“Friendly, Don’t Shoot!”: How Communication Design Can Enable Novel Social Interactions

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ABSTRACT
The ability to communicate by voice in multiplayer networked virtual worlds has become almost ubiquitous over the past decade. Yet the possibilities for creating interesting social dynamics and game play experiences through the design and configuration of voice channels remains largely unexplored. In this paper we discuss the first person shooter game *DayZ*, which utilizes a relatively unique voice communication system. We examine the design of *DayZ*’s voice channel and present examples of its use in order to understand how its configuration influences social interaction and game play. We claim that two features of this system - proximity and all-to-all - enable novel and enjoyable game play experiences and user interactions.

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DayZ, VoIP, Virtual World, CMC, FPS, MMOG, voice communication, social interaction, game play experience

ACM Classification Keywords
K.8.0 [**Personal Computing**]: General - *Games*

INTRODUCTION

The Massively Multiplayer Online Role-Playing Game (MMORPG aka MMOG) is now a familiar site for HCI research thanks to the pioneering work of Ducheneaut, Yee and others (e.g., Ducheneaut et. al. 2006). Less familiar to HCI researchers is the First-Person Shooter (FPS) which are discontinuous action-orientated combat games. Taken together, the MMOG and FPS genres include most of the major, commercially successful multiplayer online games of the past decade. In both MMOGs and FPSs users typically form teams, the members of which communicate and cooperate to achieve game goals. Thus, the design of communication tools is likely to have an important influence over the usability and sociability of these virtual worlds (Gibbs et al 2006).

One established sub-genre of the FPS game is that infused with Zombie narratives, where survival-focused players battle non-player hordes of reanimated corpses. Recent blockbuster multiplayer titles, such as the *Left for Dead* series (2008, 2009), *Dead Island* (2011) and various *Call of Duty* add-ons (2008, 2011) offer an online collaborative experience where multiple players team-up to survive. A recent release, *DayZ*, integrates the persistent quality of MMOGs with the action of survival FPS games - with a twist; in *DayZ*, there are no teams.

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In the persistent, zombie-plagued virtual world of *DayZ*, players enter as individuals and are forced to survive in a hostile, player-versus-player (PvP) environment. While players can form ad-hoc groups to achieve goals, these groups are not recognized by the game software, and unlike in other online games, the members of a group are not prevented by the software from turning on each other. While there is motivation to form cooperative groups, there is also motivation to betray one’s group-mates. Thus many interactions in *DayZ* appear to take the form of the Prisoner’s Dilemma.

We argue that two *DayZ* voice features in particular enable the unique forms of interaction we will discuss below. Voice is both unrestricted in that any user can speak with any other user, and proximity based, in that users can only communicate when their avatars are near each other in virtual space. Together these features allow unplanned interaction between players. This sets up the series of social dilemmas that characterize the user experience of this ruthless virtual world.

Consider for example this fragment of game-play,

> *“we had some awesome stuff, 2 pistols, heaps of meds, then we saw a dude with no weapons. He asked if we could give him a blood transplant so we figured we would, then as we were picking up the blood bag he went into our pack, took our stored pistol and shot us..... MOTHER F*****R!!!!“*

We are conducting research into social interaction and game play in *DayZ*. Our methods include participant research, interviews and questionnaires with players and interviews with the game designer. This research relates to the broader question of why people choose a particular communication medium in computer-mediated environments, and the consequences of that choice for the nature of their subsequent interactions.

We believe that the design of voice communication systems has not been sufficiently considered by game developers. Very rarely does the design of voice communication stray from the commonplace 'two-way-radio' configuration. We argue that there is enormous potential for unique and interesting game experiences in further examining how communication is used by players and implemented in the game design.

VOICE IN VIRTUAL WORLDS

Voice communication has become almost ubiquitous in

online virtual environments over the past decade. Adoption of voice is mandatory in many online game groups. Prior studies have shown that voice improves presence (Halloran et al., 2004) and is better for trust development than text (Bos et al., 2002), and that users prefer voice for the rapid communication it affords during fast-paced group activity, and for the easy sociability it facilitates among groups of friends (Wadley et al., 2007).

However voice brings problems as well. A large number of users will congest a voice channel sooner than they will a text channel (Lober et al., 2007), and many of the messages heard by a given individual may not be relevant to them. It is difficult to monitor several voice channels at once, whereas users routinely operate several text channels. Voice channels are easily abused, and the emotional intensity and the immediacy of voice can escalate flame wars and damage team cohesion. Voice exposes personal characteristics such as age, gender, nationality and education level. This interferes with identity and role-play (Bartle, 2003) and since many find speaking with strangers uncomfortable (Wadley and Gibbs, 2010), leads some users to avoid playing with people they do not know. Exposure of offline characteristics can also enable offline prejudice. Female voice users in particular experience significant harassment and frequently choose not to participate in voice chat at all (Castell, 2012). Privacy can be damaged when sound from a user's physical context (e.g. speech of household members) leaks into the virtual world. Conversely, users may not wish their in-world speech to be overheard by those collocated with them (Wadley et al., 2007).

MMOG players typically only use voice with fellow team members, not with other players they encounter in their travels within the virtual world. Wadley et al. (2007) found that some MMOG players felt that new channel configurations such as 'proximity voice' would be needed in order for voice to be used outside of team channels.

In most virtual worlds, voice communication has been configured according to a 'two-way radio' metaphor, whereby members of a team can speak with each other regardless of their location in the virtual world, but are restricted to communicating with users on their channel. An alternative configuration is 'proximity voice', which simulates the passage of sound through air, requiring interlocutors to be within a short virtual distance of each other. This configuration is not channel-based and does not restrict conversation to one's own team members.

Proximity voice was implemented in the popular 'social' world Second Life (see Wadley, Gibbs & Ducheneaut, 2009), but despite considerable advances in consumer technology, has rarely been implemented in game worlds. However one experimental implementation in an FPS game was studied by Gibbs et al. (2006), who discovered that because game players could only hear messages from those near them in virtual space, proximity voice acted as a "filter for relevance", in that what was heard was more likely to reference nearby events and therefore to be relevant to the receiver. Proximity voice also influenced the way that players moved through the game world, leading them to "*play as a group in which they worked together, rather than as a collection of individuals who were notionally on the same team, but not engaged in collaborative play*" (Gibbs et. al. 2006, p. 100). This voice configuration improved player experience of the game as a collaborative, social engagement as more time was spent developing plans. The consequence was an increase in *shared experiences*.

One of the most interesting side-effects of proximity voice in a game setting is that it allows voice communication between players on enemy teams. Gibbs et al. (2006) found that users exploited this to taunt their enemies, and to distract them from nearby comrades. They also used it to spy on enemy conversation, and in turn to project misleading information when they felt they were being spied upon. One pair of users, knowing they were about to be attacked by a large group, ran around inside a building acting out different voices in an attempt to convince the attackers that there were more defenders than there really were. Our research into *DayZ* has uncovered other examples where communication design affords unique and enjoyable gameplay experiences.

DAYZ

DayZ is a persistent, massively-multiplayer, zombie survival first-person-shooter developed by Dean Hall as a modification ('mod') to *Arma 2* (2009). Since its release in early 2012, there have been over 1,100,000 unique players, and the game is rapidly growing in popularity.

Users begin the game with very few items in their inventory, and no weapons. Unlike most modern digital games, *DayZ* provides no tutorial, defined narrative or goals other than to survive. Users must scavenge weapons, food, drink and medication from zombie-infested buildings spread across a vast VW. A system known as '*the hive*' saves a user's character location and attributes between play sessions, developing a sense of *persistence* similar to that of MMOGs. The death of a character is permanent ("consequential"); the user can 'respawn', but they must start again with no inventory and all previous advancement lost. Many users attribute the increased drama and intensity of interactions to this feature, citing it as one of the draws of *DayZ* over mainstream titles.

If a player kills another player they can steal the victim's inventory, gaining significant advantage. Yet there is motivation to cooperate as well. The hostile game-world is difficult to negotiate alone and a few aspects of the game mandate collaboration, for example the blood transfusion item which must be administered by another player.

DayZ offers a proximity voice channel called 'direct chat'. Utterances are transmitted between players whose avatars are within 50 virtual metres of each other. Voice is directional (presented in stereo) and differs subtly in volume as interlocutors move closer or further away. When speaking through direct chat, a user's avatar also appears to be speaking (that is, its mouth moves), providing some accountability for use of voice.

METHOD

In our effort to understand the impact of voice technology on gameplay and game experience, we are collecting data using a variety of methods. Assisted by screen capture software, we have been playing the game and participating in a variety of group-play situations. We have also conducted a review of player-generated videos, stories and discussions and collected various reviews and comments posted by bloggers and game-press. A small number of players were also interviewed for this project.

We have also attempted to interview players in-game using proximity voice. In doing so, we encountered significant methodological issues that arose from potential participants killing the interviewer's avatar.

EMERGENT SOCIAL INTERACTIONS

We now discuss instances of game play that have occurred in *DayZ* which can be attributed to the introduction of unrestricted proximity voice communication. The purpose of sharing these scenarios is to illustrate the effect that the design of communication technologies has on the interactions that take place.

Adam Ruch (2012) recounted an experience which exemplifies the potential of removing restrictions on voice communication. Upon spawning, Ruch was set upon by a group of 6 heavily armed players voicing his name and the word 'slave' through the audio system. As they surrounded him, he was shot, and collapsed unconscious. When his character 'woke up', the aggressors explained; "*You are now our slave. If you follow instructions, you'll stay alive. If not, we will shoot you"* (Ruch, 2012). What followed was an hour and a half of captivity, where Ruch was kidnapped and forced to scout a zombie infested airfield for other players and supplies, until he and his captors were killed.

There are videos on YouTube and a large number of accounts on the *DayZ* forums where players have been robbed, and even forced to perform bizarre tasks such as answer trivia questions at gunpoint. One of the most popular *DayZ* videos on YouTube shows (from the perspective of the victim) an unarmed player being kidnapped and pitted in a one-on-one fight to the death for the enjoyment of a larger group of heavily armed players, in a makeshift ring of sandbags and razor wire. In these scenarios, the consequential nature of death played a significant role in the development of the interactions; 'weaker' players are forced to submit to the whims of more powerful players lest they lose their advancement.

Another video shows three players, heavily armed and flying a helicopter (a difficult, 'end-game' achievement) landing near a new user running from a zombie. These players shoot the zombie and the unarmed player boards the helicopter to "*welcome aboard!"*, and the players use proximity voice to introduce themselves, make jokes and talk about the game.

Unbeknownst to the player, the helicopter pilots are using proximity voice to 'grief' him, while simultaneously using another private channel for voice chat between the pilots. The griefers fly the user to a remote island and trick him into disembarking the helicopter, at which point they fly away, leaving the player stranded with no way to leave the island but starvation. The video is then captioned; '*best wishes from Shadenfreude Island'*.

The ability for any player to speak with any other, afforded by the implementation of unrestricted proximity voice, along with the absence of enforced team structures, has enabled these emergent behaviours.

More often than not, interactions are mundane. "*HEY, Don't shoot!"* and "*friendly, friendly!"* seem to be the ubiquitous first calls between users who wish to avoid a fire-fight. One player who we interviewed recounted an experience where they were unarmed and another player gave them a weapon before parting ways. This same player was later killed in a separate session when he gave away his hidden position by responding to introductions from another a group of players. As in Gibbs et al's (2006) study, players are creative in their use of proximity voice communication technology, often deploying it tactically in unanticipated ways.

Some users also appear to be using voice to add to the experience of other players and possibly to role-play;

> "*The first interaction I had via direct voice chat was someone recreating the noises from the Friday the 13th series of films shortly before they shot me*"

A popular video on Youtube shows a player on a bicycle using proximity voice to play the 1996 Chamillionaire song (tryin' to catch me) *Ridin' Dirty* as they ride past players in the VW. In these examples we see how novel technology like this can enable new forms of play unimagined in its implementation. Other players we have interviewed have spoken of a 'tension' that voice adds to the game experience

In addition to the proximity voice system provided, some players are using third party VoIP products such as Ventrilo and Mumble to establish extra communication channels. In one group play session, we observed 5 friends who utilized a third-party VoIP application as their avatars were not co-located in the VW. They used voice communication to coordinate 'meeting up'. Both the *DayZ* proximity voice feature and the third-party software these players were utilizing featured a 'push-to-talk' function. Relatively quickly, players began meeting up in the VW as they travelled to a central meeting location, at which point we observed players using the proximity voice chat feature to communicate spatially relevant information while they continued to use the third party application to chat, discuss previous play sessions and the ongoing game development. 'Push-to-talk' on both voice systems enabled them to be selective with their audience; enabling different channels for different purposes. While it appeared to be problematic (players often spoke over players they could not hear) the emergence of multiple voice channels is interesting especially in the context of Wadley et. al.'s (2007) finding that one of the advantages of text was its ability to support multiple channels for different communicative purposes.

DISCUSSION AND CONCLUSION

These vignettes of use illustrate that the design of communication channels profoundly influences the social interactions that occur within a virtual environment. Schroeder argues that communication medium design in virtual worlds is a "*technical as well as social*" decision: "*the options need to be implemented with certain forms of social interaction in mind, and obviously the options chosen will strongly shape the interaction between avatars*" (Schroeder, 2011 p. 199). Dean Hall has previously stated that his intent with *DayZ* was to design *authentic* experiences (Hall, 2012). The authenticity of the innovative and evocative experiences that we have observed is enabled by a combination of the "all-to-all" communication and freedom in player interactions. This shows that the choice of communication medium is not an isolated design decision but is inextricable from the technical component of user interactions.

DayZ is an immersive, ruthless game which can reward both cooperation and cheating. Without the proximity voice feature, the limited cooperation that does emerge between strangers would not be possible. The availability of communication enables an alternative to 'shoot-on-sight'. The proximity voice channel creates opportunities for richer social engagement between friend *and* foe, as well as offering new game play experiences and enhancing existing ones. We suggest that game designers, and the designers of other virtual worlds, should take the design of voice communication within their games more seriously and actively look at ways to enhance game play and social interaction that go beyond limiting chat to teams. While this seems obvious, very few modern games have moved beyond or built upon the 'two-way radio' voice configuration (Wadley et al., 2005).

As a 'mod' game, *DayZ* is in continual development; each update introduces new features and 'tweaks' the implementation of others. This offers a unique site for HCI research, providing data on the effect of minor configuration changes on user experience and practice. For example the developer has flagged the possibilities of an in-game radio item, enabling voice communication over a wide area – if the item can be found or stolen. We also believe that it is important to understand the impact of the stratification of users by communication medium; what impact does remaining silent have on the way a user is interacted with. We will investigate this as well as issues of technology adoption, privacy, and identity (particularly in the context of ruthless games). This research will lead to a better understanding of how the design of a virtual world's communication medium influences the social interactions that take place and contribute to the development of new technologies that make the social experience of VW games richer.

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