

Artefact-centred analysis - transect and archaeological approaches

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Artefacts, both physical and electronic, are an inseparable part of an ecologically valid understanding of work and leisure. Tasks may be initiated to create an artefact (write a chapter abstract), tasks may occur because of artefacts (the memo requesting an action, the broken machine); artefacts may mediate tasks split between several people (patient records, whiteboard), artefacts may record where you are in a task (document in in-tray, office planner), electronic artefacts may even control tasks (workflow systems, Coordinator).

Studying artefacts can therefore give us a rich understanding of the tasks that they are part of, especially when the tasks are complex, long-lived, or involve different people.

We consider two types of artefact centred analysis.

The first, *transect analysis*, takes an ecologically rich approach looking at the artefacts in their physical context – physical disposition is as important as the artefact itself. It focuses on uncovering the task in praxis as performed in the actual work environment. Transect analysis looks at a snapshot of a work environment (desk, office, or potentially organisation), either at a particular time (noon on Tuesday) or over a relatively short period (day in the life).

This is inspired by the transect, as used in environmental studies, which looks at a cross-section of an environment on a particular day. If the ecology is diverse and non-seasonal it is possible to build up a picture of the life-cycles of particular organisms and the interrelations between them even though one is not studying them over time. Similarly we can look at each artefact in the work environment and ask: "who is using it?", "what for?", "why is it here?", "what would happen if it were somewhere else?", "how does it relate to other artefacts?". In particular, we look for instances of the same kind of artefact in different places (e.g. several invoices in different stages of processing) within one person's immediate environment (in-tray, centre desk, out-tray, at an angle on a pile) or between people. By piecing together these snippets of human-artefact interaction we can create models of task processes and artefact life-cycles.

The second, *archaeologically inspired artefact analysis*, looks at the artefact-as-designed, particularly looking at tools and 'support' artefacts (e.g. meeting support system, statistical analysis package, IDE). The focus here is on the tools themselves and how they tell us about designer's implicit and explicit model of the task domain. This is inspired by archaeological studies where tools and artefacts are used, often with sparse knowledge of the actual situated use, to uncover aspects of that context. By uncovering the designer's model we can use

this to bootstrap new designs, avoid damaging important aspects during redesign, or detect mismatches with the artefact-as-used.

Ethnographic and other rich analysis techniques all emphasise the importance of artefacts, but not always in a form that can directly aid design. These two techniques offer different ways to use artefacts to uncover task processes and knowledge structures.

Some relevant refs

* Dix, A., D. Ramduny and J. Wilkinson (1998). Interaction in the Large. Interacting with Computers - Special Issue on Temporal Aspects of Usability, John Fabre and Steve Howard (eds). 11(1) pp. 9-32.

* Dix, A.J. (1996-2001), Research and Innovation Techniques
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