Discussion Report:
Simplicity and Appropriation

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Abstract. Going beyond the traditional view of appropriation as the customization and tailorability of technical systems, we consider a view of appropriation as a set of emergent socially constructed meanings enacted among a community of users – that is, appropriation as a sociotechnical phenomenon (Dourish 2001a, 2001b). We lay out the rationale behind such an approach, the key role of simplicity in supporting collective appropriation, and consider how we might design for this view of appropriation. We argue that simplicity and a design stance of "less is more" are key elements in supporting appropriation.

1 Starting Points

Our discussion began with the realization that appropriation has several distinct meanings, all of which were in play at the workshop. Perhaps the canonical interpretation of appropriation is that of customization and tailoring by users. Yet we felt that other interpretations, such as unexpected use of technology,[1] or the

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[1] That is, unexpected by system designers and developers.

socially constructed meanings around technology and its use that grow out of users' practices, were equally interesting and worthy of consideration.

We realized that there was a set of assumptions underlying our conversation. First, we believe that appropriation is "always already social;" this is obvious in the case of appropriation as socially constructed meaning, but even individual acts of appropriation are embedded in a social context, if only by virtue of the fact that an individual who, say, customizes their software can tell others who may then similarly customize their software. Second, we assume that users know what they are doing, what they are trying to accomplish – in fact, they know more than designers do about their contexts of technology use. Third, we assert that users' understanding of a technical system and its capabilities is the basis for any creative practice utilizing it; this is the key contribution of simplicity. Fourth, appropriation pragmatically is a collective activity, which raises the question of the appropriate unit of analysis for research. From this perspective, analysis must include both the technical system and the practices of a community of users embedded in a social context. This emphasizes the central role of communication channels among users, and reminds us that technology itself can function as a communication channel, either by supporting communication directly, or indirectly by making users and their use of the technology visible to others and thus a source of social dynamics (e.g., imitation, peer pressure, etc.).

2 Simplicity and Appropriation

Given this view of appropriation as enacted by a community of users, what is meant by simplicity? Simplicity on this view is a relational property that emerges from the interplay of a technology with users' intentions and the social structures in which use is embedded. Although a simpler technology may be easier for users to understand, understanding in and of itself is only prerequisite to appropriation. The community of users must also have a means of collectively instantiating and evaluating adaptations of a technology. Such means may include a variety of meta-capabilities, for example, the ability to communicate about the technology itself, the ability to see the actions of others, the ability to understand how others will see one's own actions, etc. This also suggests that concepts such as self-description (Kunau et al., 2005), self-regulation (Kellogg & Erickson, 2005), and self-reference are key for understanding how to facilitate appropriation.

The consideration of how a community could possibly appropriate technology leads to the notion of a continuum of appropriation. In its simplest form, appropriation may simply evolve over the course of use, without explicit management on the part of the community. At the other end of the spectrum, appropriation may occur through a deliberate effort by the community to reflect on how a technology can or should be used to best achieve a variety of collective intentions and to learn from experience (e.g., by establishing norms or locally-

adapted use practices). Of course, there is also room for a variety of appropriation mechanisms between these extremes.

Considering how use might spread through a community of users, we also realized that appropriation is not necessarily always "good" or appropriate. The practice of responding to warnings promulgated through email is encouraged when unsuspecting users forward such emails to their trusted correspondents; when these are in reality virally-spreading phishing schemes, as they often are, this is not good. Advice to set your file sharing permissions a certain way to facilitate music sharing that in fact exposes personal information on one's hard disk is not a good adaptation to make. Thus, the easier it gets for practices and adaptations to spread, the more critical become issues such as bounding and controlling evolving use, or having a means of establishing trustworthy role models and leadership to advise and protect users.

3   Designing for Appropriation

We next turned our attention to the issue of designing for appropriation; what would it mean to do so on this view? This is an open area of research, but we articulated four areas where design might be expected to impact appropriation: first and foremost, enabling users to see the consequences of their own and others' actions. Second, progressive disclosure of function may help, which again speaks to simplicity. Third, as discussed previously communication channels are critical. Fourth, deixis (literally, the ability to point to a part of the technology in use) and reference are necessary.

There are also design consequences for viewing appropriation as a collective rather than an individual phenomenon. There is a difference between a collective practice – for example the kinds of norms established by Babble users (see Kellogg & Erickson, 2005) – and the case of many individuals who may "do" the same thing or "have" the same customization. The latter is not a collective appropriation, but at the extreme a kind of "convergent evolution" (many individuals expressing the same adaptation in response to similar 'evolutionary pressures,' but independently of each other). A primary design goal, then, is to discover and then support the social processes that can enable and shape collective action. The emphasis shifts from customization to negotiation; the notion of simplicity shifts from making easier the user's choice among a vast array of customization options to making it easier for a community of users to propose, try out, and reflect on various ways of using a technology.

4 Research Issues

We can summarize the broad research issue at stake here as "how can we do more with less?" Rather than focusing on an expanding set of "cool" customization features, we ask how little can we get away with? How can we reduce the complexity of the technology, get it out of the way, while increasing and enhancing the ways in which individual users can profit from each other's experience, or that collectives of users can negotiate ever more optimal and suitable adaptations?

Finally, there is still much to sort out in the relationship between social meaning and individual action and in how appropriation can be managed. Issues here range from support for leadership and role models among community members, to how to enhance users' ability to self-describe and self-regulate, to basic issues of how to support the emergence of norms in online environments.

5 References

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