Usees

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ABSTRACT

HCI has developed a powerful vocabulary for thinking about, and methods for engaging with, users. Similarly, recent work has advanced complementary understanding of technology non-use. However, other spaces of interaction with technology may occur that sit uncomfortably between these two poles. This paper presents two case studies highlighting individuals who neither are clearly users of a system nor are clearly non-users. Based on these cases, the paper develops the concept of *usee* to help account for such situations that lie between existing analytic categories.

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BETWEEN USE AND NON-USE

Users are the heart of HCI. 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" [9,10]. From user-centered design to usability testing, the user dominates both the practice and discourse of HCI, and numerous approaches have considered how (best) to engage with users [e.g., 1,13].

However, the very notion of "the user" introduces certain conceptual complexities. For instance, Cooper and Bowers [3] analyze how the user developed as a rhetorical strategy, a means of justifying the existence of HCI as a discipline while simultaneously differentiating in from related disciplines, such as computer science and cognitive psychology. Redström [15] argues that "the user" is in some senses a fiction created during the design process. In this way, user-centered design moves away from designing the

object—its form, its function, its materials—and toward designing the user—defining (and at times unnecessarily constraining) the behaviors, practices, and experiences of engaging with a particular design. Woolgar [20] documents how various elements of design practice—from insistence that "real" users participate in usability trials, to warning labels exhorting users not to open a computer's case, to the documentation accompanying computer software—work to define and constrain how "proper" users (should) act. That is, these practices collectively "configure the user."

In contrast, recent work has proposed focusing specifically on technology non-use. Such work inverts the traditional focus on users, drawing attention to everything from the digital divide and technological disenfranchisement [e.g., 22] to voluntary refusal of technology [e.g., 2,17]. Doing so provides the opportunity to think more broadly about how design decisions may carry implications beyond immediate users of a technology [16].

Thus, HCI possesses well-developed vocabularies for thinking about both users and non-users of the technologies we design. However, some work on non-use suggests that a clear distinction between user and non-user belies the complex nature of the engagements in which people and technologies participate [2,16,21]. Indeed, situations may arise that fit neither in our definitions of "user" (see above) nor in established categories of non-use, such as active resistance, disinterest, or exclusion [16,21].

This paper's core contribution, then, is the provision and development of the term *usees* as an analytic means of accounting for one particular type of interaction between humans and computational systems that lies in the liminal area between use and non-use. Etymologically, the –ee suffix transforms transitive verbs into "nouns which denote a person who is the object […] of the act specified by the verb" [23]. An "employee" is employed by someone. A "grantee" is granted something. A "fiancée" is affianced to someone. Similarly, a "usee" is, in at least some sense, used by a computational or technological system.

This paper develops this concept with two case studies. In each, it shows how some individual or group of individuals neither is well accounted for under the traditional umbrella of users nor fits cleanly into categories of non-users. It then describes how the notion of usees helps us account for these individuals in a way not previously analytically possible. Not only can this analytic approach help us escape a

potentially myopic focus on "the user," it also advances our thinking about the myriad ways in which the technologies we design intersect with people's lives.

CASE STUDIES

This section presents two cases where neither definitions of user [9,10] nor definitions of non-user [16,21] account well for an observed relationship with technology. The following section synthesizes across them to draw out commonalities and articulate a definition of what constitutes a usee.

Girls Around Me

[G]eo-social discovery is the future of mobile web and applications, [...] sharing interests, finding new people or cool venues is a good thing.[1]

When the iPhone app Girls Around Me loads, the user is greeted with a map-based interface. On it are shown profile photos of Foursquare users who have recently checked in near by. By default the application shows only female users, but it can also be configured to show only male users or all users. If any of those Foursquare users has linked their Facebook profile, the Girls Around Me user can click on the photo to see whatever information is publicly available on her or his Facebook profile—full name, birthdate, relationship status, high school attended, political affiliation, as well as any other publicly visible photos. Ostensibly, this functionality enables the Girls Around Me user to make a more informed choice about which venues to attend during a night out. However, media coverage depicts it as "a hook-up app [...] for potential stalkers and date rapists"[2]. This is perhaps unsurprising given the developers' own description:

In the mood for love, or just after a one-night stand? Girls Around Me puts you in control! [...] Browse photos of lovely local ladies. [http://girlsaround.me]

Indeed, a wave of negative media led in part to Foursquare revoking the app's API access, effectively rendering it non-functional. As a result, i-Free, the developers of the app, subsequently pulled it from the Apple App Store.

This app and the story around it touch on such diverse concerns as privacy, surveillance, gender, personal data, responsibility (both personal and corporate), and others. Previous work has suggested that Girls Around Me exposes some of the complex interdependencies among policy, design, and practice [11]. While certainly a valuable line of inquiry, this paper instead considers the problems this story poses for the category of "user." Specifically, how do we account for the women (and men) whose information is

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[1] http://www.cultofmac.com/158764/developers-behind-girls-around-me-stalking-app-explain-themselves-exclusive-interview/

[2] http://www.cultofmac.com/157641/this-creepy-app-isnt-just-stalking-women-without-their-knowledge-its-a-wake-up-call-about-facebook-privacy/

displayed in the app? It is difficult to argue that they use Girls Around Me "to perform a specific function" [9] or that they "benefit from [the] system during its utilization" [10]. Thus, they should likely not be seen as users.

Classifying them as non-users who reject or are excluded from a technology [21] proves similarly unsatisfying. Satchell and Dourish [16] do provide for a type of non-use where individuals may be affected by, but might not come in direct contact with, a technology. Displacement involves one person indirectly making use of a technology through another person who acts as mediator. For example, rural villages may have only a single telephone, in which case one resident becomes designated as operator and relays messages to others. Indirection arguably plays a role in Girls Around Me, though not of the kind described in Satchell and Dourish's notion of displacement. Thus, prior work provides limited conceptual vocabulary for analyzing these kinds of relationships with technology.

Target-ed Advertising

Many daily purchasing decisions—soap, trashbags, toothpaste—are made based on habit, rendering advertising for those items fairly ineffective. However, marketers argue, there are particular life events around which "shopping patterns and brand loyalties are up for grabs" [5]. These events include, among others, moving to a new house, getting married, and, most notably, having a baby.

To gain a competitive edge, retailers need to know not just that a couple has *had* a baby but when they are *going to* have a baby. That is, they must detect and predict pregnancy. By analyzing shopping patterns, a team of data analysts working for the retail corporation Target were able to identify "about 25 products that, when analyzed together, allowed [them] to assign each shopper a 'pregnancy prediction' score. [Moreover, they] could also estimate her due date within a small window, so Target could send coupons timed to very specific stages of her pregnancy" [5].

[A] man walked into a Target outside Minneapolis and demanded to see the manager. He was clutching coupons that had been sent to his daughter, and he was angry [...]. "My daughter got this in the mail!" he said. "She's still in high school, and you're sending her coupons for baby clothes and cribs? Are you trying to encourage her to get pregnant?"

[...] The manager apologized and then called a few days later to apologize again. On the phone, though, the father was somewhat abashed. "I had a talk with my daughter," he said. "It turns out there's been some activities in my house I haven't been completely aware of. She's due in August. I owe you an apology." [5]

As with the previous case, numerous points could be made here about privacy, data analysis, gender, modernism, corporate strategy, etc. However, how do current conceptual

and theoretical frameworks account for the woman whose pregnancy was identified?

As above, she is not a user of this technology in the traditional sense. While some benefits [10] might be derived from the targeted coupons that customers receive, these customers almost certainly are not "us[ing] the software product to perform a specific function" [9]. Indeed, these customers likely remain largely if not entirely unaware of the system and its functioning.

Also as above, this woman is not a non-user. She may have availed herself of the tailored coupons sent to her. Her purchases may even become data that help shape and further refine future predictive analyses. Indeed, becoming a non-user of such corporate data-mining schemes can prove exceedingly difficult [19]. Thus, existing analytic categories prove unsatisfying at describing this relationship.

WHAT MAKES A USEE?

To fill this gap, the term *usee* designates the liminal space between use and non-use depicted in these case studies. The following definition draws inspiration from the sociology and philosophy of technology, particularly the agency of artifacts [12,14,18], power and knowledge [4,6], and the relationship between technology and human nature [4,8]. Rather than encompass every situation in which someone may be "used" by technology, the term serves a fairly specific analytic purpose: to help account for a current blind spot in our reasoning about interactions between humans and computers. Synthesizing across the two case studies, this section posits three criteria for what counts as a usee, each of which may occur in varying degrees.

Targeting

First, an individual is a usee when s/he (or information about her or him) is *explicitly targeted* by a technological system. In technical terms, this means that the system leverages some representation of the individual or her or his identity. Such individual targeting is readily apparent in the case of Target-ed advertising. "Target assigns each shopper a unique code — known internally as the Guest ID number" [5], allowing the retailer to maintain a persistent representation of each individual and her or his shopping record. Degrees of targeting may also occur. For example, Girls Around Me does not store permanent records about any person, but it still targets and aggregates information about specific individuals.

As a corollary, not anyone and everyone affected by a technology could or should be considered a usee. For example, a handrail on a staircase may influence our perceptions of safety [15], but the handrail does not explicitly target its user or maintain an internal representation of those perceptions. Thus, the targeting criterion focuses us on cases in which a technology is directed *at* an individual or a class of individuals.

(un)Awareness

Second, a usee has *limited awareness of the system* or knowledge that it is targeting her or him. In the case of Girls Around Me, the Foursquare users whose information was shown were (likely) aware that they were sharing their current location. They were similarly (likely) aware of the personal information they shared on Facebook. However, based on the reactions described in the media [see 11], most people were not aware that these data were being aggregated by this application in this particular way.

As with targeting, (un)awareness may occur in varying degrees; usees need not be completely oblivious. The young woman who was identified by Target's data mining system as being pregnant may have been aware that the corporation tracked and analyzed her purchasing patterns. However, she likely did not know that it would draw conclusions about her status as a parent-to-be, let alone make product solicitations or suggestions based on those conclusions. Indeed, "as long as a pregnant woman thinks she hasn't been spied on, she'll use the coupons. […] As long as [Target data analysts] don't spook her, it works." Compare this with someone using, e.g., a personal informatics or persuasive technology system. In those cases, the person is (usually) aware that the technology is targeting, tracking, and potentially attempting to influence, their behavior. Usees, on the other hand, do not really know the full extent of the technological systems in which they are embroiled.

(lack of) Consent

Third, to be a usee of a system, the system must do things with the individual's data to which s/he *did not knowingly consent* and to which, given the option, s/he would not likely consent. For example, a Foursquare user may not know all the details of the rules and metrics by which badges are awarded, but it seems unlikely that s/he would object to such analyses of her or his data. On the other hand, the woman in the second case study would almost certainly object to the targeted advertising of which her father became the recipient.

Unlike the other two criteria, determining (the degree of) consent with certainty may not be analytically feasible. For instance, we cannot know whether every Foursquare user *would* consent to Girls Around Me's use of their data, but we do know that such consent was neither sought nor given.

IMPLICATIONS

The groups identified above do not use the systems described to perform specific functions that benefit them [9,10]. They are neither excluded nor expelled, resistors nor rejectors [21]. They are neither lagging adopters, disenfranchised, disenchanted, nor disinterested [16]. The vocabulary proposed here helps account for these cases that sit uneasily between established poles of use and non-use.

These cases might be seen as simply technologically-mediated exercises of power. While the analysis here does not preclude such a reading, *usee* still acts as a beneficial

concept for two reasons. First, viewing these as situations of technical control [cf. 6] draws attention to those acting from positions of power, providing less analytic vocabulary for the individuals on whom that power is exercised. Second, far from being exceptional, situations of this nature are likely to become more common. Algorithmically-driven systems similar to Target's advertising scheme pervade ever greater aspects of everyday life [7], not all of which carry explicitly negative moral and ethical connotations. Search engines may optimize their results based on individual browsing history. Healthcare providers may mine individual data to develop incentive mechanisms that encourage seeking preventative care. In fact, such situations suggest that users and usees may not be mutually exclusive. Future work should develop more fully how such concepts build on and extend theorizing of human-computer relationships [4,6,8,12]. This paper provides conceptual language to help begin to grapple with the nature and ramifications of these emergent sociotechnical configurations.

Furthermore, "usee" captures just one such type of interaction. A variety of other category-challenging relationships may occur between use and non-use. Current analytic approaches to such relationships can implicitly reinforce existing power dynamics [6,20], limit the disciplinary configurations possible in HCI [3], and gloss over differences between success for immediate users and secondary or tertiary repercussions of design [15]. Empirical studies giving voice to the subjective experiences of such liminal groups will prove essential in developing, and probing the limits of, these novel analytic categories. Indeed, not developing such conceptual vocabulary risks leaving us with an incomplete and inaccurate understanding of how exactly HCI technologies affect, and are affected by, the social worlds in which they are enmeshed.

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