Let's Begin Again
Sierra On-Line and the Origins of the Graphical Adventure Game

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The author retells the origin story of Sierra On-Line and its historic first product, the graphical adventure game *Mystery House*. She reviews the academic and journalistic writing that placed the story almost exclusively inside a narrative about early computer games, treating it as a saga of the competition between the graphic adventures Sierra On-Line produced and the literary games developed by companies like Infocom and dubbed interactive fiction. The author argues that such video game history proved both inaccurate and obfuscating, the she uses archival documentation and a counter-historical methodology to describe a different kind origin for Sierra On-Line and to deride the obviousness of presumptive beginnings within the discipline of game history. **Key words:** adventure, adventure game, game historiography, game history, genre, interactive fiction, Ken Williams, Mystery House, Roberta Williams, Sierra On-Line

> The most important thing to remember is to always map your way through this mythical land right from the very beginning. If you don't, you will get lost right away, or miss out on some important places to go.—Roberta Williams "Winning Strategies for Adventures" *The On-Line Letter*, June 1981

HINDSIGHT IS MOST of what we know. In the introduction to the 1996 *Roberta Williams Anthology* manual, programmer and Sierra On-Line cofounder Ken Williams recounted his first experience playing the text-based adventure game *ADVENT* (more popularly known as *Adventure* or *Colossal Cave*), offering readers a rear-view reflection on the moment in 1979 that changed his and his wife Roberta's lives.

> YOU ARE STANDING AT THE END OF A ROAD BEFORE A SMALL BRICK BUILDING. AROUND YOU IS A FOREST. A SMALL STREAM

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> FLOWS OUT OF THE BUILDING AND DOWN A GULLY. >SOUTH YOU HAVE WALKED UP A HILL, STILL IN THE FOREST. THE ROAD SLOPES BACK DOWN THE OTHER SIDE OF THE HILL. THERE IS A BUILDING IN THE DISTANCE. >GO BUILDING
>
> YOU ARE INSIDE A BUILDING, A WELL HOUSE FOR A LARGE SPRING.
>
> This is the beginning of the game that so captured my wife Roberta that she could not sleep for days while exploring the caves beneath the well. The year was 1979. I was programming an income tax program on a mainframe computer that was 3,000 miles from my Los Angeles home. To access the computer, I had a teletype machine. It was really just a typewriter with a modem and a printer communicating at 110 BPS; but it allowed me to get my work done. Although the teletype was at home solely for work, that didn't stop me from exploring the mainframe for anything else interesting to do.
>
> I will always remember the thrill of discovery when I saw something called Adventure and typed it just to see what would happen. Back typed the computer, "You are standing…" Within minutes, I was calling over to Roberta to show her my discovery. No work got done that night.[1]

Little could Ken and Roberta Williams—sitting on the spare bedroom floor of their Simi Valley, California, bungalow home—have imagined that the adventure game, and this historic link with *ADVENT*, would come to define their relevance in video game history.

Much has been made of the fact that the Williamses were, without knowing it, in the presence of "history." *ADVENT*'s status as the first adventure game has long been deemed canonical by game scholars. Not only is *ADVENT* regarded as the first adventure game ever programmed, but it was a direct influence on two other games considered foundational to the genre: Infocom's *Zork*, originally distributed by Personal Software in 1979, and the Williamses' own *Mystery House*, a graphical adventure game released under the company name On-Line Systems in May 1980 (On-Line Systems changed its name to Sierra On-Line in 1982, which remains the name most popularly identified with the company's history). Given Sierra On-Line's genealogical ties to the genre and its role in the creation of other iconic adventure titles, most notably the eight-game series *King's Quest*, it is not surprising that Sierra On-Line has been portrayed by journalists, enthusiasts and academics as a key figure in the origin story of the adventure game genre.

As a discursive field, video game history traditionally offers a limited set of analytic and organizational frameworks to substantiate why a given game or

designer or technology warrants historical attention. When we speak of why something is historical in video game history, that knowledge claim is typically ordered by some matrix of chronology, genre, technological primacy or progress, platform object, economic success, or historical novelty. In Sierra On- Line's case, the significance of genre as a dominant frame has come to condition the terms on which we imagine the company, its games, and its designers as historical actors. Yet this habit of history making produces paradoxical limits: game history can neither witness the company for what it was, as a fluctuating twenty-some-year event more elaborate in shape than simply the rise and fall of a specific genre, nor can it relate the company to the broader landscape of early microcomputer software development. This is history told front to back, which wills our telling to be merely Wikipedic: "Sierra is best known today for its multiple lines of seminal graphic adventure games started in the 1980s, many of which proved influential in the history of video games."[2]

Thus, I am concerned here with how Sierra On-Line has come to serve a specific "influential" function within video game history, often within a narrative framework that demarcates early computer game history as predominantly a competitive saga between the image-heavy, graphic adventures Sierra On-Line produced and the literary, text-based adventure games or interactive fiction developed by companies like Infocom. Accounts of Sierra On-Line rarely, if ever, exceed these stakes. In various texts, Sierra On-Line is represented within the context of one or more of the following: a chronology that traces computer gaming from institutional mainframe, minicomputer, or first wave microcomputer programs such as *Hunt the Wumpus!*, *ADVENT*, and *Zork* to a home computer software industry dominated by companies like Infocom, Sierra On-Line, Adventure International, and Sir-Tech (*Replay*); the demise of the graphical adventure game genre, and the fall of Roberta Williams, in the face of fast-paced action, racing, and shooting games (*All Your Base Are Belong to Us*); and a decontextualized overview of Sierra's adventure games, largely fixated on the technological and graphical progression showcased in the *King's Quest* series (*Vintage Games*).[3] In some instances, histories frame Sierra On-Line through a hyped-up competition narrative with Infocom—although, oddly enough, it is academic texts, rather than enthusiast ones, that perpetuate this interpretation.[4] The Infocom-Sierra matrix constitutes a confusing mythology; it emphasizes what, over the company's longer lifespan, was not tremendously significant, and minimizes—or maps over—what might be most surprising about the company. By almost all accounts, Sierra On-Line simply solidifies and provides one

trajectory for the history of the adventure game genre; geography, biography, conditionality, and other historical modifiers render down to memorable details, articulating difference even as these differences are never called to account in the mattering.

My contention is that the rubric of genre has overdetermined, to the point of obfuscation, a more diverse range of objects, affects, and practices in action at the moment of the Sierra On-Line's emergence. Thus, I dedicate this article to a simple aim: to tell a different kind of story about how Sierra On-Line came to be. If we remove "genre" as the operative impulse of the story, what remains? In a straightforward way, I rely on a more diligent approach to archival documents and methodological concerns than has previously been offered in other accounts. I emphasize the places where the story told diverges from standard narratives about Sierra On- Line, paying special attention to the technological conditions of the initial emergence, production, and distribution of the Williamses' first game. While there is much to be discovered by examining how Sierra On-Line links up with other adventure games or adventure game producers, I will cover only the ten-to-twelve-month period bookending *Mystery House*'s production. I want to write precisely about specific technological "happenings" within the Williamses' home, without deferring their human experience of such technologies. This is a move that shrugs aside the universalizing or magical divination of technological, ludic, or literary genius in favor of a more grounded, sympathetic account of human affective forces (such as talent, creativity, drive) within a specific spatio-temporal context. At every turn, history is different from what we said it was, something less true, something that could begin anywhere, elsewhere. Let's begin.

The Descent of the Adventure Game

In discussing the emergence of Sierra On-Line and Infocom, we see already that our beginnings are more arbitrary than we would like to think. Neither company's origin marks an absolute start; rather, both companies unfolded from the existing objects and relationships around them. Specifically, both companies share some partial influence from *ADVENT*: Roberta Williams in her California home and the Infocom founders at MIT were both internally sparked by this early adventure game. Thus, it is necessary to reflect on how *ADVENT* itself came to be to understand the historic primacy it has been granted today—and what

about the game uniquely fostered Roberta Williams's obsessive play.

Numerous accounts have been written on the origin of *ADVENT*, but few would begin with a domestic scene: by 1975, Patricia Crowther's marriage to Will Crowther had dissolved to the point where she moved out and took their two daughters with her. Like Will, Patricia was a programmer, a caver, and an employee at Bolt, Beranek, and Newman (BBN), a DARPA (Defense Advanced Research Project Agency) contractor in Cambridge, Massachusetts, and the East Coast point for the first cross-country ARPAnet link (with UCLA, installed in 1970).

Patricia and Will had frequently commingled the pleasures they took in caving and programming, uploading survey data of the Kentucky Mammoth Cave system to a mainframe at BBN and printing out plotter line drawing maps of the caves.[5] Patricia was even involved in the historic 1972 traverse of an unmapped, seven-mile connection between the Kentucky Mammoth and Flint Ridge Cave systems—a grueling expedition that left her and her teammates "caked in mud 'like chocolate frosting'" but proved these systems to be the longest cave in the world, an "Everest of speleology."[6] Her participation was critical; it was her lean, 115-pound frame that first passed through the initial uncharted link in this connection, a narrow canyon known as The Tight Spot.[7] Two years after Patricia moved out, she married John Wilcox, chief cartographer for the Cave Research Foundation, and the leader of the historic expedition during which Patricia "made history" five years earlier.

But between these bookends, there was Will Crowther, who began spending his off hours programming a caving simulation, intended for his daughters to play on the computer when they visited (he stopped caving over this time, as it had "become awkward").[8] The simulation, programmed in FORTRAN on a DEC PDP-10 at BBN, was a sketch of the Kentucky Mammoth Cave's Bedquilt entrance, complete with its own tight-spot-styled room interaction, where players had to "drop everything" in their inventory before they could pass through. The game used textual input and output, permitting the daughters to navigate game space with one- or two- word natural language commands ("NORTH" or "GO BUILDING"). Will Crowther scattered objects throughout the environment, which could be picked up, carried (held in an "INVENTORY"), manipulated, and used to affect the environment for defeating monsters, gathering treasure, and solving the puzzles blocking further exploration.

Unexpectedly (to Crowther, at least), his colleagues at BBN pushed the game through the circulatory system of ARPAnet. Passed into the network ecol-

ogy of transcontinental computer use, *ADVENT* was extracted from its delicate emotional origins; no one need know this was an affectual space as surely as it was a ludic one. By unknown hands *ADVENT* was copied into the Stanford Medical Center computer's GAMES folder, where it came to the attention of graduate student Don Woods, who requested a copy be transferred over to the PDP-10 where he did research at the Stanford Artificial Intelligence Lab (SAIL).[9] Woods eventually tracked Crowther down via electronic mail, obtaining both the FORTRAN source code and permission to expand and, as he felt, enhance the simulation. Woods refined the puzzles, expanded the exploratory space, added various features such as scoring and saving, and cleaned up the code enormously, providing copious program line commentary.[10] This version of the game became wildly popular—features like scoring, saving, and time-limited objects clearly identified it as a *game* rather than a navigation simulation with ludic components. Woods left the game on the SAIL mainframe for others to copy and play, and this clever, unique program travelled enthusiastically.

Tim Anderson, one of the original *Zork* programmers, recounts the experience. "When *Adventure* arrived at MIT, the reaction was typical: after everybody spent a lot of time doing nothing but solving the game (it's estimated that *Adventure* set the entire computer industry back two weeks), the true lunatics began to think about how they could do it better."[11]

The Williamses and the programmers of *Zork* thus share a joint moment of encounter with *ADVENT*. *Zork* was initially designed in 1977 as a PDP-10 "follow-on" to *ADVENT*.[12] *Zork*'s programmers founded a fledgling company, called Infocom, and elected to commercialize the game for microcomputers, partitioning, refining, and compressing mainframe *Zork* into *Zork I–III*.[13] The game met with considerable success; Infocom would gain notoriety throughout the 1980s producing a prolific and award-winning lineup of "no-res computer logic game[s]," as a *Softalk* writer termed them in a June 1981 *Zork* review. Rather than implementing graphics as many adventure game developers did, Infocom honed a reputation for text-only games with broad vocabularies, compound-sentence parser input, and sophisticated nonplayer character (NPC) interaction. Today, Infocom is generally remembered as the market leader in text adventures, and interactive fiction enthusiasts have avidly bolstered Infocom as a keystone of the ludo-literary medium.

However, a side effect of interactive fiction boosterism suggests that the stark ludic, aesthetic, technological, and narrative distinctions between Sierra On-Line and Infocom have resulted in an evolutionary narrative of the genre as a

competition between these graphical and textual inheritors of *ADVENT* (Figure 1). Sierra would be credited with innovations in graphics well into the mid-1990s with technically notable games such as *King's Quest* (1984), *King's Quest V* (1990), and *Phantasmagoria* (1995), while Infocom carved into the techniques of parser input, storytelling, and puzzle solving in games such as *Deadline* (1982) and *Planetfall* (1983). Yet between these two companies (and within the adventure game genre generally), Infocom has received the majority of academic attention and is considered a reference point for language-oriented academic disciplines and e-literature communities invested in the status of interactive fiction.[14] No genre of 1980s computer gaming has attracted more theoretical and published attention than interactive fiction, and it is the only genre of prenetworked computer gaming to command entire monographs, such as Nick Montfort's *Twisty Little Passages* and Anastasia Salter's *What Is Your Quest?*[15]

In the popular (and, often, academic) chronology, Infocom is the proper inheritor of what *ADVENT*, as the first piece of interactive fiction, prefigures. Scholars frequently attribute a literary purity to Infocom that Sierra fumbles and apes. Montfort's *Twisty Little Passages* provides a brief, strikingly presentist treatment of Sierra, labeling *Mystery House*'s graphics "minimal" and "bizarre," and its parser "primitive," while begrudging the company almost no relevance aside from being "the first" to add images to text adventures.[16] Similarly, the coauthored textbook *Understanding Video Games* lauds Infocom as the aesthetic and ludic superior to the "crude" style of "less purist" Sierra On-Line.[17] Here, the imperative need to substantiate the value of interactive fiction as serious literary creation has shaped a historical analysis that distances interactive fiction from the ludic shallow end of games. Yet reducing 1980s adventure gaming to these two companies does more than perpetrate a blunt historical shorthand. It misrecognizes what actually is historical, settling for an iteration of titles, dates, and isolated competitive sagas rather than seeking an embedded sense of how active and proliferating the video game industry had become. Accounting for the diversity of the hardware platforms, the range of software available for microcomputers, the economic volatility the industry experienced within the first five years of its emergence, the month-to-month flip-flop of sales standings, and the mixed level of discourse on the relative merits and pleasures of graphical hi-res and text-based works, we find little historical basis for uncontested claims that any company led the industry or that the popularity of any particular game was solely the effect of literary and ludic merits rather than something that occurred in concert with various technological and market conditions. Yet the

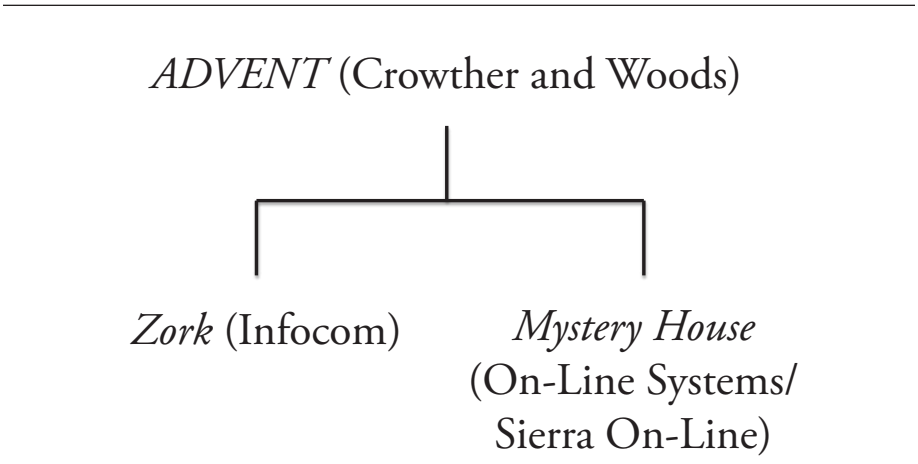


Figure 1. Chart presenting the sandard "evolutionary narrative" of the adventure game represented in video game history. Illustration by author.

graph in figure 1 represents genealogy in only the most basic, tree-like sense, a video game history that can trace the inevitable unfurling of a genre through leaps and bounds of technical and creative progression to its presumed, much-cited death at the hands of first-person shooters and online gaming worlds in the mid-to-late 1990s.

The common chronologies of the adventure game and the emergence of interactive fiction would do well to keep in mind that what was significant about *ADVENT* was not its "firstness" as a game but its distribution and its multiplicity, its *spread*—a fact that cannot and should not be reduced to a pure set of free-standing aesthetic or ludic conditions. The desire to cultivate a historical claim for the importance of this particular game—as a historical artifact in and of itself and as the catalyst for the adventure game genre—has obfuscated the game's more substantial historical erotics: how frequently it was copied, extended, or implemented for different mainframes (no less than sixty noncommercial versions or implementations of the game have been documented, to say nothing of its numerous uncited microcomputer clones); the transcontinental network that was the measure of the reach of these games (countrywide, international, even all the way into the innocuous locale of the Williamses' spare bedroom); and the networks, terminals, mainframes, and keyboards that enabled its quasicollaboration yet left the facts of the game's production, implementation, and

reimplementation in near utter darkness (names etched on the wall of a cave only to be found decades later).[18] *ADVENT* points to a meshwork of affective and material relations, the edge at which desire and capacity unfold and human-computer interaction becomes driven by affect rather than interface. Individuals, provoked to play and reproduce the game, were afforded the opportunity to do so by the possibilities and limitations of their own independent lives and the technical infrastructures in which they were bound up.

As we pry a little further into Sierra's emergence, I am keen to uncover the places where the company proves just well documented enough to expose its own disparity. In the story told by Ken Williams (who was aware, by 1996, of *ADVENT*'s historical significance), Sierra On-Line becomes *already historical* before it even exists because of the status afforded to the moment of encounter with *ADVENT.* It is a retrospective account that makes coherent the Williamses' place on a timeline of historical advancement in the adventure game.[19] Although the common mythology jumps from the scene of Roberta Williams playing *ADVENT* at a teletype machine directly to the scene of Roberta Williams designing *Mystery House* at her kitchen table, we would do well to slow down. Game history is quick to forget that no one knew *ADVENT* was the first adventure game at the time Roberta Williams played it. Some of the hazier parts of this story involve the questions of how Williams understood what she was doing, what else influenced her game design, and on what terms we should understand *ADVENT*'s significance (especially if we attempt to plot that significance through something other than the development of a genre)?

A Motor in the Bedroom

So, let's begin again: in the fall of 1979, Ken Williams executed the *ADVENT* program via his teletype machine in Simi Valley and found himself standing at the end of a road before a small brick building. Ken was around twenty-five years old, Roberta twenty-six. They had grown up in the eastern outskirts of Los Angeles County—Roberta on a couple acres of land in Claremont, Ken just south of her in Ponoma—and married young, in 1972 (figure 2).[20] Because Roberta and Ken were born so close in time, the cultural and political events of the 1960s would have mapped upon their experience of youth: John F. Kennedy was assassinated when they were roughly ten; their teenage years opened with the moon landing; the debacle of Vietnam must have coursed through it all. The

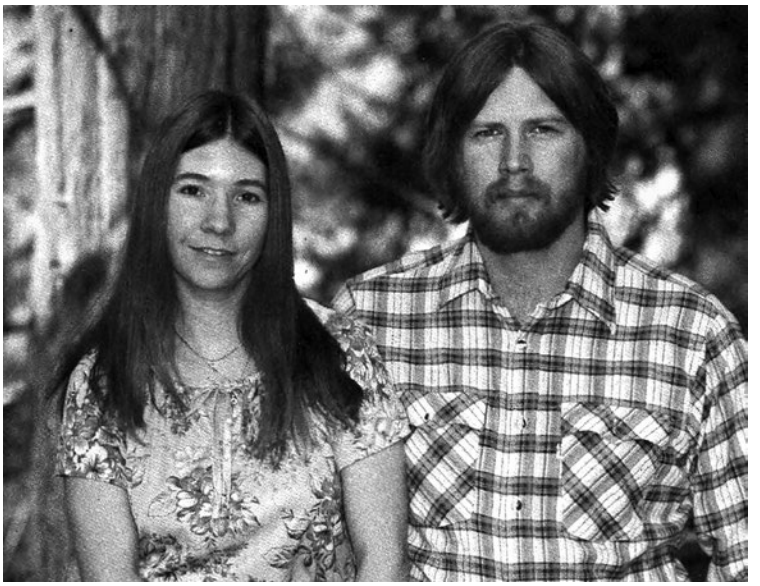


Figure 2. Roberta and Ken Williams. Photograph by Brian Wilkinson. Featured in Al Tommervik, "On-Line Exec: Adventures in Programming," *Softalk*, February 1981, 4. Image courtesy of Softalk Apple Preservation Project.

draft expired in 1973—Ken never had to take his place in a military machine that shredded the bodies of a generation of young men just a few years older than he.

As a couple, they rode the dead center of the boomer generation, Ken with his shaggy blond hair and straightforward good nature, Roberta quiet around strangers—by all reports thoughtful, dreamy. As they grew up in the 1970s, they both aspired to move away from the suburban neighborhoods and the track houses that marked their younger days and retreat into the woods. Their second son, Chris, had been born earlier that very year, 1979; the elder, D.J., was six years old. The boys' care largely fell to Roberta, who balanced all the typical duties of domestic upkeep while helping flip the houses they lived in, keeping pace with Ken, who burned through free-lance projects as an independent programming consultant, always hungry to find a better paying gig, to punch the lever that could thrust his family out of Los Angeles for good.[21] The seven-year-itch would prove computational.

Ken may have been entertained, amused, curious, or drawn in by *ADVENT*,

but his sense of the world was not fractured. He had a model for what he was looking at: games, simulations, and other interactive entertainments were exceedingly common on mainframe computers throughout the late 1960s and 1970s, often programmed as exercises or for personal amusement. As an energetic, code-slinging, mainframe programmer, Ken would have been familiar with such unapproved uses of a mainframe's memory and processing power. In a 1983 interview, Roberta Williams recollected that Ken would play games like *Star Trek* on the teletype, often encouraging her to take part: "He kept trying to get me to play, but I didn't want anything to do with it. A lot of women don't understand computers, act bored by them, and are basically intimidated by seeing their husbands slaving over them night and day, so they're just turned off to the whole idea. But finally, like me, many of them kind of wander over when their husbands are playing and within five minutes they're hooked."[22] Thus, Roberta also knew that games existed on computers prior to playing *ADVENT*, but she was typically uninterested despite her marginal familiarity with computing (she had a little experience programming COBAL).[23] *ADVENT*, however, was something other than the statistical or randomized play scenarios common to mainframe games, and Roberta Williams found herself deeply engaged.

All interaction with the game was negotiated through a teletype terminal's interface. As a technology, teletypes were mecha-digital Frankensteins of the 1970s, machines of gears, springs, and belts moreso than Ouija boards of the digital beyond (figure 3). Plugged in and turned on, the motor of the machine would have filled the acoustic space of the bedroom where Ken and Roberta stored the teletype. During data relay, anyone in earshot would have had to abide the Gatling gun of the printer head, bullets punched through the paper tape reel. This teletype terminal was portable, or as Ken described it to me in an email, "luggable," which meant it lacked a stand and rested on the floor—a device for hunching.[24] Printing and networking was a slow, noisy business in 1979, but the short descriptions and simple commands of *ADVENT* would have suited the teletype's plodding, printer-based output mechanism. User input was forward moving only; backspace buttons were things of the future. The game's natural language input and output, the fact that *ADVENT* was designed for individuals (children in fact) who were not familiar with programmer terminology and symbol use, and the terminal's typewriter, were significant material components that enabled Roberta's access to the game. As Ken Williams noted in an interview, "Roberta would have never been able to do anything if there wasn't a keyboard"—a telling statement in an era when women have been trained in touch typing but male programmers often still

Figure 3. A Teletype Model 33 ASR on display at The National Museum of Computing in 2009. In an email interview, Ken Williams identified this machine as "close" to the machine he used. According to his memory, Williams's teletype lacked a stand but did have a paper tape reader and an acoustic coupler. Image courtesy of Wikipedia user AlisonW, under Creative Commons BY-SA 3.0

used the hunt-and-peck method with their index fingers.[25] *ADVENT*'s "seminal" power was not a teleological inevitability—rather, the game had the right set of affordances to find space in the lives of both Ken *and* Roberta.

The emphasis placed on *ADVENT* as the "first" tends to obscure what Roberta Williams did after finishing the game: she played more adventure games, likely on the TRS-80 and later the Apple II.[26] A handful of articles published within a year and a half of Sierra's founding cite *ADVENT* as just one of several games that Roberta Williams played prior to the production of *Mystery House*.[27] Al Tommervik's 1981 *Softalk* feature highlighting the Williamses and their company shelves any claim to *ADVENT*'s primacy: "Roberta discovered and mastered Microsoft's *Adventure* and fell in love with the genre. She bought Softape's *Journey* and every Scott Adams adventure that was released. She loved them all, and then there were none left."[28]

In the 1981 newsletter article "Winning Strategies for Adventures," Williams summarizes her own history with games: "I have played quite a few adventure games, notably; [sic] 'ADVENTURE' by Willie Crowther and Don Woods, 'THE COUNT', 'ADVENTURELAND', 'STRANGE ODYSSEY', by Scott Adams, 'JOURNEY', by Softape and 'ZORK', by Personal Software."[29] Williams's catalog offers a strong portrait of what was available to those interested in adventure games in 1980 and 1981. This representation of events finds corroboration, in less detail, in Levy's *Hackers* as well as Ken Williams's 1996 introduction, but what proves significant about Tommervik's and Roberta Williams's articles is the extent to which *ADVENT* garners no particularly exceptional importance.

These earliest accounts apprehend a moment prior to the concretization of historical significance in the video game history canon. As Crowther and Woods's *ADVENT* has become increasingly cemented as the ur-game for the adventure game genre by hobbyist, popular press, and academic accounts, Roberta Williams's experiences with other games have been pushed aside, forgotten, or diminished in the effort to construct a genealogy from one seemingly significant game to another. Yet Roberta Williams's game play was, in fact, an accumulation of activity rather than an isolated event.

Mystery House, Made and Sold

In most accounts, it happens like a thunderclap: "Roberta decided…"; "She began…"; "Roberta sat down…." Yet the degree of ambiguity already ambient in this system of events confirms that the tipping point remains unknown. We do not know to where the teletype connected, or when Roberta Williams had access to a TRS-80, or the extent to which she had devised a software concept

before or after an Apple II became a fixture in her home—the machine was the Williamses' Christmas gift to one another, purchased in January 1980, so Ken could develop a FORTRAN compiler with a group of colleagues.[30] These messy but mutually reinforcing circumstances provided the necessary space for Roberta's adventure game to emerge over a series of months, certainly during early 1980 and possibly stretching back to the winter of 1979.

The concept she developed might be best described as something familiar bent into something otherwise. Her primary inspiration for setting and story have been attributed to from the board game Clue and Agatha Christie's *And Then There Were None*, while the natural language input, object gathering, and puzzle proceduralism gleaned lessons from the other adventure games Williams played.[31] The substantially different component Williams insisted upon was graphics. Roberta Williams sought both immersion and novelty and valued illustration over description. Importantly, she had a sense of Ken's talent with programming, even in the abstract, and she continually pressed the limits of what he thought he could program. And how could she not, with the whirling motor of his teletype terminal alive in the spare bedroom of their single-story California home, his countless freelance projects, his hit-the-programming-books all-nighters, the immersed dedication that drew him to the very machines Roberta found herself so turned off by? Levy described the young Ken Williams as a programmer "rising at quantum speed," who would "claim to know computer languages and operating systems he knew nothing about, reading a book about the subject hours before a job interview and bullshitting his way into the position."[32] *Softalk* made much of Ken Williams's ability to maneuver from higher-level mainframe and minicomputer languages to the assembly code of the Apple II. Williams's colleague, Softsel founder Bob Leff, regarded Ken Williams as a programmer in the ranks of "Bill Budge, Bob Bishop, Nasir [Gebelli], and just a very few others as one of the software greats of our industry."[33] In *Hackers*, Levy painted the couple as ambitious, if in different ways, conjuring dreams of cabins in the woods, early retirement, more money than they would ever need.[34] Roberta may have felt compelled to create, but she had confidence that her design had commercial potential, no different from Ken's after-hours FORTRAN compiler.[35]

We know relatively little, however, about the processes through which Roberta Williams produced her initial game design.[36] None of Roberta's early interviewers took much interest in the tactile details of her design process.[37] We do know that she kept her design private from Ken for several weeks, although

no archival remnant tells us why.[38] According to Levy, Roberta shared the work with him twice, and only on the second time did he take her seriously: "Ken told Roberta that her little stack of papers was very nice and she should run along and finish it. … Not long after, Ken and Roberta were at the Plank House in the Valley, a redwood-walled steak house where they often dined, and there he finally listed to his delicate wife describing how her game put you in an old Victorian house in which your friends were being killed off one by one."[39]

Recollecting more recently, Ken Williams does not remember whether he had seen the game designs before their visit to The Plank House. According to Ken, Roberta blindsided him at the Plank House, arguing that his entrepreneurial interests would be better served by designing her game than chipping away at a FORTRAN compiler. Ken recalls: "She was talking about the plot to the game and the murderer and everything else, and she tends to get real passionate about things. And people at other tables are trying to figure out what she's talking about as she's describing a series of murders."[40]

When pressed for his memories, what Ken found salient in that moment was that Roberta expressed her idea for the game as *sketches*. She organized her game as a series of rooms, each with a picture. Her design was a visual and spatial architecture long before it was ever a technical one.[41] Roberta's map was a series of bubbles and lines, each bubble corresponding to a specific "room" in the game. It was one of the curiosities of Roberta Williams' design process that would last throughout her career. Many designers began with what they could code; Roberta Williams began by mapping out the space within which she would string up the components of a narrative. Her design process required a labor distinction between designer and programmer, one unheard of in the era of do-it-all microcomputer programming.[42]

This distinction, however, does not entirely suggest that designer and programmer were exclusive categories. For all that *Mystery House* has been an object of curiosity and fascination within both scholarly and lay communities, few game historians have tried to understand how a programmer with little interest in designing games and a self-declared storyteller with little interest in computers managed to produce such an iconic piece of software together. Having agreed to help develop her game, Ken had to tune Roberta to the logic of programming. He sculpted a process that made sense for her by designing a sheet of paper with three columns on it: "A column for verbs, and a column for nouns, and then a column for what happens. And then even it codes almost like a programming language. A person says "open door" and what the conditions

would be, and what would happen if those conditions were met and what would happen if they weren't."[43]

Thus, the relationship between Ken and Roberta was necessarily collaborative. It was also full of productive conflict, as Ken haggled Roberta's expansive visual demands down into the range of technical feasibility. According to Ken, Roberta initially aspired toward "grandiose visions of having 100 locations," which Ken negotiated to the game's more manageable seventy or so screens. The process was one of constant push and pull between the couple.

> My guess is it was back and forth, and I had the idea for how to digitize pictures and she probably had a picture that was way more complex than I could fit in. I told her, "Somehow you got to get a picture down to no more than 75 points because then 4 bytes per point, that's 300 bytes." I wish I had better memory of this, [I'm] 99 percent certain I would have given her…that's how she functions best, is when you just say, "Ok here's your parameters, you have 50 points per picture, and that will average out to 300 around one picture, and try to pick another one and go simpler and go under it."[44]

The dialectical relationship between Roberta's demand for what she felt would constitute increased sensorial immersion and Ken's negotiation of technical constraints produced a quixotic set of affairs. Roberta, the member of the team with the lesser degree of technical experience, was the one largely responsible for instigating the cutting edge of this adventure game—and it was precisely that cutting edge that led to the game's financial success.

The commercial draw of the game they developed, initially titled *Hi-Res Adventure ("Mystery House")*, was the programmatic feat of its sheer quantity of images, engendering new representational possibilities for the Apple II and within the adventure game genre.[45] The game was a nimble bit of programming ingenuity: Ken Williams managed to fit the game's seventy or so illustrations onto a single floppy disk, along with all the rest of the game code, by using assembly language to script the images as stored coordinates, rather than actual lines.[46] The Williamses composed the digital images with a Versawriter, a vector-based drawing tablet with a drafting arm and stylus meant for tracing over images. The images were physically drawn by Roberta herself.[47] As I mentioned, evaluating these graphics as bizarre, crude, or otherwise vulgar is to read too much from the present. In 1980 microcomputers were uncertain objects: few people knew what to do with them, even as many people desired to have them. Ken Williams relates: "[Computer companies] were selling these computers but it wasn't clear

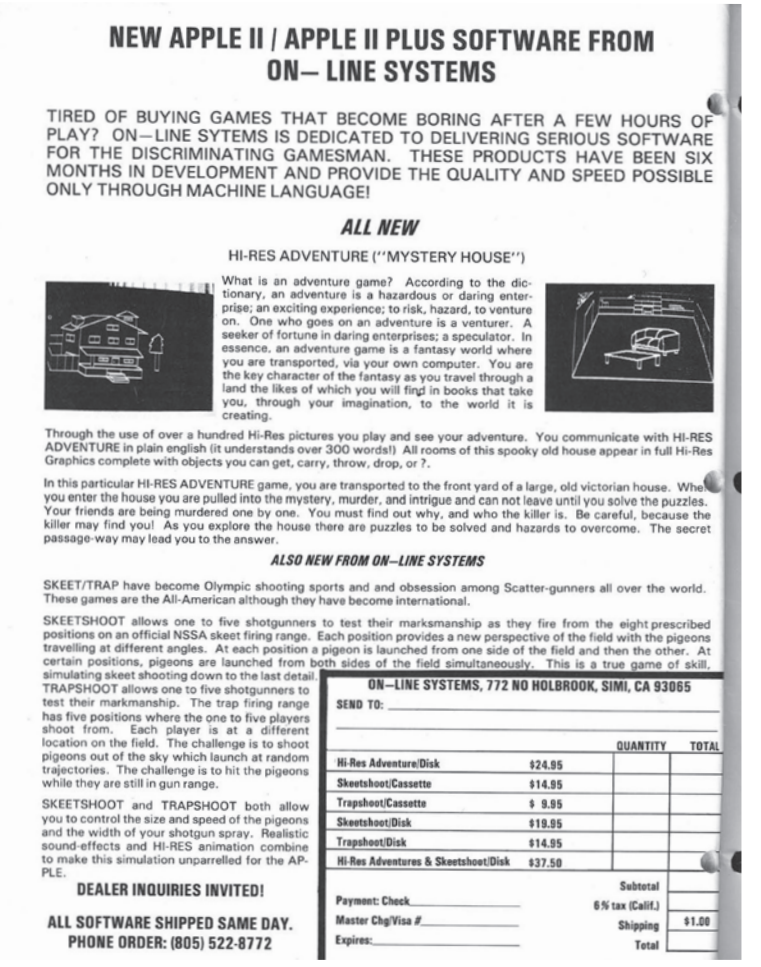
what you could do with them when you had them. … It was a weird time, and people didn't really understand what computers could do. … You couldn't do very much, you couldn't do anything with them."[48]

But *Mystery House was* something you could do with a computer and something you could specifically do only with an Apple II. While *Zork* and other text adventures gained traction because they could be easily ported to any microcomputer system, *Mystery House* appealed to early Apple II consumers who wanted to experience the processing and graphic power of the Apple II in particular. *Mystery House* made use of the Apple II's 280x192 pixel hi-res mode, a graphics display that was a substantial jump from the 40x48 low-res mode.[49] What feels crude to critics now was not simply the height of technical accomplishment in its moment but a legitimate selling point for the game. David Lubar, in the December 1980 Christmas issue of *Creative Computing*, described the game's graphics as "very nice, showing the rooms and objects in detail."[50] Similarly, Ken Williams recounts the initial impression computer dealers had of the software: "They were blown away. They really loved it right from the beginning. They were like, yeah, this is awesome, we can sell this with our computers, how can we get more? It was immediate and a real strong opinion."[51]

The Williamses did not initially intend to distribute and market the game themselves. They had early dealings with the software distribution company Programma, but ultimately determined that they did not want to take Programma's offer of 25 percent royalties. Ken Williams also tried to interest Apple Computer in the game, but couldn't get a reply fast enough (Apple eventually responded a year after he contacted them).[52] Only after failing to achieve a satisfactory distribution deal did the Williamses elect to sell *Mystery House* independently for $24.95, taking on the labor-intensive work of demonstrating the game at local computer shops and posting a full, back-page ad in the May 1980 issue of *MICRO: The 6502 Journal. MICRO* catered to microcomputer hobbyists working with the popular 8-bit MOS 6502 microprocessor— the chip that drove products like the Apple II, Atari 2600, and Commodore PET. *MICRO* ran black and white pages full of advertisements with low production value and minimal typesetting, making it a reasonable venue for an as-of-yet barely existent company with a limited budget and no in-house layout artist. To save on typesetting costs, Roberta designed the ad herself, cutting and pasting the words and images (figure 4).[53] While not specifically targeting Apple II users, *MICRO* was a magazine with a deeply technical readership, one which

would immediately recognize the graphic innovation Ken Williams had coaxed out of the Apple's hi-res mode.

In their *MICRO* ad, the Williamses offered *Hi-Res Adventure ("Mystery House")* alongside two arcade-style games, *Skeetshoot* and *Trapshoot* (both programmed by an unnamed friend of Ken's).[54] According to the ad, these two games



NEW APPLE II / APPLE II PLUS SOFTWARE FROM ON— LINE SYSTEMS

TIRED OF BUYING GAMES THAT BECOME BORING AFTER A FEW HOURS OF PLAY? ON—LINE SYTEMS IS DEDICATED TO DELIVERING SERIOUS SOFTWARE FOR THE DISCRIMINATING GAMESMAN. THESE PRODUCTS HAVE BEEN SIX MONTHS IN DEVELOPMENT AND PROVIDE THE QUALITY AND SPEED POSSIBLE ONLY THROUGH MACHINE LANGUAGE!

ALL NEW

HI-RES ADVENTURE (''MYSTERY HOUSE'')

What is an adventure game? According to the dictionary, an adventure is a hazardous or daring enterprise; an exciting experience; to risk, hazard, to venture on. One who goes on an adventure is a venturer. A seeker of fortune in daring enterprises; a speculator. In essence, an adventure game is a fantasy world where you are transported, via your own computer. You are the key character of the fantasy as you travel through a land the likes of which you will find in books that take you, through your imagination, to the world it is creating.

Through the use of over a hundred Hi-Res pictures you play and see your adventure. You communicate with HI-RES ADVENTURE in plain english (it understands over 300 words!) All rooms of this spooky old house appear in full Hi-Res Graphics complete with objects you can get, carry, throw, drop, or ?.

In this particular HI-RES ADVENTURE game, you are transported to the front yard of a large, old victorian house. When you enter the house you are pulled into the mystery, murder, and intrigue and can not leave until you solve the puzzles. Your friends are being murdered one by one. You must find out why, and who the killer is. Be careful, because the killer may find you! As you explore the house there are puzzles to be solved and hazards to overcome. The secret passage-way may lead you to the answer.

ALSO NEW FROM ON—LINE SYSTEMS

SKEET/TRAP have become Olympic shooting sports and and obsession among Scatter-gunners all over the world. These games are the All-American although they have become international.

SKEETSHOOT allows one to five shotgunners to test their marksmanship as they fire from the eight prescribed positions on an official NSSA skeet firing range. Each position provides a new perspective of the field with the pigeons travelling at different angles. At each position a pigeon is launched from one side of the field and then the other. At certain positions, pigeons are launched from both sides of the field simultaneously. This is a true game of skill, simulating skeet shooting down to the last detail.

TRAPSHOOT allows one to five shotgunners to test their markmanship. The trap firing range has five positions where the one to five players shoot from. Each player is at a different location on the field. The challenge is to shoot pigeons out of the sky which launch at random trajectories. The challenge is to hit the pigeons while they are still in gun range.

SKEETSHOOT and TRAPSHOOT both allow you to control the size and speed of the pigeons and the width of your shotgun spray. Realistic sound-effects and HI-RES animation combine to make this simulation unparrelled for the APPLE.

DEALER INQUIRIES INVITED!

ALL SOFTWARE SHIPPED SAME DAY.
PHONE ORDER: (805) 522-8772

ON—LINE SYSTEMS, 772 NO HOLBROOK, SIMI, CA 93065

SEND TO: _____

		QUANTITY	TOTAL
Hi-Res Adventure/Disk	$24.95		
Skeetshoot/Cassette	$14.95		
Trapshoot/Cassette	$ 9.95		
Skeetshoot/Disk	$19.95		
Trapshoot/Disk	$14.95		
Hi-Res Adventures & Skeetshoot/Disk	$37.50		
		Subtotal	
		6% tax (Calif.)	
		Shipping	$1.00
		Total	

Payment: Check_____
Master Chg/Visa #_____
Expires:_____

Figure 4. The original *Mystery House* ad, *Micro: The 6502 Journal*, May 1980. Photo courtesy of the author.

could be bought independently on cassette or disk or bundled with *Mystery House* for $37.50.[55] The fate of *Skeetshoot* and *Trapshoot* is unknown; they appear to have been quickly pulled from On-Line's offerings.[56] The ad was a text-dense page describing the premise and wonders of an adventure game ("one who goes on an adventure is a venturer," the copy casually explains), composed in the unfocused, overwrought language that comes with having no market standard for how to sell microcomputer game software. The ad was broken only by two off-center screen photographs and a sales and shipping form. It directed customers to make their checks out to "On-Line Systems," a company name that was a "holdover from Ken's vision of selling the respectable kind of business software for the Apple that he did in his consulting for on-line computer firms."[57] Orders by check, Master Charge, or Visa were received at "772 No Holbrook, Simi, CA, 93065"—the Williamses' home address.

Home production was a hallmark of many emerging microcomputer software companies.Lacking a recognizable business model and uncertain of retailer and consumer demand, many software producers worked out of kitchens, garages, car trunks, and other makeshift spaces until they drew enough revenue and needed enough employees to warrant office space. The Williamses were no different. They soon found themselves selling *Mystery House* by the hundreds out of their home, fielding orders and giving clues on the family telephone line (805-522-8772).[58] By day Ken went off to a programming job. Roberta cared for the house and children while packaging 5.25" game disks and simple photocopied documentation sheets into Ziploc bags and mailing out orders (figure 5).[59] Levy recounts: "Ken and Roberta made eleven thousand dollars that May. In June, they made twenty thousand dollars. July was thirty thousand. Their Simi Valley house was becoming a money machine."[60] A more amusing measure might be Roberta Williams's recollection of wheeling a shopping cart full of Ziploc bags out of the grocery store.[61]

Just two months after releasing *Mystery House*, the Williamses bumped their advertising purchase from the back page of *MICRO* to the front. When eager readers flipped the cover on their July 1980 issue of *MICRO: The 6502 Journal*, they saw On-Line's latest software offerings (figure 6). The newly designed ad rebranded *Hi-Res Adventure ("Mystery House")* as *Hi-Res Adventure #1*, indicating anticipated expansion (a French version of the game was even available "upon request"). The Williamses's adventure game was hosted alongside two graphics utilities, *Paddle-Graphics* and *Tablet-Graphics*. These programs were commercial reconfigurations of the software Ken had designed to create and

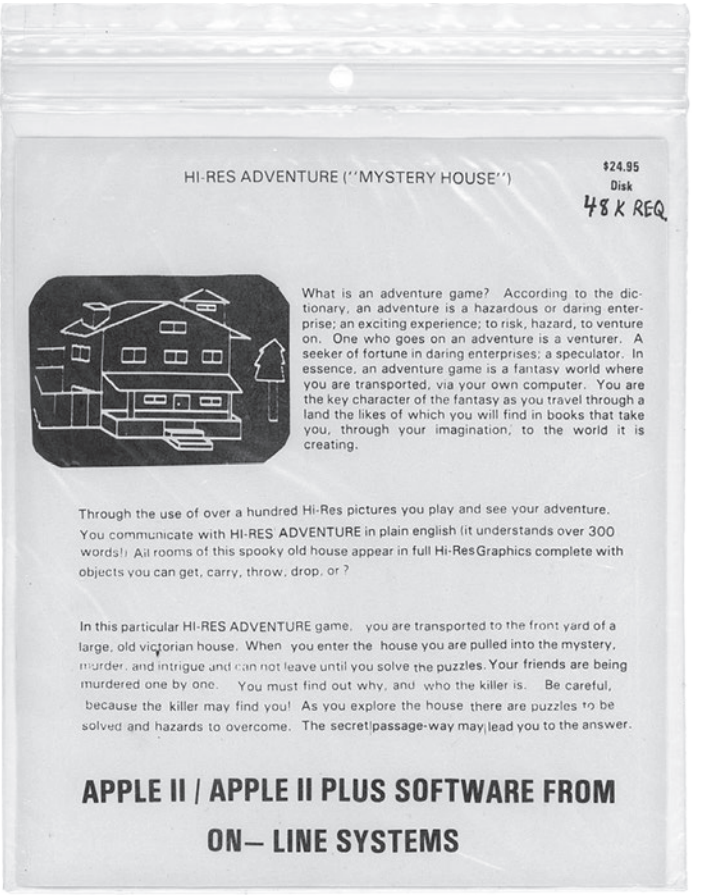


Figure 5. Plastic baggie packaging for original *Mystery House* release, circa 1980. Image courtesy of Brad Herbert, SierraMuseum.com.

store *Mystery House*'s graphics. In practice, they permitted users to draw and color hi-res graphics with the Apple II paddle controllers or Apple's graphics tablet, respectively. The utilities and the game existed as two sides of the same coin, as both relied on the graphic virtues of the Apple II to gain their technological currency.

The listing also exhibits the nonsingularity of the adventure game within the company catalog. As early as 1981, Ken was making it known to journalists

APPLE II SOFTWARE FROM ON-LINE SYSTEMS

PADDLE-GRAPHICS:

The most powerful Hi-Res graphic development package available. Upper/lower case may be drawn on the Hi-Res screen in any size, direction or color. Pictures may be sketched and filled in with any of 21 colors (must be seen to believe!). A shape may be constructed automatically from any object appearing on the Hi-Res screen.

48K Applesoft/Machine Language

$39.95/disk

TABLET-GRAPHICS:

All of the capabilities of PADDLE-GRAPHICS extended for use with APPLE'S GRAPHICS TABLET.

48K Applesoft/Machine Language

$49.95/disk

HI-RES ADVENTURE #1:

Your APPLE computer becomes your eyes and ears as you enter a spooky old mansion in search of treasure. You direct it in English to move you through the house which is portrayed in full HI-RES GRAPHICS. You are in complete comtrol as you open cuabinets, smash walls and manipulate any items you might find. Danger is ever present as you find your friends being murdered one by one. This game will definitely challenge your imagination. French version available upon request.

Machine Language for the Apple II or II plus 48K

$24.95/disk

SKEETSHOOT:

A real-time Hi-Res graphic simulation of the sport of skeetshooting. This game has all the sounds, action, and excitement of the real sport as well as the official firing positions. One to five players may compete.

Machine Language for the Apple II or II plus 48K

$19.95/disk

TRAPSHOOT:

One to five players compete at the sport of trapshooting. Fast action with many skill levels including adjustable shotgun spray make this game a true challenge.

Machine Language for the Apple II or II plus 48K

$14.95/disk

COMBINATION:

HI-RES ADVENTURE and SKEETSHOOT both on disk.

Machine Language for the Apple II or II plus 48K

$37.50/disk

Available at your local computer store.

ON-LINE SYSTEMS
772 N. HOLBROOK ST.
SIMI VALLEY, CA 93065
805-522-8772

Dealer Inquiries Invited

All orders shipped same day.

Software may be ordered directly by calling/writing 805-522-8772. Orders may be: COD/CHECK/MASTERCHARGE/VISA. Add $1 shipping. California residents add 6% sales tax.

Figure 6. Advertisement in *MICRO* of On-line Systems offerings including *Mystery House* renamed as *Hi-Res Adventure # 1*.

that he "feared that On-Line Systems would eventually become known as only an adventure programming house" and had "aggressively moved to diversify the product line, first with games such as *Hi-Res Football* and *Cribbage*, and now with his *Superscript* text processor."[62] Indeed, to remember Sierra only for adventure games is to willfully forget every attempt company leadership made

to exceed the genre as its primary source of revenue—from these two graphics utilities at the company's dawn to the flopped 1989 word processing program *Homeword Plus*, to the company's early 1990s pet project The Sierra Network, an online graphical gaming community tragically ahead of its time. Adventure games were perhaps not so much the company's ambition as its remainder: no matter how many times Ken Williams would try over his career to diversify the company's product line, adventure games were a corporate type-casting Sierra couldn't shake.

But none of this had proven true, yet. It's 1980, and "the adventure game" is still a genre with barely half a dozen titles to its name. So, the practice repeated itself: at night, Roberta began work on a more elaborate adventure game while Ken developed a new machine-language system for On-Line's next installment. With their mutual ambitions focused, the Williamses flipped one last time. Just five months after advertising *Hi-Res Adventure ("Mystery House")* in *MICRO*, Ken and Roberta moved the family to Coarsegold, California, in the foothills of the Yosemite Valley, and began laying the track for a life in the computer software industry. It was a remote, forested area tucked away along the southern entrance to Yosemite National Park—a region that even today promotes an appreciation for the riches of the land and a proud indifference to the difficulties that come with living in near isolation. Roberta's parents had moved to the area sometime earlier. Her father John Heuer became the company's northern California distributor, and Ken's younger brother John Williams soon followed suit as one of their first employees. It was September 1980, and a whole new sense of beginning was upon them.

Inconclusions

Beneath the popular timeline that jumps from *ADVENT* to *Zork* to *Mystery House*, there lies a confusing array of play and production. Embroiled in the heroic mythology of Sierra On-Line's origin is a diverse arrangement of technological, spatial, and social circumstances complicating the monocular gaze of video game historiography organized neatly by genre, company, or designer. The primary aim of this article has been to thwart a well-worn passage into video game history through specific attention to the casual construction of such history. By attending foremost to how Sierra On-Line became historical, something of history's nature becomes plain: the amount of effort that goes into maintaining

and cultivating origin stories, progress narratives, and linear paradigms. The phantasm of the emperor's new clothes requires constant reassurance. History is volitional—we hold these scattered facts in place, we ratify their truth, we perform the alchemy that conjures simplicity from a cauldron of disparity. It is hardly laziness; rather, it is an exhausting, far-reaching investment. The archival record, in both its utterances and its gaps, proves that the smooth linearity of video game progress is a diligently maintained fiction.

The stability of a straightforward rubric like the "progress" of the adventure game genre thus unravels itself under the careful application of pressure. We should not see this unraveling as a historiographic defeat but as an opportunity for continued exploration—an invitation to draft history as a map forever moving. Whenever video game history thinks it knows where to begin or where to move next, the screen could shift to a new location, and the project of mapping time, marking territory, and making sense will have to begin anew. This is not equivalent to suggesting that history should be aimless; rather, it is strategic. All histories are to some extent strategic. My concern is not that histories have beginnings, but that we often take them far too seriously.

If we imagined the movement of history at the outset as more unruly than the devices that have come to organize it retrospectively, how might we hack the chain of historical inevitability in a way that enables us to dismantle histories that serve their prophets and priests more than they serve the material circumstances of their causation? If we could imbue history with a sense of unknown possibility, might these histories form a basis for producing alternative futures, or at the very least, histories broader and deeper than those we have yet imagined? Such propositions rely on a metareflexive conceit: that the question of where something begins is never half so interesting as the desire to ask the question itself.

Notes

1. I use the name *ADVENT* in reference to the game Roberta Williams played on a teletype terminal networked via an acoustic coupler to a mainframe. Using the name *ADVENT* emphasizes the game's status as a mainframe game programmed on the DEC PDP-10, as the DEC time-sharing operating system, TOPS-10, limited file names to six characters. This distinguishes the game from later microcomputer ports and clones, often simply titled *Adventure*. In other accounts, the mainframe version of this game may be referred to as *Colossal Cave Adventure*, *Colossal Cave*, or *Adventure*. Information on *ADVENT* long suffered from being extremely scattered and inaccurate. Over the past thirty years, much of this story has been revised and corrected. See Nick Montfort, *Twisty Little*

Passages: An Approach to Interactive Fiction (2005), 91–93; Ken Williams, "Introduction," in *The Roberta Williams Anthology Manual*, by Sierra On-Line, Inc. (1997), 3. Ken Williams and Roberta Williams give different reports regarding where the teletype terminal's mainframe connection was located. Ken claims the mainframe was three thousand miles away, sometimes mentioning it was connected to MIT, while Roberta states it was connected to a mainframe in downtown Los Angeles. See K. Williams, "Introduction," 3–8; Ken Williams, personal communication with author, January 25, 2013; "1984 Interview with Roberta Williams," in *The Roberta Williams Anthology Manual*, by Sierra On-Line (1997), 35; Dave Albert et al., "Smithsonian Videohistory Program: Minicomputers and Microcomputers, Session One: The Brotherhood," interview by John B. Eklund, transcript in the Smithsonian Institution Archives, Record Unit 9533, July 31, 1987, 10.

2. *Wikipedia, s.v.* "Sierra Entertainment."

3. Tristan Donovan, *Replay: The History of Video Games* (2010); Harold Goldberg, *All Your Base Are Belong to Us: How Fifty Years of Videogames Conquered Pop Culture* (2011); Bill Loguidice and Matt Barton, *Vintage Games: An Insider Look at the History of Grand Theft Auto, Super Mario, and the Most Influential Games of All Time* (2009).

4. This tendency is most clearly illustrated in the game history chapter of Simon Egenfeldt-Nielsen, Jonas Heide Smith, and Susana Pajares Tosca, *Understanding Video Games: The Essential Introduction,* 2nd ed. (2013). However, much of the tone regarding Infocom's eminence (versus Sierra On-Line's allegedly "crude" style) feels similar to aesthetic arguments made in Montfort, *Twisty Little Passages*.

5. Dennis G. Jerz, "Somewhere Nearby Is Colossal Cave: Examining Will Crowther's Original 'Adventure' in Code and in Kentucky," *Digital Humanities Quarterly* 1, no. 2 (2007); Montfort, *Twisty Little Passages*, 85–97; Dale Peterson, *Genesis II: Creation and Recreation with Computers* (1983), 187–88.

6. Richard D. Lyons, "A Link is Found between Two Major Cave Systems," *New York Times*, December 2, 1972.

7. Obituary of John Preston Wilcox, *The Columbus Dispatch*, http://www.legacy.com/obituaries/dispatch/obituary.aspx?n=john-preston-wilcox&pid=145049233&fhid=8700.

8. Peterson, *Genesis II*, 188.

9. Donovan, Replay, 51; Jerz, "Somewhere Nearby"; Jimmy Maher, "The Completed Adventure, Part 1," *The Digital Antiquarian* (blog), June 2, 2011, http://www.filfre.net/2011/06/the-completed-adventure-part-1/.

10. For more information on the specifics of interactions between Crowther and Woods, see Donovan, *Replay*, 50–52; Montfort, *Twisty Little Passages*, 65–93. For specific details about the distinctions between the two programs, see Jerz, "Somewhere Nearby"; Maher, "The Completed Adventure, Part 1"; Jimmy Maher, "The Completed Adventure, Part 2," *The Digital Antiquarian* (blog), June 3, 2011, http://www.filfre.net/2011/06/the-completed-adventure-part-2/; and Jimmy Maher, "The Completed Adventure, Part 3," *The Digital Antiquarian* (blog), June 4, 2011, http://www.filfre.net/2011/06/the-completed-adventure-part-3/.

11. Tim Anderson, "The History of Zork—First in a Series," *The New Zork Times*, Winter 1985, 7.

12. The game's original designers were Marc Blank, Tim Anderson, Bruce Daniels, and Dave Lebling, all members of the Dynamic Modeling Group (DM) at MIT's Laboratory for Computer Science. Earlier ludic creations by these figures include Maze and Trivia. See Anderson, "The History of Zork—First in a Series," 6.

13. The other founders of Infocom were DM graduate Joel Berez and DM supervisor and MIT computer science professor Albert Vezza. Infocom did not initially intend to publish microcomputer software (the DM attitude about personal computing could be summed up in their unofficial motto, "We hate micros!"). Stu Galley, "The History of Zork—The Final (?) Chapter: MIT, MDL, ZIL, ZIP," *The New Zork Times*, Summer 1985, 4. For more information on the history of Zork and Infocom, see Anderson, "The History of Zork—First in a Series"; Tim Anderson, "The History of Zork—Second in a Series," *The New Zork Times*, Spring 1985, 3–5; Hector Briceno, Wesley Chao, Andrew Glenn, Stanley Hu, Ashwin Krishnamurthy, and Bruce Tsuchida, "Down from the Top of Its Game: The Story of Infocom, Inc." (paper for Structure of Engineering Revolutions, MIT, Cambridge, MA, December 15, 2000); especially Chapter 5 of Montfort, *Twisty Little Passages*, 119–68.

14. Games such as *ADVENT* and *Zork* were referenced as "interactive literature," "interactive fiction," "participatory computer prose," "participant novels," and even "ultra adventures" and "micro-stories" at the time they were published. Since then, they have been sheltered under the academic and literary awning of "interactive fiction." For use of all these terms, see Fred Saberhagen, Robert Lafore, Scott Prussing, Redmond Simonsen, Marc Blank, and Mike Berlyn, "Call Yourself Ishmael: Micros Get the Literary Itch," *Softline* 3 (1983), 30–34.

15. Anastasia Salter, *What Is Your Quest?: From Adventure Games to Interactive Books* (2014).

16. Montfort, *Twisty Little Passages*, 169–70.

17. Egenfeldt-Nielsen, Smith, and Tosca, *Understanding Video Games*, 58, 72.

18. Rusel Dalenburg, "Versions and Ports of Adventure Known to Exist," version 2.6.7, *Rusel Dalenburg's Home Page*, last modified July 21, 2006, http://www.prismnet.com/~ged/www/advelist.html.

19. This retrospection is assertively accented by a printed timeline immediately following Ken's historical introduction, annotating Sierra's triumphs alongside technical monoliths—the Intel 8080, the launch of Compuserv—and pop culture touchstones—*Aliens*, *Star Trek V*, *Lawnmower Man*.

20. Roberta was just out of high school; however, Ken began attending California Polytechnic-Pomona at the age of 16.

21. Levy notes that the Williamses frequently moved around the LA area—"twelve times in that go-go decade, always making sure to turn a profit on the house." See Steven Levy, *Hackers: Heroes of the Computer Revolution* (2010), 288. However, Roberta's role in home remodeling is an underreported aspect of her life prior to designing games, and it appears in only one reference I have acquired. See Robert Levering, Michael Katz, and Milton Moskowitz, *The Computer Entrepreneurs: Who's Making It Big and How in America's Upstart Industry* (1984), 239.

22. James Delson, "A Young Girl's Fantasy Turns to Fortune," *Family Computing*,

December 1983, 67. Roberta Williams does not specify which *Star Trek* Ken was playing.

23. Dave Albert et al., "Smithsonian," 9.

24. Ken Williams, email message to author, January 25, 2013.

25. Ken Williams, phone interview with author, October 8, 2013.

26. Primary documents indicate that the Williamses had a TRS-80, either soon after Roberta played *ADVENT* or concurrently. In *The Roberta Williams Anthology Manual* (1996), Ken mentions that he borrowed a TRS-80 from work; however, in a January 25, 2013 email interview, he stated that he bought the machine. Alternatively, in a *Sierra News Magazine* article, Ken claimed he accessed a TRS-80 through a neighbor before Roberta played *ADVENT*; he did not clarify whether that machine was used in his home. Ken Williams, "A Message from the President," *Sierra News Magazine*, Summer 1990, 35. Levy makes no mention of a TRS-80. Regardless, it seems accurate to claim that there was a TRS-80 in the Williamses' home at some point. The original intent was to develop a commercial FORTRAN compiler for the TRS-80, but in late 1979, Ken changed his strategy to develop the FORTRAN compiler for the Apple II instead. Ken Williams, email interview with author, January 26, 2013.

27. Later accounts of the origin of Sierra On-Line often nod to the Williamses' interest in the text-based adventure games produced by Scott Adams's company Adventure International, but I would argue these games are mentioned because they correspond to another first: Adams's *Adventureland*, the first commercial text adventure ever sold.

28. Allan Tommervik, "Exec On-Line Systems: Adventures in Programming," *Softalk,* February 1981, 4. Tommervik claims that Roberta Williams was playing Microsoft's *Adventure* port (programmed by Gordon Letwin)—this is the only place I have ever seen this claimed. However, somewhat corroborating the possibility that Williams played the game on something other than the teletype machine is Roberta herself: in a 1987 Smithsonian interview, she stated that she began playing the game on a teletype machine and finished it on an Apple II. She does not mention whether or what she played on the TRS-80. This puts into question how long Williams played the game, and whether she had finished the game before she started designing *Mystery House* (almost all accounts claim she had). Another possibility: she played the game on a teletype machine and then played it again on a microcomputer.

29. Roberta Williams, "Winning Strategies for Adventures," *The On-Line Letter 1*, no. 1 (1981): 7.

30. Albert et al., "Smithsonian," 9; Levy, *Hackers*, 294; Tommervik, "Exec On-Line Systems," 4.

31. Reference to either or both Clue and *And Then There Were None* is frequently made in documents from the period: See Levering, Katz, and Moskowitz, *Computer Entrepreneurs*, 240; Levy, *Hackers*, 297; Tommervik, "Exec On-Line Systems," 5. However, it is unclear what specific role either the game or the novel played in Roberta's design process. Significantly, *Mystery House* was not directly influenced by Dungeons and Dragons, whereas *Zork* and *ADVENT* were both influenced by tabletop fantasy role-playing games.

32. Levy, *Hackers*, 287–88.

33. Tommervik, "Exec On-Line Systems," 4; Bob Leff, letter to the editor, *Softalk*,

April 1981, 8.

34. Levy, *Hackers*, 288, 293.

35. One of Ken Williams's additional money-making schemes was a software distribution company "operated 'out of the back of his car'"; he even distributed software for future competitor Scott Adams. Williams sold the company to Bob Leff, who used it to found Softsel, which became the largest software distributor in the country. Levering, Katz, and Moskowitz, *Computer Entrepreneurs*, 240.

36. The Brian Sutton-Smith Library and Archive of Play at the Strong Museum holds the Ken and Roberta Williams Collection, which does include some of her design documents. However, these documents are all from a period after Sierra's proprietary game development system had been developed in 1983; it is clear that the documents have been designed with the engine organization in mind, and thus it is difficult to discern what, if any of her techniques, might be representative of the efforts she took making *Mystery House*. Williams herself may be able to fill in many of these gaps, but I have remained sensitive to that fact that she has taken effort to avoid interviews for many years. As this research is part of a much larger book on the subject of Sierra On-Line, I have elected to wait to request an interview with Roberta Williams until I have completed further research on the company's history.

37. For an examination of Roberta Williams's habit of designing games at her kitchen table, see Laine Nooney, "A Pedestal, A Table, A Love Letter: Archaeologies of Gender in Videogame History," *Game Studies* 13 (2013).

38. According to Williams, "Three weeks later I handed a script to Ken. He wasn't impressed until he saw I wanted pictures in the game. . . ." R. Williams, *The Roberta Williams Anthology Manual*, 13.

39. Levy, *Hackers,* 297.

40. Ken Williams, phone interview with author, October 8, 2013.

41. Having a design document comprised of sketches with rooms is a feature of Roberta Williams' life-long design style. This has been consistently described by many programmers and designers who worked with her, based on interviews I have conducted with prior Sierra employees.

42. This observation is also made in Goldberg, *All Your Base*. The distinction between programmer and designer would be repeated with future Sierra On-line designers such as Jim Walls, Christy Marx, and Jane Jensen, with much success for over a decade.

43. Ken Williams, phone interview with author, October 8, 2013.

44. Ibid.

45. *Mystery House* is widely regarded as the first adventure game with graphics. These graphics were static; animation would not be introduced in adventure games until Roberta Williams's *King's Quest* (1984). It is unclear to me what strong precedents exist for other microcomputer games with graphics produced prior to *Mystery House*. Mainframe games like *Rogue* and Mike Mayfield's *Star Trek* used ASCII typographic symbols to graphically represent spatial locations, and numerous mainframe role-playing games using the PLATO system had graphics as early as the mid-1970s. Jimmy Maher, "The First CRPGs," *The Digital Antiquarian* (blog), August 18, 2011, http://www.filfre.

net/2011/08/the-first-crpgs/.

46. Levy, *Hackers*, 298.

47. If a player runs the game on original hardware or an appropriate emulator, the lines will generate on screen in the order Roberta Williams drew them. Additionally, Maher explains that "the device was marketed as a tool for getting diagrams—flowcharts, circuit diagrams, floor plans, etc.—into the Apple II; its packaged software did not deal very well with the irregular lines and patterns typical of full-blown pictures." Jimmy Maher, "*Mystery House*, Part 1," *The Digital Antiquarian* (blog), October 8, 2011, http://www.filfre.net/2011/10/mystery-house-part-1/.

48. Ken Williams, phone interview with author, October 8, 2013.

49. A significant percentage of commercial microcomputer software used the hi-res graphics mode, including graphical adventure games. For more information on programming the Apple II in hi-res mode, see Ken Williams, Lisa Kernaghan, and Bob Kernaghan, *Apple II Computer Graphics* (1983). For a useful, lucid explanation of how *Mystery House* was programmed in the Apple II's complex hi-res mode, see Maher, "*Mystery House*, Part 1."

50. David Lubar, "Software, Hardware, and Otherware for Christmas," *Creative Computing*, December 1980, 24.

51. Ken Williams, phone interview with author, October 8, 2013.

52. Levy, *Hackers,* 298–99; Tommervik, "Exec On-Line Systems," 4.

53. Levering, Katz, and Moskowitz, *Computer Entrepreneurs*, 240.

54. Levy, *Hackers*, 299.

55. Skeetshoot on cassette cost $14.95*; Trapshoot* was $9.95. On disk, *Skeetshoot* was $19.95, *Trapshoot* was $14.95. Shipping was $1, and California sales tax was 6 percent.

56. Levy suggests that Ken Williams added these two other games to make On-Line seem like a more professional company with a broader product line. Levy, *Hackers,* 299. A review and a rare screenshot of *Skeetshoot* (referred to as *Skeet)* can be found in Lubar, "Software, Hardware, and Otherware," 24.

57. Levy, *Hackers*, 299.

58. Ibid., 300.

59. Albert et al.,"Smithsonian," 19; Levy, *Hackers*, 300.

60. Levy, *Hackers*, 300.

61. Albert et al., "Smithsonian," 19.

62. Tommervik, "Exec On-Line Systems," 6.