

# Unpacking the Television: User Practices around a Changing Technology

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This article investigates the changing television watching practices amongst early adopters of personal hard-disk video recorders (such as Tivo) and Internet downloading of video. Through in-depth interviews with 21 video enthusiasts, we describe how the rhythms of television watching change when decoupled from broadcast TV schedules. Devices such as Tivo do not simply replace videotapes; TV watching becomes more active as programs are gathered from the schedules, played from a stored collection and fast forwarded and paused during playback. Downloads users exploit the Internet to view shows and movies not broadcast, yet this watching is not fundamentally different from recording shows using a PVR, since both involve selection of shows from a limited range and a wait before the shows can be watched.

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## 1. INTRODUCTION

Although fairly unattended to previously in terms of HCI research, homes, being important to culture, everyday life, and technology, have lately gained new attention. Recent work by Forlizzi and DeSalvo [2006] has started to uncover

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the complexity of social and technological interaction in the home, and studies such as Monk et al. [2002], Bell et al. [2004], and Taylor and Swan [2005] help to defamiliarize the everyday domestic, documenting how home technologies have reproduced and shaped the social structures of the home. Issues such as family dynamics, gender divisions, and the distribution of care have all been explored in relation to many new technologies, showing how technology can change as well as amplify existing household forms.

While this research has discussed at length how technology influences efficiency and distribution of housework, much less attention has been paid to the *enjoyment* that such technologies can enable. Indeed, when they have been discussed, entertainment media such as music, television, and games have been regarded disjointed from their home context (e.g., Volda et al. [2005], and Ducheneaut et al. [2004]), although with the exception of Hughes et al., [2000]. Time-use studies suggest that the majority of time in home settings is spent consuming entertainment media, yet the existing focus in HCI on the home has been very much on those activities broadly similar to “work” of some form (e.g. housework). Indeed, one could argue that more broadly enjoyment has been a neglected aspect of technology use. The home is much more a place of entertainment and enjoyment than one of domestic labor, contrary to the focus of existing research. In the work we present here we have therefore sought to explore how technology as enjoyment and entertainment fits into the home. In particular, we focus on perhaps the single most important leisure technology, television, and how it fits into and constructs domestic settings.

Over the last three decades television has undergone considerable change. Both the range of choice and format of TV have increased. Cable TV, then satellite, and most recently digital terrestrial technologies have exploded the choice of channels. Alongside this trend, methods of organizing and storing television has changed, first with the arrival of the VCR in the 80’s, second with the popularity of DVDs, third PVRs such as TiVo, and lastly with the downloading of video from the Internet. These new technologies have made television and movies available, not only independently of times, but increasingly independent of broadcasting place. PVRs and downloading in particular enable a more interactive television watching, although not in the traditional sense of interactive television, but rather through the active choosing of what content is to be watched. Although the decline of television watching has been much heralded with the arrival of the Internet, in the U.S. individuals still watch on average 18.2 hours of television per week [U.S. Department of Labor 2006]. Time-use studies show that people spend half their leisure time watching television, much more than they spend socializing with friends [ibid]. Indeed, in terms of time spent using a technology it could be argued that television is one of the most important technologies in current usage. Television watching is also an activity that is increasingly computerized, with multiple complex HCI issues. Yet TV has attracted on the whole only passing attention to HCI. Even interactive television, a marginal technology, has received more attention in HCI than the interactions and uses of TV shows (although we note some recent work, such as that of the Social TV group at PARC, that goes some way to address this [Oehlberg et al. 2006]).

Accordingly, this article documents an interview study looking at the usage of TV and in particular new television technologies and how they fit into the home. This study describes how television-watching changes with the use of PVRs (Personal Video Recorders) that enable an archive of television shows to be recorded to a hard disk. This study also looks at early adopters of downloading television from the Internet, an activity that, although of dubious legality, has become one of the largest users of Internet bandwidth [Sen and Wang 2004]. Drawing on the interviews, this article argues that these technologies enable a fundamental change in how TV is watched. Early adopters use these new TV technologies to tailor their television consumption, supporting a form of television watching based around *choice, collecting, and organisation*, rather than the passive consumption of content. In this way PVR recorded and downloaded TV watching more resembles other types of media consumption such as reading, listening to music, or going to the cinema.

More broadly, in contradiction to televisions' usual presentation as an asocial technology (see, for example Putnam [2001]), we document how television watching is embedded into the social context of the home. Televisions are frequently watched as a household, even if only one person is sitting in front of the television. Social activities around television embed TV into broader social networks; the discussion of television either on the Internet or "around the water cooler" connects TV to other parts of our lives. Indeed, for the TV downloaders we spoke to, Internet conversations could initiate the downloading of shows, or encourage downloaders to obtain the latest shows so as to keep up with their online friends. Collecting is also an important yet neglected part of television watching. For many of the downloaders we interviewed, the ability to collect large libraries of content was a central part of their television watching, to the point where they would be obtaining gigabytes of video and complete TV series for their collection.

These different aspects of technologies lead us to argue for studying the whole "video media lifecycle" in that viewers do not simply watch TV, but search for, obtain, share, collect, and discuss television. Each of these parts of the lifecycle of video media gives value to viewers; looking across the lifecycle highlights a number of aspects of TV which currently have poor technology support.

Lastly, studying home entertainment technologies gives us an opportunity to unpack some of the underlying assumptions that are mobilized when discussing technology in the home. In particular, we argue that enjoyment and entertainment need to be reintroduced to considerations of the home; that current HCI discourse around the domestic is too concerned with activities that are most similar to the work settings usually considered. Rather, we need to take more seriously the home as a site for enthusiasm and connection, as much as labor, privacy, or organization. In contrast to Bell et al., we argue not that the home needs to be "defamiliarized" Bell et al. [2005] but instead that *enjoyment* needs to be put back into, at times, misanthropic accounts of domestic space. At least *some* of the time technology's major contribution to the home is in the delight and enjoyment it enables.

## 2. EXISTING WORK

While the consumption of media in the home has gained some attention (in particular interactive TV, the Internet and music) we find that within the technology design literature, television has been much neglected. Two notable exceptions to this are Taylor and Harper's study of how viewers choose what to watch [Taylor and Harper 2003], and Rode et al.'s study of VCR use [Rode et al. 2005]. Taylor and Harper's study argued that channel surfing dominated the method whereby viewers choose what to watch [Taylor and Harper 2003], with viewers expressing considerable dislike for onscreen Electronic Program Guides (EPGs). Rode et al.'s study, on the other hand, focused on the use of VCRs within households; they found that VCRs are used collectively in the household rather than by one main user [Rode et al. 2005]. Although all members of households watch recorded TV, households often have a "recording czar" who decides what to record and programs the VCR.

Alternatively, in media studies, television has received prolonged attention, although it still remained a controversial, even nefarious, technology. Writers such as Putnam [2001] have blamed television for a fall in civic engagement. Television has been blamed as being behind a host of social evils, not least of all alienation, violence, and the loss of childhood (see, for example Milavsky [1982] or the discussions in Dickinson et al. [1998]). Yet accounts of TV watching have not been exclusively negative; authors such as Silverstone [1994] argue that TV creates an "ontological trust" in society through the consensus view it projects. That is to say, children watching television learn a host of expected views, behaviors, responses and knowledge—the ontological "what's what" of the modern world. In part TV thus works to bind and create social order.

A related study we have drawn on extensively is Gauntlett and Hill's [1999] long-term study of television watching in Britain, research that provides numerous insights into television practices in more detail, as well as people's attitudes and relationship to television. Indeed, they criticize Silverstone for presenting theories with "little grounded analysis of neither television or everyday life as they are actually experienced in the world" [Gauntlett and Hill 1999, p. 9–10]. Their study, in contrast to Silverstone's focus-group-based methodology, uses an audience authored diary approach. Over five years (1991 to 1996), 427 respondents reported on their television watching habits and attitudes. From this the authors explore how television is part of the life and social setting of the home. Gauntlett and Hill find that television provides their participants with great levels of enjoyment; viewers actively chose much of what they watch, and show considerable reflection on those choices. While participants report feeling guilty when watching "too much television" they compare this guilt to the "guilty pleasure" reported by female readers of romantic fiction Gauntlett and Hill [1999] (see also Miller [1998] on the relationships between consumption, guilt, and pleasure). In part, this guilt comes from some of the value attributed to work over leisure in society.

Another reported finding in the study by Gauntlett and Hill was how social home life was often coordinated around a television watching routine. TV brings families together in a shared experience, although not one without conflict.

Disputes over what to watch, where and when, are a familiar of family life. In particular, parent's monitoring of children viewing habits was one aspect of considerable conflict (results echoed by Kubey and Csikszentmihalyi [1990]).

Gauntlett and Hill's study also inquired to habits in relation to VCR use. Although not all participants owned a VCR, the majority did and reported how it was used for time shifting programs, chopping too-long films into convenient chunks, and entertaining children (among others). This is similar to other more recent studies (e.g., Rode et al. [2005]) and corresponds to our findings reported later in this article. Gauntlett and Hill describe the VCR in a positive light, as a supporting tool for watching preferred content, and the authors showed a quite radical change in how people were able to structure their daily schedules with the acquisition of a VCR [Gauntlett and Hill 1999]. As we shall point to further on, PVRs have a similar effect in giving people "freedom" from set schedules.

Lastly, perhaps the most radical finding of Gauntlett and Hill's work is the broadly positive view towards television and expressed enjoyment of the viewers they studied. In contrast to the negative and skeptical accounts of TV and mass culture, from the Frankfurt school to discussions of TV violence, Gauntlett and Hill point out the emotional depth of viewer's relationship with television. Indeed, in a strong rebuke to those who blame TV for its damage to the social fabric, Gauntlett argues that many of the criticisms of television are "part of a broader conservative project to position the more contemporary and challenging aspects of the mass media, rather than other social factors, as the major threat to social stability" [Gauntlett 1998, p. 122]. It is not that TV is without its faults, and excessive television watching can be damaging (as with nearly any activity), but rather its demonizing effect on everyday life has been much overplayed, neglecting its pleasurable contribution to everyday life.

## 2.1 New TV Technologies

Since Gauntlett and Hill's work, television has undergone a new set of technological changes. In particular, the advent of the PVR or personal video recorder, most distinctly the TiVo released in 2001, TV consumption is changing again. PVRs enable users to record an archive of television without the use of tapes or CDs, as well as to view, pause, and fast forward television while it is still being recorded. TiVo initially promoted their set-top box by focusing on the ability to pause a live program, since they found it difficult to communicate the many different features that a PVR offers. Over time, the advertising message developed into TiVo as "a VCR without tapes" [Wood and Skrebowski 2004].

Despite the considerable success of TiVo in the U.S. (alongside other PVR systems), TiVo's sale in the U.K. has been discontinued. Instead it is Sky+, at one time a competitor, which has developed into the most widespread system, currently in around 6% of U.K. homes [Offcom 2006]. Sky+ offers a very similar service to TiVo, although it lacks the ability to recommend television shows, and as with the "DirectTV TiVo", it is tied to a satellite-based TV service.

Downloading TV from the Internet, compared to PVR use, is something of an infant technology and practice. Only recently has the spread of broadband enabled the common Internet user to share video files. Web sites like Pirate Bay

and protocols like Bittorrent and UseNet News enable users to download and share television content after so-called “seeders” have digitally recorded the television and uploaded it. The advantages include commercial-free television (the seeders mostly cut out advertising), the possibility to watch rare or already broadcast but unrecorded television, as well as television not broadcast in the user’s home country yet. Europeans, for example, can download television that has been broadcast and seeded in the U.S., which has not yet been broadcast locally.

The practice of file-sharing has received much attention, mostly because of its questionable legalities; the copyright of a show, movie, or a piece of music is such that downloading that show infringes its copyright [Lieb 2005], even if it has already been broadcast. Several services now do offer legal television downloads for a fee, such as iTunes (although these were not available in the U.K. at the time of study). In this article we have suspended comment or judgment on these controversial issues. It is important to point out that, despite these legal issues, the practice of downloading television from the Internet is still an important use of computers. One could argue that in the end it is not legal questions that will decide the future shape of television downloading, but the choices that users make, and users are currently choosing in massive numbers to download TV from the Internet.

File-sharing can be a long and tedious practice. Numerous obstacles exist, including the trouble of finding the right file, finding seeders who will share it, and the sometimes long downloading. For a detailed description of how file-sharing works from the user’s point of view, see Kwok [2004] and Andrade et al. [2005]. Despite the difficulties and challenges of downloading television, many users perform this practice regularly. In fact it was not very difficult to find participants for our study who were regular downloaders of television and movies, as we describe shortly.

### 3. METHODS

The study documented here is based on in-depth interviews with users of a PVR and/or video downloading. Our goal in using in-depth interviews was to explore user practices and design agendas; we approached our analysis with the goal of informing design about possible future use of television and video in the home. Lofland et al. explains that in-depth interviews are one method suitable for inquiring into situations where direct observation is inappropriate or impossible [Lofland et al. 2006]. While there have been some attempts to conduct ethnographies and video studies in homes, interviews have proven to be the most popular technique; the extra details in data that are collected by direct observation are to a certain degree counteracted by the enormous amount of time such observations take. We chose to interview participants in their home where users could show us the way they used PVRs and downloaded television. One limitation of this method stems from the possibility that informants in some cases want to appear to be watching a specific show or, even more realistic, do *not* want to expose specific shows they watch. So although participants seemed honest about watching numerous soap operas a week and

other possibly “embarrassing” shows, there is always the possibility that they were hiding or that we misconstrued aspects of their viewing habits.

We interviewed 21 individuals and couples, mainly within their own home. We recruited nine as PVR (specifically Sky+) users, nine as downloaders of programs and movies over the Internet, and three traditional VCR users. However, for several of the participants their TV watching combined these two first approaches so we also gained insight into the other medium in the particular interview. For TV downloaders we recruited households who had downloaded and watched a TV show or film from the Internet in the last week, and lastly for our three VCR viewers those who had recorded and watched a show with their VCR in the last week. Since TiVo (the most popular PVR in the U.S.) is not widely available in the U.K., we interviewed users of Sky+, as mentioned in Section 2.1.

The participants were recruited from the friends and family of staff working at our university, through emails sent to mailing lists, and postings to U.K. Web forums which discuss television programs. While PVR use and file downloading are common in the U.K., they are not yet widely adopted so as such the individuals and households we interviewed were “early adopters” of these technologies. By answering our call for participation our participants also demonstrated some commitment to television watching (we would go as far as to characterise our participants as “television enthusiasts”); those who enjoyed television as a regular part of their entertainment choices. Participants ranged in age from 18 to 60, and had a range of occupations. They included a retired couple, individuals living alone, students living with their family, families with children, couples living alone, and house-mates sharing an apartment. Five of our interviewees were couples who we interviewed together (23%), the remaining participants were five women (23%), and eleven men (52%); see Table I for details.

Drawing lessons from early adopters can be dangerous since these groups often have different usage patterns to when, or if, technologies become adopted more widely. In the case of an earlier study we conducted looking into MP3 downloading, the early adopters we interviewed there did prove to be clearly indicative of later adoption [Brown et al. 2001]. With caution, we would therefore argue that early adopters can be a good source of information in areas where the adoption happens gradually, and where aspects of the practice (such as music listening or TV watching) are already broadly adopted. A study of early adopters can also highlight some of the critical disconnections between the ways in which technologies have been designed and how they are consumed, naturalized, and rejected.

Moreover, with the popularity of PVRs and downloading TV, these practices are well on the way to move beyond niche activities. Even using the Internet to download television and movies is surprisingly popular; some sources indicate that about 27% of Americans have downloaded video from the Internet at one time or another [Madden and Rainie 2005]. A recent estimation suggests that over one-third of all broadband is used for file sharing [Singel 2008].<sup>1</sup>

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<sup>1</sup>This number also includes file sharing of music and other types of media, however, it is difficult to distinguish file sharing of music from file sharing of video in technical surveys.

Table I. Participants of the Study

| Interviewees    | Other Household Members           | Age Range | Occupation                    | Use of Other Media       |
|-----------------|-----------------------------------|-----------|-------------------------------|--------------------------|
| PVR users       |                                   |           |                               |                          |
| Craig & Judy    |                                   | 30–34     | Retail workers                | Download TV occasionally |
| James & Richard |                                   | 30–34     | Nonprofit administration      | Download TV occasionally |
| George          | Wife and two teenage boys         |           | Salesman                      |                          |
| Bob & Isabel    |                                   | 60–64     | Retired                       |                          |
| Carl & Mary     | Three children                    | 35–39     | Architect and teacher         | Download TV occasionally |
| Lisa            | Parents                           | 18–20     | Undergraduate student         | Download TV occasionally |
| Neil & Melanie  | Two children, 0 and 3 years old   | 25–29     | IT repair and maternity leave | Download TV occasionally |
| Steve           | Mother                            | 25–29     | Manager in airport pub        |                          |
| Janice          | Two adult sons                    | 50–54     | Teacher                       |                          |
| Downloaders     |                                   |           |                               |                          |
| Martin          | Three cohabitators                | 25–29     | Graduate student              |                          |
| Simon           | Parents and sister                | 20–24     | Undergraduate student         |                          |
| Milton          | Parents and sister                | 25–29     | Research assistant            |                          |
| David           | Girlfriend                        | 35–39     | Head manager                  |                          |
| Alan            | Girlfriend                        | 30–34     | Technical manager             |                          |
| Darren          | Wife, two children 5–10 years old | 35–49     | System administrator          |                          |
| Dirk            |                                   | 35–39     | Freelance writer              |                          |
| Matthew         | Girlfriend                        | 25–29     | Graduate student              |                          |
| Don             | Parents and brother               | 20–24     | Restaurant worker             | Family has Sky+          |
| VCR users       |                                   |           |                               |                          |
| Anne            | Two sons and husband              | 40–44     | College Teacher               |                          |
| Laura           | Parents and sister                | 20–24     | Just graduated (BSc)          |                          |
| Bethany         |                                   | 25–29     | Personal assistant            |                          |

In order to compare our early adopters of new media technologies to “later adopters” we included a small comparison group of VCR users. These are informants who are recording and time-shifting television and movies, but who do not have the same access to storage, since tapes have limitations in this aspect. They are an interesting group to compare to, because they can illustrate the differences in ease of use of PVR makes in time-shifting television.

Where possible we aimed to interview the two main adults of the household, but in some cases we only talked to one of them, especially when the participants lived with their parents or roommates. The participants are summed up in Table I; where couples were interviewed together they appear in the same column, where they had another or other household members, these are listed in the next column. All names have been changed to preserve anonymity. Although



five families had children, their young age (or in one case “old age”) usually made it too difficult for us to include them in the interview. However, the adults provided information about the children’s use of the medium (since it was often controlled by the parents). When referred to the specific participants further down, the notation used is that couples or people in shared households are referred to as (name and name) where unconnected participants are referred to as (name and name). All names have been changed for anonymity. The participants were all residing in Scotland and where local dialect and expressions are diverging from common English, another more common expression is indicated in square brackets.<sup>2</sup>

#### 4. USING NEW TV TECHNOLOGIES

Moving on to the results from the study, we will start by outlining generally how PVRs and downloading fitted into and changed the household’s television watching practices. We then move onto broadly characterizing the way in which television was watched in both focused and ambient ways, and how television watching was organized as a shared resource in multiple occupancy households. This leads us to consider the sociability of television, and how TV, contrary to its image, is linked into the sociability of the household, as well as discussions outside.

##### 4.1 Using a PVR

For both the PVR and Internet-downloading households that we interviewed, these technologies had had a radical effect on the organization of television watching. While the technology behind PVRs and downloading share much of the same technology (file compression, hard disks and PCs), the effects they have on television viewing are quite distinct.

Eight of the nine Sky+ households we interviewed had moved almost entirely to watching prerecorded shows from the PVR. Some interviewees even struggled to name the last show they had watched on live TV. This was a large contrast with the VCR users, who recorded only on average two shows a week, compared to seven new shows a week for our Sky+ users. Rather than channel surfing to find suitable TV to watch, viewers would “queue up” recordings to be watched from the episode guide, or automatically record entire series using “season passes.” Through maintaining a sufficient buffer of recorded shows, TV watching then took place almost entirely from the archive of shows that was collected. In this way programming watching became relatively decoupled from when shows are broadcast.

For those who worked or lived on different timecycles from that of “standard” television, this was particularly valuable. For one viewer who worked shifts as a bar manager, the PVR meant he could watch “primetime” TV early in the morning when he came in from work. For a family with children, they could

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<sup>2</sup>Examples include “at the pictures” = “at the movie theater” and sitting room or front room = living room.

watch their favorite soap operas in the late evening when they had put their kids to bed. The random access nature of PVRs, however, also supported practices that went beyond simple time-shifting. For example, by allowing viewers to start and stop recordings quickly, without losing their position in a recording, multiple films or shows could also be “grazed” with viewers moving between multiple shows before deciding on a show to watch. Viewers also often collected an archive of the same show that would allow multiple episodes to be collected together for viewing in one sitting. An evening’s TV would then be selected from the store of a complete series. While PVRs users were generally enthusiastic about this technology, its use was not without problems. In particular, lost recordings caused considerable upset, since their devices would infrequently fail to record shows. The PVR was also not seen as a reliable medium for long-term storage of programs. Whereas some viewers copied shows to recordable DVDs and deleted them, others waited and bought shows on DVD, expressing displeasure in having to delete shows to make space on their PVRs.

As a PVR, Sky+ integrates a range of different functionality into one package: specifically, season passes which record multiple episodes of a show, the ability to record and watch at the same time, as well as multiple tuners to record multiple shows simultaneously. The major feature of the PVR was not one specific feature but a combination of several types of functionality. Just as much of the impact of mobile phones comes not only from their mobility but their integration of a host of previously rare features (such as caller ID, voice-mail, SMS, and so on), so do PVRs bring together a range of new features as a package. Much of the value for those we interviewed came from how they used the different features in combination. For example, shows can be queued to be recorded in advance using an onscreen program guide, with “season passes” recording shows whenever they are on. Yet season passes for shows can often clash, particularly as TV networks often put popular shows on in competition with each other. The ability to record two channels simultaneously (offered by Sky+ and the DirectTV TiVo) thus develops more value with the use of season passes. In turn this interacted with a third feature: Live TV, when watched, would usually be watched on a short delay from the actual time of broadcast, as this allowed viewers to skip through advertisements. When two programs were being recorded, this required the ability to record three channels simultaneously. Thus four different features would work together in use: season passes, dual record, watching while recording, and watching from a live buffer.

One disadvantage about PVRs that brought frustration to interviewees was the tie between the Sky+ box and one television. While most households had more than one TV (most often two to three: one in the living room, one in the bedroom, and one in the kitchen) few households had more than one Sky+ box. This meant that the programs recorded on one box could only be watched on that particular television. A few households (Craig and Judy and Steve) had linked the TVs together and were in that case able to watch television in the bedroom from the Sky+ box in the living room. For one participant this resulted in television fights with his mother who, if she started a program on the box in the living room, would stream this to the bedroom instead. Interestingly, the participant did not describe this as much of a problem, since it could be

easily solved by “pulling” the signal back to the living room from the remote control.

#### 4.2 Downloading TV

Although downloading video from the Internet is a very different experience to using a PVRs, storing video to hard disks enables a random-access mode of viewing video. To download video files our participants used peer-to-peer software, in particular Bittorrent, as well as Internet newsgroups. Most of the downloaders could stream their downloads to a TV, or burn it to a disk that they could watch using a DVD player. One participant (Martin) watched around half the television on his laptop and half on his household communal television in the kitchen/living area.

All downloaders made use of the selection of shows by “seeders,” users who make shows available for download. Encoding TV, cutting out the adverts, and distributing it takes considerable effort, thus the shows that are shared are essentially a selection of what those with the technical skill and motivation consider valuable. As one would expect, availability of science fiction is high, cookery and quiz shows low. Downloaders would browse through the new uploads, often downloading shows which they had not previously seen, the presence of a downloadable version of that show acting as a recommendation. Although the limited availability of content could be frustrating for downloaders (particularly as rare shows would be much slower in downloading or unavailable) it also acted as a filter on shows. Indeed, one inherent aspect of peer-to-peer file sharing is that popular shows in high demand will be shared more quickly.

The downloaders belonged to two distinct groups. Four of our nine downloaders were “supplementors” in that they still watched broadcast television and downloaded shows or movies around once a week. For these participants the Internet was a way of obtaining shows that were difficult or impossible to obtain in the U.K. In particular, American TV shows often have a long delay before they are broadcast on U.K. TV, or released onto DVD. As one supplement downloader (Steve) put it “For Six Feet Under [one popular show], the third series, I just wanted to see if the guy died or not. When I found out he was alright, I went back to the TV.” These occasional downloaders were often critical of the experience of downloading, finding the process slow, full of effort, as well as expressing doubts about the video quality of some of their downloads. Indeed, boxed DVDs of TV shows that had been downloaded were still purchased by these users, explained by their desire to collect the high quality “definite article.”

Alternatively, “replacers” (five of our nine downloaders) watched little or no broadcast television, downloading all their TV from the Internet. These viewers would regularly check Internet resources to find the new TV and films available, constantly downloading a queue of video which would be watched when convenient. Unlike the supplementors, replacers were also serious about building up an archive of TV shows and films downloaded. Collecting video in this way was a source of considerable pleasure, in particular having complete TV series available. A point we return to in Section 5.4 is that the collection itself

seemed as important as the ability to watch shows from the archive, echoing results from our previous work on music listening [Brown et al. 2001].

## 5. THE SOCIAL ORGANIZATION OF TELEVISION WATCHING

After focusing of the specific users of the technologies we investigated, we now explore more broadly how television came to be watched for those we interviewed. This to a great extent was similar to previous studies of television [Gauntlett and Hill 1999] alongside the changes these technologies supported. Contrary to a common conception of television as something of an antisocial technology, television for our interviewees was deeply integrated into their social networks and activities. Not only was the watching of television organized as a household, but the choice of what to watch, download, or record frequently came from what could be discussed with others.

Our interviewees were all regular television watchers, reporting watching an average of 2.3 hours of TV a day (2.4 for the PVR users, 1.76 for the VCR, and 2.56 for downloaders), making them quite average in relation to consumption shown in other studies. All our interviewees were also *routine* television watchers, often describing the shows that they regularly watched and how that fitted with their daily and weekly routines. Television was something embedded into the routines of each household, with shows that were regularly watched, or even a habitual arrangement of turning the television on when anybody was in the house.

### 5.1 Television as the Default Evening's Entertainment

Particularly for the families we interviewed, TV could be considered the *default evening entertainment* for the family. TV, supplied from many different sources both prerecorded and live, was a common shared activity for members of the household and it was usual for two or three hours of television to be watched most evenings. It was expected that a set number of hours of television would be watched every evening, even if not everyone in the household would actually be watching TV. Television provided a relatively enjoyable and inexpensive activity, something freely chosen with enthusiasm. TV was a reliable activity (with its own demands) but, as we will discuss, also linked into social networks.

In particular, interviewees enjoyed the evening television, such as early evening soaps and series that are followed closely. Several participants followed the American TV drama "24" at the time of the interviews and some talked about how important it was for them to be able to watch them in the specific order. The perceived advantage with both downloading and a PVR seemed to be the selectivity that took place real time. One couple explained how they often made sure to stock up the PVR with television for Saturday where the broadcast television was not of their taste: "Saturday evening is usually rubbish so (Isobel) went through and filled up the planner, so we would have something to watch. I put things in from the planner to fill the evening when it's notoriously bad for television." They enjoy having a range of television to choose from for the weekend evening and would watch much of it together.

The ongoing narrative of television provides considerable incentive for the regular watching of shows, that is, “following” a show. In this way shows have an inbuilt “addictive” quality; watching television serials makes little sense as an individual event, but instead can be viewed as a sequence. Indeed, the end of shows can be a significant event. Our informants were diverse in the amount of shows they kept up with. For the PVR users, some kept up actively with up to eight series in a week (e.g., Lisa); contrastingly, others held onto one soap and two weekly shows (Bob and Isabel). The PVR enlarged the number of shows one could practically keep up with, making one of the participants (James), for example, term his PVR an “addictive box,” although it should be pointed out that when we asked this participant if he wanted to change his behavior, he reformulated his TV watching as “a hobby.”

Viewing changed during the year, with many participants reporting watching significantly less during the summer because they were more active outdoors (in line with general TV viewing figures), or watching more during the summer because university was in recess.

Although all participants emphasised the importance of keeping up with their favorite series, the VCR users had selected a more limited set of television series that they felt they had to keep up with. These participants would change their time schedule to fit the show times, similarly to other research of television viewing [Gauntlett and Hill 1999], and only occasionally (when away for an evening, for example) set their VCR to record. Many PVRs have what is called a series link or a season pass, which enables the user to subscribe to a specific series; the show is then taped each time it is aired so the viewer can keep up. One of the complaints from the Sky+ users, however, was that the series link would record every airing of the show, including repeats, which in turn complicated the management of recordings. All of the PVR users still used a series link to indicate that they wanted to repeat recording a specific show. One participant (Judy) even set the series link on shows she watched the first time, to make sure it keeps recording, as she said, “you can always change it later.”

There were many different strategies for keeping up with series and the informants often used a combination of tools. The PVR users who did not supplement their television with downloading kept large numbers of old shows and sometimes copied content to a DVD in order to keep the shows safe from accidentally recording over them.

Alternatively, another participant supplemented his regular television watching with downloading by having the episodes that he had missed or forgot to record ready at hand. When asked what he downloads he said the following.

Darren: Basically we missed two episodes [of *Lost*]. And 24, if you miss two episodes you can't watch it. So if I missed one or two I would watch it before the next one started. It depends on the TV show, because for example *Still Game*, if you miss one it does not refer back to any other ones so it doesn't really matter.

Interviewer: So why do you download TV series?

Darren: Usually I will download a whole series. So if I miss one I always got them. So I can catch up easily.

Keeping up with episodes was in essence very important to our participants; when they watched was not as important as that they watching the shows in the correct order. With their favorite shows, the viewing was important to their everyday life in that it gave them a satisfaction to keep watching new episodes and follow the thrill of the plot. This feature of televisions shows may contribute in some ways to the results that television can have serious addictive qualities [Kubey and Csikszentmihalyi 2002]. It is an old result of the reception studies, for example, that viewers form emotional bonds to television characters, becoming emotionally attached them and their experiences.

Downloading and PVR use also enabled a distinctive practice with respect to multiple shows, in that multiple episodes (even a complete series) could be recorded or downloaded and then watched back to back. Judy, for example, described to us that she had watched three episodes of *Lost* the night before the interview. This was particularly popular for downloaders, who described watching an individual show and becoming “addicted,” downloading further episodes and watching them in a single sitting. For the PVR users, saving up individual episodes provided a challenge in terms of being tempted to watch those shows recorded, or to prevent friends and colleagues at work from talking about broadcast shows not yet watched.

## 5.2 Ambient versus Focused Watching

Keeping up with shows contrasts with the activity of watching television as something in the background, what we would characterize as “ambient watching.” For many, television played a role as the continual background to other activities in the home.

Bob: There’s always a telly on, the little one in the kitchen if we’re eating – [my wife] has pet programs that you watch foreground but if there is not a pet program on, then it goes back to the background.

When used in this way the TV acts not only as a voice in a possibly otherwise quiet house, but as a resource that can be dipped into and out of as different activities come to dominate. For television programs that are not followed by viewers, this form of watching can provide a means to dip in and out of shows as they show scenes of interest. This form of watching particularly suits magazine-style television shows, or single-topic constantly broadcasting stations such as news channels.

Ambient watching also took place when other household members were focused on the television. The main television in the household would be watched at different times by different household members. This television was usually in the living room, and was nearly always the biggest or most advanced television. On this set one household member would watch in a focused way, with other household member watching in the background.

Bob: I think its like anybody, you kind of watch it over the top of what you are doing. And there is a background awareness of what is on, but

Isobel: (interrupting) like typical men when the soaps on, they don’t watch it but they know what’s going on. [laughter]

Our interviewees described the frequent situation of their partner watching a show while they carried out household chores, such as cleaning, or used other media such as browsing the Internet on a laptop. For those households with children the television would be used to entertain children in the background. For one family this was one of the main uses of their PVR; they recorded a large number of children's TV shows, and their three-year old son would repeatedly watch the same recorded shows. In this situation the television is a focus for the child, with the adults having it as ambient watching.

In these ways watching television in the house was an activity integrated into the broader social behavior and arrangement of the household. When watching a show individually in the living room, one does not disappear from social contact with others. Watching television in the main room was thus a *publicly accountable* activity; television could be seen by others in the house and potentially could be seen as a connection between the show and those watching it. The organization of the main television (a scarce resource) was also something that would be shared across the household. At times this could cause conflicts or discussion over who watches what, with some reluctance of household members to move to another TV if there was a conflict (all the multiple occupancy households we interviewed had alternative ways of watching TV). For those households where the television was on all the time, managing what the television was doing was one of the activities of the household, but one arranged both jointly and individually.

Of course, it is possible to watch television in nonpublic rooms: One PVR viewer complained about her teenage sons only watching TV in their own bedrooms, and who would even record shows from the PVR to a DVD so as to watch them privately, rather than in the public room. More generally, however, most of the TV watching discussed by our participants was done on the single main household TV, even for nonrelated student households that we interviewed.

### 5.3 Socializing around Television

This social nature of television is not only restricted to the home, but frequently becomes a focus for social interaction in the workplace, with friends, or online. That television is a common conversation topic at work is hardly a new observation; this is behind the American idea of "water cooler TV" [New York Times 2005], television that is so popular that it becomes a common shared television experience to be talked about over the water cooler at work.

It would seem that PVRs and downloading could potentially disrupt or damage this ability of television. Certainly, multichannel television itself has changed the extent to which television shows are shared; shows are often broadcast in advance on cable channels, and the viewership of the main free-to-air TV channels has also been reduced. However, similar to other previous research focusing on VCR use, we found that many PVR users watched recorded TV on the broadcast date so they could talk to friends and colleagues about it the next day. The only difference was a minimal time-shifting, either to avoid advertisements or to postpone to a later convenient time. One household (Carl and Mary)

described watching a finale to the popular Big Brother reality television show. As they had a shows to watch to catch up before the final, they watched this show and the final back to back. While they were watching friends and family sent text messages and phoned up so as to share and discuss the events happening “in real time.” While this could be shared, the PVR viewers had a somewhat fragmented experience between friends discussing the show they were about to watch, but with themselves catching up as they skipped past adverts. We would also add that socializing over a particular series can take place even if one has not watched the latest episode or followed a particular show. Even just knowing the characters can be sufficient to support some talk around a new episode. We would suggest that water cooler conversation is more than robust enough to deal with missed episodes.

An interesting extension of water cooler conversation occurred with three of our participants who downloaded TV. These participants spoke about keeping up-to-date with online conversations through Web-based forums. Since these forums frequently discussed episodes when broadcast on American TV, so as to keep up with those shows the participants had to download the shows so as to watch the shows which were currently being discussed. One female downloader (Lisa) described her downloading of Stargate.

But just now Stargate is getting the priority because I've got friends online, they're all in the states, and they see it anyway. So I don't like to know what's happening so I miss a lot of conversations online, skip a lot of posts because I don't want to know what's happening. So I'm desperately trying to download Stargate. I've got a livejournal account – and I do all my online stuff there now. [...] Generally online I talk about whatever you want to talk about but the people I know online are into Stargate, and the rest of them into Harry Potter. So they're all desperate for me to catch up so they can chat with me.

Another downloader discussed how he shared TV shows amongst his friends at work, who were also avid television downloaders. This meant that the shows which were discussed were those that had been most recently released; however, this release was not the broadcasting on television, but rather the release on the Internet by those who recorded and seeded the file. This would usually happen fairly quickly after the broadcast of a new show. This downloader also brought shows into work to share with his colleagues, usually on a laptop computer, allowing his colleagues to download the video files from his machine.

Most of the participants found great satisfaction in watching television to socialize afterwards, some found it stressful at some times. Judy, for example, felt she had to keep up with all the series and found she had to be able to watch all in time. This meant a great deal to the PVR users in particular, where they would spend whole weekends to catch up with episodes they had not been able to see through the week. The participants also watched older series that they had either watched as young or as kids or more special-interest series that they did not share with anyone else in their circle of friends. They were often hesitant to share these titles with us and often said it was merely for nostalgic reasons that they recorded/downloaded and watched these. They were for their pleasure only, and were not talked much about, even with other members of their household.



#### 5.4 The Changing Nature of Broadcast Television

The distinct modes of television watching interact with behavior around recorded and live TV. 15 of our PVR and downloading viewers professed that the majority of their television watching now came from prerecorded or downloaded television, rather than from live TV. Some of the participants would even watch a prerecorded show in preference to watching a live show, so that they could skip through the adverts using the PVR's fast forward capacity. The download participants had similar patterns, where five of the nine either did not even have the option of watching broadcast television or only watched live broadcast on the rare occasion. The "replacers" had limited their television watching through getting rid of their cable or satellite, removing the possibility to watch live TV at all and solely watched TV that they picked from online services and newsgroups.

One female participant (Lisa) who recently acquired a PVR phrased how this technology enables the move away from watching live TV.

One of the reasons I got the [PVR] is that I couldn't be bothered setting the video recorder anymore and I stopped taping stuff, but now its gone the other way because its so easy.

This change was characterized as a move away from "channel surfing" to watching programs that participants actually wanted to watch. For example James and Richard and Steve, described how they would sit down and actively watch the TV shows that they had recorded, rather than trying to find something worth watching by changing channels.

The live television that the participants did watched was in most cases news or live sporting events. Many of both the PVR and downloaders found it difficult to remember what they had in fact last watched as live TV, usually only remembering news programs which were turned on in the background, such as in the morning as participants got ready for the day and/or had breakfast. The programs watched "live" were often also the ones watched in an ambient way. In general, the more television the participants watched, the more they watched as background to another activity. Most participants, including one of the VCR users, however, felt that their recording tool assisted them in focusing their viewing to the shows they actively had chosen to watch.

For the downloaders, live television was mostly watched in social situations such as with other people in the living room of either their own home or their parents' or friends' house.

#### 5.5 Collecting Behaviors

As in our earlier research on music downloading and consumption, collecting was a key behavior identified in our interviews. All the different types of TV viewers we spoke to collected some sort of TV, be it on tape, recorded DVD, hard disk, or purchased DVD.

In particular, boxed sets of DVDs were particularly popular; despite its cost, it was the preferred way of collecting series for everyone except the four "replacers." Even though the PVR users could easily burn whole series onto DVD

(all of the PVR users, except Neil and Melanie, had DVD recorders), they preferred the “glossy” original version of a box set. Some explained that they had extra material (for example, Darren), but most just liked to have the original boxes, the engraved DVD disks (rather than a blank silver disk), and the manufactured paper cover with descriptions and pictures of the series. Although the participants were not representative of a general population, this finding does indicate that although possibilities exist for collecting television series and movies for free (which is in many cases illegal), they do not necessarily take advantage of it. Having an original version defeats the desire to collect copies of material that does not live up to people’s standard. They collect not only to view the series again and again (which was supported by many of them confessing to revisit the collected shows quite rarely), they collect series and movies merely to have them.

One particularly interesting set of behaviors cropped up around the replacers, the downloaders who now watched all their television from the Internet. For three of these downloaders they had obtained collections of hard disks so as to be able to archive complete series of TV shows that they enjoyed. Indeed, three of the five replacers we interviewed had over a terabyte of compressed video, stored on PC hard disks (over three months worth of video). One PVR user had also purchased extra hard disks onto which she/he archived television shows recorded by his/her PVR.

Much of this television had not been watched by participants, or at the most had been watched once. This suggests that, as with other collecting behavior, the value of owning the collection is more than simply the benefits that the easy access to what is being collected provides. Instead, the activities around collecting, seeking out rare recordings, managing the collection, displaying it to others, and sharing it, are all part of the pleasure. Indeed, Belk explains as follows.

[A] benefit of collecting is in enlarging the collector’s sense of self. [...] the choice and assembly of objects to form a collection is ostensibly a self-expressive creative act that tells us something about the collector. [...] The surest way to undermine a collector is to observe that the collectible or collection ‘is not you’ [Belk 1995, p. 89].

The collection is thus one way of building up a stable sense of self; an artifact that will in many ways communicate and demonstrate one’s good taste or at the least one’s commitment to the effort of establishing such a large collection.

A collection also affords something that can be shared with others, not just electronically but as part of existing friendship groups. Two downloaders with large collections shared them with either their family in one case, or their house-mates. In this sense the collection was not an individual resource but one shared, and perhaps even collected so as to be shared. A number of participants also mentioned burning DVDs of TV shows for friends, even shows that they had shown no interest in, but as a way of “giving taste” to others. While this appears (perhaps because of the current state of technology) to be very much an emergent behavior, we suggest that this has many similarities with the “compilation music tape,” where a tape or CD is made up of songs chosen to communicate with the recipient.

## 6. DISCUSSION

In the previous sections we have described how participants watch television using new technologies, how these new technologies change or reinforce social routines at home, and how the consequences of watching television spread out to other aspects of daily life. The participants report tremendous joy mixed with smaller parts of guilt and stress for keeping up with series. The main issue to draw out is how time-shifting and location-independent technologies enable television watchers to structure their everyday life better and in some cases even reduce the guilt that, for example, Gauntlett and Hill also reported.

For both downloaders and PVR users, new video technologies allowed them greater choice in what to watch. In particular, downloaders could choose from a potentially vast array of video available on the Internet and in their own archives. However, many files are unavailable or too rare and thus slow to download. This means that in practice it was mainly the most popular files that were downloaded. Accordingly, both for PVR users and downloaders the changes in their TV watching followed similar patterns. Rather than “video-on-demand” both made selections for potential viewing, in advance, from a limited selection of shows. While watching TV, shows would be selected from the archive of current available shows with newly downloaded shows taking priority. Since shows are available to be watched in any order, viewing strategies such as watching complete series together were popular.

TV watching has always been a mix of “lean forward” and “lean back” close viewer engagement with shows, versus less active (and possibly less positive) “couch potato” watching [Silverstone 1994]. These new technologies appear to encourage a more active engagement with television and in some cases, even change how some shows were watched. PVR viewers could fast forward through adverts, and downloaded shows usually are distributed with adverts cut out. However, this was taken further by some users who would watch shows “on fast forward,” as one user put it, scanning through slow or undesirable scenes. The random access nature of shows also meant that bookmarks could be set and shows returned later to quickly find the “good bits.”

More broadly, this emphasises how television watching can be seen as not simply the act of sitting in front of the TV. The “TV lifecycle” includes finding out about new shows, selecting what to record, choosing what to watch, collecting an archive of shows, and sharing and discussing those shows with others. As studies of music consumption also show [O’Hara and Brown 2005], consumption is more than simply the act itself; one must consider the complete lifecycle: from finding out about a new program, all the way through to storing it in a personal archive. Each of these types of use suggests a distinct form of technical support. Moreover, many of these stages have been essentially ignored in the current design of television technology.

Finding out about new shows, for example, is in a sense a lot of work; users report using both paper schedules and EPGs as well as getting information from Internet newsgroups and friends and colleagues. Although tools for this have improved recently, the main way of getting information seemed to be from trailers watched on television (even on fast forward) and word of mouth. Considering

this, it is clear that tools are mostly valuable when they support social interaction or are situated in the television context.

We have been using the results from this study to inform the design of new video technologies that could enhance and better support the lifecycle of television watching. One area we are exploring is the collecting of television shows, and providing better interfaces for navigating through large archives of video. Indeed, it is worth noting that while video-on-demand has long been seen as the most desirable format for video distribution, a pure video-on-demand system would provide very little support for the collecting and random access of video files that was popular amongst our downloaders. We are thus exploring interfaces that could support the collecting of shows, and displaying that collection to others as recommendations. A second aspect we are investigating is the ability to share information about what parts of shows tend to be fast forwarded, and what parts are best to watch. Through monitoring what sections of shows are repeatedly played and what sections are skipped, one can build an overview of a show on a timeline, providing better support for navigating (as explored in a different way by Drucker et al. [2002]).

Lastly, we are exploring new ways to support choosing what to watch. While some PVRs use collaborative filtering to recommend shows, a way to go beyond this is to program a whole evening's entertainment from recorded shows, much like the shuffle play in iTunes. Alternatively, popular scenes from shows could be selected and edited to produce an "attract" mode of TV of edited highlights which is played in the background, allowing viewers to focus attention when they see something of interest, possibly choosing to then watch that show in full.

## 7. CONCLUSIONS

Our work here started by exploring how new television technologies impact television watching habits and behavior, considering how these different technologies allow for time-shifting and downloading of television shows. Yet in exploring this we found it was important to look beyond the point of interaction with the technologies itself, and to explore how they broadly changed daily television routines. This article has therefore explored broadly not only how the act of watching changes with the use of PVRs and downloading, but also how the broad spectrum around watching changes; choosing what to watch, when, where, and with whom. Our main findings are thus not simply that PVRs or downloading TV facilitates a more selective watching behavior, but rather how we have started to uncover the domestic organization of television watching, an activity that involves not only the whole household, but those outside whose relationships are supported by conversation, and shared enthusiasm, for television shows.

A second theme of this article has been to explore the form that one particular enjoyment technology takes, and the social organization of enjoyment in this case. Notions of enjoyment, pleasure, and happiness broadly are strangely neglected in CHI. Television is perhaps not the first technology that we think of—or would admit to thinking of—when we discuss pleasure. Yet we would argue that its ordinary status as an affordable form of entertainment, and one

that has been successfully domesticated, gives an opportunity to start understanding more broadly the organization of enjoyment and how technology can contribute in positive ways.

We close with a caveat. Our aim with this research has been to explore technologies' impact on social and individual habits of television watching. By studying early adopters we have obtained insights into possible future changes and behavior. Yet these behaviors are under much change, not only with the advent of other new TV technologies (such as, for example, YouTube), but also with the multifaceted changing roles of television in our lives. Whatever form these changes take, understanding current practice can be a valuable grounding for understanding these changes.

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