Changing the Rules: Social Architectures in Virtual Worlds

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Introduction

In the late 60s, Mischel (1968) sparked a debate in personality psychology by critiquing the reliance on trait-based frameworks of behavior. While the standard approach had been to measure stable dispositions (such as Extraversion), Mischel argued that behavior was largely determined by situational demands (such as being at a party). In the decades that followed, while there have been loud calls within the field to embrace an interactionist approach, research in personality psychology has still largely sidelined situational factors (Endler and Parker 1992) and has continued to focus on standardizing trait measures (Costa and McCrae 1985; Goldberg 1992).

Virtual worlds evoke this person-situation debate not because we are able to create impossible and fantastic scenarios, but because of the degree of control we are able to have over social interactions. Unlike the physical world, all the rules of social interaction in a virtual world have to be explicitly coded. These rules dictate the maximum size of ad-hoc groups, the distance your voice can travel, whether other players can hurt you, and the consequences of dying. As Lessig has noted,

> Cyberspace does not guarantee its own freedom but instead carries an extraordinary potential for control … Architecture is a kind of law: it determines what people can and cannot do. (Lessig 1999, pg. 58-59)

Indeed, we are not free to do whatever we want to do in virtual worlds, especially massively-multiplayer online games (MMOs). There are consequences to dying, and these rules vary from game to game. While we tend to think of altruism and gregariousness as personality traits, virtual worlds allow us to ask how the social architectures of these environments can be engineered to shape individual and community behavior.

In this chapter, I will explore two kinds of social architectures in virtual worlds. The first are *surface layer* architectures that are readily apparent to players in MMOs, such as death penalties. The second are *hidden layer* architectures that strategically manipulate the version of shared space players see. The discussion of these two layers will be driven by qualitative survey responses and findings from experiments in immersive virtual reality studies.

Surface Layer Architectures

In this section, we will consider the impact of two surface layer architectures on player behavior in MMOs—death penalties and third-party databases. Players who have participated in multiple MMOs were invited to participate in an online survey. Specifically, players were asked whether they thought varying game mechanics changed how players behaved in MMOs. A total of 225 responses were received. 69% of the respondents were men and the average age was 30.9. A grounded theory approach was used to identify common themes and ideas from the responses.

Death Penalties

While it is said that nothing is certain but death and taxes, the consequences of dying actually vary from one virtual world to another. Among the mainstream MMOs popular in the US (such as *World of Warcraft* [*WoW*], *EverQuest II* [*EQII*], etc.), game characters die when their health drops to zero as a result of combat damage, poisons, or falling from great heights. When characters die, a variety of mechanics may take effect depending on the game. In most games, the character's body (i.e., corpse) remains at the location of death and the player (in ghost form) has to travel back to their corpse to resurrect themselves. In some games (such as *WoW*), a moderate decrease is applied to

the durability of armor and weapons which players need to spend game currency to repair. A smaller number of games apply an experience penalty after each death. For example, in *EQII* and *City of Heroes* (*CoH*), you accrue a small experience penalty that increases the time to reach the next level. In the original *EverQuest* (*EQ*) a significant amount of experience was lost when a character died and in fact characters could lose their level by dying. And in very rare instances, death actually does mean death and the character is erased completely when it dies. This feature, known as perma-death, was applied in very specific cases in *Star Wars Galaxies* (*SWG*) and *EQ* for a period of time. On an abstracted level, most death penalties are essentially differing levels of time penalties (with the exception of perma-death); dying means spending an extra amount of time to catch up to where you were but nothing is lost permanently.

Of course, whether that amount of time is 2 minutes as opposed to 2 hours is experienced much more than simply a quantitative difference by most players. This is one of the more striking differences when comparing earlier MMOs (such as *Ultima Online* [*UO*] or *EQ*) and more recent MMOs (such as *WoW* and *EQII*). Earlier MMOs tended to have much more severe death penalties and these changes over time are quite salient for players who have played multiple MMOs over the years. For example, item decay existed in both *UO* and *EQ* and thus there was the possibility that a player might lose everything they owned if they did not retrieve their corpse in time. Moreover, in *EQ*, players had to retrieve their corpses while naked (as opposed to ghost form in *WoW*). Since players are more likely to die in dangerous places, corpse retrieval while naked was often difficult and resulted in dying again. As the following players note, death in the earlier MMOs was a very costly mishap.

> You could play for six hours and lose all the progress by dying twice. You could log in and log off with less than you came on with. [F, 25]

> People would sit in front of their computers for hours, waiting for a cleric to come to their zone and rez them, because they knew they'd have to play for days to make up for the massive amount of Xp loss if they didn't bother with the rez. [F, 39]

In contrast, dying is almost light-hearted in comparison in the more recent MMOs. As one player puts it,

> In subsequent games, I have found it absolutely does not matter if I die. Really, who cares about some repair bills and some dread, or decreased experience gain for a short time? Running naked after your corpse in a dungeon? Potentially losing all your equipment if your corpse decayed or losing a level? That was a penalty. [M, 31]

The severe penalty of death affected player behavior and attitudes in several ways. First and foremost, it made everyone value being alive much more and this in turn created a sense of danger and risk in the world of *EQ*. In comparison, the world of *WoW* feels almost rubber-padded.

> I remember working for two weeks in the original EQ to get to level 5. I finally got brave and wandered a few hundred yards away from the guards in Kelethin and promptly got lost in the fog. I was soon attacked by several level 8 mobs and died. I've never experienced that level of fear and concern as I searched frantically for my corpse. I currently play WOW and enjoy it for the most part. However, there is no need to ask for help as the game does 90% of the work for you. In some ways I like that, but at times I really wish someone could come up with a way to recapture the original spark that kept me playing EQ for close to five years. [M, 39]

> The harsh 'sting' of death in those games really made your heart pump during fights and a rush when you killed someone and took their loot. [F, 48]

This pervasive sense of danger in these earlier worlds also contributed to a higher level of willingness to help each other. After all, players understood the burden of death and, more importantly, all players knew that they too would need help one day.

> Finding someone who could rez or summon your corpse or someone to help you retrieve it was key. People helped others because they knew they themselves would probably need similar help later. [F, 21]

> This harshness also fostered a desire for players to actually help each other out in these situations since everybody knew how much death sucked and that by helping someone recover their corpse/experience that person might be willing to help you out in return someday if you ever wound up in the same position. This often led to forming relationships with other players and even getting a guild invite from helping out others. [M, 29]

> Guilds, even enemy guilds, would help each other recover from bad wipes because they knew that there were occasions when they would need help. This helped to mitigate annoying behavior since you knew you may need to work together at times. [M, 42]

Thus, it's not surprising that many players found that death in the earlier games was a bonding experience. The shared crisis and aftermath created salient memories for everyone involved.

> While I'm glad the severe death penalty has been removed from EQ, I think it helped my character bond with her friends. I'm still playing with the same folks I met 8 years ago, and we often talk about the dreaded CRs (corpse retrievals) we went through, especially one in Chardok that lasted hours. [F, 39]

> As much as I hated corpse runs back in old EQ, having to run naked from Fironia Vie to Chardok with a coffin to have my corpse summoned after a raid wipe with my guild was a bonding experience. [M, 20]

Of course, not all players felt that the severe death penalties improved social interactions and social bonds. Some felt that the penalties involved simply prolonged the search for blame when death did occur.

> When a group dies it often becomes a blame game. In games with more severe penalties (e.g. AO's XP-loss) the group first spends 5 minutes to decide who's fault it was, that person then complains for 5 minutes and tries to blame another, which turns into another 5 minutes of the group either ganging up on the second blame-victim or telling the first one that he's a noob and should not even be playing... so after 15 minutes all tempers are flaring, many feelings are hurt and the group falls apart. [F, 33]

Others felt that the death penalties stressed players out so much that the game became too emotionally draining.

> I've had mostly negative experiences with that. I mean that no one wanted to go out fight monsters if the party was not perfect, and people would get very upset if someone died. [F, 26]

While it may be tempting to believe that more severe death penalties improve social bonds by encouraging players to trust each other in a dangerous world, perhaps it's more accurate to say that the penalties heightened the emotions in play among players—both the good and the bad. From this perspective, it's not that the more recent MMOs provide poor platforms for social bonds as much as that the casual death penalties might have dampened the emotions among players because there is both less to gain in helping someone and less to lose if you are not helped.

Information Access

Social architectures are usually in the control of the game developers, but it is possible for third-party architectures to become part of a game. This is partly because much of game-play in a sense already exists outside of the virtual world itself. In a survey from the Daedalus Project (Yee 2006b), it was found that MMO players spent on average 3.5 hours each week looking for game-related information, another 3.6 hours each week reading or posting on forums. And players who belonged to guilds (87% of the sample) would spend another 2.7 hours each week in their guild's website in the forums or managing guild-related tasks. In other words, the average MMO game spends about 22 hours in the game (Yee 2006a), but also an additional 10.8 hours in the meta-game.

In the case of *WoW*, the game developers have provided the game community with a modifiable interface via a scripting language. This has allowed players to create

tools that overlay the game as well as extract information from interactions within the game. Examples of overlay interfaces are tools that provide custom visualizations for specific game roles, such as timer bars for different healing spells. And one example of an extraction interface is the census bot that PARC's PlayOn group created to collect longitudinal behavioral metrics from the game (Ducheneaut, Yee, Nickell, and Moore 2007; Ducheneaut, Yee, Nickell, and Moore 2006).

One very well-known extraction interface in the *WoW* community is ThottBot. Once installed by players, the add-on automatically tracks everything a player does and relays that information to a third-party database. Aggregated over time, the stored information is accessible from a website (located at www.thottbot.com) that provides players with a collective intelligence in reference format. Players can look up a quest and find the location on a map where the requisite items are located. If the quest involves killing a monster, a map shows its wandering range and the database shows the percentage likelihood that the monster will drop it needed item. Players can alternatively search for a needed item and view all monsters that drop it or the chain of quests that lead to the item reward. And every element has its own player comments field to allow for discussing tricky strategies or confusing parts of a quest.

The accessibility of information is also something provided in-game to a lesser extent by game developers. For example, computer-controlled guards in large cities in *WoW* provide directions to points of interest. Also, quest givers and rewards are highlighted in the player's mini-map to ease way-finding.

> You'd be hard-pressed to find any aspect of WoW that isn't well-documented online somewhere, complete with video footage and everything. [F, 33]

This is in stark contrast to the earlier games such as *UO* and *EQ*, before the Web 2.0 sensibilities of cross-referenced databases of aggregate information, where the information was much harder to find.

> When I was playing EQ years ago, there were websites with game info out there, but they were always incomplete. Unlike with WoW today, I couldn't always find out what I needed to know. [F, 33]

It is easy to assume that third-party databases are an information source and thus add to any existing social system. The things that these information sources take away from social systems may be less obvious at first glance, but by providing a centralized information source, these databases removed the primary method for gathering information before—by interacting with other human players.

> There weren't places on line you could go to get all the answers, you had to ask other players. There was a lot more give and take. [M, 29]

> I much preferred the early days of MMOs when all the information you ever needed wasn't available on a website. It meant players actually worked together, spoke and chatted lots in the general channels about things directly related to the game and helped each other with quests. [F, 38]

As other players noted more explicitly, these social interactions could have led to friendships forming. After all, the more opportunities that players have to interact with each other, the more likely that a social bond forms.

> It does affect the number of relationships formed in-game. Without it, the player offering help will probably have to explain things to the one asking for it, but with it he'll just give a link. [M, 20]

> If people were more willing to answer questions, it would be a great conversation starter and there would be more friendships forming. [F, 26]

These third-party databases do not only provide a centralized information source, interactive add-ons that dynamically read in data from these databases provide in-line help within the game itself. For example, an add-on known as QuestHelper analyzes all

the active quests a player has and calculates the most efficient path and order that they should be completed. Quest-related items and monsters are marked on the map to guide the player along. By providing all the answers to players, these information sources gradually took away the sense of adventure in more recent MMOs. As I've argued elsewhere (Yee 2006b), modern video games are essentially work platforms that slowly train game workers to play more and more efficiently. Add-ons like QuestHelper are part of this transformation that renders adventure into task completion using a personal information manager.

> Maps, databases, etc. have taken the mystery out of playing. While it saves time and minimizes frustration, I think in doing so, they've also killed a big part of what makes the games exciting. Yes, it's nice to see what the quest reward is going to be, but it removes any surprises you might have had. Adventuring, finding things out for yourself, discovering things, etc. is a huge part of what makes games fun and interesting. It saddens me that to really enjoy a game, you have to make a conscious effort to avoid or ignore all the tips and info available. [F, 40]

> I think thottbott has created more of a Task-oriented game world. I have a quest, look up where to go and what to do, complete, get a new quest. As a result the 'discovery' aspect of the game has lessened significantly. [M, 42]

More than simply removing the need to ask other players for directions or help with quests, these information sources also shape the cultural norms within MMOs. Given the easy access to information, asking for help becomes almost anachronistic and frowned upon.

> In the old days, asking questions and, if you didn't know the answer, helping the person find the answer was part of the fun of the game. Helping total strangers with quests or helping them with their character's profession was fun and you made new friends. Then the age of the 'l33t' speakers came and if you asked the wrong person a question you were criticized and called a 'noob.' [M, 42]

> There was a lot less online arrogance and apathy back then, and a much broader sense of community. Todays MMOs have information almost forced upon you.

> Standard responses to questions in the general channels online are 'look it up' or 'check thottbot'. [M, 33]

Reading between the lines, these third-party databases have created a culture of self-reliance in contrast with a more open community of assistance in the earlier MMOs. And in a sense, the ability to ask for help is the inverse of altruism. Players can't help each other if the cultural norm is to not ask for help to begin with.

Hidden Layer Architectures

As opposed to the surface layer architectures which involve rules and information that are easily accessible and understandable by players, hidden layer architectures work behind the scene. In virtual worlds and any collaborative virtual environment, all interactions (non-verbal and verbal) are mediated by the computer system. And thus, all interactions can be strategically filtered or manipulated by the system without the interactants' awareness. These strategic filters have been referred to as Transformed Social Interaction (TSI, Bailenson, Beall, Loomis, Blascovich, and Turk 2004). One simple example would be performing simple linguistic analysis and adding the word "please" to all questions. As a more interesting example, given that eye gaze influences persuasion in social interaction, we might engineer a virtual world where a virtual presenter could maintain eye contact with every member of the audience at the same time (Bailenson, Beall, Blascovich, Loomis, and Turk 2005). This is possible because every audience member sees the virtual world from their own computer display and these versions of reality need not be congruent. Below, we'll discuss several findings from experiments that have explored how TSI can be used to change how people behave in virtual environments.

Facial Similarity

Two related well-known preference cues in the psychology literature are familiarity and self-similarity. People prefer familiar things over less familiar things (Zajonc 1968; Zajonc 2001). Our own faces are objects that we, over a lifetime, become intimately familiar with. And thus the ability to subtly transform someone else's face to resemble our own might trigger these familiarity preferences. Similarity-based attraction and preference have also been well-documented. Individuals who are similar to us, whether in appearance or beliefs, are rated more positively, perceived as more attractive, and rated as more persuasive than individuals who are less similar to us (Berscheid and Walster 1979; Brock 1965; Byrne 1971; Shanteau and Nagy 1979).

Thus, the ability to manipulate another person's face to be more similar ours would appear to improve our impression of them, based on both the familiarity and self-similarity effects. Of course, such a transformation would be difficult to achieve in the physical world. Digital tools of image manipulation, however, have over the past decade become widely available and affordable. Software, such as the commercially-available Magic Morph, (iTinySoft 2002) allows the composition of two separate faces at a user-specified ratio. In other words, it has become possible to specify faces that contain a 20% or 40% contribution from another target face.

The impact of this facial-similarity manipulation has been tested in a series of studies in voting behavior (Bailenson, Garland , Iyengar, and Yee 2006; Bailenson, Iyengar, Yee, and Collins 2008). In both sets of studies, participants were asked to rate political candidates who either had or had not been morphed with their own photographs. Participants were also asked whether they would vote for the candidates. One study used an undergraduate sample, while the other study used a sample of nationally-

representative voting-age citizens. The results of both studies showed that facial similarity is a powerful cue, changing voting behavior even in high-profile elections where a great deal of other information and partisan biases exist, such as the 2004 presidential election. Most importantly, in these two studies with over 700 participants altogether, no participants detected the self-similarity manipulation.

Of course, in an MMO, we do not have access to player's photographs, but familiarity and similarity cues might work at other levels of specificity. For example, if we could deduce a player's approximate age from their in-game behaviors, then we could morph avatars that player interacts with a standardized photograph of a younger individual. The same could be done with ethnicity or gender. An interesting research question is whether such a method might create stronger social bonds at the community level.

The Proteus Effect

The fluidity of our digital bodies opens up the question of whether the avatars we employ in virtual environments change the ways we behave. While behavioral confirmation (Snyder, Tanke, & Berscheid, 1977)—the process of changing our behaviors to conform to the expectations of others—provides one potential pathway for avatars to change how a person behaves online, might our avatars change how we behave independent of how others perceive us? Another line of research suggests that behavioral modifications can occur without interaction with a perceiver. Bem's self-perception theory (1972) suggests that people infer their own attitudes from observing their own appearance and behaviors. For example, participants given black uniforms behaved more aggressively than participants given white uniforms (Frank & Gilovich, 1988). And in a

teacher-learner paradigm with electric shock as punishment, subjects in costumes that resembled Ku Klux Klan robes delivered significantly longer shocks than subjects in nurse uniforms (Johnson & Downing, 1979).

In the same way that uniforms in the physical world are a transformation of visual representation, digital avatars provide a means for more specific and dramatic self transformation. Thus, we might expect that our avatars have a significant impact on how we behave online. In other words, users in online environments may conform to the expectations and stereotypes of the identity of their avatars. Or more precisely, in line with self-perception theory, they conform to the behavior that they believe others would expect them to have. This process has been termed the Proteus Effect (Yee & Bailenson, 2007).

In two studies conducted in an immersive virtual reality setting (Yee & Bailenson, 2007), a participant's avatar was shown to directly impact his or her behavior. In the first study, participants were given avatars that were either pretested to be attractive or unattractive. Studies have shown that attractive individuals are perceived to be friendlier and more extraverted (Dion, Berscheid, & Walster, 1972). The study found that participants in attractive avatars walked closer and disclosed more information to a confederate stranger than participants given unattractive avatars. To ensure that behavioral confirmation was not a factor, the confederates were blind to condition and always perceived the participants to be of average attractiveness.

In the second study, participants were assigned to either tall or short avatars. Studies have shown that taller individuals are perceived to be more confident than shorter individuals (Young & French, 1996). The study found that participants with tall avatars

were more competitive in a negotiation task than participants with short avatars. Again, the confederates were blind to condition. Thus, these two studies show that the appearance of avatars can directly change how a user behaves in a virtual environment.

In the context of virtual worlds, these findings suggest that avatar design in and of itself could come to shape social interactions at a community level. In the same way that the virtual world *There* only allowed youthful, athletic avatars to be created, we might examine what the consequences of only providing attractive avatar options might be. Or, to be more devious, one could apply a behavioral confirmation strategy. When player A using a dark, mean-looking avatar interacts with player B, player B sees player A as an attractive and well-dressed avatar. Might behavioral confirmation lead to more positive social interactions via reciprocity? Of course, the theoretical question of pitting behavioral confirmation against self-perception theory is interesting in and of itself.

Ending Thoughts

The fluidity afforded by virtual worlds isn't only about users customizing avatars and creating their own cities. In a more interesting way, this fluidity also allows virtual world designers to influence and shape how people behave in these worlds via social architectures. These architectures can be on the surface and revealed to users or hidden and used to intercept and manipulate data by the computer system. Survey responses from MMO players provide some initial evidence that varying the severity of death penalties and the accessibility of information can influence how people interact and relate with each other in a virtual world. And findings from experiments show that subtle changes in an avatar's visual appearance can change how people interact with other.

As tantalizing as the survey responses were, it is impossible to pinpoint any sense of causality or quantify the effects. Using the existing games as data points, it would also be difficult to isolate the effects of particular mechanisms because the comparison of any two existing games always involves a difference in more than one mechanism. Any game like UO, EQ, or WoW vary on many variables at the same time. And when comparing earlier MMOs with more recent MMOs, it would also be difficult to tease out the potential generational or attitude changes that may have occurred over time. On the other hand, it is precisely virtual worlds that offer the potential of living laboratories—using virtual worlds to study these questions on a level (community vs. individual) and scale that would not be possible in traditional laboratories.

We often think of virtual worlds as digital frontiers that we can build and shape with our unbridled imaginations, and yet, the creation of virtual worlds requires the articulation of rules and laws and constraints that surpass the typical organization of social groups in the physical world. When we organize parties in the real world, we don't need to have rules for the distances our voices will carry, whether two people are allowed to share the same pie, or what the consequences of dying might be. In MMOs, however, all this needs to be spelled out in excruciating detail. And those details in turn affect how players choose to interact and relate with each other. Those details partly determine what social norms emerge. So far, we don't have a good vocabulary or framework for talking about social architectures in virtual worlds. Thus, while we might think that virtual worlds are something that we make, I think the far more interesting question is what virtual worlds make of us.

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