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Colossal Cave Adventure and the Path-Dependence of Adventure Games

Colossal Cave Adventure (also known as *Adventure*) was the first text-based adventure game and the first example of interactive fiction. *Adventure* was an “interactive textual simulation of a caving expedition” that contained elements of fantasy, magic, humor, simple combat, and basic puzzles.¹ Developed by Will Crowther, a programmer at Bolt, Beranek and Newman (BBN) in 1976, and later expanded by Don Woods, then a graduate student at Stanford University’s Artificial Intelligence Lab, *Adventure* inspired a generation of hackers and has come to define many conventions in subsequent adventure games.²

Adventure challenged players to navigate a fictional cave by reading textual descriptions of the setting and typing in simple two-word commands such as “light lamp” in order to solve puzzles and collect treasure.¹ The inspiration for the “Colossal Cave” in *Adventure* came from the real Mammoth Cave in Kentucky. Will Crowther was an active caver and based his game on his surveys of Mammoth Cave. “While Crowther remained largely faithful to the geography of the real cave, his original did introduce subtle changes to the environment in order to improve the gameplay.”¹ Additionally, Crowther was an avid *Dungeons and Dragons* player at the time, which inspired him to include elements of magic and fantasy in *Adventure*.² On his vision for *Adventure*, Crowther recounted, “My idea was that it would be a computer game that would not be intimidating

¹ Jerz, Somewhere Nearby Is Colossal Cave.

² Adams, A History of 'Adventure'.

to non-computer people, and that was one of the reasons why I made it so that the player directs the game with natural language input, instead of more standardized commands.”² From its inception, Crowther had intended *Adventure* to be accessible to the non-technical player. In fact, Crowther originally designed the game for his two children as a bonding activity after his divorce.²

Apart from his children, Crowther had shown *Adventure* to his colleagues at BBN, where he was on a team that helped develop the ARPANET, the immediate precursor to the internet. He had considered *Adventure* to be complete and left a copy of the game on his BBN computer before leaving for a month’s vacation. Upon his return, he was surprised to learn his game was widely distributed across the network.¹ One of those who had discovered the game was Don Woods, a graduate student at Stanford in 1976. Woods wanted to expand upon *Adventure* and contacted Crowther, who agreed and gave Woods access to the game’s source code. Woods greatly expanded *Adventure* from Crowther’s original 709 lines of code to 2949 lines of code. His expansions include more fantasy elements based on his love of J.R.R Tolkein, a scoring system, and more treasures for players to collect.³ Wood’s 1977 version of *Adventure* became the most recognizable and “cannon” version of the game because he widely distributed his source code while Crowther did not. Therefore, nearly all subsequent versions of the game were based on Wood’s version.⁴ Though Wood’s version of *Adventure* was immensely popular, it was never marketed or commercialized. Nonetheless, *Adventure* had a significant cultural impact in the late 1970s and spawned a wave of commercial interactive fiction games in the 1980s.

³ Peterson, *Genesis II, Creation and Recreation with Computers*, 188-190.

⁴ Montfort, *Twisty Little Passages: An Approach to Interactive Fiction*.

Before I delve into the influence of *Adventure* on subsequent games, we need to examine the mechanism of how that influence is exerted, namely, via path-dependence. Broadly speaking, path-dependence is the idea that the continuous trajectory of a particular technology or medium is influenced by historical developments. MacKenzie and Wajcman define path dependence as a history in which “past events exercise continuing influences... Path-dependence means that local, short-term contingencies can exercise lasting effects.”⁵ *Adventure*’s design choices were informed by Crowther and Wood’s personal interests and inspirations. Little did they know that their game would become one of the most influential titles in video game history and come to define many conventions and gameplay elements in the adventure game genre and beyond.

Apart from being the first work of interactive fiction, *Adventure* established conventions that are standard in interactive fiction titles today, such as the use of shortened cardinal directions for commands (e.g. “e” for “east”).⁶ Additionally, *Adventure* inspired a wave of commercial text adventure games that would become the best-selling computer games of the 1980s.¹ Text adventure games created the first market for home computer games. The first commercial adventure game, *Adventureland*, was developed by Scott Adams in 1978. Loosely based on *Adventure*, *Adventureland* required players to move between various areas of the game to collect objects and solve puzzles. However, unlike *Adventure*, the game had no plot and was simply a treasure hunt.⁷ *Adventureland* was so successful that it prompted Adams to found Adventure International, the first commercial publisher of interactive fiction, in 1979. Adventure

⁵ MacKenzie and Wajcman, *The Social Shaping of Technology*, 34.

⁶ Sloane, *Digital Fictions: Storytelling in a Material World*, 57.

⁷ Adams, *GameSetInterview: Adventure International's Scott Adams*.

International went on to publish twelve more interactive fiction games until it went bankrupt in 1985.⁷ Although Adventure International had a brief life, it is credited for introducing adventure games to microcomputers, given that *Adventure* ran strictly on large mainframe systems at the time.⁷

Perhaps one of the most well known examples of interactive fiction is Infocom's *Zork* series. When *Adventure* reached MIT in the spring of 1977, four members the MIT Dynamics Modeling Group responded by creating *Zork*.¹ Interactive fiction scholar Dennis Jerz has said, "whereas *Adventure* began as a simulation of a real cave, *Zork* began as a simulation of *Adventure*."⁸ However, *Zork* offered several key innovations, one of which was its ability to take sentences for commands compared to the two-word commands accepted by its predecessors.⁹ In 1979, *Zork*'s developers founded Infocom, which would later become the largest producer of interactive fiction games.¹⁰ While the original version of *Zork* was for mainframe computers, it was ported and released as a trilogy for personal computers in 1980. Infocom sold more than 680,000 copies of the three games through 1986, making *Zork* the first text adventure game to see widespread commercial release.¹¹ Infocom was later purchased by Activision in 1986 and closed in 1989. In its decade of operation, Infocom truly popularized interactive fiction and text adventure games as a commercial product.

Mystery House was the first adventure game to incorporate graphics. Released by On-Line systems in 1980, it was designed, written, and illustrated by Roberta Williams

⁸ Jerz, *Zork* -- Blank and Lebling (1977).

⁹ Barton, *The History Of Zork*.

¹⁰ Nelson, *A Short History of Interactive Fiction*.

¹¹ Carless, *Great Scott: Infocom's All-Time Sales Numbers Revealed*.

and programmed by her husband, Ken, for the Apple II computer.¹² In 1979, Ken Williams discovered *Adventure* on a mainframe computer accessed through a teletype terminal from his home. Ken and Roberta played *Adventure* all the way through. Having finished playing *Adventure*, the couple looked for similar games and found the market underdeveloped.¹² While Roberta liked the idea of a text adventure, she thought players would have a more satisfying experience with images. *Mystery House* places the player inside an abandoned mansion with the task of discovering its occupants' murderer. However, in addition to the textual descriptions of the scenes, *Mystery House* featured 70 simple two-dimensional graphics to accompany the text.¹³ *Mystery House* was an enormous success and became one of the best-selling computer games at the time. *Mystery House* is credited for introducing a visual component to adventure games at a time when most computer games did not feature graphics.¹³ Although the gameplay and setting of *Mystery House* deviates considerably from *Adventure*, its creators took inspiration from the original and created a product that blends the traditional text adventure with their innovative vision for game graphics.

Outside of adventure games, *Adventure* is often considered the precursor to role-playing games. *Adventure* created a virtual world and the means to explore it, and it included elements such as monsters and simplified combat. Dennis Jerz contends that *Adventure* contained “logic and resource-management puzzles and the exploration of a complex virtual topography within the context of a framing story,” and these features “remain staples in adventure, role-playing, and multiplayer game genres.”¹ *Adventure* also influenced the development of online multi-player games such as Multi User

¹² Williams, Introduction to The Roberta Williams Anthology.

¹³ Fatt, Feature: The 52 Most Important Video Games of All Time.

Dungeons (MUDs), which were themselves precursors to modern Massively multiplayer online role-playing games (MMORPGs) such as World of Warcraft.¹⁴ Finally, the 1979 Atari 2600 game *Adventure* was an attempt to create a graphical version of *Colossal Cave Adventure*. *Adventure* (1979) became the first action-adventure game and introduced the fantasy genre to video game consoles.¹⁵

While *Adventure*'s influence in the realm of gaming is unequivocal, its influence is not confined to games. *Adventure* also had a profound influence on hacker culture. For instance, within *Adventure*, the phrase “xyzzzy” teleports the player between two specific locations. However, if a player enters the command from any location other than the two specified locations, the game produces the response, “Nothing happens”.¹⁶ As a tribute to *Adventure*, many later computer programs include a hidden “xyzzzy” command, with responses ranging from the straightforward to the humorous.¹⁶

Today, *Adventure* may seem like a relic from the past. However, few games have had such a wide-ranging and deep influence as *Adventure*. While *Adventure*'s inspiration for modern games may not be obvious or even visible, it is important to remember that *Adventure* served as the precursor to the precursor of many games today. Not only did *Adventure* define an entire genre of games, it captured the hearts and minds of enthusiasts like Woods and the Williamses and inspired them to create. In the words of Richard Cobbett, “Might all of these things happened anyway? Perhaps. But in our reality, they all owe a debt to Will Crowther’s love of caving, and his desire to share that experience with his daughters in the comfort and safety of virtual space.”¹⁴

¹⁴ Cobbett, The 50 Most Important PC Games of All Time.

¹⁵ Connelly, Of Dragons and Easter Eggs: A Chat With Warren Robinett.

¹⁶ Adams, Magic Word 'XYZZY'

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