Computers, Storytelling and World Creation --- The Reader as Writer in Multi-Participant Interactive Fiction

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Foreword

When I first encountered an article about the original Essex Multi-User Dungeon in a magazine at the age of 14 I was so thrilled that I started coding my own version at once. I hacked the first version in the horrible GW-BASIC, then Pascal and eventually in C. The Pascal version became a program called PCMUD which ran a short time, some years after I had finished the system, on the local area network at my school. Ever since then, I have been very interested in hacker culture, computer-based interactive media and text based multi-user ``games''.

I would like to thank those that have read the thesis while it was being composed; my advisor Martin Kylhammar at Link\"oping University, Sweden, my Quebecois friend Guy Isabel at McGill University, Quebec, still part of Canada and Shawn Wilbur at Bowling Green State University, USA. I would also like to thank Tore Berglin, system administrator at Bromangymnasiet, Hudiksvall, who unknowingly and certainly most unwillingly, inspired me to explore the art of network programming. Thanks also to Helena, my wife, for so many evenings that have gone by with me in front of the terminal.

--- Mikael Cardell, Linköping, October 13, 1994.

Introduction

Interactive fiction, literary text mediated through computers, has been with us for the last 20 years, (See section one for a discussion of the origin of MUDs.) but has received little or no attention from the literary establishment. I want to contribute to a change with this thesis, where I am going to focus on the reader creating a world through storytelling and coding in multi-participant interactive fiction. In the text, the word ``world'' is used in the meaning of a complex system where interdependence rules.

What I call ``multi-participant interactive fiction'' is generally known as MUD, or Multi-User Dungeon, named after the first program in the genre. The first MUD ran at Essex University in 1979 and was very limited compared to the programs I will use as examples in this thesis. (To my knowledge, the last real MUD ran on AIDA, a DEC 2065 at the Update computer club at Uppsala University, Sweden. However, when AIDA was turned off in March 1994, the last real MUD went down with it. Since I had an account at AIDA I was able to try out the original Essex MUD before the machine was turned off.)

My Aims

The main idea behind the thesis is that a literary world, as well as a MUD world, is designed to create a pact of trust with the reader and that a story set in the world rely on it for the credibility of the story. Because of this I will look, very shallowly, into both how a MUD world is built and designed and how a traditionally literary world, that of Tolkien, is designed. After that I will look into the storytelling that takes place with the world as its background, which is what this thesis is about.

In this text I will focus mostly on the role of the reader as writer in MUD-like systems. I will show how the reader, or participant as I

choose to call him or her, builds the world by either explicitly creating objects or by being a part of the world as a character and telling stories to other participants. I will discuss creative, realtime storytelling where parts are created for all present participants, a phenomenom that is very common, as well as taking a quick look at the creation of inherent plot --- quests --- within a MUD world.

To place the storytelling in perspective I will also look into the overall plan of creating entire imaginary worlds and compare it with that of a famous earlier creator of worlds --- J.R.R. Tolkien. I will try to show that the worlds are built in much the same way and that both, in fact, together with the stories that are set within them, are literature and that they form a natural, and necessary, background for the storytelling that takes place within them.

The Thesis

The thesis will start with a section concerning the origin of MUDs and a short history from the original MUD at Essex University to the current programmable environments. After that I will look into the creation of a MUD world and compare it to the creation of Tolkien's literary world and to what Tolkien had to say about such worlds.

Section three will discuss the role of the reader as an author, more participating in an authoring session, and thus creating the world, than reading. The concepts of storytelling and character interaction will be highlighted.

Before I present my conclusions I will look into the possibilities for social and psychological experiments within a MUD-like environment and hence add to my theory about the MUD participant as a writer. I will also discuss the role playing in the encounters between characters and the relation between the participant's real world identity and a possible role playing identity.

At the end of the thesis I have included a glossary of special words that I use throughout the thesis. Since this thesis is mainly intended for readers with a background in the study of literature, most of the words in the glossary are computer related.

Literature

The most relevant material regarding traditional fantasy worlds will be taken from Tolkien's appendices to _The Lord of the Rings_ and from his famous essay _On Fairy-Stories_. I will also use comments added by such noted Tolkien scholars as Paul Kocher and Randel Helms. Other material will be taken from _Tolkien and the Critics_ where several critics comment on the achievement of Tolkien.

Most of the history of adventure games will be taken from _Interactive Fiction_ by computer scientist Phil Goetz, but the more MUD-specific information will be taken from the original MUD creator Richard Bartle's _Interactive Multi-User Computer Games_, the MIT Media Laboratory researcher Amy Bruckman's _Identity Workshop_ and the Xerox MOO creator Pavel Curtis' _Mudding_ and an essay called _MUDs Grow Up_ co-authored with David Nichols, also at the Xerox Palo Alto Research Center. I will also use an article by Professor Norman Holland in _EJournal_ to place this kind of interactive fiction in a literary context.

I will use material from the latter four texts and from _Electropolis_ by the historian Elizabeth Reid and a thesis on human interaction in electronic media by Jill Serpentelli to form my opinion on the behaviour of the participants in a MUD-like system.

LambdaMOO Programmer's Manual will be used to investigate how MUD objects can be programmed and logs taken from actual MUD and MOO sessions, conducted by myself and others, will be used as examples.

These examples have been slightly edited, and it should be remembered that I have edited out all the commands I have given and only included the results to get a better flow when reading the text. It is my experience that this is how I experience it anyway --- the commands are simply not there when you are visiting a MUD.

All names of actual participants in the logs of MUD sessions taken by me have been changed. However, the names are coherently shown so that a name I have chosen follows a particular character whenever he, she or it says or does something.

A Short History of MUD

Interactive Literature

All literature is in some way interactive, with the reader interpreting the text, given his or her background, reading habits and education. However, interactive literature, meaning that the reader has the possibility to change the course of the story, is rather new. Jorge Luis Borges described an interactive story, based on what is now called hypertext, as early as 1941 in _El jardin de senderos que se bifurca_ (Goetz 93:1). Since then, this type of interactive literature has gone over educational textbooks and juvenile adventure stories into the realms of computers.

In early 1977 the first computer adventure game, as we now use the term, was finished by Willie Crowther and Don Woods. Their adventure game, written in the FORTRAN programming language (See the glossary.) was simply called _Adventure_ (Goetz 93:3). It was not really interactive fiction, because there was no real plot --- you basically had to explore a colossal cave and bring back whatever treasure you could find. However, since nearly every site of the ancient ARPANET had a FORTRAN compiler the adventure was quickly spread to a huge audience and it was therefore an important step towards true interactive fiction.

With the event of _Zork_ that appeared not long after the original, apparently as a reaction to _Adventure_, real interactive fiction seemed to be possible. The new game was crafted by Tim Anderson, Marc Blank, Bruce Daniels and David Lebling of the Dynamic Modelling Group at the MIT Artificial Intelligence Laboratory. This is what _BYTE Magazine_ had to say about the later, but essentially same, microcomputer version of the game:

> That the program is entertaining, eloquent, witty, and precisely written is almost beside the point. Unlike the kingdoms of the Adventures for machines with 16K bytes of memory and far from the classic counter-earthiness of the Colossal Cave in the original Adventure, Zork can be felt and touched --- experienced, if you will --- through the care and attention to detail the authors have rendered. [...] [A] most excellent and memorable work of computerized fiction.

(Goetz 93:5)

Multi-User Dungeon

When interactive fiction and adventures had reached the realms of computers it was not long before people started to long for a possibility to play the games with several other players present in the same world at the same time. This longing eventually evolved into action and in 1979 Roy Trubshaw, and from 1980 also Richard Bartle, started coding on the original MUD at Essex University, UK (Bartle 90:6).

The original MUD was written in an interpretive language called MUDDL, but was not expandable from within; to change something you had to go outside the game and rewrite the source code. However, more scenarios

than the original fantasy setting evolved, using the same interpreter. Dr. Bartle writes about scenarios covering Fraggle Rock, Essex University Computing Department, various Science Fiction worlds and more Fantasy settings, other than the original. However, none of these alternate scenarios were available for public players who could reach the MUD through what then was the PSS. (A public packet switching computer network in the UK.)

After the original Essex MUD, the history forks into two paths; one covering the more adventurous playing-oriented style of the original and one covering the creative object-creating style that goes back to the TinyMUD system.

Programmability

TinyMUD, one of the first systems to allow user extendability, was originally written by James Aspnes to be a game, of a sort. The original setting enabled a user to build objects such as rooms and things and to connect exits from one room to another if, and only if, the user had enough MUD pennies to do so. The intention of the game was that users would collect enough pennies to build something by solving quests and offering things to MUD gods.

After having had TinyMUD running for a while, objects with extreme values were created, in the long run enabling everyone to create objects freely. The intention of the game was lost and it was no longer a game, but a place where people could let their creativity roam free to create worlds of their own (Bartle 92:80 and Bruckman 92:7--10).

In the original TinyMUD any object could be created, but they could not be given any sort of ``behaviour''. For instance, in my own TinyMUD I created a Japanese tea-garden with a small hut that would be my, Teakettle's, home. These things are easy to create, even to a non-programmer, and mostly involves prose descriptions. However, some of the players of the original TinyMUD were very frustrated by these limitations and quickly hacked the driver to incorporate real programming languages for object design. Hence the development of programmable systems like TinyMUCK by Stephen White and TinyMUSH by Larry Foard, both decendents of TinyMUD.

LPMUD and Wizards as Janitors

Another interesting system was developed by Lars Pensjö at Chalmers Academic Computing Society (Chalmers datorförening, CD) in Göteborg, Sweden. The system, known as LPMUD after the primary author, was basically a compromise between the egalitarian TinyMUD and the original MUD. LPMUD was user extendable, using a C-like language (See the glossary.) called LPC, but only wizards, players of an extremely high level, could use this programming language to create objects.

Putting a kind of editorial function on MUD wizards is a good idea, according to Richard Bartle (Bartle 92:77). Now existing LPMUDs have often more control over worldbuilding and can at least guarantee some kind of world coherence. MUDs based on the TinyMUD system tend to be, by comparison, very chaotic.

The idea is that a wizard, who can be said to have ``won'' the game, is competent enough and have gained enough experience through his or her extensive playing to create new areas in the MUD. However, to keep the wizards from creating objects with extreme values or extreme abilities, most LPMUDs also have arch wizards, appointed by God, the holder of the system. Everything a wizard creates has to go through the arch wizard before players can use it.

Pensjö has left the LPMUD project behind and a team at the Lysator Academic Computing Society at Linköping University, Sweden, has taken over the development. The LPMUD driver has changed a lot since

Pensjö's time and there is now even a stand-alone LPC interpreter called LPC4. (Taken from personal communication with Fredrik Hubinette, one of the principal programmers of LPC4.)

\subsection{Object-Oriented Systems

Another recent system is the Xerox MOO. MOO stands for MUD, Object Oriented and the name gives a hint on how you program the system. Really, an object-oriented MUD, in a programmer's sense, is nothing new. LPMUD's LPC can also be said to have classes and inheritance, basic traits of object-oriented languages. However, MOO is still something new, especially if you take into context what the creators intended MOO to be.

MOO is by far the most ``serious'' MUD-like system so far, even considering that the original MUD was intended as an experiment in artificial intelligence. Pavel Curtis, the principal creator of MOO and the holder of the LambdaMOO world, (Available at lambda.parc.xerox.com 8888.) writes about the new communication medium in _MUDs Grow Up: Social Virtual Reality in the Real World_ (Curtis & Nichols 93). In this text the authors describe new uses of a MUD world and several projects for computer-mediated communication at the Xerox Palo Alto Research Center that intend to use the Xerox MOO system. If what Curtis and Nichols describe in that article works out, a lot of us will be working from home through MUD environments in the future, using this no-longer imaginary world for interaction.

World and Object Creation

The original MUD could not easily be expanded from within (Within, in this context, simply means that a user can change the behaviour of MUD objects while still being present in the running MUD system and seeing the change affect the world at once.) by players, although its source code could be changed to include new scenarios other than the original fantasy setting. This has changed with the event of programmable MUDs, most notably systems like LPMUD, Xerox MOO, TinyMUCK and TinyMUSH.

In this section I will look slightly at such questions as ``How do you create a MUD object?'' and ``Can object design be compared to writing?'' I will also try to set MUD world building in a literary context and compare it to the more traditional imaginary world of J.R.R. Tolkien. With that I want to show how the world itself creates a ground of credibility for the stories that take place within it. The concept of ``Secondary Belief'' is introduced.

Object Creation

A MUD object can best be said to consist of two things; a prose description and code that defines the behaviour of the object. These two are very close to each other and it can sometimes be hard to distinguish what is code and what is descriptions --- after all, things can be described by their actions.

Often, however, the actions of an object are described in prose whenever they occur. Less often, objects just act without telling. This is, for instance, the case with invisible players. What is produced from the behaviour of objects is therefore usually literary texts, that deal with descriptions of a virtual world.

A MUD is simply a database of facts, concerning the MUD world. When something happens in the world, the database is manipulated. This means that something really can happen in this world, it is not just described by text _as_ happening, it _is_ happening, to the MUD database --- to the virtual world.

Objects in a modern MUD world contain code that define their behaviour. The code can, for instance, look something like this:

```
return pass() + " It is " + (this.awake ? "awake." | "sleep\-ing.");
```

which excellently, although shortly, demonstrates how an author goes about describing a particularity in an object. In this case if it is sleeping or not.

This single line of code is taken from an example of the MOO programming language (Curtis 92:40). It calls the {\tt description verb of the parent object (See _inheritance_ in the glossary.), using a function called pass(), and then appends a text string describing if the current object is awake or asleep.

In MOO, every object, except the original parent object, has got a parent. When the verb description is called for, the object normally has code corresponding to that verb. If it does not, the pass() function is used to execute the description verb of the parent object. In this case, however, both the description of the parent and of the initial object are shown to the participant.

I will not go into any more detail on how to program MUD objects since this is not what I intend to do here. I trust that the reader can find out how to program objects much better elsewhere. (See References.)

The role of the author when designing MUD objects is somewhat like that of a playwright. Like the playwright, the author does not have full control over the actual play when it is carried out on stage. The author can simply try to foresee what the participants will make of a certain scenary. He builds the skeleton of a story, a script of code and prose.

When the actors, the MUD participants, come onto the stage they, as much as the author of the scenery and the objects that surround them, are active writers, creating the story as they act out on the virtual stage. These are indeed the traits of an alternative world, that man can enter into.

Both the code and the prose in such a literary skeleton can be said to be literature, and I am not alone in saying so; as a _BYTE Magazine_ columnist wrote in a review of a series of books by Knuth on the TeX document formatting system: (TeX is, incidentally, the same program used to format this document, through the use of the LaTeX package.)

> I think that there is [a reason to publish large listings of programs]. Architects avidly study the works of their colleagues. Scientists turn to scholarly publications to examine the work of their fellows. Novelists read other people's novels. But when was the last time you studied someone else's program? [...] Knuth himself has long advocated _the concept of programs as literature_, and he now has a chance to to put his money where his mouth is.

(Hoenig 87:67, my italics)

With this, I want to point out that the _program_, the code itself, should be regarded as literature. When the human author has stopped creating text, and begun creating _ programs that produce text_, the program itself takes on the role of literature. Writing is now meta-writing, a creation of entire worlds that describe themselves to a reader.

Objects, World Design and Writing

Man is a maker of worlds, building worlds of belief for himself to enter. All human knowledge is formed into worlds, into systems, where every theorem is true as long as it is derived from the rules making up the system. Whether the system mimics the behaviour of a natural system, such as the world we mostly call our own, is of no importance to the truthfulness of these theorems.

The world of physics, that of language, mathematics and computer science are, to some extent, known to us all. All these, and many more, are worlds formed by man, and believed in by man. They are all models or imaginary _worlds_.

The world we most vividly can imagine is that of literature. Worlds explicitly created by great authors, like J.R.R. Tolkien, Lewis Carroll, Merwyn Peake and others, are among those which we can really see in our imagination. To be able to enter a literary world fully, however, we also need that basic belief which makes it possible for us to believe in any system or model.

The belief in an imaginary literary world is, according to my opinion, brought to us much in the same way as the belief in other systems --- through the truthfulness of the initial axioms. This means, simply, that what happens in the world, what is brought to us through the text of the author, has to be in accordance with the rules of the system. If they are not, the credibility of the world drops.

These axioms must be chosen to be in internal consistency with each other and be formulated so that they can be easy spotted by the reader. The reader must be able to look through the world to be able to see its credibility.

In saying so, I stand with great company. J.R.R. Tolkien himself talks about the establishing of ``Secondary Belief'' in the now famous essay _On Fairy-Stories_:

> What really happens is that the story-maker proves a successful ``sub-creator'' (As a Christian, Tolkien of course refers to the Christian God as the primary creator.. He makes a Secondary World which your mind can enter. Inside it, what he relates is ``true'': it accords with the laws of the world. You therefore believe it, while you are, as it were, inside.

Tree and Leaf p. 36, taken from Helms 75:84--85. (The only copy of _Tree and Leaf_ I had available at the time was included in the Swedish collection _Ringens värld_ (Tolkien 80) and instead of translating back into English I trusted Helms for this quotation.)

Helms, in his _Tolkien's World_, goes on to tell us that

> The reader of fantasy needs, in order to remain inside the Secondary World, not a negative suspension of disbelief, but a positive form of `Secondary Belief' that must be the product of the author's art.
>
> [---]
>
> The disciplined fantasist must, therefore, in order to maintain Secondary Belief, always keep an eye to the structural principles, the internal laws, of the world he is creating...

(Helms 75:85)

Paul Kocher in _Master of Middle-Earth_, on the other hand, points out that Tolkien takes on the role of the modern scholar, only compiling and editing things, not of his own creation, but something very old (Kocher 73:2). That too leads to the establishment of Secondary Belief. For instance, in the appendices to _The Lord of the Rings_ Tolkien is using a scholarly language when he explains phenomena in his imaginary world. The tone is that of a critical scientist:

> It is often difficult to discover from old tales and traditions precise information about things which people knew well and took for granted in their own day (such as the names of letters, or of the days of the week, or the names and length of months). [...] I am not skilled in these matters, and may have made many errors [...]

(Tolkien 66:385)

Just like the traditional literary fantasist, the author of a MUD, or an object, must restrain him- or herself to create something that is within cognitive reach of the reader. The secret is to keep the creation ``not too strange, not too common''.

The world, or a single object, is designed to invoke interest, but it must be comprehensible. It is essential that the structure of the world somehow be visible to the reader. The reader, or participant as I prefer to call him or her, must be able to rely on the world. Of course, for dramatic effect the author can sometimes change things as they are, but this must not happen too often, or the reader will simply lose interest. The act of creating a MUD world is therefore, because it relies on the same basic theories, as much world designing and literature as is the world of Tolkien.

The Reader as Writer

Participant Interaction

Many MUD-like programs are used more as a place where people can meet and interact than actually play a game where winning and losing is possible. This interaction, which of course mostly consists of written text, can be said to be a kind of creative writing or postmodern game. Most participants ``talk'' to each other by writing and make up long descriptions of their characters and their actions.

Objects, or the underlying MUD program itself, usually provide a number of ways for users to interact with each other. There is at least one way to communicate with other users in the same imaginary place, or room, as one's own character. Using this method no-one else but the characters, and objects, present in the same room will ``hear'' you. Often, there is also a possibility to yell something to the entire world, but using this method for personal communication is considered inappropriate behaviour.

Characters in a MUD-like program sometimes use gestures and other ways of interacting than ``speech''. The program often provide the possibility to ``emote'' something that will be visible to others. This emote capacity can be misused, so in some programs this facility is reserved for high-level users. In many MUDs, these high-level users create objects that users of the lower levels can use to interact with each other. A typical object might be a soul-addendum which gives a character the possibility to emote more specific feelings.

If it is allowed to emote freely, users type in what they want to emote and the text is transferred to the other present characters. Sometimes, automatic emotes are attached to the actions of going in and out of a room as well as teleporting. These often very personal text strings are written by the participant as a part of the character description. Here are some examples of emoting from _The Postmodern Culture MOO_: (Taken from a session on PMC MOO, hero.village.virginia.edu 7777, on August 31, 1994

```
Rodent is a psycho.
Rodent says, ``I mean a psychologist...''
Rodent bounces about happily.
Rodent says, ``Hilary's here! I get to go eat now!''
Rodent bounces about happily.
Terrible_Place comforts Deck and offers eir sympathy.
Rodent says, ``Bye, everyone!!!!''
Rodent waves and falls over.
Foobone [to Rodent]: see ya
Deck curtsies to Rodent.
Rodent hugs Mumrik with a warm and loving embrace.
By_My nods in agreement with Foobone.
Rodent goes home.
```

Descriptions

Pavel Curtis has described the number of ways a MUD participant has to describe him- or herself. The first way is to choose a name of some significance. Most MUDs have only one restriction in the choosing of a name; that it be unique. Curtis has even written about participants that complained to him about other participants whose name were too similar to their own (Curtis 92b:6-7). It is apparent that the choice of name, and the sticking to it, is very important.

The other way of describing the participating virtual character is the choice of gender. I will deal with this in a more eloquent way in a later section dealing with psychological and social experiments.

There is also the possibility of writing a more thorough description of the character, the description other participants will see when they use a command similar to the look command available in many MUDs. Here is a moderately long character description, taken from Curtis (92b:21):

> You see a quiet, unassuming figure, wreathed in an oversized, dull-green Army jacket which is pulled up to nearly conceal his face. His long, unkempt blond hair blows back from his face as he tosses his head to meet your gaze. Small round gold-rimmed glasses, tinted slightly grey, rest on his nose. On a shoulder strap he carries an acoustic guitar and he lugs a backpack stuffed to overflowing with sheet music, sketches, and computer printouts. Under the coat are faded jeans and a T-shirt reading 'Paranoid CyberPunks International'. He meets your gaze and smiles faintly, but does not speak with you. As you surmise him, you notice a glint of of red at the rims of his blue eyes, and realize that his canine teeth seem to protrude slightly. He recoils from your look of horror and recedes back into himself.

As anyone can see, the writing of descriptions is clearly writing in the old sense. In some MUDs participants are free to write their own descriptions. Other MUDs do not allow this until the participant reaches a certain level.

MUD Homes

If the ability to write descriptions is free, chances are that the ability to build a home for your character is also free. A MUD home can be a sort of secondary description of your character and character personality. Something that clearly shows that a MUD world indeed is an alternate reality, and not just a place for role playing, is that it is considered very rude to enter someone's home without asking. This is an example of a small home description: (Also taken from PMC MOO.) I am just teleporting in.

> You digitize yourself for reconstruction elsewhere.
> You digitally reconstruct yourself next to Deck (Dozing).
>
> The living room
>
> Dweezel's world-famous living room, home of nightly gatherings and debauchery. Usually shared with Deck and Mr. Tole.
>
> You see bandb here.
> Deck (Dozing) and Dweezel (Dozing) are here.

In some of the more adventure-based MUDs, a wizard is not just obliged to create a home, but a whole part of the MUD world, often starting with a castle. Many wizards also create a guild or league of some sort that will go with their part of the world. (See the section _Role playing and guilds_.)

Storytelling --- Imagination at Work

Elizabeth M. Reid, in her thesis on the Internet Relay Chat (Reid 91), has written that to be a part of the virtual community you have to have certain personal traits:

> Speed of response and wit are the stuff of popularity and community on IRC. The Internet relays chat, and such social endeavour demands speed of thought --- witty replies and keyboard {\it savoir faire\/ blend into a stream-of-consciousness interaction that valorises shortness of response time, ingenuity and ingenuousness in the presentation of statements.

(Reid 91:25)

This is also true for MUD-like systems. All in all, the Internet Relay Chat and the MUD-like systems I am investigating have very much in common, with modern MUDs being programmable as the only difference of any importance.

I would like to call this witty stream-of-consciousness text producing of IRC and MUD users creative writing. People tell each other stories. That is what it is all about. It is just that the writer gives the readers the ability to act in the stories and to be co-authors.

When suddenly a huge mountain appears out of nowhere on channel \#hack on IRC and all the hackers puts on their mountain climbing boots, that is a story. When they climb the mountain, racing to reach the top, that is a story --- a story written by the participants as they climb. (Taken from an actual event a few years back, started by me.

Here is another example of a story, taken from a session on PMC MOO on August 31 1994.

> Forgery has morphed into Suicide.
> Freud produces a hang noose and looks at Suicide.
> Suicide sings, ``I WANT TO TASTE DIRTY, A STINGING PISTOL IN MY MOUTH ON MY TONGUE! I WANT YOU TO SCRAPE ME FROM THE WALLS AND GO CRAZY LIKE YOU MADE ME!''
> Suicide then pulls a gun out of his pocket, sticks it into his mouth and pulls the trigger. Little pieces of Suicide splatter all across the room, caking the walls with shredded flesh and blood.
> ``HEAD LIKE A HOLE, BLACK AS YOUR SOUL! I'D RATHER DIE THEN GIVE YOU CONTROL! BOW DOWN BEFORE THE ONE YOU SERVE, YOU'RE GOING TO GET WHAT YOU DESERVE!''
> Suicide goes flying across the room and smashes into the wall with a loud bang. The wind is blown out of him and his nose begins to bleed.
> Suicide is Dead.
> Freud holds up a spam reading: ``Suicide is dead.''
> Freud claps in admiration for Suicide.
> Suicide bows.
> Isis laughs!

[Somewhat later in the same session]

> ED209 screams, ``I can't take it any more, the voices, the voices, ah...'' and with that ED209 pulls out a BFG9000 from nowhere. ED209 gets a maniacal look on his face and then pulls the trigger.
> A large green glowing sphere is fired from his weapon. The sphere hits the wall with a bright green flash.
> Sunshine melts into a puddle of orange liquid and disappears into the ground.
> Kit is evaporated into a lump of pink dust.
> Will_Tennyson explodes.
> Terrible_Place melts into a puddle of orange liquid and disappears into the ground.
> Suicide is evaporated into a lump of pink dust.
> Isis explodes.
> Freud screams in agony and then disappears.
> Teakettle is evaporated into a lump of pink dust.

> Mars explodes.
> ED209 sighs in relief, ``ah...'' and reholsters the BFG9000.

These on-the-fly stories, as well as the stories inherent in MUD worlds, called quests, are, in my view, definitely postmodern literature. Professor Norman Holland, in an essay published in _EJournal_'s first issue this year (Holland 94), criticizes the usual view that computer-based systems such as hypertext and hypermedia are examples of postmodern literature. Instead, he argues that a program called _ELIZA_ by Joseph Weizenbaum was one of the first truly postmodern computer program. The secret with _ELIZA_ is that the program talks back, that the program is truly active, generating text as a response to the user/reader.

I agree fully with Professor Holland in his criticism of hypertext as a postmodern literary technique. However, even in Professor Holland's strict view on postmodern literature, my statement about the on-the-fly story-creating of MUD and IRC holds. He writes:

> Whatever the technological problems, though, we can now see that the ELIZA genre, even the most rudimentary one back in 1963, had already changed the nature of literature. Why? Because the text says things. Like other literature, the program is created by an author, and then the author stands back. _Un_like all other literature, however, this writing then creates the illusion that it is another human being with a will of its own, independent of the author whose hands are now off.

This is exactly the case when it comes to user interaction and storytelling in MUDs and on IRC. It is also true for the creation of open-ended MUD objects that are created to fit into the general scheme of things, in a quest. The author stands back and lets the object interact with the user, seemingly on its own.

Quests and Areas

In more adventure-based MUD systems _quests_, meaning adventures or plots inherent in the MUD world, are common. Quests are created by wizards, participants of an extremely high level that can be said to have won the game. Their characters are now immortal and they spend their time building new parts of the world, writing quests or just harassing new participants.

When a wizard creates a new part of the world he or she usually starts by placing a castle in a nice neighbourhood. The castle is really just an object to start building things inside and not really a castle. Usually, a wizard then creates a workroom inside the castle and starts planning what to do with the world. The only limitations are arch wizards, if there are any, which can be said to work as world janitors, checking parts of the world before opening the area to other participants. (See above in the history section about arch wizards as editors or janitors.

A wizard creates a part of the MUD world not just to amuse him- or herself, but to amuse or interest other participants. It is highly rewarding, in the eyes of other wizards, for a wizard to have many visitors. Especially LPMUDs have made use of wizlists, where the wizards with the area most visited by participants are listed. Being number one on the wizlist is considered to be an extreme honour, especially in a large system with thousands of other wizards.

However, to make an area interesting, one must be very creative. It is not enough to make interesting sceneries, one must also include interesting plots for the participants to figure out. Things like hidden treasures, murder mysteries and dragons have been very common, which is understandable given the fantasy background of MUD.

To create a quest a wizard is bound to write a lot of prose, as well

as code describing the behaviour of objects that will appear in the plot. These objects can, of course, be anything, things and people alike. I have found no earlier research in the writing of quests and inherent plots, so what I have written here is based on my own experiences only.

To make an example of a quest, I have included a small story. Usually, quests are rather big and involves the solving of a number of mysteries. However, if I were to include the solution to an entire quest, I would quickly run out of space. Instead, I have included an example on objects that lead the story onwards:

```
You take a window seat near the middle of the bus.
The tourguide sez: ``Today's tour of 4 stops will take about 10
minutes.''
The engine revs and z-ooooo-m, MAGICBUS is off! Peering through the
tinted windows of MAGICBUS, you see: The Terrain of Postmodernism.
The tourguide sez: ``You have arrived in The Terrain of Postmodernism.
You may `exit' but be sure to `enter bus' within 2 minutes!''
You stand up from your window seat.
You de-bus and find yourself in...

The Terrain of Postmodernism

You enter a vast theme park of postmodernism. At the moment, its
vastness is hypothetical, though. Add your suggestions for development
on the Suggestion Board (type: write [text of suggestions] on sb).

Obvious Exits: East to the stairwell, West to DisneyLand, Down to the
Dada Room, Diagonal to the 1001 Plateaus.
You see Projects Board, PoMo Slot Machine, Lab Door, Brain, Slippery
Signifier, and MAGICBUS here.
Mumrik de-buses into The Terrain of Postmodernism.
You go down.

The Dada Room

You have entered the Dada Room. Expect a certain amount of
randomness here.

You see Hugo Ball's Journal and Toy Bacchanale here.

You read the journal, a copy of Ball's journal, describing Cabaret
Voltaire.  The cover is torn and a few pages are missing, but it's
still readable.
You flip through some pages, reading bits here and there...
I can imagine a time when I will seek obedience as much as I have
tasted disobediance: to the full...
People who live rashly and precipitately easily lose control over
their impressions and are prey to unconscious emotions and
motives...
Everyone has been seized by an indefinable intoxication. The little
cabaret is about to come apart at the seams and is getting to be a
playground for crazy emotions. It is a race with the expectations of
the audience...
You turn a few more pages...
That's peculiar...
Emmy Hennings smiles at you through the swirl of letters...

Cabaret Voltaire

Welcome to the club. Please do not throw anything onto the
stage. Should fire break out, do not yell theater. At no time must you
interpret. Drink heavily and enjoy the show.

The cabaret holds about twenty people. The room smells of a
combination of absinthe, cigar smoke and charred wood from last week's
little fiasco. Futurist slogans and collages by Jean Arp decorate the
walls.  One collage in particular catches your eye, a rather large and
```

```
  rather confusing poster, bordered with block lettering...

  The tables seat groups of four and are arranged somewhat haphazardly
  around the stage. The back of the room has a sofa and some overstuffed
  chairs, mostly occupied by unconscious AWOL soldiers.

  You see portable television here.

  You sit down on the chair.
  You look at the portable.

  Portable television

  One of those little Sony jobs. It looks pretty battered,
  probably from being carried around so much.

  You try to pick up the portable. When are you going to learn to leave
  other people's stuph alone?
```

Notice, that what brings the story forward is first the magic bus who takes my character to the Terrain of Postmodernism. After that, it is the journal that twists the reality for poor Mumrik (Which is the name of my character at the MOO. when he is unable to stop reading.

This behaviour of MUD objects is very typical. The objects somehow take control of the story and lead it forward in one way or another. Of course, the character can fight back or just go along with what the objects are doing.

Social and Psychological Experiments

Amy Bruckman, in her _Identity Workshop_tries to show that MUD-like programs can be seen upon as ``a rich psychological play space'' (Bruckman 92:22). This conclusion is based on her reading of the works of the psychoanalyst Erik Erikson, author of _Childhood and Society_, and data she has collected while visiting several MUDs. In her essay, Bruckman tries to show that characters on MUD use it to understand the concept of identity and ``the ways in which we construct ourselves'' (Bruckman 92:23).

She goes on, saying that people with poor social skills find refuge in MUD-like systems where, paradoxically, everything is based on people interacting socially with each other. What, then, is the difference between real life and MUDs that make people so willing to experiment with identity and social life in an artificial setting?

The perhaps obvious answer to this is that in a multi-participant interactive fictionm what you do as a character will not affect you in Real Life, or rather, it _appears_ not to affect you in Real Life. As we shall see, the issue is more complex than that --- the different realities tend to blend into each other. However, the interactive fiction environments bring back the participant to the freedom of childhood pretending; it is the freedom of play.

Most players of MUDs are, so far, male and present themselves as such. There is, however, a minority of males that present themselves as females, either to deceive others or to gain something from it. It is common, on some MUDs, that female-presenting players get special treatment, mostly because they are so rare. Some males present themselves as females to get this special attention. In fact, Curtis tells us, that since the problem with female-presenting males is such a well known fact, females are sometime asked to ``prove'' their gender (Curtis 92b:7).

Curtis also writes, as does Jill Serpentelli, that female-presenting males might be exploring the way ``the other half lives'' (Curtis 92b:7 and Serpentelli 22). Serpentelli adds that this may be a way for male players with poor social skills to overcome their shyness.

Female players sometimes complain about the special treatment, which in some cases might turn into actual harassment (see for example Bruckman 92:41). This special treatment sometimes lead female players to present themselves as male characters.

In MUD, gender is never certain. In fact, in most MUDs there is also the possibility to present the character as neuter, as an ``it''. Some MUDs even offer the possibility of plurality (Bruckman 92:4)!

Sexual harassment is not that common in MUDs compared to ordinary MUD sex, (Also known, jokingly, as teledildonics. which seems to occur every now and then.) Of course, this is just an exchange of written messages and manipulation of MUD database objects. In systems such as the Internet Relay Chat, teledildonics is just another form of telephone sex, with text replacing voice.

MUD romances, with or without sex, are even more common. Amy Bruckman has interviewed a character called DePlane about friendship and romances in MUD-like worlds (Bruckman 92:23). DePlane says that, basically, friendships in MUD are ``deeper and of better quality'' than real life friendships.

I would say that this, that friendships in MUD are felt to be deeper is due to the way people get to know each other in MUD-like systems --- everything occurs ``backwards''. First you discuss things with someone without a face, without age and without gender. Then, after having acquainted yourselves you decide whether to be friends or not. In real life, things tend to go the other way around, you being biased by the other person's sex, age and general appearance. This way of getting acquainted with someone is not limited to MUD-like systems and interactive systems such as IRC, but also extends to e-mail and news discussions.

DePlane, in Bruckman's interview, goes on to tell her about a MUD romance where he met a female character and fell in love. DePlane and the player of the female character have since swapped photographs and even met in real life. Apparently, the female character also turned out to be female in real life.

Of course, MUD sex and romances are not as physical as the real thing, but I am very curious about who actually is having a relationship --- is it the MUD characters or the real persons? I do not expect to find any real answer to that question within this thesis, but I would personally say ``both''. A MUD wedding is generally, but not always, a way of saying that the real life players of these two characters have a romance. I would guess that MUD sex also often, but not always, is a way of saying ``I would like to have sex with you, but you are too far away''. (I know for certain that my own MUD wedding, Teakettle's wedding with Pettson (sometimes known as Pet), was for real. The wedding was a celebration of my real-life wedding with Pet's player --- my wife Helena. A lot of our MUD friends had no possibility to be present at the real life wedding, in most cases because of the distance, and our MUD wedding was simply a way of letting our friends be present at this important moment. It was also a way of announcing to the MUD community that we were, indeed, married.)

So, how come all these experiments are encouraged by a MUD environment? What is it that makes people with poor social skills so keen on experimenting here with social and psychological relationsships and expressing them in text instead of experiencing them in real life?

For one thing, I would say that the text-only interface in most MUDs encourages social experiments like gender swapping, MUD sex and MUD weddings. This text interface also takes away all the possible prejudices you might have when meeting someone in real life. You simply do not know whether the real person behind the character Teakettle is black or white, male or female or how old he or she might

be. Of course, some things might be revealed through the conversation and the general behaviour of the character. See also my discussion above about the freedom of pretending.

The situation in an environment such as a MUD world can be compared to the situation of a writer hiding behind a pseudonym. The same freedom from responsibility is, to some degree, available to the participant in an interactive fiction environment. However, as we have seen and shall see, people tend to use this medium as a way of meeting other _real_ people, although sometimes participating in interactive storytelling activities.

I would also like to defend the view that a MUD world is indeed an alternate reality. (See the first paragraph in the section below.) When you are visiting a MUD environment you keep all the experience you have gathered in this world and enter into a new world where everything is possible within the world boundaries. If you can experiment freely in that world, you can gather experience about social and psychological phenomena and use them in this world, in Real Life. MUD environments can, indeed, be said to be a ``psychological play space'' (Bruckman 92:22).

Role Playing and Guilds

Pavel Curtis, in _Mudding: Social Phenomena in Text-Based Virtual Realities_, seems to believe that most of the character descriptions, MUD homes and various created objects are used only as a background for encounters between real people (Curtis 92b:8). He writes:

> Given the detail and content of so many player descriptions, one might expect to find a significant amount of role-playing, players who adopt a coherent character with features distinct from their real-life personalities. Such is rarely the case, however. Most players appear to tire of such an effort quickly and simply interact with the others more-or-less [sic!] straightforwardly, at least to the degree one does in normal discourse.

Curtis goes on by explaining that he thinks that most of the characters are taken from more or less specialized works of fiction and that the characters simply do not match outside the context of that particular work.

Much of what he writes goes along perfectly with my own experiences in MUD-like systems, but I want to stress that this is not the case in all MUDs and with all characters. For instance, I would like to point out that in adventure-style MUDs, guild-building and different orders are very common. Within these guilds, characters often have a more ritual position, played to the full. I can mention, as an example, that I was once a member of ``The League of Agnostics'' and had the very esteemed title of ``The Pope's Enemy''. My role as the enemy of the Pope was very much role playing.

It appears, then, that if any role playing does occur it is within the bounds of a guild. As I have explained above, a guild is created by one or several wizards as a means to interest participants in visiting their area. To keep people inside a particular guild the creator often give his members certain privileges that they can use as long as they stay members. Often, these privileges are magical spells that the guild members can use to communicate with each other, to kill enemies and such. I can mention that I, as a member of the League of Agnostics, had the possibility to debate any man of the church to death.

Other guilds, such as the Guild of Druids at The World of Mizar (Available at mizar.docs.uu.se 2000). has less frightening privileges, such as the ability to force trees to grow, to teleport into a higher demension and to command birds and other animals at will.

Conclusions --- Storytelling and Writing

My aim has been to show how the MUD participant builds worlds by writing object code and object descriptions or by being a part of the world as a character, telling stories to other characters. I have focused on the interactive storytelling between participants while at the same time arguing that the imaginary world is necessary to give the story credibility while it is being acted out.

I have been trying to place the world creation of participants in a literary context by comparing to the literary world of J.R.R. Tolkien and arguing that this new kind of storytelling is literature, mainly based on collected data, but also with some support from Professor Norman Holland's views on the _ELIZA_ program.

I have gone through a short history of MUD and interactive fiction, to show why a modern MUD world looks the way it does. Of particular interest is the development of programmable MUD systems and I have mentioned several programmable systems of historical importance such as the original Essex MUD, the TinyMUD and TinyMUCK systems, the Swedish LPMUD and the Xerox MOO.

To deepen the reader's familiarity with programmable systems I looked closer at how to go about programming objects. I have described the similarity between object code and object descriptions and pointing out the literary qualities of both.

I have also tried to show that world creation, seen from a higher angle, such as the design of imaginary worlds as a scene for stories and plots is the same action for both traditional fantasy worlds, as in the case of Tolkien's Middle Earth and MUD worlds. I have highlighted the concept of ``Secondary Belief'' which makes it possible for a reader to ``trust'' an imaginary world as if it was real. The concept of ``Secondary Belief'' is apparent in both MUD worlds and the traditional fantasy.

The main part of the thesis has been the section called _The Reader as Writer_. Here, I examined the role of the reader in a MUD like system, concluding that it is that of a storyteller. However, I have been pointing out that this is not the traditional narrative, but a situation where several participants can cooperate to create a narrative _environment_ where the story takes place --- the participants themselves can create roles for each other and play them out at will, but can at any time step out from the narrative and communicate user to user.

I have also been looking at the way a participant can describe him- or herself as well as the concept of a MUD home and a wizard's area. A small section has also dealt with the ``guild'' phenomenom, even though it has not been my aim to focuse on that.

Social and psychological experiments and relationships have been highlighted in _The Reader as Writer_ section. Many of the participant interactions have a social or psychological background and I have been looking at phenomena such as gender switching, MUD romances, MUD sex and role playing.

My conclusion here is that although the computer environment is used as a base for storytelling, there is little real role playing among the participants. The role playing that does exist is limited to social experiments such as gender switching and within the limited scope of a guild or league. Mostly, the participants are simply using the environment as a new medium, although a medium perfectly suited for storytelling.

Glossary

This is a glossary of simplified explanations to some of the (computer related) words I use throughout the thesis. I hope I with this

glossary makes the thesis more readable for readers not well versed in computers.

AI --- AI is an acronym for Artificial Intelligence, a wide research area within computer science, psychology and information science.

ARPANET --- ARPANET was the forerunner of modern day Internet. It was started by the Advanced Research Program Agency (ARPA) in the 1960s and connected university and military computers in the US.

Adventure --- Adventure is at the same time the name of the first program in its genre and the name of a whole generation of adventure programs. An adventure is an interactive story where the user/reader is in charge of a character.

C --- The C programming language is a systems programming language designed in the 1970s which became popular among computer professionals in the 1980s.

class --- A class, in the object-oriented programming meaning of the word, is a structure that includes both variables and functions that handle these variables.

compiler --- A compiler is a translation program that translates a program written in a programming language to machine code, or at least to a lower level.

ELIZA --- ELIZA is a program written by the artificial intelligence researcher Joseph Weizenbaum that was created to prove that the Turing Test, a test of artificial intelligence, is of no value. The program takes on the role of a Rogerian psychiatrist and turns back everything that the user say and asks for more input.

FORTRAN --- FORTRAN is an old programming language designed in the fifties for scientific computing. It was largely spread in the scientific community and a program written in FORTRAN could therefore run on almost any large computer.

IRC --- IRC is short for Internet Relay Chat, a system of named channels where users chat via text. At any given time there are about 5\,000 users using IRC (August 1994).

inheritance --- Inheritence, as the word is used in object-oriented programming, is used to signify that one class (see above) can inherit traits of another.

interpreter --- An interpreter, like a compiler, is a translation program. The difference is that an interpreter executes the program at once, while interpreting the code.

MUD --- MUD is short for Multi-User Dungeon. It is both the name of the first multi-user adventure program and the name of the whole genre of programs.

object --- An object in object-oriented programming is an instance derived from a class (see above) that may or may not have functions and variables in common with the class.

quest --- A quest is an inherent plot in a programmable MUD. It is usually the role of the participant to solve quests.

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