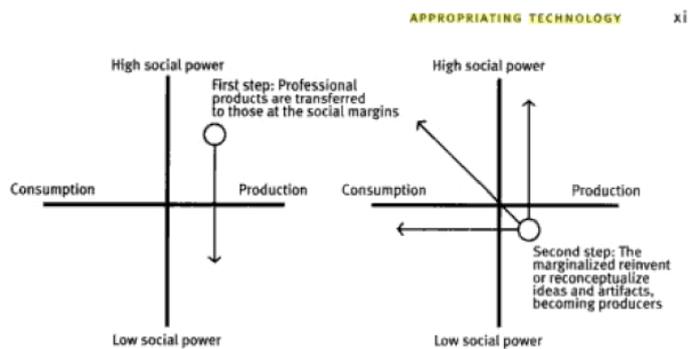Figure I.2. Use of indigenous knowledge in professional science and technology production.

Figure I.3. Appropriation of science and technology by those at the margins of social power.

from Ron Eglash

"Appropriating Technology"(2004)

political-cultural frame

Societal appropriation practices

- 3 forms of cultural appropriation! from South America...

- Cannibalization - dismember, absorb, transform..

- Creolization - mixing, hybridization...

- Baroque (layering)   - multiplicity, filling, adjusting

- applied to mobile phone take-up, use.... (Bar Pisani, Weber, 2007) - wallpaper, bank services, jal-breaking

...frugal engineering, bricolage, mash-ups, fab-labs, crowd-sourcing, appropriating, "bottom-up" activities, democratic, community-based activities, sharing, cooperation, open sourcing,......

- inspirations...local, global innovations

- *Jugaad* (india) - fix-it, time-constraints, local

- *Riquimbili* (Cuba) - innovate, cost and material constraints...

- FabLabs/ BricoLabs - bottom-up open source fabrication and deployment of hardware and software applications and products..

- ....????

Bricolabs - social activism, hacking...

- "Bricolabs is about affordable used hardware that can run anything, available in large numbers, democratic and hackable.."

- we claim the right to run any software on the devices we own and to re-distirbute them as we like."

- GNU/Linux - driven....

- Brazil, Netherlands, UK, France...

- Rob van Kranenburg (De Waag, Amsterdam)

example... IDC study (Storni, 2010)

- Healthcare policies and technologies

- Home healthcare

- technologies and practices

- limits of medical model - chronic diseases

- "compliance"

- space of actors expanding - doctors, nurses, pharmacists, "patients", spouses, neighbours, community, self-help networks, patient associations...

Self-monitoring: Blood Pressure, Glucose

- moving to home

- self-administration

- interpretation issues - whose language is privileged?

- ownership issues...

- self, partner, family, neighbours, community, health nurses..

- new partners... pharmacists, on-line fora, patient associations..

- networks

From things to Objects - back to things?

- Things as Assemblies - "topics of concern"

- things - open, formless..not shaped..

- Latour's thoughts on design...

- object - result of design shaping..

- internet of things? - perhaps the term is appropriate!

so, the Appropriation debate is of importance to the extent it re-focuses attention to issues such as the human & social use, re-design, critique, reflection, improvisation of tools and media...

...........the role of human actors...