



## Why study technology non-use?

by Eric P.S. Baumer, Morgan G. Ames,  
Jenna Burrell, Jed R. Brubaker, and Paul Dourish

To attain knowledge, add things everyday. To attain wisdom, remove things every day.  
— Lao Tzu

What is a user? From an engineering perspective, the ISO software engineering standard states that a user is "an individual or group" who "uses [a] software product to perform a specific function" and "benefits from a system during its utilization" (ISO/IEC, 2007, 2001). Another engineering and cognitive psychological perspective suggests that "the user and the computer engage in a communicative dialogue whose purpose is the accomplishment of some task ... The human mind is also an information processing system" [1]. One perspective from interaction design suggests that users are those people who interact with a system, device, or product to accomplish a task (Preece, et al., 2015).

This perspective takes the individual as its unit of analysis. Studies of this form assess psychometric traits of individuals and then compare differences between groups of users and non-users. Such work can suggest potential differences between individuals who use a given technology and those who do not. With few exceptions (e.g., Baumer, et al., 2013; Lampe, et al., 2013), such work often reinforces a binary between users and non-users, which, while perhaps simplifying the analysis, may gloss over subtle nuances in different forms of engagement with technology. The papers in this special issue tend to take a different approach. While some focus on non-users of a specific technology, device, or system (Levy; Ribak and Rosenthal; Thorén and Kitzmann; Van House), this issue does not include an article that conducts a straightforward comparison of users and non-users.

### Resistance, addiction, and identity

There are a number of studies that have focused on cases of deliberate, even conspicuous, non-use, as in when people swear off e-mail during their vacation or give up Facebook for Lent. In these cases of deliberate refusal of a technology, one of the key traits of the individual is her or his ability to resist the temptation of using technology. Approaches that frame (social) media and technology use as addiction fall into this mold (e.g., Andreassen, et al., 2012; Steiger, et al., 2013). In other cases, non-use may represent an individual's attempt to regain (a sense of) self-control over their own technology use (e.g., Ames, 2013; Baumer, et al., 2013; Schoenebeck, 2014). In many of these cases, the discourse is one of control. Because the resulting non-use may be partial or negotiated, these kinds of studies tend not to frame "use" as a monolithic concept for which non-use is the binary opposite.

Moving beyond the individual, the voluntary non-use of technology may function as the production or performance of a particular sociocultural identity. For instance, abstention from Facebook becomes an act of performing a particular identity, one bound up with "conspicuous non-consumption" and a rejection of neoliberal values of commodification (Portwood-Stacer, 2013). Non-use (and use) of the smartphone app Grindr also figures prominently in partners' negotiations about the status of their own relationship (Brubaker, et al., 2014). In another example, the Christian period of Lent becomes, for some, an occasion to limit use of social media (Schoenebeck, 2014).

This work highlights the sociocultural significance of technology non-use. An individual's non/use of technology may have sociocultural repercussions that reach beyond the individual, as pointed out by several pieces in this issue (Ems; Gomez, et al.; Levy; Ribak and Rosenthal; Thorén and Kitzmann).

### Development and the digital divide

While a significant portion of the literature focuses on voluntary non-use, there are ample cases where an individual may want to use a technology but cannot, or where certain technologies are not even available. Wyatt (2003) refers to those who are involuntarily prevented from using a technology as the excluded and the expelled. Lenhart and Horrigan (2003), drawing on survey data, argue that this distinction should not be described as a digital divide but more as a spectrum ranging from the truly unconnected, to evaders and drop-outs, to intermittent users, to home broadband users. Satchell and Dourish refer to situations where non-use "[has] its origins in economic, social, infrastructural, geographical, and other sources" [2] as disenfranchisement. Work on the growth of the Internet and especially mobile phone use in emerging economies or "developing" countries has also addressed exclusion as manifold, or as a kind of spectrum often reworking or rejecting the "digital divide" metaphor (Keniston, 2003). Patra, et al. (2007), for example, note on computer sharing (in schools in India) that up to five children might use a machine together and that caste and gender hierarchies were often recreated in terms of who got to "drive" the computer and who was left to passively observe. Wyche, et al. (2013) found that, despite being ostensibly "free," Facebook use in rural Kenya was associated with various costs, both economic and otherwise. Burrell (2012a) found that among the young men who frequent Internet cafes in Ghana hoping to meet and communicate with foreigners online, that the question of exclusion is very much an ongoing concern despite their status as the "connected." An online culture established on Euro-American norms and low quality (i.e., slow) and expensive connections made it hard to engage and keep up relationships with foreign contacts (Burrell, 2012a). In a follow up with key informants many years later Burrell found many were no longer Internet users, having become disillusioned with the liberatory possibilities they had once associated with the Internet (Burrell, 2012b).

Firmly transcending a focus on individual agency, such approaches draw attention to some of the broader social, cultural, historical, and political aspects of technology non-use, especially outside of the North American and European contexts where many such technologies are developed. Focusing on social networking sites, Boyd and Ellison argue that, "although the situation is rapidly changing, scholars still have a limited understanding of who is and who is not using these sites, [...] especially outside the US" [3]. In this issue, both Banks' and Kumar's papers speak to these questions.

### Power and agency

Finally, various contexts may shape, constrain, or otherwise influence the mode of technology non/use available. In some ways, this approach extends the ideas developed in notions of disenfranchisement (Satchell and Dourish, 2009), exclusion, and expulsion (Wyatt, 2003). However, it also acknowledges that technology use may be involuntary, thereby highlighting the interplay between individual agency and social power structures (Certeau, 1984; Giddens, 1984). For example, the lagging resister (Baumer, et al., 2013) wants to cease using a technology but for some reason does not. Numerous intellectual strands have considered the ways in which technological systems may "enroll," and thus limit the agency, of various types of actors (Latour, 2005; Law, 1986).

This approach also provides a slightly different lens on the digital divide. Rather than policy, infrastructure, and technological availability, it emphasizes governments, corporations, non-profit organizations, and others who constrain what is and is not possible. From this perspective, technology non-use becomes a question of how the exertion of power amplifies or limits the agency of certain groups. This issue includes several pieces that illuminate such power dynamics (Banks; Ems; Kumar; Plaut; Van House).

### In this issue

In "Lines of power," David A. Banks presents an engaging socio-historical analysis of the origins of the terms "online/offline," first in the early rail industry and then in the computer industry. In the process, he highlights the discursive role these terms play in linking "online" to positions of social and economic power. He then proposes that given the parallels between these worlds, resistance in the Internet service provision industry could perhaps take a lesson from successful resistance in the rail industry, where instead of individualized market-based solutions, "users" collectively fought for distributed control of the railways such as "common carrier" laws. Through this, Banks illustrates that being "online" necessarily constitutes a social relationship — a collective, not individual state, with strong implications of power.

In "Pulling the plug visually: Images of resistance to ICTs and connectivity," Ricardo Gomez, Kirsten Foot, Meg Young, Rose Paquet-Kinsley, and Stacey Morrison make an important point about the representation of non-use. Much prior work studying non-use focuses on written text as its primary data source. However, Gomez, et al. point to the numerous visual images online that depict resistance to information and communication technologies (ICTs). The authors analyze 233 images collected from various online resources, focusing on four interrelated questions. Who is resisting technology? What is the nature of the critique depicted in the image? What specific technology is being resisted? How do visual depictions of resistance differ from textual descriptions? Throughout their detailed analysis, Gomez, et al. point to significant use of humor, metaphor, sarcasm, irony, and related devices. Importantly, these devices do not occur as frequently in prior work that uses primarily textual data. The findings provide an important lens into the sociocultural significance of, as well as visual and rhetorical tropes surrounding, resistance to ICTs.

Neha Kumar in "The gender-technology divide or perceptions of non-use" looks at rural Indian women and asks whether non-use is more perception than lived reality. That perception is shaped specifically by men within a patriarchal ordering that seems to attribute incapability and curiosity to women. For their part, within such a structure, women negotiate phone access and use in a way that keeps their technological use and capability relatively concealed. This is an especially helpful reminder that scholars need to be vigilant in analyzing accounts of non-use (whether personally recounted or in the mass media). These are not always the disinterested reporting of facts, but often imbued with symbolic associations. In this way societies attempt to cast technology as suitable, manageable, or appropriate for some populations and not others.

In "Technologies of avoidance: The swear jar and the cell phone," Ethan R. Plaut conducts an informative conceptual inversion. Rather than avoidance of communication technologies, we might consider technologies of communication avoidance. Many productivity tools that disable one's Internet connection, or perhaps restrict access to certain Web sites, function in just this way, limiting or forcing us to avoid specific types of communication. Plaut begins his exploration with a historical-cultural analysis of the swear jar, an artifact intended to discourage the use of profanity through monetary penalty. A parallel can be drawn to constraints implemented in numerous communication technologies, as seen in the author's analysis of both existing devices and a corpus of U.S. patents. This analysis reveals how particular definitions of communication, selection, and avoidance are embodied in these technologies. Furthermore, Plaut suggests that this "patent imaginary" envisions, rather problematically, users who are willing to impose constraints on their own communication that have been designed and tailored by others. The author then draws implications, both for theoretical accounts of communication (avoidance) and for design of communication (avoidance) technologies.

In "The user as network," Karen E.C. Levy uses actor-network theory (ANT) to analyze why anyone would prefer using tamper-proof Nexafed over Sudafed, which seems illogical using an individualized understanding of use/non-use. Through the ANT lens, however, networked motivations emerge as families and communities struggle with controlling methamphetamine addictions, consumers want to signal proper use of decongestants, pharmacists want to be able to "do the right thing" for their communities, and shops see Nexafed as insurance against theft. Alongside legal restrictions on Sudafed purchases, Levy makes the case that Nexafed thus emerges as a product of networked power relations tied to the prevention of methamphetamine use. This emphasizes the fundamentally political nature of technologies, the social nature of motivations, and the logic behind intentionally limiting technologies.

Rivka Ribak and Michele Rosenthal in "Smartphone resistance as media ambivalence" consider non-users of smartphones acknowledging this as a temporary condition, one that is infeasible in the long run. Nonetheless, the resistance to the smartphone is an expression of "media ambivalence" and these non-users provide commentary on an emerging smartphone culture that disturbs them, one of total availability, distraction, privacy violations and self-subjecting to surveillance. These conscientious non-users are distinct from those who merely negotiate the overabundance of media mindfully. Yet, the admission of the likelihood of succumbing to smartphone use raises the question of whether, ultimately, users or non-users have agency in any true sense.

In "Exploring ethnographic techniques for ICT non-use research: An Amish case study", Lindsay Ems presents material from her ethnographic studies of a classic, although frequently misunderstood, community of non-users, the Pennsylvania Old Order Amish. Ems' study not only examines the careful evaluative practices that the Amish bring to any new technological innovation but also provides an important reflection on the methodological problems of studying non-use, and of managing ethnographic encounters in contexts where scrutiny of non-normative technical practice seem potentially threatening. Studying non-use is, after all, a tricky methodological prospect, it seemingly presenting itself as an absence rather than a presence; Ems documents the processes of surfacing the presence in studies of non-use.

In "Facebook enactment and practices among the 'young old': Implications for studying use and non-use," Nancy Van House examines perceptions of Facebook among 65–70 year olds. Theoretically, the article draws on phenomenology and practice theory to argue that different "versions" of Facebook exist. This notion of version depends not on technical feature updates but on the (imagined or actual) uses, practices, and experiences associated with the site. Focusing on 65–70 year olds provides the author an opportunity to study users and non-users who engage with a version of the site that differs at least to some extent from the narrative in common discourse. She argues that studying non-use requires understanding the particular version of a technology that is not being used. As with much well-done research on non-use, this study provides an important complement to studies that treats social media, or technologies more broadly, as a monolithic, relatively undifferentiated whole.

In "Replicas, imposters, and the real deal," Claes Thorén and Andreas Kitzmann examine a community that intentionally rejects digital synthesizers in favor of 1970s analog synthesizers. They chart this community's reactions to software that simulates the sound of their favored equipment so well that they can't be distinguished in blind tests or algorithmically. What emerges as important in this technological resistance is thus more than keeping an 'authentic sound,' the professed reason among many in this community for using this equipment, or elitism, the claim of detractors and those who cannot afford the vintage equipment. It centers on the importance of keeping alive the equipment and practices that were in use when the music the community is listening to was produced. Through this analysis, Thorén and Kitzmann highlight the emotional valence that technological resistance can inhabit.

#### Concluding statements

In a spirit aligned with that of Oudshoorn and Pinch (2003), we could have referred to this special issue as focusing on non-use and use. Technology non-use offers a fascinating sociotechnical phenomenon worthy of study per se. However, it also provides an opportunity to rethink how we approach, study, and conceptualize human relationships with, and through, technology. The authors in this collection take a multiplicity of approaches on diverse topics to develop a rigorous theoretical understanding for non-use, setting crucial groundwork for future research. 

#### About the authors

**Eric P.S. Baumer** is a Research Associate in the Departments of Communication and of Information Science at Cornell University.  
E-mail: [ericpsb\[at\]cornell\[dot\]edu](mailto:ericpsb[at]cornell[dot]edu)

**Morgan G. Ames** is a Postdoctoral Researcher at the Intel Science and Technology Center for Social Computing at the University of California, Irvine.  
E-mail: [webmaster\[at\]morganya\[dot\]org](mailto:webmaster[at]morganya[dot]org)

**Jenna Burrell** is an Associate Professor in the School of Information at the University of California, Berkeley.  
E-mail: [jburrell\[at\]berkeley\[dot\]edu](mailto:jburrell[at]berkeley[dot]edu)

**Jed R. Brubaker** is an Assistant Professor in the Department of Information Science at the University of Colorado Boulder.  
E-mail: [jedbrubaker\[at\]gmail\[dot\]com](mailto:jedbrubaker[at]gmail[dot]com)

**Paul Dourish** is a Professor in the Department of Informatics at the University of California, Irvine.  
E-mail: [jpd\[at\]ics\[dot\]uci\[dot\]edu](mailto:jpd[at]ics[dot]uci[dot]edu)

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#### Notes

1. Card, *et al.*, 1983, pp. 4, 24.
2. Satchell and Dourish, 2009, p. 12.
3. Boyd and Ellison, 2007, p. 224.

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