Research & Analysis: The Legend of Zelda

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The Legend of Zelda, originally created for the NES system, was a revolutionary game made by Shigero Miyamoto and his team at Nintendo. Zelda is a top-down, dungeon-adventure game that follows the hero Link on his quest(s) to save the princess Zelda and defeat the antagonist Ganon - all set in the fictional land of Hyrule. The overwhelming acclaim Zelda received made it one of Nintendo's most popular series, one of the most popular retro games of all time, and a very influential title for future game creations. So influential that over the following three decades, many game design companies have looked to The Legend of Zelda's success as a flagship for game design. Some reformat miniscule components of Zelda in new artistic ways, while others sloppily steal huge chunks of code and level design before slapping a different title on their "reproduction." Here are a few examples of both.

When I think of the dungeon-style progression used in Zelda, the first game that I think of is **The Binding of Isaac**. TBOI was created in 2011 in the roguelike genre, with a biblically-based story following Isaac as he acquires angelic/demonic powers in order to kill his maniacal mother. While both titles use RNG for enemy spawns, TBOI builds on this by using seeds to randomly generate each floor, each room, the enemies within, and the items dropped. Being the more modern game, TBOI obviously has better graphics, a more polished look, and arguably more playability. However, one can easily see how TBOI reengineered various components from The Legend of Zelda. TBOI offers the same top-down view, a familiar GUI (with hearts, a dynamic map, and consumables), and similar enemies/traps (*gels* and *dips*, *blade traps* and *slides*). But, we feel that the small differences in mobility in TBOI makes a lot of difference in gameplay, and for the better. The Binding of Isaac feels like a much cleaner game, with much more playability (due to the RNG) and a better control system. For example, it is possible to shoot in a direction you are not moving in, which makes it easier to avoid enemies, but also can be confusing and non-intuitive if you're already used to Zelda-like gameplay. Also,

the player's movement in TBOI is not constrained to a grid like Link is in The Legend of Zelda, thus giving a much more fluid, almost drifting motion. This allows the player to avoid projectiles, sneak up behind enemies easier, and attack *while* moving (which is not possible in Zelda). The motion in TBOI has its own inertia, visibly accelerating to the target velocity and then visibly decelerating after taking your finger off the arrow key, unlike Link's all-or-nothing running. However, we must take into account the restrictions the NES had in comparison to modern systems. Rendering capabilities and syncing bit refresh rates are just a couple of reasons why Link was constrained to a gridded system and why there is the frozen-game shift as Link changes rooms. An additional game logic divergence is that in TBOI, once the player enters the room, they are unable to leave until they kill all of the enemies within (other than a few exceptions, such as teleporting, bombing their way out, etc). This was most likely done to prevent the player from slowly slicing away at enemy numbers in various rooms - a much easier task than being trapped in the room and being forced to slay all foes before progressing onward. This difference arguably makes Zelda easier, since the player can leave the room, gain health with some other (potentially easier) enemies, and then come back. Conversely in TBOI, the compartmentalization of sealed rooms as "subchallenges" that gradually increase in difficulty reward the player progressively and proportional to the difficulty of the room.

Another game that is similar to The Legend of Zelda is **Crystalis**. On the outside, it may feel and look different, but we thought the gameplay was similar enough to talk about. Both games have randomly generated enemies of different types that can cause us damage and that we can try to destroy with a weapon, and both games have plenty of collectibles that give us health, wealth, etc. There are some obvious things that are different: the map is totally different, as is the camerawork. Instead of separate map sections that each have their own fixed camera like the separate dungeon room setup in Zelda, Crystalis has one big continuous map, and the camera always follows the hero. We found that this made gameplay a little more aimless, and we found ourselves getting lost and not being able to find checkpoints. Additionally, the hero can move diagonally in addition to the four cardinal directions, so motion is a bit more fluid in

this game than in Zelda, but the diagonals' slopes are constrained to positive or negative 1, so it's still gridlike in a way. Another added motion functionality in Crystalis is jumping over enemies, which lends more control in attack style for the player than Zelda gives. Weapon usage is a little different too; automatic shooting is not available like with Link at full health. Instead, you have the option to hold down the shoot key for extra force and only then, at release, will the sword shoot. Otherwise, it's just within-range attacks. This can be very frustrating, as the hero often has to get closer to the enemy to attack it, but the collision detector is really big and sometimes triggers even when the hero doesn't seem to be touching the enemy. Anyway, the changed sword allows for some extra strategizing in the action aspect of gameplay, since it's more difficult to take shots in Crystalis. However, Zelda has more strategy in terms of how to navigate the maps to get the Triforce for every level (due to locked doors, pushable blocks, etc). Also, the tasks to complete in Crystalis follow a very strict progression (the hero must finish a certain task first to get to the next part of the map), while the level progression for Zelda can be pretty arbitrary (other than the last level). This leads to a freer-feeling experience when playing Zelda, since a player is able to explore wherever they want and complete tasks at random. The strong linear story background in Crystalis thus creates a big difference in gameplay, since the player is constrained in their choices. In all, Crystalis seems very well-crafted and fun to play, but although both feature similar elements of gameplay (attacking, collecting), the purposes behind them are distinct, and lead to totally different gaming experiences.

However, with every proper game release that attempts to sample a few aspects of the original game respectfully, there are about three that are flagrant copies. One example of a Legend of Zelda copy is **Golden Axe Warrior**, made for the Master System in 1991. One only needs to play a few screens to realize the uncanny "similarities" between the two titles. GAW can be described by almost identical classifying terms: top down (with slight camera tilt/depth) roguelike adventure game, single-section maps (where the camera doesn't move as the player moves around a single section of the map, but it pans to the next rectangular section if the

player makes it to an edge), grid-based movement, and a HUD with life/magic/item counts. Arguably (because it was made later), GAW has better graphics, sound design, a larger total map size, and a more diverse enemy base. And yet, the differences did not necessarily make a better game. One of the biggest differences was that within each different section of the map, there could be more than just one type of enemy--there were often three or more, each with different walking patterns and functionality, unlike in the Zelda dungeons, where each room had only one enemy type. Moreover, the sheer number of enemies per section was sometimes overwhelming, where in Zelda the number of enemies was always more manageable. In addition, GAW is notorious for more low health/magic drop rates compared to Zelda, making the it much more difficult and very frustrating during gameplay. Adding to this, each different enemy provides a different health drop rate, and so it adds a degree of strategy in navigating a map--which enemies would it be okay to come in contact with, and which wouldn't? This is different from Zelda as well, as each enemy drops health by exactly half a heart each time, which makes Zelda feel more stable as a game.

The player controller felt more difficult, too. First of all, the hero walks much faster in this game than Link does in The Legend of Zelda, which intuitively should make the game more "juicy," but in reality this just makes the hero harder to control in our opinion. Also, even with all the extra difficulty with enemies, there is no shooting mechanism with the weapon. This makes killing enemies much more difficult, as often to get close enough to damage an enemy, the hero is at risk to be damaged himself. The one small relief is that if the hero dies and we continue the game, the enemies don't reappear after we've killed them once. On one hand, this makes it easier, but on the other hand, it gives zero stake to dying. It doesn't matter if you die, because you can literally go back to exactly where you left off with full health and keep going. The Legend of Zelda was superior in this respect--success in the game was dependent on skill and not just killing enemies, dying, respawning, and repeating as necessary (GAW). Zelda bolstered the incentive to maintain health and not die, which ultimately translated to a more fun experience.

After doing this review, we had some ideas about what we might want to change about Zelda if we had been implementing it ourselves from scratch. One aspect we thought we might change is that we could halve the number of rupees when Link dies, so as to give further motivation to stay alive. This was mainly a response to our experience playing Golden Axe Warrior. We also enjoyed the freer, more inertial movement in The Binding of Isaac, so we also liked the idea of allowing Link to move in more than just the four cardinal directions, and in a way that's not constrained by a grid. From studying Crystalis, we felt that while the strong linear narrative could be overly constraining during gameplay, we felt that Zelda could maybe use a little bit more of a guided storyline, to give some "purpose" to the game. Also, we liked the wider and more varied collectible items, all with different functionalities, so maybe we would have liked to introduce a new weapon with some interesting attack movements or effects.

All in all, no newly produced video games will ever be 100% authentic and unique. It is perfectly ethical to sample mechanics from other titles in order to improve your game. In a Darwin-esque manner, game developers evolve and learn from each other. Sampled game mechanics that succeed - meaning that the audience likes that feature - are passed along to other games in that franchise and even other genres, while unpopular game features *hopefully* fade into the Shadow Realm. Thousands of new games will continue to be made every year, and graphics/fps/controllers will progress and evolve. However, we can't forget our roots - our wonderfully simple, 8bit, and sometimes glitchy roots - that immortalizes titles like The Legend of Zelda as true masterpieces in the minds (and hearts) of true gamers.