Character Sharing in World of Warcraft

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Abstract. Many online games are played through characters that act out players' intentions in the game world. The practice of *character sharing* – allowing others to use one's characters, or using others' – is prohibited in many RPGs, but anecdotal evidence suggests that the practice is common, and that it may play an important role in the game. To shed light on this little-known form of collaboration, we carried out a large-scale survey study to investigate character sharing in one RPG, World of Warcraft. We analyze and report on 1348 responses, providing a detailed picture of sharing practices and attitudes. We found that character sharing is common (57% of respondents reported sharing) and that sharers have a wide variety of motivations and concerns. In addition to showing how character sharing works, the study also provides new perspectives on several themes in CSCW, including conceptions of sharing, online identity, and mediating artifacts.

Introduction

In role-playing games (RPGs) players create a character in an imaginary world, acting in that world through the role of their character. The first RPGs were adventure games such as Dungeons and Dragons, played by small groups in real-world social settings. Many RPGs have now been developed for online play, commonly involving thousands of active characters in a persistent game world. These massively multiplayer online RPGs (MMORPGs) have become very popular, with millions of players worldwide (Woodcock, 2008).

   MMORPGs are different from real-world RPGs because the game world is often controlled by a game publisher. Thus, players are subject to the publishers' regulations whereas real-world RPGs are governed by the players themselves. One regulation in many MMORPGs is the prohibition of *character sharing* –

where a player uses a character that belongs to another player (we consider both lenders and borrowers as sharers) – and there can be severe penalties for sharing (Blizzard, 2009). Nevertheless, anecdotal evidence suggests sharing still occurs (e.g., Jonk, 2007), indicating that it may be an important group behaviour in MMORPGs. Because of its outlaw nature, character sharing is rarely discussed openly; consequently, very little is known about this kind of collaboration.

Our goal in this paper is to shed light on this shadowy practice. We report on an investigation that used discussions with gamers and a large-scale survey to understand when, why, and how character sharing occurs in online RPGs.

The results of our study confirm that character sharing is not only common and widespread (57% of all respondents stated that they share characters in one way or another), but that it is also an important vehicle for collaborative gameplay—one that players rely on to accomplish a variety of goals. Borrowers and lenders engage in a unique type of sharing relationship, the nature of which varies based on players' attachment to their characters, their motivations for sharing, and their relationship toward the other member of the sharing relationship.

We make three main contributions. First, we uncover and document a common real-world group activity that until now has been little known and poorly understood. Second, we suggest design possibilities to better support character sharing, enabling the coordination and communication that underlie this practice. Third, we show that character sharing is a useful case study for several CSCW concepts – showing how it is a novel type of sharing, providing insight into players' relationships with their online identities, and suggesting that characters are mediating artifacts that both retain and convey experiences and state changes.

Background

Our study explores character sharing in World of Warcraft (WoW), an MMORPG published by Blizzard Entertainment. We set the scene by introducing relevant game concepts and terminology, and then briefly review research on WoW, online representations of players, and identity.

WoW was released in November 2004, and is the leading MMORPG game with over 11.5 million subscribers (Blizzard, 2008). Like other MMORPGs, WoW combines a predesigned story world with a character system that allows players to create narratives through in-game action and interaction (Pearce, 2004). Players create a character who is a member of one of two warring factions. Many aspects of a character can be customized, including sex, race, and clothing. The most important feature is a character's class (i.e., their job or role), which determines what skills, abilities, and equipment a character can gain and use. The differences between classes define the specific play style of a character: for example, a mage would use magic almost exclusively, whereas a warrior would generally use weapons. Characters gain experience as they are played, and with

enough experience a character attains a new level; when this happens, they are granted new skills and abilities.

A *guild* is an in-game association organized by players to accomplish in-game goals (Ducheneaut et al., 2007). One of a player's primary activities in WoW is participating in *raids* (large-scale activities involving several players) organized by these guilds. Reasons for participating in raids include searching for valuable items, and defeating hard-to-kill monsters.

A player connects to WoW using a password-protected account which is purchased and maintained with a monthly service fee. A player can have multiple characters per account. The use of this account is governed by an end-user license agreement. To enforce this agreement, Blizzard employs Game Masters (GM), whose primary job is to police in-game behaviour. In the event of a violation – such as account sharing – Blizzard may suspend or cancel the account.

The success of WoW, and its popularity among players of diverse backgrounds has made the game the subject of several research projects. Topics that have been explored include player demographics (Yee, 2006), motivations for playing (Yee, 2007), player behaviors (Yee and Bailenson, 2007), social dynamics in the game (Ducheneaut et al., 2006), gaming culture (Lindtner et al., 2008), learning in the game (Nardi et al., 2007), and collaboration (Nardi and Harris, 2006).

Our work on character sharing was also informed by studies of on-line identity and on-line representations of people. The concept of self in virtual worlds has only become common in recent years (e.g., Turkle, 1995). Research has considered how digital selves and online personas link to the virtual environment, and the nature of the relationship between people and their online identities (Donath, 1998). Previous research has shown that there is a wide range of these relationships, and that the connections between online personae and their creators are highly personal (e.g., Donath, 1998; Bessiere, 2007; Blinka, 2008).

These relationships can be affected by the nature and organization of the game genre in which the online identities exist. Role-playing games differ from other genres and from more traditional narratives in that the process of character configuration is dynamic, evolving, and determined by the players themselves (Pearce, 2004). Whereas a key factor in generating emotional responses to characters in traditional linear narratives is through empathy (Raney, 2004), interactive computer games put much more emphasis on agency, where the player controls their character and shapes the game's events (Tomlinson, 2005; Pearce, 2004). The balance between agency and empathy in RPGs may change the way players feel about their characters, and we return to this issue later in the paper.

A Survey Study of Character Sharing

Little is currently known about character sharing practices, so our initial research questions concentrated on four basic issues: *whether it happens* (what is the

prevalence of character sharing in a major online game), *why it happens* (what are players' motivations for sharing characters), *how it happens* (what are the particulars of character sharing practice), and *what factors are considered* when players decide whether or not to share a character.

To answer these questions, we designed a questionnaire to ask players of online RPGs about their character sharing practices and motivations. We developed the questionnaire through discussions with several current players, and then advertised a web-based version of the survey to WoW players.

Study Methods

We developed a web-based survey with a mixture of closed-response (check-one, check-all, and yes/no questions), short answer, and open-ended questions. The survey asked players for basic demographic information, the frequency and duration of their character sharing practice, their motivations for and reservations against sharing, and experiences with character sharing. Respondents went through one of four different paths in the questionnaire depending on whether the respondent was a borrower, a lender, both, or neither (39, 44, 69 and 12 items). Respondents spent an average of 12 minutes completing the questionnaire.

We deployed the survey for a two-week period in July 2008, and recruited participants by posting an invitation on a popular WoW forum (forums.worldofwarcraft.com). This site, frequented by both WoW players and representatives of Blizzard, is a sanctioned real-world community that allows players to ask questions and discuss in-game issues. Because respondents are WoW forum visitors, they are likely to be enthusiastic about the game and thus may not be a fully-representative sample of the general population of WoW players. However, our invitation did not mention character sharing, only stating that we were interested in studying "the playing habits of people who enjoy MMORPGs" with a link to the survey. We believe that our results are indicative of trends in the general population of WoW players.

Participants. During the two weeks that the survey was available, we received 1476 responses. We discarded 128 responses that were incomplete or from players younger than 18, leaving 1348 legitimate responses (1210 men, 112 women, 26 no response) for our subsequent data analyses. Respondents ranged in age from 18 (the minimum allowed for the survey) to 65, with a median age of 26.

Our survey attracted a wide range of participants, skewing slightly toward dedicated gamers: 62% rated themselves as 'regular' players, 24% as 'hardcore', 13% as 'casual', with 1% abstentions. We asked users to classify their player type based on descriptors adapted from Bartle's (1996) descriptions (Achiever, Explorer, Killer, Socializer). The majority of participants (52%) identified themselves as Achievers, meaning that they "set game-related goals, and vigorously set out to achieve them" (Bartle, 1996). 19% of respondents identified

themselves as Explorers, 13% as Killers, 8% as Socializers, and 8% either not responding or stating that that they did not identify with any of the categories.

Data Analysis. For check-all-that-apply questions, we solicited additional information through a free-form follow-up question. After coding the open-ended responses, we integrated the user-supplied answers with the original check-all-that-apply answers for further analyses. For each type of multiple-choice question, we present the results as percentages of the respondents who answered that specific question. The number of respondents for each question varied due to the participants' varying paths through the survey.

Does Character Sharing Happen, with Whom, and How Often?

Our results show that character sharing is both widespread and frequent (see Figure 1). 57% of respondents stated that they shared characters in some way. Of these, 74% reported *lending* characters to others, while 94% reported *borrowing* characters from others. Of the 43% of respondents who do not share characters, 84% of these report having made an explicit decision not to share, while the remaining 16% report not having had the opportunity to share.
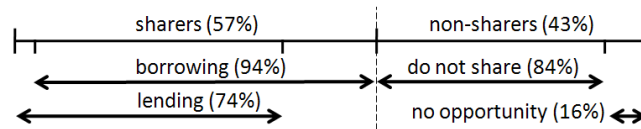

Figure 1. Sharing among our participants.

We asked survey participants with whom they decided to share, and how long they allowed the sharing arrangements to go on. The four main types of people that participants reported sharing with were family, real-life friends, in-game friends, and fellow guild members (see Table I).

	Family	Real-life friend	Game friend	Guild
Loaned a character to…	20%	50%	27%	3%
Borrowed a character from…	13%	37%	36%	14%

Table I. Sharing percentages with different types of people.

The only major difference in lending and borrowing patterns is in sharing with guild members. People are willing to borrow from these people, but less likely to lend; this may be because guild relationships are not as strong as personal relationships, but may also arise because of so-called 'guild accounts' where all guild members can access the guild account's characters.

Participants reported two main types of sharing arrangements. The most common was 'one-time' sharing where the borrower used the character once for a particular purpose (40% of total sharing). In these cases, borrowers were expected not to log in again afterwards. Several lenders reported temporarily changing their password for the duration of the share, and then changing it back afterwards.

The second type of sharing arrangement was longer term, and allowed the borrower to repeatedly log into the account (25% of total sharing). In some cases

this arrangement was used because the in-game task was time-consuming (e.g., obtaining several copies of hard-to-get items); in other cases players had long-standing agreements with friends or their guild that characters could be used when needed (e.g., where a guild "[has] access to our main warrior's account").

In a few cases, there were mutual long-term arrangements within a group. Participants described situations in which all player accounts were known to the entire group, and where players were welcome to use others' characters at any time to achieve the goals of the group. In one case, it appeared that these accounts did not even have real owners, and were instead owned by the entire group:

> [A guild] I belonged to had a "shared guild account." This account was given from a player who stopped playing to the owner of the guild. This account information was then given to all trusted members… to use the characters if it was needed.

We also asked participants how many times they had shared characters. For those who reported lending, people had lent characters an average of 10.8 times; borrowers reported that they had borrowed characters 9.1 times on average.

Motivations for Sharing – Why do People Share Characters?

In this section, we examine motivations for character sharing, illustrating that character sharing is largely motivated by a desire to experience the game more fully. Participants identified 22 reasons for sharing characters, but four groups of those made up 65% of all responses (described in the following sub-sections). The ten most frequent reasons for sharing are presented in Figure 2.

Sharing to experience new things (72% of sharers)

Each character in WoW experiences the game in different ways: for instance, each of the two warring factions has a unique story unavailable to the other faction. Most players advance through the game using a single character, and few invest much time in alternate characters; consequently, most players only experience
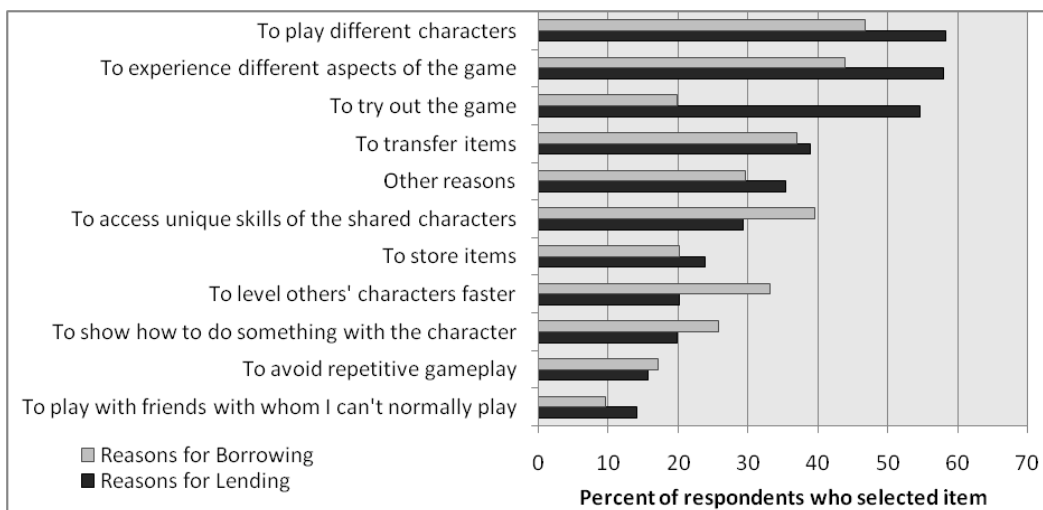

Figure 2. The main motivations for borrowing and lending characters.

gameplay through a single character. Our survey shows that many players are curious about other aspects of the game and other character classes – especially high-level characters who gain access to special content – and how those character classes experience the game. In our sample, many respondents reported sharing characters to play different characters (58% of lenders and 47% of borrowers) and to experience different aspects of the game (58% and 44%), for example:

> Sometimes [I borrow] to try a class that I haven't played before, and that I am interested in leveling, but don't want to max out to find out that I don't like it.

Similarly, several respondents loaned characters to real-life friends to allow them to try the game: 55% of lenders and 20% of borrowers reported having shared characters for this reason. In these situations, the benefit is primarily to the borrower who is able to have a different (or new) play experience.

Together, these three motivations (to play different characters, experience different aspects of the game, and try the game) were reported by 72% of sharers.

Sharing to ensure adequate resources for a raid (43% of sharers)

A *raid* in WoW is an organized group activity where a team of players attempt to achieve an in-game objective defined by the game designers (e.g., defeat a monster). Raiding parties contain 6-40 characters, with each character typically playing a specific role (e.g., *damage dealers* who attack the enemy, *healers* who restore other characters' health). Coordinating the many players needed for a raid is often difficult: owners of some important characters may not be available at the scheduled raid time. In these situations, it is common to loan important characters to a player who is available for the raid. For example, as one participant stated:

> He asked me to play his account as we were sho[r]t a healer and he couldn't make it that night.

29% of lenders and 40% of borrowers reported sharing characters for this reason (to access unique skills of the shared characters). Sharing benefits the raiding party because the group needs the skills of the shared character: often, raids cannot be carried out without the appropriate balance of roles. The owner of the shared character also benefits, because their character receives a share of the spoils from the raid. Lending for raids is most often a short-term arrangement (lasting as long as the raid); however, this situation was also a reason to set up a more permanent lending arrangement. For example, one respondent stated:

> sometimes we need a warrior to tank a boss but we don't have a warrior online, but we have access to our main warrior's account, [so] I'd log on the warrior and bring him to the fight then after the fight go back to playing my character.

In addition, a few respondents reported having a 'guild account' (as discussed above) that is accessible by all guild members and that was used for raids.

Sharing to advance a character (38% of sharers)

Leveling is the activity of moving a character to a new experience level and often involves the completion of dull, repetitive tasks. Although these tasks are part of

the game, players often consider aspects of leveling a necessary evil. To reduce the effort and pain of leveling, some players lend their character to a friend or even to a private business that will carry out some of the required tasks. This type of sharing is different from other reported types, as it primarily benefits the lender rather than the borrower. In our survey, 20% of lenders and 33% of borrowers reported sharing characters to level a character more quickly. Although most sharing in these situations was intended to avoid repetitive work, some cases involved a sincere interest in helping another person – for example:

> My good friend has trouble leveling her characters, and not being able to participate alongside her friends and her husband because she was too low-level; [this] was very distressing to her, so I helped her out.

Sharing for leveling is more controversial among players than other reasons for sharing. Many people saw it as cheating, since the character was no longer a true reflection of the owner's skill (e.g., "playing a character that's been leveled [by someone else] feels like cheating"). It was regarded in the same light as allowing a character to be advanced by a 'bot', a practice that is also disallowed.

Sharing to learn new techniques for playing the game (33% of sharers)

The WoW user interface is highly customizable, allowing players to modify and tailor in-game commands to their specific needs; for instance, macros may be recorded to automate sequences of commands. However, in-game tricks or techniques are often difficult to explain to newcomers. Sharing a character allows the borrower to learn these enhancements – in these cases, it is not so much the character that is shared as much as the customized environment.

Many respondents reported employing character sharing to either teach another player about some aspect of the game (e.g., instances where certain macros are useful), or to learn from another person. Often this type of sharing was carried out in a co-present environment, so that the lender and borrower could more easily talk about the interface. In our sample, 20% of lenders and 26% of borrowers reported sharing characters for this reason, showing that customization – and community support for customization through sharing (Mackay, 1990) – has become common in WoW.

Details of Sharing Practice – How Does Character Sharing Occur?

This section looks at the details of character sharing: setting up the arrangement, coordinating the use of the character, and finding out what happened afterwards.

Managing the handover: transfer and scheduling

Accounts in WoW are protected by a username and password, and so the actual transfer of a character involves the transfer of account details. This information is typically sent through email or IM (85% of lenders) or by logging in and letting a co-present borrower use the account (31%). The more complex handover issue,

however, is that of scheduling to avoid conflict on the account, because if another player attempts to log in to the account while the first login is active, then the first player will be disconnected, or *kicked*. Beyond being an inconvenience, this can also cause serious problems if the character is in the middle some important activities. For example, one participant stated:

> [I] once logged on to my character while a friend was using him […] the character was underwater when it happened and the delay in transition caused him to drown.

Because only one person can be logged in to the account at once, organizing and following a schedule is crucial. Respondents relied both on large-scale coordination (e.g., "I only loan my characters to others when I'm not playing the specific game at that time") and finer-grained scheduling (e.g., "I told the person they could use [my characters] while I was at work so between the hours of 9-5").

Respondents also felt that multiple logins could draw the attention of the Blizzard game masters, which could result in banning of the account. Consequently, most borrowers (78%) indicated that it was important for the borrower to inform the lender before logging in as the shared character.

Limiting the borrower: rules and restrictions

Most of the lenders in the survey (74%) placed restrictions on how shared characters could be used. Respondents stated many different rules that were based on the specifics of characters, situations, and the borrower themselves. The most common restriction (mentioned by 44%) relates to the use of a character's in-game resources such as money and items, because they may be difficult to reacquire. For example, a common set of rules were:

> don't sell/delete anything without asking. Don't use crafting materials without asking. Don't re-spec [(change character attributes)] unless I ask you to.

Another common rule was similar – during gameplay, irreversible decisions occasionally need to be made (e.g., selling unique items); consequently, many lenders stated that they tell borrowers to avoid making such decisions, or only lend to other players who 'already know what not to do' with the character.

Getting the character back: finding out what happened

Characters are 'returned' either implicitly through the scheduling arrangement, or by the borrower notifying the lender that they are finished. This is not, however, the end of the sharing lifecycle: after the character is returned, the majority of lenders (67%) also want to know 'what happened'.

Interest was highest in the outcome (40% of lenders) – the success of the borrower's task, in-game tasks that had been accomplished, changes in the character's inventory, and the character's game world location. Lenders gathered this information in two main ways. First, they spoke with the borrower, either by voice or online (several respondents stating that a real-time medium was necessary to allow clarifying questions to be asked). Second, lenders also gathered information by inspecting their characters: 42% of lenders reported studying the

character's item inventory to determine which items (e.g., gold or equipment) had been used, obtained, or sold. The inventory functions as a persistent, indirect record of activity: for example, it can show that a character has been in battle (e.g., health potions depleted), or has succeeded in a task (e.g., new items acquired). In addition, lenders also checked the inventory to ensure that the borrower had not wasted or given away items – one participant reported that he went so far as to take a screenshot of the inventory before lending a character, and then checked the screenshot against the character's inventory afterwards.

Some lenders were also interested in other experiences that did not result in changes to the character, although this was mentioned less frequently (27% of lenders). People stated that they were also interested in the actual experiences that the character had while 'away': when the character was played, what monsters they fought, how items were obtained, and whom they encountered in the game. For example, one lender wanted "to know who in the game my character has encountered so I am not confused later."

Factors in Deciding Whether or Not to Lend

We asked sharers a check-all-that-apply question about their concerns when lending and borrowing characters. We also asked non-sharers their reasons for not sharing characters. Results are presented in Figure 3, and below we detail the five most frequent reasons.

Fear of being caught

Character sharing requires account sharing, which is against the publisher's terms of agreement for the game. The fear of being caught and punished is a major concern for players, and a serious deterrent for those who choose not to share (it was indicated by 57% of non-sharers and 37% of sharers). As one person stated,

> [playing someone else's character] can be really tense. It feels strange playing on someone else's account and knowing that you're breaking the ToS

Blizzard watches for infractions such as account sharing, and users mentioned issues with logins from distant IP addresses or multiple logins. For example,

> I know a few people who got banned because a GM [(game master)] noticed weird login / IP addresses on their accounts.

Identity

Respondents stated that three kinds of identity issues were important. First, some players identify strongly with their characters and consider them to be extensions of their selves (38% of non-sharers felt that characters were a reflection of one's personal identity, and 22% of sharers also indicated this response). This strong relationship to on-line avatars has been reported numerous times in past research (e.g., Turkle, 1995; Blinka, 2008), and for many players, this was the primary reason for not sharing:
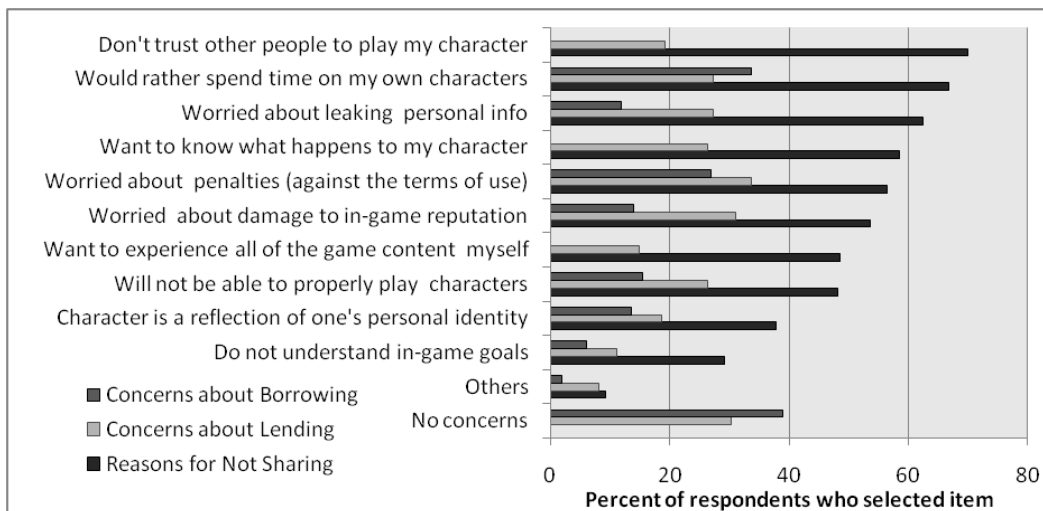
Figure 3. Concerns about borrowing and lending, and reasons for not sharing.

> I feel my characters are a personal incarnation. The personality that they are is me and people come to know this and enjoy being around me due to this. When someone else plays my characters I feel it throws things off in a way.

Second, even if they did not see characters *as* themselves, many respondents felt that their characters *stood for* their real-world identity, reputation, and social standing. For example, one person said that "a character is an icon of one's social identity in the online world;" another stated that "a character is a reflection of my personal identity." Players who felt this way were sometimes willing to lend their characters, but were concerned about how the borrower would play the character (e.g., one stated "I don't want my reputation to be ruined"). Accordingly, many borrowers reported playing a shared character with greater care (so as to not damage the lender's social standing).

These responses suggest that in some interactions there is a clear separation between the character and the real-world person behind it. A third identity issue that is strongly related involves the practical realities of carrying on real-world interactions through in-game characters. Many respondents mentioned problems arising from the fact that during sharing, a different real-world person is now behind the character. These cases of mistaken identity can lead to confusion and out-of-context communication. In some cases, mistakes lead to social *faux pas*:

> The [owner] used to log in at a different time than me and chat with others... and became very friendly with someone else. Needless to say... the conversation that came my way when I happen to log in on a day off from work was not something I was expecting... especially since the friend using the account was a she and I am a he. It was rather embarrassing for all concerned.

Borrowers mentioned several times that this issue leads them to avoid starting conversations when playing another person's character: as stated by one person, "my biggest concern is their in-game friends talking to me, I'm not familiar with them so I don't know how to respond to them." Problems caused by mistaken identity led several borrowers to consistently reveal who they were (i.e., not the owner) when others engaged them in conversation. Most borrowers (54%)

indicated that it was appropriate to inform others in this way, but lenders were evenly split as to whether borrowers should do so.

Characters as Investments

Another factor that lenders consider is the value of the character, and the potential loss that could occur if something goes wrong. Advancing a character through WoW, and obtaining gold and equipment, requires a considerable investment of time; many respondents stated that they thought more carefully about sharing higher-level or wealthier characters, and imposed rules about how borrowers should act (as described above). For example, a lender stated:

> [I] have a huge amount of gold and items…I don't like the feeling of my friends, even my best friend, playing on my characters and not knowing exactly what they did when they played my characters.

In addition, the idea of characters as investments was raised as a concern for borrowers; that is, that playing a shared character would be a waste of time since the value would go to someone else (34% of borrowers considered this a drawback). The idea of character as possession (rather than as persona) warrants further investigation and we return to this idea in the discussion.

Trust and Security

Trust in the borrower was a major concern for players: 70% of non-sharers stated that this was a factor in their decision, as did 19% of lenders. Sharing relationships generally follow real-world trust patterns – as shown in Table I, characters are lent primarily to friends and family members. Both non-sharers and lenders are concerned about whether they can trust the borrower to protect their reputation (54% of non-sharers, and 31% of lenders), and to play the character properly (48% and 26%). Even maintaining interface settings is a concern:

> I spent maybe an hour going over screenshots in an attempt to re-create my UI toolbars after that incident.

Thirty percent of lenders, however, reported no concerns with sharing their characters, suggesting that a sizeable minority of lenders either do not mind what happens, or that there is implicit trust, as stated by one participant who said,

> honestly, I don't care. Unless of course its something serious, but I wouldn't expect anything like that to happen.

In addition, many players perceived character sharing as a potential security risk: 62% of non-sharers and 28% of lenders stated that they were concerned about personal information when sharing characters. Security problems can occur in several ways: first, the account contains considerable personal information that could be given out or lost; second, if a borrower changes the account's password, a lender could lose the account completely. These concerns led to practices such as changing account passwords every time a character is shared (as described above). Last, players were concerned about risks from the borrower's computer:

I don't give my account information away, because [although] I trust friends not to mess with my characters, I do not know if they protect their computer against hackers. I want my account to be safe.

Summary of Survey Results

Our survey provides evidence about the existence, prevalence, and complexity of character sharing in World of Warcraft. In summary:

- *Sharing is frequent and widespread*. The majority of respondents have lent or borrowed characters, and have done so many times.
- *Sharing has two main patterns*: one-time sharing, where characters are returned once a particular task is completed, and longer-term repeated sharing.
- *Sharing is used for several purposes*. There are many different reasons for sharing characters, the majority of which are not considered to be cheating.
- *There are several types of player-character relationships*. Players indicated that they think of their characters in many ways: extensions of themselves, as valued possessions, and even as throwaway objects.
- *Identity is a main concern*. Online identity issues are a major factor in sharing, leading some people to avoid sharing, and others to be careful about protecting their reputations and avoiding problems with mistaken identities.
- *Change awareness is important*. The majority of lenders want to know what happened to shared characters, and use both in-game (e.g., character inventory) and non-game channels (e.g., telephone), to obtain this information.
- *Communication about sharing is required*. The practical details of sharing involve considerable communication – for transferring account information scheduling, setting rules, and reporting what happened to the characters.
- *Sharing is not well supported*. The lack of any in-game support for character sharing forces people to engage in risky practices and to use tools and mechanisms (such as screen shots for awareness) that are often awkward.

Discussion

Our study reveals many of the details of character sharing, a collaborative practice that has not been studied before in CSCW. However, the broader value of our study is that character sharing raises new questions for a number of existing CSCW topics – in the next sections, we discuss the ways that character sharing may be able to shed light on research into sharing, on issues of player-character identity, and on characters as a mediating artifact in the articulation work of sharing. In addition, we consider the question of whether character sharing should be better supported by game companies, and present several design ideas that could help to provide this support.

Character sharing is a different kind of sharing

There are fundamental differences between the sharing of game characters and the types of sharing that have been studied previously in CSCW, including program customization files (e.g., Mackay, 1990), shared folders (Voida et al., 2006), music sharing (e.g., Brown et al., 2001), and photo sharing (e.g., Miller and Edwards, 2007). The main difference is that sharing of files, music, and photos involves digital objects that can be trivially and transparently copied, meaning that people are actually sharing a copy of the artifact rather than the owner's original. In contrast, characters in on-line games are unique and cannot be copied, since they are tied to the owner's unique account with the game publisher.

This means that sharing practices and people's attitudes toward the shared object are dramatically different. With music or file sharing, there is no concern about getting the shared object back again, and the idea of sharing, in part, implies the idea of making the artifact public (particularly with photo sharing). With copy-based sharing, there is also no need to maintain awareness of what happens with the shared object while in the borrower's possession. Although the 'lender' may still take an interest in what the borrower does with the object (e.g., makes a new version of a song or adds to a customization file), the original version is still in the owner's possession, and lending creates a version tree rather than accumulating changes to the original object itself, as occurs with a WoW character.

The fact that there is only one copy of a WoW character means that character sharing is more like sharing real-world objects like cars or bicycles than it is like sharing other types of digital objects. In particular, the owner sees real value in the actual object being shared, and so considerably more thought must be given to decisions about when and with whom to share. Thus, we see many comments about whether the lender can trust the borrower to use the character appropriately – concerns that generally do not occur in copy-based sharing. Player comments about this issue sound very similar to what goes through one's mind before lending a valued real-world possession, such as a car or a book, to another person (e.g., as one participant in our survey said, "I would want to know whenever someone wants to use my car, the same goes for my character").

There has been very little CSCW research done on this type of sharing; work exists in areas such as deception in Usenet discussions (Donath, 1998) and group computer accounts (Egelman et al., 2008; Muller and Gruen, 2005), but there is much that could be done in this area. For example, an issue raised by our study was the wide range of value that lenders placed on their characters – from treasured possessions that would never be lent out, to throwaway objects with little value. Part of the reason for this wide range is that the actual creation of characters is easy, and so the value of a character does not arise only from its mere existence (as it would with some kinds of physical objects). Instead, it appears that value is primarily created by the degree of the owner's involvement in the character (e.g., the investment of time and effort to reach a particular level).

Therefore, characters are 'self-built,' somewhat like handmade furniture or pottery, and character sharing shows similarities to sharing these types of personally-meaningful items.

In a different way, however, character sharing is similar to other types of digital sharing – these types of group activity are interesting for CSCW in that they raise the question of where in a sharing relationship the collaboration actually occurs. Character sharing appears to be a type of articulation work, in that it enables some other end goal; but only in some sharing arrangements (e.g., using a character for a raid, or working towards a level) does there appear to be a common goal between the lender and the borrower. In other cases, such as allowing others to try out the game or try out a different type of character, there does not seem to be a clear group goal – in that sharing allows one person to have an individual experience that they could not otherwise have. Character sharing is therefore a mechanism for social interaction in the larger community (and in this domain, helping others to new experiences could indeed be part of the larger shared goal), as much as it is a coordination mechanism for 'getting things done,' and thus contributes both to thinking about focused work activity and to research on the broader social issues that have been considered in other studies of digital sharing (e.g., Brown et al., 2001; Håkansson et al., 2007).

Characters as a new kind of mediating artifact

The artifacts that are transferred between people in collaboration can store and show information that aids articulation work. As stated by Schmidt and Simone (1996), the artifact "mediates articulation work as well in the sense that the artifact acts as an intermediary between actors that conveys information about state changes to the protocol under execution" (p. 179). It is clear that characters in WoW play this role of mediating artifact – for example, in situations where lenders inspect the character's inventory to determine what items have changed.

Character sharing extends this idea, however, in that characters not only show state changes that have occurred during the share, but also 'contain' the in-game events and happenings that the character has experienced. These experiences are often as important to lenders as are changes to gold or equipment, and several people stated that they were reluctant to lend characters because they didn't want to miss out on what happened. Thus, the story of the changes is often as important as the changes themselves, and characters can be seen as mediators of experiences as well as representations of the state of the sharing arrangement.

There is currently no way to extract these experiences from the character, however. Although research into edit wear and read wear (Hill et al., 1992) has considered the idea of recording and displaying a wide variety of interaction history (and these techniques could also benefit character sharing), prior work has not considered the artifact's own experience (e.g., the character's adventures

rather than its state changes) as history that could be recorded. The fact that characters' experiences are understandable to players means that there are new opportunities for characters to relate and share this information – such as the possibility of asking the character questions about their adventures, or the possibility of playing back experiences (as discussed below).

Character sharing exposes identity issues in online environments

We were surprised by the degree of willingness to share characters, and by the almost casual attitude towards sharing that we saw from some of our respondents. Although we did not focus specifically on identity issues, answers and comments suggest that there may be several ways that character sharing can illuminate the ongoing interest in the relationship between players and their in-game avatars. In particular, our study suggests that WoW has a wider range of relationships than have been reported before, and that some of these involve less of an identity connection between player and character – sometimes to the point where a character is as much a possession as it is a persona.

The way in which players see their relationship with their characters contributes to their attitudes towards character sharing, and through our participants' comments, we saw several different types of relationship. As discussed earlier, some players strongly identified with their characters and thought of them as extensions of their own identities and personalities. Other players considered characters as a symbolic representation of their real-world self. At the other end of the spectrum, several players talked about characters as objects quite separate from themselves; as discussed above, several people thought of their characters as property and explicitly referred to them as such (e.g., one participant stated that "a character is a personal possession;" another said "objectively, a character is something that is property").

The degree to which a player identifies their characters with themselves could have substantial effects on sharing practices. The more closely a player associates themselves with a character, the less likely they would be to lend it out, and the more concerned they would be about the character's behaviour while in someone else's care (e.g., one lender told borrowers "don't act like an ass"; other lenders stated rules for the borrowers, as described above). In contrast, seeing characters as possessions could lead to much more willingness to share, and more interest in the character's inventory as opposed to their behaviour (as one lender said "no rules, I don't really care that much […] I would prefer them not to delete or sell my stuff"). This difference could also explain people's different opinions on whether lending characters is cheating – at the one extreme, obtaining skills or materials without personal investment would be similar to the falseness of getting cosmetic surgery; at the other, it would be no more devious than letting someone else tune up your car or fix your bicycle.

The ways in which characters are created and manipulated in virtual worlds may have an effect on how much players identify with the character. For example, the player's avatar in *Grand Theft Auto* has a pre-determined name and back-story, and although his appearance can be customized, it is unlikely that players see this character as a representation of their actual selves (except in a vicarious sense). Other games provide different creation mechanisms that can allow a closer bond between player and character; but the details of character creation and management still affect the relationship. One way that World of Warcraft differs from other virtual worlds is that an account can contain multiple characters; in contrast, worlds like Second Life allow only one avatar per account. The ability to create multiple characters may be important for identity issues because it makes a clear break from the character-equals-player relationship, and makes possible the existence of multiple characters in which the player has not invested time.

Few of the participants seemed to think of their characters as only possession, but the language people used to talk about their characters (e.g., comparisons to cars or other objects) showed that the idea of characters as property is present at least for some players. This idea has not been widely considered in CSCW research before, and presents several new opportunities for further research – for example, arguments about cheating in virtual worlds could be informed by an understanding of this identity issue.

Should character sharing be supported?

Our survey shows that character sharing is already widespread, and that not all aspects of this practice are likely to be harmful to the game publishers or the in-game experience. In addition, there are many benefits in sharing – it brings people to the game, it helps people get greater enjoyment out of the gameplay, and it aids the development and maintenance of social groups both in game (guilds) and in the real world (local and broader communities of players).

Our findings suggest that game publishers could benefit from thinking about ways to support different aspects of character sharing. Although there are several issues at play in this debate, one of particular interest to CSCW is the question of whether (and how) companies can support types of collaboration that enable prohibited activities. Discussions of articulation work in CSCW have often highlighted the failure of groupware systems to support the essential activities that go on behind the scenes (e.g., Schmidt and Simone, 1996). World of Warcraft can be seen in exactly this light – as a groupware system that fails to recognize the behind-the-scenes work (i.e., character sharing) that is needed to accomplish a variety of tasks and aims in the game and in the larger community of players. However, it is not the case that WoW's designers have simply failed to notice an important aspect of group work; the problem is that the activities are prohibited. This poses the question of whether an activity should be supported when doing so

makes it easier to engage in disallowed behaviour – game publishers may believe that doing so would be seen as legitimizing these activities (Birnholtz et al, 2008). In addition, there is the possibility that legitimizing character sharing could dramatically change the way characters are developed and used (e.g., open rental of characters or more widespread sharing beyond a player's immediate social circle), and raises many questions for further study.

Although we do not expect Blizzard to embrace character sharing in the near future, there are possible ways forward that could obtain some of the benefits of character sharing without compromising account security, and without ruining the experience for other players. In addition, it would be relatively simple to sanction and support certain aspects of the practice if players are willing to live with the (mild) cheating that it allows. In the next section, we consider some of the ways that character sharing could be better supported, if there was a willingness to do so either in WoW or in some new role-playing game.

How could character sharing be better supported?

The issues and attitudes shown in the survey suggest several design ideas that could provide more explicit support for different aspects of character sharing. In the following paragraphs we describe seven design changes that were closely aligned with the results of the survey, and that could be feasibly implemented.

Decoupling accounts and characters. The security risks of current character-sharing practices could be dramatically reduced by allowing characters to be played from different accounts. Each gamer would still need an individual account, but the characters would no longer be tied exclusively to it.

Different levels of access. The owner of a character should be able to control what a borrower can do to and with the character. This could be done by locking certain functions of a character to borrowers (e.g., item usage).

Tracking changes. Systems should provide change-awareness information to lenders when characters are returned. This could be done by simple visualizations, such as highlighting the changes in the inventory.

Playback tools. Another way to support change awareness is to provide playback tools (e.g., videos or screenshots). In addition to awareness, playback gives lenders a way to participate in experiences that they have missed.

Private sticky notes. Characters could be used as a repository for asynchronous communication between borrowers and lenders. Lenders could, for example, attach sticky notes to a character to tell borrowers what they should do next with the character, and borrowers could use them to report what has happened.

Spectator mode. Spectator mode would allow players to observe gameplay through another player's view. Such a mode in WoW could reduce unwanted 'kicking' of a borrower, and could also provide real-time feedback. Sharers could even trade control of the character for a collaborative gaming experience.

Identity indicators. Knowing who is controlling the character is important. Graphical indicators, such as a halo around the character, could show whether the player is the owner of the character or a borrower (or even the name of the player). Identity indicators would reduce confusion and cases of mistaken identity.

These new tools and techniques could dramatically simplify practices that are currently carried out through clumsy and insecure mechanisms.

Conclusions and Future Work

Until now, little has been known about the prohibited practice of character sharing in online role-playing games. We surveyed 1348 WoW players to investigate this practice, and although this is a relatively small sample, the survey is the first to report on this shadowy form of collaboration – we show that it is widespread, frequent, and plays an important role both for in-game collaborative activities and for interaction in the larger community of players. In addition, character sharing sheds new light on several themes in CSCW: characters are a different kind of object than has been considered in studies of sharing; character sharing shows new perspectives on the relationship between a player and their online identity; and characters can be a novel type of mediating artifact that contains experiences in addition to state changes. Our work in this area will continue in two directions: first, we plan to confirm our findings through discussions with players of other MMORPGs; and second, we will further explore the issues of sharing, identity, and mediating artifacts that have been raised by our study.

References

Bartle, R. (1996): Hearts, clubs, diamonds, spades: Players who suit MUDs. *Journal of Online Environments*, 1(1).

Bessiere, K., Seay, F., and Kiesler, S. (2007): The Ideal Elf: Identity Exploration in World of Warcraft. *Cyberpsychology and behavior*, 10 (4), pp.530-535.

Birnholtz, J., Gutwin, C., and Hawkey, K. (2007): Privacy in the Open: How Attention Mediates Awareness and Privacy in Open-Plan Offices, In *Proceedings of Group 2007*, pp.51-60.

Blinka, L. (2008): The relationship of players to their avatars in MMORPGs: differences between adolescents, emerging adults and adults. *Cyberpsychology: Journal of psychosocial research on cyberspace*. 2(1), pp.1-9.

Blizzard. (2008): World Of Warcraft Subscriber Base Reaches 11.5 Million Worldwide. http://www.blizzard.com/us/press/081121.html

Blizzard. (2009): Account Sharing/Third-Party Character Advancement ("Power Leveling"). http://us.blizzard.com/support/article.xml?articleId=21506

Brown, B., Sellen, A.J., and Geelhood, E. (2001): Music Sharing as a Computer Supported Collaborative Application. In *Proceedings of ECSCW '01*, pp.179-198.

Donath, J (1998): Identity and deception in the virtual community, in Kollock P and Smith M (Eds), *Communities in Cyberspace*, Routledge, London, pp.29-59

Ducheneaut, N., Yee, N., Nickell, E., and Moore, R.J. (2006): Alone Together? Exploring the Social Dynamics of Massively Multiplayer Games. In *Proc. of CHI 2006*, pp.407-416.

Ducheneaut, N., Yee, N., Nickell, E., and Moore, R.J. (2007): The life and death of online gaming communities: a look at guilds in World of Warcraft. In *Proc. of CHI 2007*, pp.839-848.

Egelman, S., Brush, A. J., and Inkpen, K. M. (2008): Family accounts: A new paradigm for user accounts within the home environment. In *Proceedings of CSCW'08*, pp.669-678.

Håkansson, M., Rost, M., and Holmquist, L. E. (2007): Gifts from Friends and Strangers: A Study of Mobile Music Sharing. In *Proceedings of ECSCW'07*, pp.311-330.

Hill, W., Hollan, J., Wroblewski, D., and McCandless, T. (1992): Edit wear and read wear. In *Proceedings CHI 1992*, pp.3-9.

Jonk, J. (2007): Blizzard bans 12 wow PVP accounts. www.esreality.com/?a=post&id=1386800

Lindtner, S., Nardi, B., Wang, Y., Mainwaring, S., and Jing, H. (2008): A hybrid cultural ecology: world of warcraft in China. In *Proceedings of CSCW 2008*, pp.371-382.

Mackay, W. E. (1990): Patterns of sharing customizable software. In *Proceedings of CSCW'90*, pp.209-221.

Miller, A. and Edwards, W.K. (2007): Give and Take: A Study of Consumer Photo-Sharing Culture and Practice. In *Proceedings of CHI 2007*, pp.347-356.

Muller, M., and Gruen, D. (2005): Working together inside an emailbox, In *Proceedings of ECSCW 2005*, pp.103-122.

Nardi, B. and Harris, J. (2006): Strangers and Friends: Collaborative Play in World of Warcraft. In *Proceedings of CSCW'06*. pp.149-158.

Nardi, B., Ly, S., and Harris, J. (2007): Learning Conversations in World of Warcraft. In *Proceedings of HICSS 2007*, pp.79a.

Pearce, C. (2004): Towards a game theory of game. In *First person: new media as story, performance, and game*. Ed. Noah Wardrip-Fruin & Pat Harrigan. Cambridge: MIT Press.

Raney, A. (2004): Expanding disposition theory: Reconsidering character liking, moral evaluations, and enjoyment. Communication Theory 14(4), pp.348-369.

Schmidt, K., and Simone, C. (1996): Coordination mechanisms: Towards a conceptual foundation of CSCW systems design, *CSCW*, 5(2/3): pp.155-200.

Tomlinson, B. (2005): From linear to interactive animation: how autonomous characters change the process and product of animating. In *Computers in Entertainment*, 3(1), 5-5.

Turkle, S. (1995): Life on the screen: Identity in the age of the Internet. NY: Simon & Schuster.

Voida, S., Edwards, W., Newman, M. W., Grinter, R. E., and Ducheneaut, N. (2006): Share and share alike: exploring the user interface affordances of file sharing. In *Proceedings of CHI 2006*, pp.221-230.

Wachowski, E. (2007): Rogue with Twin Blades of Azzinoth sells account for almost $10,000. http://www.wowinsider.com/2007/09/16/rogue-with-twin-blades-of-azzinoth-sells-account-for-almost-10

Woodcock, B. (2008): MMOG Chart. http://www.mmogchart.com

Yee, N. (2006): The Demographics, Motivations and Derived Experiences of Users of Massively-Multiuser Online Graphical Environments. In *PRESENCE: Teleoperators and Virtual Environments, 15*, pp.309-329.

Yee, N. (2007): Motivations of Play in Online Games. In *Journal of CyberPsychology and Behavior*, 9, pp.772-775.

Yee, N. and Bailenson, J.N. (2007): The Proteus Effect: The Effect of Transformed Self-Representation on Behavior. In *Human Communication Research*, 33(3), pp.271-290.