

Second-Hand Interactions: Investigating Reacquisition and Dispossession Practices around Domestic Objects

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ABSTRACT

We present a qualitative study of *reacquisition*—the acquisition of previously possessed goods—involving in-depth interviews with 18 reacquirers within or nearby Pittsburgh, PA, USA. Based on critiques of sustainable consumption and our findings, we reframe technology consumption as acquisition, possession, dispossession and reacquisition. We present four reacquisition orientations describing our participants’ motivations and practices: casual, necessary, critical, and experiential. We then present a range of findings including issues with work, time and effort involved in reacquisition, and values and practices of care and patience associated with invested reacquirers. We conclude with implications for designing technologies to support current reacquisition practices, as well as broader opportunities for HCI and interaction design to incorporate non-mainstream reacquisition practices and values into more mainstream technologies.

Author Keywords

Sustainability, consumption, reacquisition

ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

General Terms

Design, Theory

INTRODUCTION

Growing concerns over sustainability have prompted a substantial area of research within the CHI community related to product durability and re-use [2,6,15,16,17,18,23,30] and sustainable consumption more generally (e.g., [31]). Motivated and informed by these concerns, we report a qualitative study of individuals engaged to some significant degree in acquiring used or second-hand goods rather than new goods from firsthand retail sites.

While we cover a range of topics and issues, specific

research questions guiding our investigation include: What motivates reacquisition, i.e., the acquisition of used items? What processes, practices, experiences and values are involved in reacquiring used items versus acquiring new items? What role does the type of technology being (re)acquired play (e.g., computer versus furniture)? What role do technological tools, services and environments play in reacquisition (e.g., Craigslist versus thrift store)?

In this paper we reframe the consumption of durable goods as involving acquisition, possession, dispossession and reacquisition. This reframing is motivated both by critiques of sustainable consumption which point out that durable goods are not actually metabolically consumed, and our participants who show us that goods often circulate within and across multiple contexts of use and ownership.

Our study uncovers a great richness and diversity of practices, experiences and values related to reacquisition. We frame the value of studying reacquisition in terms of two goals: (i) designing for or with communities of reacquisition and (ii) designing from communities of reacquisition. The former is concerned with improving reacquisition as it is currently practiced through the design of interactive products as well as technological tools, services and environments. The second goal is based on the idea that we can learn much from the processes, practices, and values of invested reacquirers; and we can apply these understandings when designing technologies for more mainstream communities. We argue for the value of looking at invested reacquirers as potential experts in sustainable, ethical and meaningful consumption of and with technology. This perspective shares much in common with arguments for studying non-uses of technology [25], studying non-mainstream even marginalized communities for sustainability (e.g., [7]), and various challenges to values of ease and efficiency in technology design (e.g., [3,4,10,12,26,29,30]).

In what follows we present: (i) related consumption literature and our reframing of consumption, (ii) key findings from our qualitative study of reacquisition, and (iii) implications for HCI and interaction design.

CONSUMPTION LITERATURE

The demand and impact of firsthand goods

The enormous negative environmental impacts associated

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CHI 2011, May 7–12, 2011, Vancouver, BC, Canada.

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with the manufacture and disposal of vast amounts of consumer electronics and other goods have been widely discussed [2,8,10,16,18,30]. Attention has been drawn not only to the high rate of consumption of new goods but also the high rate at which still functioning goods are disposed of prematurely [2,8,16,18,29]. Reliable figures on the durability of goods are scarce, yet a 1998 UK study of over 800 households reported that 1/3 of discarded appliances were still functional, respondents usually replaced rather than repaired appliances they deemed repairable, and respondents tended to have negative attitudes toward obtaining used appliances [8]. The potential for second-hand markets to decrease demand for new goods has been observed in a number of cases, including used clothing, cars and books [28]. Economic models have predicted second-hand markets can reduce demand for new goods [28]. All this suggests the importance and potential of designing to support the use and re-use of durable goods as a matter of sustainability.

Second-hand consumption studies

One of the most substantial treatments to date of second-hand consumption is Gregson and Crewe's book *Second Cultures*, a series of ethnographic studies of vintage shopping and other types of second-hand consumption in England [14]. Other empirical and theoretical work on second-hand consumption includes investigations of second-hand clothing [24], transfer of ownership at garage sales and auctions [19], and the concepts of disposal and waste in modern society [20]. However these works have tended to overlook issues specific to newer technologies, including products as well as services and sites of second-hand consumption (e.g., eBay, Craigslist). Within HCI a number of recent works have recently investigated durability and re-use as a matter of sustainability [2,6,15,16,17,18,23,30].

THEORIZING ((UN)SUSTAINABLE) CONSUMPTION

While even a basic overview of theoretical approaches to consumption is well beyond the scope of this paper we nonetheless note some important approaches to consumption including (post-)structuralist and Marxist oriented approaches (e.g., [1]), anthropologically oriented approaches (e.g., [9,22]), and sociological approaches based on theories of practice (e.g. [5,27]). While we find these approaches useful and draw on them throughout our work, we also find that prior approaches remain relatively uncritical of the concept of consumption as a material practice. As argued by design theorist Tony Fry, academic literatures as well as design and policy approaches tend toward a conceptually problematic notion of consumption:

[T]he very notion of consumption itself, as an economic and socio-cultural practice, is mobilized unproblematically. It is the fact that people do not metabolically consume that is at the heart of the problem. Consumption as an economic category is incommensurate with it as an ecological category.

No matter the way in which products are acquired and used or whether consumption is thought and theorized as an economic activity, the fact is that all durable products at the end of useful life have not been consumed. The residual materials of land fill, waste dumps, junk yards, plus the content of our attics, cellars, sheds and garages all testify to the truth of this claim [10, p. 192].

Recent works within HCI echo such criticisms [2,6,15,16,17,18,23,30], as well as works outside of HCI (e.g., [8,29]). However here we wish to take more seriously the claim that the very notion of consumption may be flawed and "*the rhetoric of sustainable consumption either knowingly or unknowingly legitimates the unsustainable.*" [10, p. 193].

Reframing the consumption of durable technology

Drawing on recent critiques of sustainable consumption, we reframe consumption of potentially durable material goods in terms of the **acquisition, possession, dispossession and reacquisition** of a particular material object¹. This reframing parallels Huang and Truong's investigation of mobile phone acquisition, ownership, disposal and replacement [16]. By explicitly re-interpreting consumption as involving (re)acquiring, possessing and dispossessing we consider more seriously and explicitly the ways in which technologies can and do circulate within and across multiple contexts and temporalities of use and ownership; rather than being "consumed", a notion which may tend to obscure the fact that technologies continue to endure beyond initial moments of purchase, use and ownership—be it in the hands of another or in a landfill.

Our qualitative study focuses on reacquisition, the notion that a material object may be acquired as something that has been previously possessed, typically knowingly as such. While our reframing of consumption is based in large part on theoretical and critical considerations it is importantly also a result of working to understand and name what we observed in our study. Our participants show us ways that goods are reacquired and recirculate, or else fail to do so. Moreover these individuals may be said to teach us ways of re-acquiring, possessing and dispossessing that depart in interesting, even radical ways from the acquisition of the not-previously-acquired and the possession of the not-previously-possessed (i.e., firsthand consumption). We now turn to our qualitative study.

METHODS

We conducted an ethnographically informed qualitative study from June-August 2010 in and nearby Pittsburgh, Pennsylvania, USA consisting of in-depth interviews with

¹ We use the term *dispossession* to refer to the act, process or practice of discarding, giving away or otherwise "shedding off of domestic and personal objects" [20, p. 5]. We use the term *reacquisition* to refer to the acquisition of an object that has been previously possessed, i.e. "used" or "second-hand".

18 individuals that reacquire (previously possessed) goods. These individuals also dispossessed goods and in some cases also significantly engaged in reselling goods. Prior to these interviews we conducted approximately 20 hours of observation work that included informally conversing with reacquirers and resellers at locations including thrift stores, vintage stores, yard and sidewalk sales, flea markets, and, on a number of occasions, people reacquiring items that had been discarded in streets, alleys and dumpsters.

In-depth interviews were conducted with 18 participants from distinct households. The primary inclusion criterion for participation was some significant degree of involved and/or routine reacquisition of goods. We sought to recruit a fairly diverse range of people within this population, which we knew from our observation work and prior literature was indeed diverse. All participants were currently residing within or nearby the city of Pittsburgh, Pennsylvania. Participant ages ranged from early 20s to 70s; 11 were female and 7 male. 7 participants were recruited in-person at sites including a local vintage/resale store, a flea market, a sale of used items in a parking lot, and a witnessed reacquisition of an item left outside of a home for taking. The remaining 11 participants were recruited through ads posted to Craigslist. Despite efforts to recruit diverse ethnicities most of our participants were Caucasian; the exceptions were one Asian participant (Jun) and one African-American participant (Samantha).

One and sometimes two ~1-2 hour interviews were conducted per participant. Interviews were audio recorded and conducted at the participant's home and/or site of selling second-hand goods. All participants were offered \$10 compensation. Home tours were conducted in most cases during which participants described and explained their various possessions. Participants also were asked to describe and when possible demonstrate reacquisition and dispossession practices in certain ways (e.g., describing how a particular item was reacquired; showing us lists of things they planned to obtain; demonstrating use of eBay and Craigslist with the computer). Photographs were taken of each participant's possessions and homes during these visits.

Interviews were open-ended and the direction of each conversation varied with the participant. However we designed a framework of topics that were covered with each participant. This allowed for a level of comparative analysis to be conducted across participants. The topics covered were: *sites*—where participants (re)acquire items; *objects*—what types of things they (re)acquire; *processes & practices*—the mental, physical, material and symbolic processes involved in (re)acquisition; *values & motivations* for (re)acquiring; comparisons of *new & used items*; comparisons of *digital & non-digital items*; comparisons of *virtual & physical sites of (re)acquisition*; and comparisons of *the self to others* within and outside one's social circles in terms of above topics.

Our study resulted in the collection of hundreds of pages of field notes and approximately 1000 pages (300,000 words) of interview transcripts. Analysis of the data was an ongoing process throughout the study. Field notes were reviewed immediately following an interview or observation period and tentative insights and themes noted in reflective field logs and memos [13]. A more thorough analysis of all data was conducted at the conclusion of the study using an iterative process of searching for emergent patterns and themes [21]. All transcripts were closely read and reread—in conjunction with a review of field notes and photographs—while highlighting, commenting on and reorganizing text.

Two important limitations of our work should be noted. The first is the limited number of participants and interviews conducted. The second is the great diversity of participants interviewed. Together, these limit both the depth and reliability of our understandings of particular individual's experiences and practices, and the extent to which our findings can be generalized to other groups. We intend to address these limitations in future studies.

FINDINGS

The first and second-hand distinction

We find that central to understanding the practices, experiences and values of reacquisition is the distinction between firsthand acquisition and reacquisition—the acquisition of goods that have been previously possessed. Across all participants and regardless of social position, those engaged in reacquisition consistently defined themselves, their values, their practices and their things with respect to reacquisition in terms of an oppositional—at times even resistant—relation to those of firsthand acquisition. For some this was manifested through attempts to minimize this distinction; for others, it was explicitly highlighted, even embraced. This is consistent with Gregson and Crewe's interpretations of second-hand selling and shopping [14]. Further, we argue, wholly aligned with Gregson and Crewe, that the distinction between firsthand and second-hand—between acquisition and reacquisition—cannot be ignored as it often provides the very conditions within which value is created by those engaged in social and cultural practices of reacquisition.

While all of our participants share a common practical and reflective understanding of the firsthand and second-hand distinction—in some cases, an oppositional relationship core to their identity, in others, apparently much less so—it is crucial to make clear the heterogeneous nature of our participants in terms of how they (and we) view their selves, their values, their practices and their things. We found the various worlds of reacquisition and dispossession that we were drawn into to be rich, varied, complex and highly nuanced. This presents distinct challenges in how best to present our findings, requiring us to omit interesting and relevant discussions. As such, we focus here on issues most relevant to our aims of understanding reacquirers in

order to design for/with them and to design from them.

Reacquisition orientations

While we anticipated that our participants represented diverse groups, we were nonetheless struck by the great diversity of viewpoints and practices described by our participants. In order to give an overview of this diversity and categorically begin to make sense of it, we outline four *reacquisition orientations*. While the orientations are not mutually exclusive, each participant has been associated with one and sometimes two primary orientations. (Note that pseudonyms have been used for all participants.)

1. Casual reacquisition. For casual reacquirers, reacquisition is primarily seen to be a cheaper alternative to the otherwise more desirable conventional retail acquisition. Participants engaging in casual reacquisition are characterized by a lack of speech reflecting a strong commitment to or opinion of reacquisition. They often have difficulty or do not feel the need to explain their practices in detail or distinguish them strongly from firsthand acquisition. For casual reacquirers, reacquisition enables them to possess everyday goods that otherwise would be financially prohibitive, even well outside their means. Casual reacquirers tend to desire to minimize the distinction between new goods acquired firsthand and used goods reacquired second-hand. For casual reacquirers, the “*regular store*” with “*new things*” is in almost every way preferably aside from the price difference.

2. Necessary reacquisition. Necessary reacquirers tend to approach reacquisition as much more of a necessity, a constant struggle to obtain goods they deem necessary or essential. While several participants with extremely low incomes tended toward necessary reacquisition (including casually-, experientially- and critically-oriented reacquirers), an orientation toward reacquisition as foremost a financial necessity is most clearly evident in the case of Joan. In Joan’s words, she “*had everything*” and now has “*nothing*” owing to a recent divorce and personal injury. She describes deeply resenting now having to shop at thrift stores and charity outlets, not having money or credit cards, the embarrassment and distress at her daughter and others thinking she is “*cheap*”, and the strong desire to once again be able to shop for “*new things*” at “*expensive stores*”. Although Joan represents our only participant characterized foremost as a necessary reacquirer, we nonetheless believe this is an important orientation to consider as other participants tended also toward necessary reacquisition and there are likely many more who represent this distinct orientation. (Note the economic recession in the U.S. at the time of our study is likely of particular relevance here.) Further, this orientation offers a corrective to the notion suggested by many of our participants that reacquisition is primarily an enjoyable and meaningful practice or activity.

3. Critical reacquisition. For critical reacquirers, reacquisition is very consciously and reflectively bound up with considerations of social, political, economic, ethical and/or environmental concerns. Critical orientations were most salient among younger participants who may be identified with strong oppositions to the status quo, exhibiting even counter-cultural orientations. For example, John—a 33 year old who does various sound engineering work for films—describes himself and his social circle as “*independent*”, “*curious*”, “*shar[ing] a healthy defiance of authority*” and interested in “*learn[ing] how to do... things that everyone’s forgotten how to do*”, like growing food, operating a letter-press and making musical instruments. For John (re)acquiring goods involves strong political, social and moral considerations, such as where and how a product is made and the working and living conditions of those that actually manufacture and produce it.

4. Experiential reacquisition. For experiential reacquirers reacquisition is strongly appreciated for its positive experiential or aesthetic qualities—both in terms of the processes of re-acquiring and the products of reacquisition. For example, Tanya—a 30-something year old who was very recently laid off from her job as development director for a non-profit organization—engages in reacquisition to renovate and decorate an old house she lives in and plans to resell. This a profitable yet intrinsically enjoyable activity for Tanya, and the second time she has done this. Although she expresses strong ethical views on reacquisition these tend to be described in terms of an aesthetic sensibility for objects and materials, and the joys and skills of re-acquiring and re-using things. This is the case rather than having critical basis in, for example, environmental values, which she made clear did not inform her ethical views and practices.

In the remainder of this paper we commonly distinguish *casual reacquirers* from *invested reacquirers*, the latter being those of a primarily experiential or critical orientation. In what follows we present findings focused on the processes and products of reacquisition and dispossession.

Work, effort, and time: Difficulties of re-acquiring. A clear distinguishing aspect of reacquisition is that it is often discussed by participants as requiring more work, time and effort than acquiring new things at firsthand retail stores. Most casual participants described instances in which they were open to buying used items, even preferred a used item in some ways, yet constraints on time and effort (but usually not direct cost of purchase) caused them to seek these items through more conventional retail outlets. In fact all participants mentioned such issues with reacquisition as, at least at times, requiring increased work, time and effort, which in many cases caused them to resort to purchasing something from a firsthand retail store. Invested participants typically felt conflicted about purchasing new products or felt obligated to strongly rationalize such

purchases. Thus we see that the practices of re-acquiring are often fraught with distinct challenges that may make firsthand acquisition appear more seductive, convenient, accessible, even necessary. However for invested reacquirers this involved process of re-acquiring is itself often a source of value.

Skill, satisfaction, discovery: Value through re-acquiring. All of the invested reacquirers we interviewed emphasized ways in which the *process* of reacquiring was an important, intrinsically valuable experience, sometimes apparently more so than the actual object reacquired. However, it is important to note that most casual and necessary reacquirers also suggested this perspective at times. For invested reacquirers this valuable experience of reacquisition was often described as a primary motivation for reacquiring. This was made clear through comparing the experience of reacquiring at thrift stores, flea markets, “*trash piles*”, etc. to the experience of shopping at firsthand retail stores. For example, Bob describes the importance of the “*the chase*” and “*the search*” in his love of flea markets and yard sales:

I'm surprised you haven't asked the question: If you're going and looking and spend all this time looking wouldn't it be easier to *just buy the damn thing*? ... It's part of the search. The chase is half of it...you won't find that at Wal-Mart at all. There's no such thing as search and find in those places. It's categorized. No—that doesn't even enter into department stores. (Bob, 70s, retired toolmaker).

Here we see how the ways in which Wal-Mart has been designed for and experienced as “*categorized*” and usable has rendered the experience of shopping boring and unexciting for Bob. The involved and skilled processes of searching and hunting are, for Bob, clearly experientially superior in important ways to “*just buy[ing] the damn thing*”, where acquiring is apparently simply a means to the end of an acquired object. We find great importance in this recurring idea that a “well designed” experience that minimizes work, effort and frustration can be resisted as inferior and running counter to the value derived from thrift stores, flea markets and finding things on the street, experiences which may be considered poorly designed or not designed. To illustrate this point further we present a description given by Tanya, whom we met earlier, of her experience of eBay compared to flea markets and thrift stores.

Tanya: eBay is kind of different to me because there's a lot of—it's *too much* work almost. There's *so much* and it's *so huge*. The experience of looking through page after page after page, you know, vintage ashtrays, for example. It's not as satisfying as going to the flea market and *handling* them. You know what I mean? So no, I don't care for eBay so much.

James: I think so... tell me a little bit more about that...

Tanya: I mean, where's the satisfaction in typing in, “I want a blue—I want a *turquoise* blue vintage ashtray with a dolphin”, and three of them pop up. Is there any satisfaction in that?

James: So what's the experience of going to a thrift store?

Tanya: You might have to go for two years and finally, when you find that blue vintage ash tray with dolphins, which is not something I'm looking for, but, I mean, when you find it you feel like: “I got it.”

James: So you're not gonna go on eBay and buy one?

Tanya: No. I'm not. ... I'm sure if I went on eBay right now I could find enough pressed tin [something she is actively looking for] to put pressed tin in every room of [my] house, but then there's no *joy* in that.

Throughout our discussion with Tanya, and other invested reacquirers, resistance to mainstream, predetermined, categorized and usable sites of (re)acquisition come up as well as a tendency toward embracing work as rewarding, pleasurable and meaningful. The multiple and conflicting notions of work at play here are, we argue, a crucial point. Interestingly Tanya describes eBay as being “*too much work almost*” compared to continuously hunting for a particular object at a thrift store or flea market where “[y]ou might have to go for two years” to finally find it. Tanya uses the term “*work*” in different ways throughout our discussion, one use being to indicate something intrinsically enjoyable yet underrated:

Yeah, it's definitely work and—but I think work is underrated. I think people want to *consume* and *possess* and not—maybe the reason why America is so throw-away, everything is so ridiculously disposable, is that they're not enjoying—they're enjoying the wrong thing or they're looking for satisfaction in objects relative to, not the experience of [acquiring] it, but *having* it.

While expressing strong ethical opinions concerning work and (re)acquisition—about how one ought to live and work—Tanya also expresses that she is in a unique, even privileged position that is not shared by most, suggesting a very different understanding of “*work*”:

Could you—could I—drag four kids around a flea market so that I found whatever it is that [my friend with kids is] going shopping for? Probably not. You know what I mean? ... I realize I have the luxury of time that most people might not. So no, I don't think everybody could do it.

These tensions among how one does live, how one can live, and how one ought to live were acknowledged by many invested participants. While emphasizing the importance and value of reacquisition—typically with an emphasis on positive experience and/or political critique—invested participants also often felt that they occupied a niche, even privileged, position (despite often having low incomes).

Still we see clear evidence, even from casual reacquirers, of the potential value in very different ways of going about (re)acquiring that resist the easy route and embrace work,

skill, surprise and, as we will see later, patience, openness, and care. Acknowledging, understanding and incorporating these types of perspectives in HCI research and design is important as they run counter to many commonly accepted notions of work, usefulness and usability.

Quality, reliability, hygiene: Shortcomings of the reacquired. All participants drew fairly clear boundaries separating things they could not or would not acquire used. Issues of safety, cleanliness and hygiene often played a strong role. For instance, even many invested reacquirers refused to acquire used underwear, linens, towels, bedding, mattresses or food (although we did encounter exceptions for *each* of these items). Such issues have been discussed previously in terms of *divestment rituals* whereby people desire and work to remove previous traces of use and ownership [14]. While the removal or divestment of negative histories from second-hand goods is an important and recurring theme with reacquired goods, we will focus in the remainder of this section on issues with the reacquisition of second-hand electrical and digital technologies because of their direct relevance to HCI and recent concerns with the durability/disposability of such technologies.

Overall, participants tended to perceive newer technologies—especially the newest digital consumer products—as lacking durability. Invested reacquirers in particular often had strong opinions about quality, particularly the perceived lack of quality of many newer products. Commonly cited issues with used digital products included: lack of perceived durability and reliability; lack of a guarantee or warranty; lack of availability of used products; and relatively high cost and/or risk. However, these issues were often not felt to be as relevant when reacquiring more traditional technologies such as furniture, where it was often felt one had a stronger ability to judge quality and reliability.

Issues also arose of a lack of engagement and transparency with technology—of an inability to understand or intimately relate to the inner workings and operation of devices (see, e.g., [4,29]). Kristy, a self-described anarchist and community organizer, feels conflicted about her acquisition of a new Apple computer in relation to her values of social equity and sustainability. These issues are apparently not simply abstract ethical or political issues but are also intimately linked to Kristy’s direct experience of use:

The computer relationship feels much more dependent. [James: Dependent?] That I need it and want it... I’m totally dependent on a bicycle, too, but I can also *treat* it. My bicycle has a name and I, like I think it’s a person because I’ll be like “Mindy, why are you doing this to me? Why is your tire flat? Come on,” just like “Oh, Mindy, I take such good care of you...” ... I’ll talk to it like that because I know how to fix it. So it’s like more of a *relationship*. [James: You don’t talk to your computer?] No,

and this is more like a need or a use, an addiction or something. I would really feel compromised if this broke. I don’t have the money to replace it [computer] or fix it or anything. (Kristy, 20s)

This suggests the importance of products that are not only technically durable but also perceptually durable and facilitate relationships of repair, maintenance, and dispossession for reacquisition by others.

We conclude this section by bringing in the importance of social and cultural contexts to understanding people’s perceptions of and interactions with (re)acquired objects, and drawing on sociological investigations of consumption (e.g., [5,27]). This point is perhaps most salient with Katie. Katie explained most of her possessions—many if not most of which she reacquired—as largely a factor of her current “*life position*”: a 20-something year old student renting an apartment; a “*temporary situation*”. Katie described most of her possessions as temporary: “*at this point in my life these are temporary purchases. I don’t plan on having them forever*”. These “*temporary purchases*” were contrasted with “*grown up purchases*”, notably the new bed and television she recently acquired, and the “*really nice dinette set*” she someday hopes to obtain when she is married. Katie’s story highlights the importance of social acceptability in reacquiring, owning, using and perhaps especially displaying to others used goods. Critical or experiential reacquirers tended to describe reacquired goods as a source of pride and meaning, having a social circle of similar values and practices. In contrast casual and necessary reacquirers often desired to minimize the “*second-handedness*” of reacquired possessions, even resenting them as such.

Quality, uniqueness, history: The value of the reacquired. We conclude this section on reacquired and dispossessed objects by noting some recurring themes related to possessing the reacquired. In contrast to the divestment rituals [14] discussed previously we find many examples of reacquired objects having value precisely because they have been used and owned previously and are consequently thought to be “*unique*”, authentic, “*interesting*”, “*original*” or possessing “*character*” (relationships that can often be understood as the reacquirer positioning or distinguishing himself or herself as exhibiting refined, even elitist taste in the sense articulated by Bourdieu [5]). In many cases, the real or imagined history, story or biography of an object was a source of value rather than something to be eliminated or divested. Gregson and Crewe have described these types of relationships as *investment rituals* [14]. In other cases the meanings and attachments to reacquired objects is strongly related to processes of re-use, reappropriation and remaking from reacquired materials and objects, described by Gregson and Crewe as *alteration rituals* [14] and Odom et al. as *augmentation* [23]. For example, Laura described deep attachment and care for her and her husband’s

engagement rings and “*candidate*” rings that they finely crafted from common found objects such as paper clips (Figure 1). Such findings are interesting and important, and essential to understanding reacquisition and the possession of the repossessed. However we forego a more thorough treatment of such issues, many of which have been discussed in prior work cited, and instead move to focus in on several themes more specific to invested reacquirers.

Departures from firsthand acquisition

We conclude this section with two themes that appear quite unique to invested reacquirers, suggesting interesting departures from mainstream acquisition.

Patience, openness and faith in things. As discussed previously, reacquisition often implies additional work, time and effort—although generally whether this is seen as negative or positive and the particular ways this is experienced can vary dramatically. Delving deeper into these issues we find that the experiences and practices of invested reacquisition are often characterized by notions of patience and openness. Laura, a 30-something year old artist, exemplifies this characterization. Laura lives with her husband, a carpenter, on a limited income, although she described this as a choice more than a necessity. She relies on reacquisition for most of her everyday possessions. Throughout our discussions, Laura described having an “*open*” relationship to things and circumstances:

I *really* have faith that things will just *turn up* when you need them. So I’ve never felt like I have to have a lot of money to have stuff. Because I’ve always been, kind of, proven the opposite. I’ve never earned that much money, and I’ve always had everything I needed.

Even though Laura had recently moved into a new home 3 months prior from England, she exhibits extreme patience in populating her home with common items:

There was nothing that we couldn’t live without really... We didn’t have a sofa for long time. ... [M]y experience has been that when I need something, if I know I need them, I’ll find it. So, I’ve kinda learned then to know what I need and kinda have this list with me. ‘Cause I think it’s just—a lot of it is just perception. And if you’re kinda thinking ‘I need a sofa’ then one will come to you, because it will be on your mind, when you’re going around your everyday life. So in the end we got a sofa from a friend who was moving out.

Invested reacquirers similarly describe being patient—often a process of learning to be patient and resisting “*object envy*” (Tanya), “*retail therapy*” (John) and other characterizations of the to-be-resisted seductions of firsthand retail:

If I need something, I don’t just go out and buy it. ...I basically live without it for a while and then it comes, it finds a way to materialize. (Kristy, 20s)



Figure 1. Laura carefully displays her and her husband’s engagement rings and candidate rings they constructed from re-used everyday objects.

I’m patient. ... You keep your eyes out. You have your list in the back of your mind as to what you want or what you need. (Bob, 70s).

We interpret such reacquisition dispositions as characterized by being patient, surrendering complete control, deeply reflecting on what one needs and wants, and accepting, even embracing reacquisition as a continual openness to one’s context and circumstances. This disposition stands in stark contrast with the control, immediacy and reliability often associated, at least ideally, with firsthand acquisition.

Care of things, self and others. A deeper understanding of our invested participants’ relationships to material things may be achieved through the notion of *care*. Here we are referring to an understanding of care as discussed by Tony Fry, which has its basis in the concept of care developed by Heidegger: “*as an instinctual mixture of concern, anxiety and practice over what is essential for our survival. Such a form of care directs us to act carefully by taking care of ourselves, of how and what we make, plus the manner of use of all we use.*” [11, p. 82]. We find such a notion of care suggested in recurring types of speech exhibited by invested participants:

[I]f it can be salvaged it is worth salvaging. (Tanya, 30s)

If I had to get rid of it I would give it a good home someplace. (Bob, 70s)

Importantly notions of care were evidenced in observed practices and participants’ explanations of these practices. For example, John and Kristy (as well some of their friends) had designated specific areas of their homes for collecting things they no longer needed, which they encouraged others to reacquire. John referred to these areas as “*give-away pile[s]*”, Kristy as her “*free pile*”. While we did come across deeply cherished things that were cared for as one’s own (e.g., Laura’s engagement rings, Figure 1), we also found many examples of care for objects as temporary

possession that recirculate. For example, Kristy casually describes “*cycling back*” items she no longer needs and Joe describes a strong desire to get things he “*rescues*” “*in the hands of someone who could use ‘em*”. While many invested reacquirers spoke in ways suggesting objects as constantly in circulation rather than permanently in possession, some participants also expressed what we interpret to be a care for things that recognizes, even respects, that a thing’s being, as with a person’s, at some point comes to end:

But this is the chair I was talking about that I might not be able to save. ... [The “damage”] may be too significant to—[pauses] I might not be able to save it. (Tanya, 30s, invested home renovator and decorator)

I don’t want to throw it away...if I know somebody can use that, it’s just worth hanging on to [to try to sell, “toss in” on a deal, or give away]. But eventually if it’s just something that’s one man’s trash and another man’s treasure, well, sometimes it’s just trash. (Joe, 50s, flea market seller)

IMPLICATIONS FOR HCI AND INTERACTION DESIGN

Based on our findings we discuss implications for HCI and interaction design with a focus on designing for sustainable and experientially desirable reacquisition and dispossession.

Designing for and with communities of reacquisition

We are hesitant to offer general design recommendations for designing for communities of reacquisition. Indeed, our participants suggest to us that often the very value they derive is dependent on reacquisition *not* being experienced as a “(well) designed” experience. For example, recall Tanya’s and Bob’s positive experiences of shopping at disorganized flea markets as being superior to the easier, more organized, more designed experiences of eBay or department stores. Further our study is focused on individual “consumers” of second-hand goods much more so than the retailers and other groups involved in selling and trading second-hand goods. Additional studies investigating the retail side of second-hand goods would be a useful complement to our study as means to inform design. Nonetheless, with these caveats in mind we offer some opportunity areas for interaction design and HCI based on common problems articulated by participants, problems which we feel are most pertinent to designing for those casual or financially restricted reacquirers that may be considered as not having the time, motivation or resources to reacquire as they might like.

Simplifying reacquisition of the dispossessed.

Reacquisition is hard work, often requiring a great deal of time and effort and leading to frustration, disappointment and failure. Interactive technologies can play important roles in simplifying these processes. For example, adding an online component (e.g., ads, searchable databases, recommender systems) to second-hand stores could help avoid fruitless hours spent searching for particular items. Such systems could help shoppers determine if the right size, color, product type, etc. is currently available or notify

them when an item is available. In-store and mobile phone versions should be considered, as many who reacquire out of financial necessity may not have easy access to Internet or computers. Connecting reacquirers to modes of transport is also crucial as many participants described enormous difficulties not only locating things but then also findings means of moving large items.

Simplifying dispossession for reacquisition. Related to improving the availability of reacquired items is simplifying the processes of dis-possessing for reacquisition. Digital technologies offer many opportunities to more easily connect people who are looking to get rid of things with those who are looking to (re)acquire things, helping avoid the unfortunate case when dispossessed objects are taken to landfill or forgotten in attics rather than being reacquired, as our work continuously shows us that *every thing potentially has value in the right context.*

Guaranteeing possession of the reacquired. A significant barrier to reacquiring many dispossessed goods is that people perceive them as potentially unreliable, unclean or unsafe and not worth the risk of reacquiring. This suggests, for example, the importance of systems of guarantee and warranty, as well as products themselves that can digitally record histories of possession, maintenance and repair.

Designing from communities of reacquisition

We find that invested reacquirers in particular often appear to live less materially intensive lives: They often own and (re)acquire less; they often resist (re)acquiring things, especially new things, even things that others would feel they need immediately; they often reflect on what they do and do not need and want; they rarely “throw things out” but rather carefully dis-possess things to others. Importantly these lifestyles were typically felt by participants to be “better” ways of living, and also often had very little if anything to do with values explicitly related to “the environment”, “being green” or “sustainability.” This suggests that much can potentially be learned from such individuals and communities that can be applied to design for more mainstream communities. We articulate several perspectives on legitimizing and promoting reacquisition as mainstream, sustainable and experientially desirable acquisition.

Redesigning objects for reacquisition. We came across many issues with the lack of perceived quality and durability of reacquired goods, particularly newer electronic and digital products. Many of these issues of durability and disposability have been discussed previously in the context of sustainable interaction design [2,15,16,17,18,23,30]. However here we highlight their significance specifically in terms of reacquisition and the importance of designing products that are not only capable of being possessed durably but also dispossessed and reacquired with care. A specific issue our findings help bring into focus is how the design of technologies affects the persistence of products not only with a single owner but also across multiple

contexts of use and ownership. When designing sustainable technologies of and for reacquisition consideration should be given to issues related to perceived quality, safety and hygiene; the ability to maintain and repair an object; and care for and openness toward objects.

Recoding the reacquired and reacquiring. While constructing more durable products is important, at the same time this focus may obscure the fact that many, if not most, of our things *are* durable, are thrown out prematurely, are not metabolically consumed, and, crucially, that *every thing* potentially holds value in the right context. Our participants help us see that perceptions of durability and acceptability are to many extents matters of social and cultural perception (see also, e.g., [5,27]). Throughout our work we see many successful as well as failed examples of objects of reacquisition being successfully *recoded* as valuable, unique, clean, acceptable, normal, etc.—for example, when an object suddenly acquires value when it is removed from an attic and placed in the window of an upscale vintage shop; or an object found in the trash is “rescued” and brought into someone’s home. A classic example of *recoding* is Marcel Duchamp’s “readymades”. Readymades were ordinary commercial products such as a snow shovel, a urinal and a bicycle wheel that were (re)presented as art thus transforming their meaning and value. These artworks demonstrate how the meanings of an object can be utterly transformed without changing the material object itself, but by changing the context in which it is interpreted (see also [10] on recoding). What these examples suggest is an approach to sustainable interaction design that has less to do with redesigning material technologies themselves than with redesigning how we think about and relate to those technologies already made (through the redesign of, e.g., interactive media, services, systems and environments). This opens up a space for designing to *recode the reacquired*.

Making space for reacquisition: Materially, spatially and symbolically relocating reacquisition to the center. Consider that the act of reacquiring items that have been “thrown out” on the curbside or in the dumpster literally requires reacquiring what is designated as trash by the space it occupies (e.g., “dumpster diving”, “trash-picking”). This is in contrast to the careful designation of objects for reacquisition in John’s “*give-away pile*” or Kristy’s “*free pile*”. Similar can be said for other marginalized sites such as yard sales, flea markets and thrift stores. This material, spatial and symbolic marginalization of reacquisition raises the design challenge of literally and symbolically *making space for reacquisition at the center* or mainstream. For example, consider making space for repair and maintenance of digital products at an “Electronics Co-op”—perhaps within the space of a firsthand site like the Apple Store or Best Buy (a proposition we recognize is fraught with challenges and contradictions)—where people can repair, customize, share, and re-use digital parts and products. In important ways virtual spaces such as eBay, Craigslist and

Freecycle are already making space for reacquisition at the center. In other ways these spaces could be interpreted as promoting increased material (re)acquisition as they exist in addition to rather than in place of firsthand retail. An analogy to an observed practice would be literally making space for *more* acquisition by throwing something out of the home. This suggests that *displacing sites of firsthand acquisition* may present a distinct challenge for interaction design in terms of reducing the manufacture, acquisition and overall demand of new technology products as a matter of sustainability.

Recirculation and shared use. Our participants present numerous “challenges in practice” to single owner/user models of technology. We see how firsthand goods become second-hand goods as they recirculate across different contexts of use and ownership. Despite expressing great love and care of objects, invested participants often described having an “*easy come, easy go relationship to things*” (Laura) or “*not getting attached [to things]*” (Joe). Recirculation and shared use represent very different contexts for sustainable consumption in the context of digital technology, even suggesting deemphasizing possession/ownership to focus on *usership* and *non-usership*. For example, there are many opportunities to explore digital technologies to support the shared use of products ranging from hand tools to automobiles.

Reacquisition values and technology. In line with various concerns with values and technology (e.g., [4,26,29]), we argue that as designers and researchers we should constantly be asking questions such as: How are we currently designing technology in relation to durability or disposability, care or a lack thereof, patience or immediacy? How are we currently marginalizing reacquisition while privileging firsthand acquisition? We see time and again how invested reacquirers often embrace work, patience and care involved in routine daily practices, at times even displaying resistance to ease, immediacy and flexibility². These findings echo approaches within HCI that challenge values of ease and efficiency, such as designing for reflection, ambiguity, enjoyment and everyday creativity [3,12,26,30]. Such perspectives should be employed and built upon to explore ways of promoting reacquisition and dispossession that are *less* materially intensive and *more* experientially satisfying and meaningful. Based on our study, *patience* and *care* are two values we believe are worth stronger consideration in the design technology.

² Such practices often appear to have the engaging character of “focal practices” as described by philosopher of technology Albert Borgmann. These practices may also at times be interpreted as practical resistance to the device paradigm articulated by Borgmann. See [4].

CONCLUSION

We have reframed the consumption of durable technologies as acquisition, possession, dispossession and reacquisition. We presented 4 reacquisition orientations and other findings from our study. Based on our work we have highlighted a number of opportunities for designing technologies to support current reacquisition practices, including simplifying reacquisition of the dispossessed, simplifying dispossession for reacquisition, and guaranteeing possession of the reacquired. An equally important contribution of our work is to more broadly inform how HCI and interaction design can lead the way in designing future sustainable contexts for technological (re)acquisition and dispossession.

ACKNOWLEDGEMENTS

We are grateful to our study participants for sharing their time and stories. We also thank Sara Kiesler for her instructive comments on an early draft of this paper, and the anonymous reviewers for their insightful comments. Financial support for this work was provided in part by National Science Foundation Grant #IIS- 1018340.

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