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STS 145   Case Study

Zork: A Study of Early Interactive Fiction

I: Introduction

If you are a fan of interactive fiction, or have any interest in text-based games from the

early 1980's, then you are no doubt familiar with a fascinating series known as *Zork*. For

the other 97 percent of the population, the original *Zork* games are text-based adventures

in which the player is given a setting, and types in a command in standard English. The

command is processed, and sometimes changes the state of the game. This results in a

new situation that is then communicated to the user, restarting the cycle. This type of

adventure game is classified as belonging to a genre called "interactive fiction". *Zork* is

exceptional in that the early *Zork* games are by far the most popular early interactive

fiction titles ever released. It is interesting to examine why these games sold so well,

while most other interactive fiction games could not sell for free in the 1980's. As we

will see, this is a result of many different technological and stylistic aspects of *Zork* that

separate it from the rest of the genre. *Zork* is a unique artifact in gaming history.

II: MIT and Infocom – The Prehistory of *Zork*

Zork was not a modern project developed under a strict timeline by a designated team

of programmers, but credit is given to two MIT phenoms named Marc Blank and Dave

Lebling. Its history can be traced all the way back to the invention of a medium-sized

machine called the PDP-10, in the 1960's. Then, around 1970, the ARPAnet was

introduced. ARPAnet was basically an early version of the internet, which allowed for a community of connected machines. ARPAnet had virtually no security, so any user who had a connection or knew the appropriate phone number could check out basically anything that the community had to offer. A few games were produced during this time that became moderately popular among the ARPAnet community. In 1977, however, an interactive fiction game known as *Adventure* spread across the net like wildfire. Before long, it arrived at MIT.

MIT's ARPAnet community became obsessed with the game. When they finally finished it, a few of them (including Blank and Lebling) analyzed the flaws of *Adventure*, and set out to make a better game of the same style.[1] We will examine *Adventure*'s profound influence on *Zork* shortly. The first version existed as early as 1977, very soon after *Adventure*, but it was only in a mainframe form, not yet distributable to the masses. The tentative title *Dungeon* was used briefly, but was abandoned well before the product was released. The name *Zork* was actually just a nonsense word that was used to refer to unfinished projects, so in a sense, this game was never really named. It was originally written in a language called MDL (which is somewhat similar to LISP) for the PDP-10. This game itself was actually never distributed, but it was extremely popular among the relatively small community that had access to it. In fact, this game was really an early version of the first three *Zork* games, combined into one large (albeit crude and buggy) project.

In order to sell this product, Blank, Lebling, and a few of their cohorts joined together to form a company called Infocom. They made some improvements to the initial version, and split it into segments, since the entire game was too large to run on most personal

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[1] http://mud.co.uk/richard/zork.htm

computers at the time. Another key development during this time was the translation of

the game into FORTRAN, giving many more computers the ability to understand it.

Previously, it was playable almost exclusively on a PDP-10 operating system called

TENEX[2]. Infocom made an initial agreement allowing a software company called

Personal Software Inc. (PS) to release *Zork* in 1980, but PS was planning to drop their

line of entertainment software, so Infocom broke off and became publishers themselves.

Zork: The Great Underground Empire, was released in 1980, and re-released later

under the name *Zork I* (which is how I will refer to it). *Zork I* was extremely successful,

so Infocom released *Zork II: The Wizard of Frobozz* in 1981, and *Zork III: The Dungeon

Master* in 1982. I will deal mainly with these first three games for a few reasons. They

are all part of the same linear storyline, they are extremely similar in terms of dealing

with puzzles, settings, and NPC's (non-playable characters), and they were all released

within a span of 2 years. For various reasons, the later games deviate more and more

from the style of these three.

III: On the Shoulders of Giants – The Influences of *Zork*

Zork relies heavily on the influence of *Adventure*. This is obvious given the

circumstances of its development. The implementors[3] did not try to keep this a secret;

the language parser in *Zork* even recognizes specific nonsense words introduced by

Adventure, and mocks the player for trying to use them. There are even minute

similarities, such as the fact that in both *Zork* and *Adventure*, the parser looks only at the

first six letters of a given word.

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[2] http://www.csd.uwo.ca/Infocom/Articles/NZT/zorkhist.html
[3] This is the spelling used in *Zork*.

The style of play is virtually identical in the two games, but *Zork* adds a few significant improvements, one of which is immediately obvious even to the most inexperienced of newbies. *Adventure* was extremely enthralling because it allowed the user to type commands in English, which would be understood by the game's language parser. However, the parser was somewhat confining, in that nearly all commands had to be in a simple two-word "verb object" format, e.g. "TAKE LAMP" or "ATTACK DRAGON."

   Zork's parser is much more sophisticated. It allows for the use of adjectives, prepositions, and indirect objects, so sentences of the form "TAKE RUSTY KNIFE" or even "THROW RED CAKE INTO POOL" would be perfectly acceptable. Needless to say, this opens up tremendous possibilities for game design. Many of the puzzles in *Zork* simply could not have been used in *Adventure* just because of the rigid command format. In playing *Adventure*, I often found myself unable to express a desired action in a form that the parser would understand. The interaction in *Zork* just feels more natural, in a way that no other text game of the era could duplicate. Another important element in both games is the rich use of setting, which we will delve into later.

   Zork was also influenced by sources outside the world of interactive fiction. There are many elements of *Zork* that are clearly derived from Tolkien. Besides a few standard Tolkienesque creatures, there is also an elvish sword that glows when monsters are nearby, which Tolkien fans will realize is quite reminiscent of the elvish weapons Sting, Orcrist, and Glamdring. In addition, *Zork II* contains a series of magical spheres that behave much like the palantír in *Lord of the Rings*. It is likely that many players were comfortable with these particular varieties of magic, having already seen them in another medium.

Zork also borrows somewhat from *Dungeons & Dragons*, especially in terms of fighting. Combat is one of the few aspects of *Zork* that is non-deterministic, i.e. when you type "STAB TROLL WITH SWORD", you may kill the troll, and you may not. *Zork* takes enemies' strength and "hit points" into account, as well as weapon strengths. Your character can also be wounded without being put out of commission. Another obvious *D & D* reference is found in the plot of *Zork III*. The title of the game is *Zork III: The Dungeon Master*, which, in itself, will make most people immediately think of *Dungeons & Dragons*. When the player eventually finds the dungeon master near the end of the game, it is revealed that his role is exactly that of his *D & D* namesake. *Dungeons & Dragons* will probably never accurately be simulated on a computer, but these similarities undoubtedly pleased many of its fans. Since *Zork*'s influences come from several different media, and it adds much of its own character, it presents a new and unique experience for gamers.

IV: Complete Immersion – The Use of Setting

The terrain that the player explored in *Adventure* was actually a model of a real network of caverns (the Mammoth Cave and adjoining caverns in Kentucky). This was part of the reason that the settings were so vividly descriptive. Here is the game's description of one of the rooms:

> You are in a splendid chamber thirty feet high. The walls are frozen rivers of orange stone. An awkward canyon and a good passage exit from east and west sides of the chamber.

This scenario is so much more interesting than simply being told the cardinal directions in which the player can move. When all of the environments have interesting

descriptions, the player reads them carefully, and the detail and imagery begin to take

over the senses. The implementors of *Zork* were well aware of this.

Instead of simulating a real environment, the implementors of *Zork* set out to create a

fantasy world with the same exquisitely detailed use of setting. The result is a set of very

detailed environments, many of which are improbable, but absorbing nonetheless. The

following is a description of one of the rooms in *Zork III*:

> Land of Shadow
> You are in a dark and shadowy land. All around you are gentle hills and eerie
> shadows. Far above, shrouded in mist, you can barely make out the ceiling of the
> enormous cavern that spans this entire land.

A gamer can almost feel him/herself standing in the Land of Shadow. We can also see,

in addition to the similarity to *Adventure*, that the Land of Shadow has a little bit of a

mystical, otherworldly tone. However, there are also environments in *Zork* that are just

downright bizarre, such as this one from *Zork I*:

> On the Rainbow
> You are on top of a rainbow (I bet you never thought you would walk on a
> rainbow), with a magnificent view of the Falls. The rainbow travels east-west
> here.

The fact that *Zork*'s settings are often unrealistic helps keep the games fresh and

interesting.

Another important aspect of the settings is that their details are often involved in

puzzles. In many cases, a long room description will contain a small piece of information

that is vital to solving a puzzle, such as a hole in the wall, a hook on a ledge, etc. This

forces the player to carefully examine the settings, thus becoming more and more drawn

into the virtual world. For all of these reasons, it is impossible to overstate the effect of

the wonderful use of setting on *Zork*'s reception in the gaming community.

V: Uniquely *Zork* – Defining Reality

In designing a new and improved form of communication, along with creating

elaborately detailed settings, the implementors of *Zork* did more than just produce a

popular series of games. They also defined a style that is difficult to accurately replicate,

but is very easily recognizable at the same time. To illustrate this point, I have included

an excerpt from a unique Infocom piece of work. Just for fun, some of the implementors

wrote a biblical Infocom-style creation story in 1985.[4] The following is a small sample

of this story:

> Void
> All is unformed and void; and darkness is upon the face of the deep.
>
> >VERSION
> This is the Authorized Version of King James.
>
> >TIME
> It is the beginning.
>
> >WHO AM I
> You are that you are.
>
> >EXAMINE DARKNESS
> You can't see the darkness without a light!
>
> >LET THERE BE LIGHT
> Okay, there is light.
>
> >EXAMINE THE LIGHT
> It is good.

The remarkable thing about this story is that it will instantly remind any interactive

fiction fan of *Zork*, since the style of interaction is identical. *Zork* fans will instantly see

the humor in this story. All others will probably just find it strange though, so a short

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[4] The full Infocom Creation can be found at http://www.infocom-if.org/creation.html

explanation is in order. The *Zork* language parser responds in very predictable ways, and the room descriptions always follow a specific format (as was seen earlier in the examples of setting). This makes the interaction between the player and the game conform to a certain structure, which has come to be associated with the series. The association is so natural to *Zork* players that the style can be readily mocked.

Another reason that the world of *Zork* is so unique is that the game defines its own virtual cultural context. In most cases, it has nothing to do with the actual gameplay, but it makes for an interesting background. The implementors created many elements that became nearly household names (or as close as possible in the realm of interactive fiction). Some examples are the "zorkmid," which is the unit of currency in the world of *Zork*, and the "grue," which the games define as "a sinister, lurking presence in the dark places of the earth. Its favorite diet is adventurers, but its insatiable appetite is tempered by its fear of light. No grue has ever been seen by the light of day, and few have survived its fearsome jaws to tell the tale." As a side note, Lebling actually created the grue as a hazard to replace bottomless pits when it was pointed out that a bottomless pit in the attic should be visible from the ground floor.[5] The region that the player explores in *Zork* is called the Great Underground Empire, and much is revealed about its culture and history, particularly through accounts of an eclectic family called the Flatheads, most of whom are very blatant parodies of famous people in the real world. This creation of an elaborate context is no longer unique, since modern day adventure and RPG titles do this regularly, but it was not the norm in the early 1980's.

In addition, the implementors supplied *Zork* with a sense of humor. For example, the games allow the player to ask an NPC to perform a task by saying something of the form

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[5] http://www.csd.uwo.ca/Infocom/Articles/NZT/zorkhist.html

"character, perform action." If the player tries to ask himself to do something, the response will be "Talking to yourself is said to be a sign of impending mental collapse." There are many similar pieces of wit interspersed throughout the games. This is yet another reason *Zork* is so uniquely fascinating. Not only is the parser designed to handle more complex sentences, but the implementors also took the time to add clever responses to some of the more naive or ridiculous commands the player might enter. *Zork* defines a unique immersing environment with a rich background and its own structure of communication, with a sense of humor thrown in as well. Is it any wonder that it captured lots of attention from gamers in the early 80's?

VI: Replicating Originality – The Decline of Infocom

   Zork was followed by several other Infocom sequels and spin-offs. In some cases, Infocom tried to extend the *Zork* franchise, with games such as *Beyond Zork*, *ZorkQuest* (1 and 2), and *Zork Zero*. Mostly, however, they branched out and created completely new titles using the same foundation (for language parsing, etc.). Many of these games were not designed by members of the original Infocom team, as it had grown to be a rather large company. None of the later Infocom games came anywhere close to the popularity of the *Zork* trilogy. The trilogy sold over a million units during the 1980's, while the newer games typically did not sell more than 50,000.[6] There are a few reasons for this, but the biggest is that they were just stale. They did not offer as much in the way of cleverly designed puzzles, and while many were certainly respectable games, they were not new and original in the same way that the *Zork* trilogy was. Even the sequels were getting tiresome, although *Zork Zero* deserves some positive recognition.

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[6] http://www.gnelson.demon.co.uk/inform/short.html

Zork Zero, a prequel designed by Steve Meretzky, is really the only later game that maintains some degree of faith to the original style. Meretzky argued that "continuing the saga is a good thing as long as they spend the time to become thoroughly familiar with the earlier games and remain true to their spirit."[7] *Zork Zero* was released in 1988, a full six years after *Zork III*, and it has a few stylistic additions, such as an in-game map, and minimal graphics support in the form of icons. However, many of the classic *Zork* elements are present, including the vivid imagery and strange sense of humor. Despite its strengths, *Zork Zero* was still not nearly as well received as the originals. By this time, fans were jaded by the multitude of text-based *Zork* sequels and spin-offs. This is the primary reason, but there is one other. *Zork Zero* is huge. It has 215 rooms, while the first three games average just under a hundred rooms each, and it contains 106 objects, with the first three averaging less than 50 each.[8] This, in and of itself, is not detrimental to the game, but *Zork Zero* is also incredibly difficult compared to its predecessors. Getting through the game is virtually impossible without outside assistance.

There was also one factor in Infocom's decline that had nothing to do with games. Originally, their plan was to develop games only to keep the company afloat. They wanted to create business software. Their first such product was a database project called *Cornerstone*, which did not sell very well, putting the company in even more trouble. Finally, after years of flat sales and internal problems, the Infocom label was purchased by Activision. By 1989, Infocom was no longer a company, it was just a name.

VII: The New Era of *Zork*: Activision Takes Over

[7] http://www.xyzzynews.com//xyzzy.10e.html
[8] ftp://ftp.gmd.de/if-archive/infocom/info/fact-sheet.txt

By the time Activision took over, graphical games were already predominant, and console games were achieving unprecedented success. Many other computer game companies, such as Sierra and Electronic Arts, were already selling graphical games for PC's. The demand for text-based games was diminishing, and Activision realized that it was not going to make money off of them, especially since they had managed to retain very few of the Infocom employees. Lebling claimed that "they haven't shown a great deal of interest in using the original implementors in their new '*Zork*' projects."[9] The result was a new generation of *Zork* games.

The new generation of *Zork* games included titles such as *Return to Zork* and *Zork Grand Inquisitor*. These games really had little in common with the *Zork* trilogy. They were graphical, the puzzles were less creative, and they required so much less thought. They didn't stimulate the imagination like the originals did. They weren't particularly bad games, but they certainly were not in the spirit of *Zork*. Nothing more needs to be said about them here, except that they were the ultimate signals that there would be no more *Zork* in its classic form.

VIII: Conclusion – Why There Will Never Be Another *Zork*

The claim is that *Zork* is not just a good game; it is a unique and original game. We have seen that it has not yet been matched by a similar game. The only thing left it to argue that it never will be. There are a few reasons that there will never be another *Zork*. First, obviously, is the fact that nobody sells text-based games anymore. Lebling acknowledges that "it's unlikely anyone is going to make big bucks anymore writing text

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[9] http://www.bf.rmit.edu.au/~fayep/Zork/dave_int.html

adventures."[10] It is possible that some independent programmer would write a text-based

interactive fiction game and distribute it freely, but it is unlikely that such a game would

succeed, for one simple reason. The reason no one sells text-based games is that most

gamers (particularly those who never played *Zork*) do not want them anymore.

The only other possibility for a successful new game in the classic *Zork* style is a

modern, 3D graphical one. However, this is also unlikely. Lebling's (somewhat cynical)

view is that in modern games, "the emphasis is on multimedia glitz rather than play value

and plot. Many seem to be little more than old puzzles connected by graphic

sequences."[11] Although this is a broad generalization, it is certainly much truer now than

it has ever been. Blank points out that this type of interface is "very limiting in what is,

ideally, a flight of the imagination."[12]In order for a game to sell, it has to have flashy

clips suitable for television ads. The style of *Zork* does not lend itself well to advertising.

It is the type of game that must be played to be appreciated, and must be played

extensively to be fully appreciated. Even in a graphical representation, the true merit

would have to be in the puzzles and the player-computer interaction. In the unlikely

event that such a game should come into existence, it will not sell anywhere near as well

as the *Zork* trilogy. I firmly believe that *Zork* will never be outdone. It is a unique and

wonderful artifact in the history of gaming.

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[10] http://www.xyzzynews.com//xyzzy.8d.html
[11] http://www.bf.rmit.edu.au/~fayep/Zork/dave_int.html
[12] http://www.bf.rmit.edu.au/~fayep/Zork/marc_int.html

IX: Bibliography

Anderson, Tim, and Stu Galley. "The History of Zork".
http://www.csd.uwo.ca/Infocom/Articles/NZT/zorkhist.html
Appeared in "The New Zork Times", http://www.csd.uwo.ca/Infocom/Articles/NZT/

Bartle, Richard A. "*Zork*: A Computerized Fantasy Simulation Game".
http://mud.co.uk/richard/zork.htm

Briceno, Hector, Wesley Chao, Andrew Glenn, Stanley Hu, Ashwin Krishnamurthy,
Bruce Tsuchida. "Down From the Top of Its Game".
http://www.ifarchive.org/if-archive/infocom/info/infocom-paper.pdf

Doherty, Paul David. "Infocom Fact Sheet".
ftp://ftp.gmd.de/if-archive/infocom/info/fact-sheet.txt

"Interview with Dave Lebling". http://www.xyzzynews.com//xyzzy.8d.html

"Interview with Dave Lebling, June 1996".
http://www.bf.rmit.edu.au/~fayep/Zork/dave_int.html.
"Interview with Marc Blank, June 1996".
http://www.bf.rmit.edu.au/~fayep/Zork/marc_int.html

"More Interviews With the Infocommies". http://www.xyzzynews.com//xyzzy.10e.html

Nelson, Graham. "A Short History of Interactive Fiction".
http://www.gnelson.demon.co.uk/inform/short.html