



Matt Waddell
STS 145: Game Review

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In 1984 President Hiroshi Yamauchi asked apprentice game designer Sigeru Miyamoto to oversee R&D4, a new research and development team for Nintendo Co., Ltd. Miyamoto's group, *Joho Kaihatsu*, had one assignment: "to come up with the most imaginative video games ever." ¹

On February 21, 1986, Nintendo Co., Ltd. published The Legend of Zelda (hereafter abbreviated LoZ) for the Famicom in Japan. It was Miyamoto's first autonomous attempt at game design. In July 1987, Nintendo of America published LoZ for the Nintendo Entertainment System in the United States, this time with a shiny gold cartridge.

Origins: where did LoZ come from?

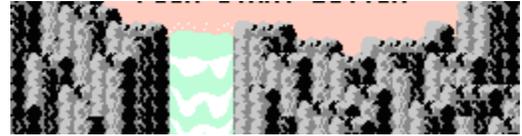
Miyamoto admits that LoZ is partly based on Ridley Scott's movie [Legend](#). Indeed, Miyamoto's video game shares more than just a title with Scott's 1985 production. But Miyamoto's fundamental inspiration for LoZ remains his childhood home, with its maze of rooms, sliding shoji screens, and "hallways, from which there seemed to be a medieval castle's supply of hidden rooms." ²

Story Line: a brief synopsis.

In the land of Hyrule, the legend of the "Triforce" was being passed down from generation to generation; golden triangles possessing mystical powers. One day, an evil army attacked Hyrule and stole the Triforce of Power. This army was led by Gannon, the powerful Prince of Darkness. Fearing his wicked rule, Zelda, the princess of Hyrule, split the remaining Triforce of Wisdom into eight fragments and hid them throughout the land. At the same time she commanded her most trustworthy nursemaid, Impa, to



escape and go find a man with enough courage to destroy the evil Gannon.



Braving forests and mountains, Impa fled for her life. As she reached the very limit of her energy she found herself surrounded by Gannon's evil henchmen. But wait! All was not lost. A young lad named Link appeared. He drove off Gannon's henchmen, and saved the nursemaid. Impa told Link the story of princess Zelda and the evil Gannon. Burning with a sense of justice, Link resolved to save Zelda. But in order to fight off Gannon, Link had to bring the scattered eight fragments of the Triforce of Wisdom together. "Can Link really destroy Gannon and save the Princess Zelda? Only your skill can answer that question. Good luck. Use the Triforce wisely." ³

Game Play: the basics.

LoZ is a single-player action RPG. You, the player, assume the part of Link, the game's elfin protagonist. You manipulate a growing collection of "objects" in order to vanquish the enemy and navigate "rooms."

Irrespective of your progress, Link starts in the aboveground Overworld, an interconnected maze of forests, lakes, mountains, benevolent wise men, merchants, and bad guys. Because LoZ operates from a $\frac{3}{4}$ overhead view, you can anticipate both geography and enemy location. Link must navigate the Overworld in order to broaden his inventory of weapons, gain real-time fighting experience, and perhaps most importantly, discover the eight entrances to the Underworld. The Underworld (underground), like the Overworld, is a series of "rooms" that must be explored and looted, though much darker, and with more enemies than the Overworld. Eight Underworld levels correspond with the eight Triforce fragments. Each level boasts a final boss that you, Link, must conquer to earn a Triforce fragment.



To facilitate your shellacking the enemy, Link possesses a dynamic set of strategic objects and life-restoring medicines. You (Link) begin(s) with a shield that fends off most enemy fire. To attack, simply wield one of three swords, throw one of two boomerangs, shoot one of two arrows, or bomb the enemy. (Notice, each attack or defense object must be discovered or bought; most Underworld levels contain a secret "room" that hides an inventory-boosting object.) Those objects not used solely for battle - for example, the blue and red candle, and keys - uncover or unlock secret entrances to prosperous rooms and acquaintances. There is also the matter of life.

Three hearts represent your total "life." For each hit you take, you lose half of a heart. Newbies find this initial six-hit maximum to impede game-play, but every recovered Triforce fragment or heart container increases your heart count by one! In effect, this boosts the number of enemy hits you can sustain. Objects such as the red heart - often the reward for killing pesky bad guys - or the water of life - visit your local merchant for details - restore Link's hit count to full capacity. When your life is full, you can attack enemies clear across the screen with your sword.

Tech Specs: like nuthin' your mama has ever seen.

Two chip technologies in particular are responsible for LoZ's technological prowess: MMC (Memory Management Controller); and, SRAM (Static Random Access Memory). MMCs, or logic gates, are custom-designed circuits that take the data for a game and break it up into organized parts that the master chip (ROM) can reference when needed: efficient memory allocation. Thus, the MMC enables LoZ's simultaneous vertical and horizontal "scrolling." These logic gates also expanded the NES memory to allow for more, and larger game worlds.

The SRAM made LoZ the first battery-based backup cartridge that could record a player's progress. An SRAM chip contained all the information about a player's progress in memory like any normal RAM. However, SRAM's are equipped with a battery that produces just enough energy to allow the memory to stay in tact even when the console is turned off and the cartridge is removed from the system. Simply, select "save" after Link dies and resume game-play later. (Click [here](#) for NES technical specifications.)

Control Interface: the As and Bs.

LoZ's control interface is twofold. First, there exists the physical Nintendo I/O device - a "controller" - that boasts a directional pad, and select, start, A, and B buttons. Pressing the directional pad moves Link either north, south, east or west. Pressing start pauses the game and displays Link's [current inventory](#). Pressing select pauses or resumes game-play. Assaulting the A and B buttons - as is usually the case - causes Link to attack and/or utilize the selected object.

Second, and less obvious, are the maps of the Overworld and Underworld levels. The Overworld map demonstrates Link's location (green dot) relative to the expansive world of Hyrule (gray rectangle). Similarly, each Underworld level contains a map and compass that, together, reveal the location of the Triforce fragment. A successful LoZ gamer manipulates both control interfaces - the physical and the virtual - simultaneously.



AI: the artificial stuff.

LoZ's "artificial intelligence" is far from academic, but multi-layered nonetheless. Each enemy adheres to a specific movement pattern (i.e. jumping, slithering, flying). In addition, certain enemies are susceptible to only certain weapons. Beyond the enemy's movement sequence and the appropriate attack object, LoZ's AI consists of two things: quantity and pace. For example, each Underworld level presents more enemies, faster enemies, or both.

Game Design: I wanna play!

Two partial reinforcement systems interact with the LoZ player: 1) periodic conflict with the enemy, and 2) Link's mission to collect the Triforce fragments and save princess Zelda. Both are "critical psychological ingredient[s] of video game addiction"⁴ and contribute to LoZ's significant replay value.

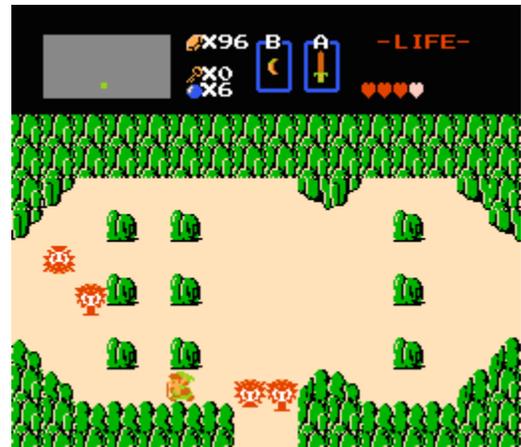
Destroying the enemy yields rubies, hearts, and occasional fairies that satisfy Link's basic elfin needs; killing can provide immediate reinforcement. But how often should the player be reinforced? LoZ answers: from time to time. Vanquished enemies do not always produce "power-ups," but rather, occasionally. Then, "[players] keep responding in the absence of [power-ups] because they are hoping that another reward is just around the corner."⁵ In a sense, LoZ gamers continue to play in hopes of attaining power-ups. Nevertheless, this initial characterization of LoZ's replay value underestimates the game's narrative quality.

Link thwarts evildoers, but does not amass points for killing bad guys. (Because the SRAM permits the player to save and return to his game, LoZ need not inflate his accomplishments with a *score*.) Instead, his ultimate goal is a narrative one: he must assemble the mystical triangle of Wisdom and rescue princess Zelda. For this reason each Triforce fragment, every Underworld level, is a component of this more holistic, albeit more prolonged, partial reinforcement system. That the gamer must invest (gasp!) time and effort in order to accomplish his task demonstrates LoZ's true replay value.

That Link's character does not talk in LoZ invites the player to intimately project himself onto the elfin protagonist. Perhaps this explains LoZ's timeless quality.

What's with the nervous twitch?

Link's attacking and defeating the enemy requires quick dexterous movement on the part of the player and provides instantaneous feedback. This works to keep the user actively engaged. But, LoZ demands that a player view the larger problem too: saving the princess. Link must navigate underground dungeons, discover hidden keys, and outsmart the enemy to achieve his goal. Because LoZ utilizes a combination of wit and dexterity, the player must simultaneously contemplate and conquer; strategy coupled with a "sheer visceral rush of immediate feedback."⁶ LoZ demonstrates a symbiotic blend of strategy and "twitch".



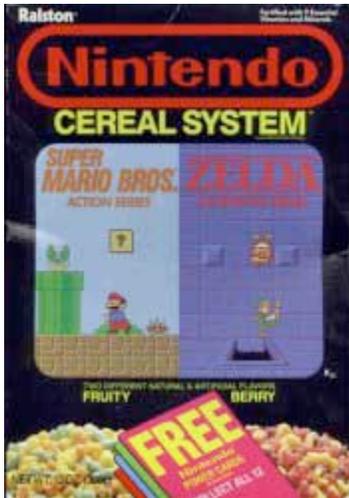
In too deep.

Learning and winning LoZ is a process of demystification: the player must discover how the software is put together. For this reason, the strategic depth of LoZ is inextricably linked to its AI. For example, the dragon boss of Underworld Level One must be hit in the head - the rest of his body cannot be harmed. He spits three fireballs towards Link every five seconds. Here, Link must slash the dragon's head between fireballs. But, LoZ boasts a game quality that is far subtler, and more demanding of players than its AI: nonlinearity.

Indeed, the concept of Underworld "levels" is misleading. Defeating a level's boss does not

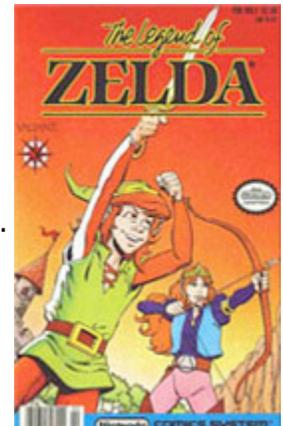
preclude Link's return to the level. In fact, it is often necessary to revisit conquered levels in order to gather life-sustaining power-ups. In addition, levels can be visited out of chronological order. Because the act of exploration is central to LoZ, the game requires that the player consider a web of possibilities. That LoZ necessitates such three-dimensional, out-of-the-box thinking adds immense strategic depth to Link's adventure. Case and point: even after a player "beats the game," a second quest awaits him! It's a whole new Hyrule fellas.

SUCCESS



LoZ was the first stand-alone game to sell over one million units in North America, and sold more than 6.5 million copies worldwide. Compared to \$6 million in development costs, the game grossed \$205 million domestically. Miyamoto's masterpiece would spawn five highly anticipated sequels for the NES, Super NES, Game Boy, and N64. LoZ also inspired lunch boxes, t-shirts, comic books, cereal boxes, and a cartoon series. Perhaps more intriguing though are attempts at both interactive and serious literary styles modeled after LoZ.

Between 1991 and 1993, Simon & Schuster published two "Choose your own adventure books" entitled "[The Crystal Trap](#)" and "[The Shadow Prince](#)." Jason Rich, a writer for Sybex, authors a series entitled *Pathways to Adventure*. His *The Legend of Zelda: Ocarina Of Time* tells a story of our protagonist Link. There also exists epic poetry that concerns LoZ. The most accomplished is Adam Wade Bradley's [The Legend of Zelda](#).



It is sufficient to reiterate the significance of the MMC and SRAM technologies. MMCs allowed LoZ to scroll in two different directions and increased Nintendo's maximum game size. LoZ's SRAM offered a backup system to record your progress. Previous video games were one-shot experiences, offering no continuity from one gaming session to the next.

But it is LoZ's narrative, nonlinear structure that represents a watershed in game design. It substituted the "highest score" criterion for success with a more fulfilling goal: "complete" the game. Miyamoto created a "miniature garden, which the players [could] explore rather freely. [LoZ players] ha[d] to become creative and independent - they need[ed] to think about what they should do next." ² This adaptable experience and changing environment kept gamers glued to LoZ, and to the five sequels that would follow.

Endnotes

¹ David Sheff and Andy Eddy, *Game Over: Press Start to Continue*. GamePress, 1999. 48.

² Ibid. 44.

³ Nintendo, The Legend of Zelda (instruction manual). Nintendo, 1987. 2.

⁴ Geoffrey R. Loftus and Elizabeth F. Loftus, Mind at Play: The Psychology of Video Games. Basic Books, 1983. 14.

⁵ Ibid. 16.

⁶ Marshall G. Jones, Learning to Play; Learning to Learn: Lessons Learned from Computer Games. Albuquerque, NM: Association for Educational Communications and Technology, 1997.

⁷ Jason Leung, "Miyamoto on Zelda." Nintendo Power November, 1998.