

Harrison Osaki

STS 145

Case History

From *Diablo* to *Gate*: Differences in Computer RPG Theory

In the face of the increasing popularity of massively multiplayer online role-playing games (MMORPGs) and the growing relegation of popular single-player role-playing games (RPGs) to consoles, it is interesting to note the incredible successes of the computer RPGs *Diablo II* and *Baldur's Gate II*, both of which feature single-player and multiplayer support. Studying these two games, rather than their original incarnations, is advantageous as the game designers had the chance to improve upon their mistakes and refine their game concept. It is also interesting to note that these two RPGs are only superficially similar; although they share the genre of RPG, the two games are significantly differently designed. These differences are the result of two different branches of design theory stemming from the game *Zork*, and how an RPG should be adapted to preserve the role-playing aspect in a computer-generated environment.

The *Zork* series was in and of itself inspired by the prototypic adventure game, *Adventure*, which is itself based on the tabletop role-playing game Dungeons and Dragons (D&D). D&D is one of the earliest tabletop role-playing games, in which human players would act out fictional 'player-characters', solving puzzles and killing monsters that the Dungeon Master (the referee of the game, abbreviated DM) pitted against the characters. The purpose of these adventures varied, but most early RPGs focused merely on the combat aspect of role-playing. Indeed, the company that created D&D was called TSR for "Tactical Studies Rules", and originally released a set of 'role-playing' materials called *Chainmail*, that was merely a set of combat instructions. Role-playing was left up to the DM to adjudicate.

In any event *Zork*, which was released in 1979, was a compelling text-based adventure game in which the nameless protagonist explored a mysterious dungeon by following simple commands typed in by the user. The game was fairly popular and remains well known to this day. Janet Murray in *Hamlet on the Holodeck* attributes the game's popularity to its 'participatory organization'; *Zork* "was set up to provide the player with opportunities for making decisions and to dramatically enact the results of those decisions." (Murray 2001) A key element of *Zork* is that the challenge that exists is a result of the interplay between the human player and the preprogrammed game. The programmer who created the various challenges, from

monsters to puzzles, had to account for how the character could and would react, and what should occur as a result. Technically speaking, *Zork* was an adventure game and not an RPG in and of itself since there was no significant character development or plot to speak. This fact highlights one of the difficulties in adapting a tabletop game into a computer game.

Converting an RPG from tabletop to computer involves several difficulties, the most notable of which are:

- Lower amount of flexibility on the part of the players regarding to the actions they can perform. Taking action in an RPG demands that the referee understand what it is you wish to do, and evaluate accordingly; in a computer role-playing game (CRPG) the referee is the computer, and therefore in and of itself non-intelligent and non-caring. In order to act in a CRPG the computer must either speak the language of the human or vice versa.
- A change in the relative importance of the player-character. In a tabletop RPG the players are assumed to be either the focus of the plot or at least somewhat relevant; most DMs will attempt to tailor their adventures so that each player gets some time to be relevant, so that no player becomes bored. This is not significant in a single-player RPG, but if it is the players and not the DM who is creating the story (as in a MUD, for example) not every player may have the chance to shine. Indeed, the world is dynamic when the player is offline; other players are gaining power and treasure while you are not.
- Whether or not the players have the ability to dynamically change the game world. The world in a tabletop RPG usually does not change when the human players are not playing their characters, and the characters also usually have at least an illusion that their interference dynamically changes the plotline; if the player-characters chose to not follow the plotline, the DM is expected to not ‘railroad’, or force the players to obey his command.
- The sequence of time in the CRPG. All tabletop RPGs are turn-based. Since each human player needs to tell the DM what he is doing, and the DM can only make rulings one at a time, this is necessary. A computer does not have this problem, and can handle multiple requests at once. Thus, real-time RPGs are possible—but how can the ambience of a turn-based RPG like D&D be simulated in a CRPG like *Baldur’s Gate*? And can AI be developed for monsters that are effective enough to challenge human players?
- All enemies effectively have a pre-scripted, yet flexible AI: the DM. The DM is responsible for ensuring that the non-player characters (NPCs) and the enemy monsters

interact intelligently with the players. This is not a problem in tabletop gaming, where the DM is sentient; scripting an AI that can fulfill even the conversational aspect of a DM has proven thus far to be nearly impossible.

All of these differences between CRPGs and tabletop RPGs can be simplified into one simple difference: the DM in a CRPG is not human. It is not as flexible, and cannot process as wide a range of commands. As Steven Poole says in Trigger Happy, without further AI development “dramatic interactions are still going to be pretty one-sided unless the videogame player is allowed greater freedom and creativity in the exchange” (Poole 2000), and in order for this to happen computers must be able to parse proper language structure. Dramatic interactions such as conversation are, of course, necessary for interesting role-playing.

The “Zork” theory of games, which would include such famous games as (obviously) the Zork series, the Final Fantasy series, the Dragon Warrior series, the Wizardry series, the offline Ultima series, and *Baldur’s Gate II*, attempt to avoid the problem of poor AI flexibility in one of three ways: they shift the emphasis in the game from situations where the lack of flexibility can be solved, they sidestep the problem of AI flexibility by creating specific patterns which the human player must follow to overcome a given challenge, to and/or to merely improve the AI, either through better coding or through ‘cheating’ such as giving the computer unfair knowledge about the player-character.

One of the game genres *Zork* was directly responsible for was the MUD, or multi-user dungeon. Originally designed as ‘collective games of *Zork*’, players gradually found that they could communicate as well as compete within this virtual realm. Instead of conversing with pre-scripted, limited NPCs, players could form stories and fashion fantasy within themselves. However, as Murray notes, there were significant troubles with this form of storytelling; she recounts the difficulty players encountered in determining appropriate behavior for in-game characters, and in confusing in-game actions with real-life ones.

Nevertheless, the MUD has many advantages over the single-player RPG. Not relying upon a fickle AI for combat and conversation is less memory and resource-intensive (server and communications technology, more a product of investment of money and time, is significantly simpler to develop than an AI script for coherent conversation, for example). Allowing the player to make up stories with friends and acquaintances met online is extremely useful, as it places the burden of the storyline upon the person-person interactions instead of the person – pre-scripted

AI relationship of *Zork* and other single-player RPGs. *Diablo II* is more gripping as a multiplayer game than a single-player game, and thus NPCs and the game world play a lesser role in the game experience than in *Baldur's Gate II*. This “MUD” theory, then, attempts to replace the AI with human interaction—the player makes his own stories based on his interactions with other players, and the computer acts only to mediate combat and other services of functionality.

Baldur's Gate II was developed by the game company Bioware and published by Black Isle Studios (the internal RPG division of Interplay Productions). Interestingly, Bioware is a fairly new company; when the first *Baldur's Gate* was made, the company had only one other game on its record (the game *Shattered Steel*). After the success of *Baldur's Gate* in 1998 (1.5 million copies sold by 2001), Bioware naturally wished to follow up with another game that would prove a similar hit. The most obvious choice was to make a sequel to *Baldur's Gate*, as according to Executive Producer Ray Muzyka, many of the developers on the original project felt that they didn't “have adequate time to reach [their] design goals; we were simultaneously developing the Bioware Infinity Engine while creating the content in *Baldur's Gate*” (Muzyka 2001). The Infinity Engine is the software engine that “runs” the game; it is used in the *Baldur's Gate* series, and in several other RPGs (such as *Planescape*). Both Interplay and Bioware are fairly low-key companies; unlike Blizzard (below) little media penetration has occurred, and most of the Bioware team members remain unknown to the fan community at large. Bioware's Senior Designer David Gaider is a partial exception to this rule, as interviews with him are fairly common most fan sites; ironically, Mr. Gaider himself had almost no experience with computer games before joining the Canada-based company. It is difficult to tell whether or not this media opacity is due to intention or simple lack of press, but in either case Bioware remains relatively unknown except for the *Baldur's Gate* series. Since the *Baldur's Gate* series has the actual license to use D&D in it, the gameplay rules are lifted nearly word-for-word from the 2nd edition rules of D&D; its connection to the tabletop genre is obvious.

On the other end of the media spectrum is Blizzard Entertainment, the company behind *Diablo II*. Blizzard Entertainment is well known in the real-time strategy genre for the *Warcraft* and *Starcraft* series, maintains an extremely strong relationship with its fans through its free online gaming service, Battle.net and websites associated with each specific game supported by the service. Blizzard was and is a very personal company, retaining most of its original founders. For example, the Executive Producer of *Diablo II*, Mike Morhaime, is the co-founder and current

president of Blizzard; similarly, the founders of the game company Condor (which merged with Blizzard to form Blizzard North) Max and Erich Schaefer, and Dave Brevik were all design leads for *Diablo II*. Rather amusingly, *Diablo II* was designed nearly immediately after the original *Diablo*, despite the fact that none of the designers had been considering a sequel; each person assumed that everyone else was burnt out from working on the project, until the designers discussed possible future games and realized that, in fact, no one was tired of *Diablo*. Elements of D&D can be seen in *Diablo II* in, among other things, the heavy traditional fantasy element; the ubiquity of magic and magical items (including potions), the grouping of characters into several different, fairly inflexible classes; and the usage of a straight defensive rating to be compared with an attacker's attack rating for combat.

Diablo II was explicitly designed to “provide a constant source of simple pleasures, many of which are perhaps too basic and obvious to mention in evaluations and reviews” (Schaefer 2000), among other goals. Every attempt is made in *Diablo II* to make the game simple and easy to play. The system of signing onto Battle.net, the Blizzard-provided secure service by which players can join and begin games with other people requires only one click of a button. Combat in *Diablo* consists of point-and-clicking on enemies; a bar pops up which shows how much damage the highlighted monster has taken. All calculations in *Diablo* are kept secret from the player, apparently so that the human player worries less about the mechanics and more on the empirical effect.

Diablo II was also designed to be easily played in multiplayer as well as single-player; a person need only click once to create or join an individual game in Battle.net. Although the numbers, names and general types of buildings and monsters in *Diablo II* are constant, the locations and layout of the buildings, treasures and monsters are, with a few key exceptions, randomized each time a game is begun (the player's character is placed in an effective “cold storage” between game starts; the character is static, some quests are kept constant depending on how far the individual game creator has progressed) so that no player has a great advantage over another in memorizing areas. In multiplayer the treasures that the player receives for completing challenges are greater, and the presence of other players can present a beneficial element (if they choose to join your party) or a hostile element (if they attempt to kill you). Saving the game for later is, and can only be, done in tandem with exiting the game. This was done in order to eliminate the possibility of ‘save-and-reloading’, in which the human player saves his game,

faces a challenge or combat, and then reloads the game from the previous save in order to either show off (by recording a shorter amount of time in completing the challenge) or exploit a weak point in the enemy that was previously unknown. *Diablo II* also tries to offer a “steady stream” of challenges that have to be faced—there’s always one more enemy to be killed, one more experience level to be gained, and so on. On the other hand, compared with *Baldur’s Gate II*, *Diablo II* takes place in a very simple, limited world; in each ‘Act’, which serve to separate the different areas of the game, the player has one town setting in which no character can damage one another (including the NPCs) and the majority of NPCs are present to interact with (i.e., listen to voice clips, buy items and receive quests). The player has little choice to affect the quests that he is given; in literally every quest in *Diablo II* the only choice the player has in fulfilling quests is to complete the quest, or to refuse to until he gets bored and completes it. Thus, the catchword of *Diablo II* may be “simplicity”: it is, straightforwardly, a “dungeon-crawl”, or an adventure in which the primary focus is killing enemies, and since it is simple it is easy to find many players online and adventure with them.

Baldur’s Gate II was created with a significantly different theme in mind. Ray Muzkya’s first design guideline in his list for his postmortem on gamasutra.com is, “The player must always feel as if it is HIS actions that are making him succeed” (Muzkya 2000); the second guideline, “The player must feel as if he is having an effect on the environment.” By its very definition, a high level of complexity is needed for this; the world in *Baldur’s Gate II* is static and does not change unless the player triggers changes, whereas the world of *Diablo II* radically changes every time a new game is begun. There is a far larger amount of flexibility in *Baldur’s Gate* than *Diablo*, in one sense that, although a larger overarching storyline exists which the player must at some point follow (or run out of things to do), the number of quests that are necessary to advance the plotline are in smaller number than those of *Diablo II*, where almost every quest which exists is necessary to advance the storyline. These optional quests are often meant to be fun or interesting, and provide extra items and strength to advance the character. In *Diablo II* this character training takes place mostly from killing enemies on the way while completing the quests; in *Baldur’s Gate*, often the goal of the quest leads to as much advancement as occurs on the way.

Baldur’s Gate’s interface allows the player to, in some senses, simply do more; the player can perform a wider variety of actions (thieving; assembling the characters into groups; attacking

NPCs important to the plot and thus drastically altering how the story proceeds), and also choose how he wishes to interact with important NPCs from a range of conversational options. The choice of scripted conversations can drastically and permanently determine the NPC's attitude towards the party. In contrast, there are no conversations for NPCs in *Diablo II*; the NPCs' speeches are monologues. The only parts of the game of *Diablo* that are interactive involve talking with other human players online, killing monsters and gaining treasure. Strictly speaking, conversations in *Baldur's Gate II* could be crudely construed as just another puzzle to be solved; however, the fact that there are many dialogues in the game which have no gameplay function but are nevertheless highly popular (such as romancing other NPCs, which do not greatly help or hurt the main character except for the player's personal interest in role-playing), would seem to undermine this argument. In fact, there are no significant bonuses to playing with other humans, and the game itself discourages it since there are pre-scripted conversations and events with NPCs that can join your party, that occur without other human players. The character is also free to pause and save the game at will—features that, in multiplayer, would cause extreme lag and annoyance to other people. These are features of a single-player game, and not of a multiplayer one. The pausing function of *Baldur's Gate II* actually plays a central role to the game, since orders to the characters can be given while the game is paused. The human player must give orders to up to six characters simultaneously in real-time, and this is only truly possible with either a pause function or AI script. *Baldur's Gate II* offers both solutions, but most players choose to use the pause key. Saving the game in a given area preserves the character in that specific area, and games can be reloaded with no penalty in contrast with *Diablo II*'s respawning of the character in the safe town zone whenever the game is reloaded.

Both *Baldur's Gate II* and *Diablo II* are RPGs, but they are so in different ways. *Diablo* follows the historical precedent of MUDs in creating an ever-changing world, in which the player is important but not too important; he makes the world, but cannot break it. The primary source of role-playing comes in the multiplayer setting, when the player can choose how he interacts with other humans. In *Baldur's Gate II*, the freedom that the player has in affecting the world allows for a wider range of interactions within a limited universe. Attempting to implement a system in which the player is truly able to act as he wishes, in a dedicated multiplayer environment such as Bioware's ambitious *Neverwinter Nights* project, remain as theoretical vaporware. No company has even put forward the idea of creating an MMORPG

game system in which NPCs played as large a role-playing role as human participants, although some of Ken Karl's comments in his lecture about using company employees as role-playing elements in *Asheron's Call* go partially in this direction. I believe that the polarization of RPGs into single-player console-based RPGs and multiplayer computer RPGs will continue, unless companies seriously attempt to unify the two as in Square's planned *Final Fantasy XI*.

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Appendix



A screenshot from *Baldur's Gate II* of the Underdark region. Taken from Bioware free sample screenshot gallery, http://www.bioware.com/games/shadows_amn/screenshots/index.html?galleryID=31, without permission. This picture is copyright Bioware 2001. All rights reserved.



A mage casting the spell "Magic Missile" from *Baldur's Gate II*. Taken from the Bioware free sample screenshot gallery at http://www.bioware.com/games/shadows_amn/screenshots/index.html?galleryID=31 without permission. This picture is copyright Bioware 2001. All rights reserved.



A mage casting the spell "Inferno" in *Diablo II*. Note the quick access to healing potions at the bottom of the screen and graphical representation of health and "mana", or ability to cast spells. Taken from the Blizzard Entertainment webpage

<http://www.blizzard.com/diablo2/screenshots/ss01.shtml>. This picture is copyright Blizzard Entertainment 2002. All rights reserved.