PART I

The Nexus

One *Inklings*

Richard Garriott flopped onto his bed in the small, two-bunk dorm room at Oklahoma University and surveyed his options. There didn't seem to be many. His parents had dropped him off seven hours from his home and high-school friends so he could attend a seven-week summer computer camp. While inquisitive by nature, Richard was used to summers full of weird art projects and near total freedom. The bit of programming he'd previously picked up hadn't captured his imagination—certainly not enough for him to get excited about ditching the geeky-cool confines of a home near the National Aeronautics and Space Administration's (NASA's) operations center.

Resigned, he sat up and kicked the bag he'd flung on the floor. He was trapped with the computer nerds.

Not to say that Richard wasn't excited about tinkering with computers, at least in theory. In the summer of 1977, computers were still out of reach for most people, and sixteen-year-old Richard's parents wanted to make sure he was on the cusp of the technological revolution. He agreed with them that far, at least. His family and most of the kids Richard had grown up with already lived in something that looked a little like the future, with rocket scientists and astronauts as their neighbors in suburban Houston.

His father, Owen Garriott, was one of those astronauts, and had temporarily shared the title for the longest space flight any human had ever taken. Later he had uprooted the family and moved them to Palo Alto, California, while he studied at nearby Stanford University. It was here that Richard's parents had gotten the computer religion. Richard had done some work on the computer terminals that had been placed in every classroom

in Palo Alto's technologically advanced high school, but hadn't been nearly as impressed as his parents. Dedicating almost a whole summer to the machines seemed like a waste.

It soon became clear that others didn't share Richard's hesitations about computer camp. Before long there was a knock on his dorm room door. He roused himself, finding a small group of boys outside.

"Hi," one of the boys said.

"Hello," he replied.

"Did you say hello? Nobody from around here says hello," one of the boys said, frowning a little.

Richard had been born in England, but his parents had moved to Houston when he was a baby. He had no discernible accent at all, and he had no idea what the boy was talking about. This just solidified his preconceptions about the kids at this camp. Definitely weird, even by his own generous standards.

"Okay, you're 'British,' then, the boy decided, tagging him with a nickname that would follow him through much of the rest of his life. "Welcome to camp."

This was the welcoming committee, and in this group he'd be known as "British." *Fine*, he thought. The group moved on to the next door, repeating the sequence. Knock. Answer. Bestow a nickname. Move along. Richard followed as the group made its way down the boys' corridor, through the main lobby, and into the girls' corridor. By the end of the circuit, everyone had a new name.

The rest of the day was taken up in meetings: meetings about rules, meetings about courses, and meetings about the campus. The day that had started miserably began looking more promising when he met the girls, but turned sour again as they were set to work. All of that lasted until after dinner, when he found himself in the common area. There he noticed a small group of students gathered around a table playing some kind of game, surrounded by soda cans and crumpled candy wrappers. He was intrigued. He'd already decided that the way to make the most of his time at programming camp was to try to make a game—just as he, his brothers, and often his mother had thrown themselves into ambitious creative projects during previous summers. If he couldn't be at home, he'd do his best to bring home to computer camp.

He sauntered over, but didn't say anything, hovering for a minute behind the person who appeared to be leading the game. This boy had a stapled booklet laid out on the table in front of him, and was slowly describing a landscape and scenario. The other players responded in turn, explaining how their characters would react to the story: exploring, opening doors, and fighting monsters. Every once in a while, someone would roll some weirdly shaped dice that would resolve some conflict. Richard was confused. There was no game board or pieces to move around. If this game had rules or immediate objectives, they certainly didn't seem obvious. The players were simply talking about fighters, dragons, dwarves, elves, and magic. It sounded a little like the books he'd read earlier in the year, J.R.R. Tolkien's *Lord of the Rings* trilogy.

After several minutes, Richard leaned down, tapped the leader on the shoulder, and asked him what they were doing.

"It's *Dungeons & Dragons*," the boy responded, not looking up. "It's a role-playing game." That didn't help much. Richard had never heard of the game, and he associated role-playing with the occasional acting he'd done in a local theater. He stuck around for a little longer, listening to the game unfold as the dungeon master, the person who created the story with which the players interacted, wove the tale. Other students drifted over, and before long the original group had to stop and explain in more detail.

Richard and a handful of others soon joined a game. By the second night, the little lobby was filled with several gaming groups, all telling each other stories of dragons and skeletons and orcs. Girls were as eager as the guys to play, and threw themselves into character with just as much bravado. The role-playing helped them talk to each other in ways that shy high-school kids might otherwise have had trouble doing. It was a little silly at first, pretending to be a dwarf or elf or magician—and "British" Garriott exchanged embarrassed grins with other players more than once—but once the stories started flowing, they lost themselves in these magical worlds.

With the initial social awkwardness fading, other barriers fell too. Among the first to go were the gender-segregation rules imposed in the halls. The college-age chaperone tasked with keeping boys and girls apart moved one of the female students into his room, and the other girls and boys quickly paired up. One enterprising student figured out a way to jimmy the locks that kept them out of the closed half of the dormitory, and soon

the theoretically off-limits rooms had become hideaways or clubhouses for couples and gaming groups. Richard and his summer girlfriend laid claim to a particularly choice room with a door labeled "The Crypt" in dripping blood-red letters, and with an interior featuring a full-room mural depicting a swamp creature about to abduct an oblivious half-naked woman.

Programming computers, though, was the reason the teens were there. Even Richard was soon won over. They learned and worked in the FORTRAN programming language, feeding punch cards into the big machines as a means of input and control. The techniques they learned were simple, certainly not sophisticated enough to fulfill Richard's vague notions of writing a game, but they hinted at a vast potential power.

Just as powerful was the shared social experience. People spoke the same language here. It was the first time that many of the students had experienced a sense of community around this kind of activity. Spending time with computers, programming, technology, fantasy, and role-playing games was okay. It didn't make them nerdy, or dorky, or strange. The group just accepted this as perfectly logical and natural, no stranger than athletes practicing after school or cheerleaders doing routines between bells. For Richard, the environment would prove to be deeply influential and bitterly hard to give up at the close of the seven-week camp.

"It was a summer of programming and girls," Richard would say later. "It was one of those pivotal moments. A lot of firsts happened there."

That Richard would find a shared community at that computer camp was less strange than he may initially have suspected. He grew up in a Houston neighborhood just a hop and a jump away from Johnson Space Center, where the NASA influence could be felt everywhere. His father, Owen, was a former Stanford physics professor and Navy officer who had been tapped by the manned space flight program in 1965, and the Garriott family had quickly become a part of the tight-knit NASA circle. Their own immediate clan—Richard's two older brothers, Randy and Robert; a younger sister, Linda; and Helen, Richard's free-spirited artist mother—was even tighter. They'd all shared the national spotlight briefly in 1973 when Owen had gone up in Skylab 3 for fifty-nine days, doubling the amount of time any

human had been in space. Growing up in that kind of environment tended to undermine any kid's sense of the impossible.

The Garriott household had long been a mix between a mad scientist's laboratory and a surrealist artist's studio. Richard's father, a thin, mustachioed man with an angular, serious face, had routinely brought home expensive government gadgets from NASA headquarters, tinkering with them for days on end and taking them apart to see what made them work. When he emerged in the evenings from his study, he often brought the coolest science projects imaginable with him. In the mid-1970s, years before weekend warriors would know what night-vision goggles were, Richard and his brothers had chased each other through the darkened neighborhood wearing prototypes provided by Owen.

On another occasion Owen appeared with a pair of glasses with special prisms that reversed the wearer's vision, flipping the world by 180 degrees. Reach out your right hand, and the glasses inverted the image to make it appear it was your left hand. The distortion was mind-wrecking for a time after the wearer donned the glasses, making it impossible to accomplish even the simplest tasks, such as grabbing the handrail on the staircase. The space agency was using cats to study how long it took the mind to adjust to radical vision problems, but Richard and his brothers were happy to serve as unofficial test subjects.

"It was like magic," Richard said later. "There was always something at our house. I didn't realize that this wasn't necessarily true in other places."

Owen rarely had the time or the inclination to work closely with his youngest son. Robert, Richard's serious-minded older brother, was closer in disposition to the reserved astronaut. When Richard and his father did work together, however, the results were impressive. Late in Richard's high-school career, the two teamed up on a science fair project they dubbed "Wave Propagation with Computer Analysis." Owen had taught and studied electromagnetic theory and ionospheric physics, and he showed his son a little about how light and radio waves moved through air, water, and other substances. By that time, Richard knew enough programming to create a fairly sophisticated computer simulation of radio waves' motion. Their combined efforts helped Richard win the U.S. National Science Fair, and place fourth in an international competition.

If the practical-minded Owen was forthcoming with his scientific

knowledge, he was decidedly less so with his own experiences. Despite constant questions, Owen seemed reticent to talk about his Skylab trip. "My dad has never told me anything about being in space," Richard said years later, leaning back in his office chair and shrugging his shoulders. "He once said it was kind of like scuba diving, but he never said anything with any kind of emotion."

Richard was much closer to his mother, an artist whose interests took her from pottery to silversmithing to painting and well beyond to conceptual art. Her garage workshop was always open to the kids, and Richard in particular took frequent advantage of the open-door policy, working with his mother on clay sculptures or little metal designs of his own. These were the little diversions. Helen thought big, and she wanted her sons to be just as ambitious. She taught the boys to be totally committed to their projects, a lesson the brothers willingly followed.

"I like to think that I do big projects," Richard said. "But I definitely acquired that drive from my mother."

That drive had a way of getting out of control. For instance, the Boy Scouts required its members to construct a series of scaled prototypes to obtain a Model Design and Building badge. Richard, Robert, and Helen decided instead to build an airplane in the backyard, starting with two-by-fours, shaping the skeleton, and then paneling the sides. They rigged the wing flaps with a pulley system allowing them to be raised and lowered using a handle in the cockpit, which also came with a working gearshift and a movable steering stick. That was good, but lacked the realism that Richard craved.

The inspiration for something better came at the dinner table, where the boys would on rare occasions get a glimpse of life at NASA. One evening, Owen mentioned tests astronauts had to endure before being allowed into the cockpit of an actual spaceship. One of the toughest tests involved a g-force accelerator that simulated the crushing effect of gravity several times stronger than Earth's, similar to what astronauts would feel as their capsule catapulted out of the atmosphere.

A light bulb went on in Richard's head, and The Nauseator was born. Four feet long and two feet wide, the structure as conceived would spin whoever climbed into the little box 360 degrees in any direction, with the motion controlled by motors. The controls consisted of two joysticks

that would in theory guide both horizontal and vertical movements. When the engineering for electronically controlled joysticks turned out to be far beyond the boys' capabilities, they substituted old-fashioned elbow grease for a motorized experience. Once an "astronaut" was strapped into the contraption, three people would set the device spinning, producing the dizzy feeling of a plane spiraling out of control. In the anarchic realm of childhood this was something like the ultimate game. There was no point other than to avoid throwing up, and by those standards there weren't many winners. In the end, the thousand-pound behemoth took up much of their garage and was, in Richard's words, "staggeringly dangerous."

"We'd just spin the rings and you'd come out and recover feeling pretty good," Richard's older brother Robert said years later, half-laughing at the memory. "Then you'd get this stomach thing going after about ten minutes, just when you thought you were going to be fine, and you'd just throw up all over the place. It was really staggering. Ten minutes. Every time."

These were the elements Richard added to his Oklahoma experience as he found himself drawn to creating computer games. He wanted to make a game that was visceral, that challenged the players, and that made you feel a little bit weird ten minutes after you stopped playing. It proved to be a short step from The Nauseator to games that would sweep up dozens of people in his neighborhood, and put him on the path to a starring role in computer-game history.

Two *The Dungeon Master*

With summer nearly over after camp's end, Richard returned to Houston, where he spent his waning free days building bike ramps and tree forts with his sister Linda and friend Keith Zabalaoui, who lived in a house behind the Garriotts'. His mental decompression didn't last long. He couldn't shake the feeling he'd had while playing *D&D* with his fellow campers. He missed the energy and the camaraderie, and he wanted to find a way to get it back.

He decided to bring a little bit of computer camp to Houston by starting his own *D&D* game. On the first day of school, he tracked his friends down one by one, pitching them on the idea of a weekly role-playing game. He cornered Bob White, then Elizabeth Froebel, Chuck Bueche, Rene Hans, and finally Zabalaoui. Each agreed to join, although few had any idea what he was talking about or how the game was played. Like Richard, they were a bit geeky, and experience had taught them that he could deliver on his promises of fun. That was enough.

Richard spent the week preparing for the game, bent over notebook paper, mapping out an imaginary world. By the time Friday rolled around, his nerves were frayed. Word had spread through his extended circle of friends, and his small gaming group had swelled to nearly a dozen people. His mother loved the idea too, and offered to prepare dinner and snacks. As the gamers arrived, Richard led them back to the formal dining room table, which the family rarely used. It was large enough to let everyone stretch out and eat while Richard wove his fantastic story. Hours passed while the group played, laughed, and talked, oblivious to the appearance of the dawn sun through the curtains.

By any measure, his first time leading a role-playing adventure proved a success. Monday morning, the weekend gamers found each other before the school day began, eager to relive their weekend session and plan the next one. As they saw each other in the hallways, in classes, and during lunchtime, conversation turned repeatedly to the game. Eavesdropping friends asked questions, and Richard and the others preached the game's virtues. As a result, several new gamers showed up at the Garriott household the following Friday. Another batch arrived the week afterward. Before the end of the first month of school, two games were underway: one in the formal dining room and another in the family's living room.

Word continued to spread through the school, first to the science and math geeks, and then to other social cliques. Throughout the day people would wander up to Richard and ask if they could spend the weekend with him. He was more than happy to oblige. By winter, games were being played throughout the house, eventually forcing Helen out of her garage art studio. In its place she set up two large table tennis tables, minus their nets, to accommodate more gamers.

The Garriott home became ground zero for weekend gaming. Adventures would stretch into early Saturday mornings, and after brief rest periods for food and catnaps, they'd slowly pick up again in the afternoon. With so many players, the sessions took on a diverse personality. What had started as a small group of hard-core geeks turned into a social cornucopia. By early 1978, parents started showing up with their kids. The front porch became the recreation area for smokers and drinkers. The group garnered enough attention that the notoriously conservative Boy Scouts even asked Richard's eclectic group to become part of its organization.

This was new territory for Richard. While never unpopular, he hadn't participated in many school activities outside the science fair. Athletics didn't much interest him, and social clubs weren't really his thing. He was one of the ordinary students that roamed the Clear Creek High School hallways waiting for the end of the day so he could go on to more interesting events. The weekend games changed that. He was now "Lord British."

The stars of the weekend games were the dungeon masters (or DMs), the storytellers who devised the adventures. The best game leaders could transport a room full of players sitting in a living room in Houston to a place where anything was possible. The only limitation was the imagination of the

players, and these players in particular had grown up where the impossible was already routine.

Richard didn't excel as a DM; his interest lay in other areas. He'd take his spot at the formal dining table every Friday, ready to follow Bueche or White's lead, but his mind inevitably drifted to the computer.

Indeed, from the moment he'd returned from Oklahoma, Richard had begun scheming ways to get himself back in front of one of these machines. On the first day of his junior year, the same day he began enlisting friends for his weekend games, he walked into the main office and asked to see the principal about a proposal just as close to his heart.

The previous year he'd finished the school's only computer-related class, a basic math accounting workshop. He'd spent most of that class daydreaming or sketching. The truth was that his programming skills now far outstripped those of any other student in his class, thanks to his Stanford and Oklahoma camp training. The school's undeveloped computer department had little left to offer him. Fortunately, his science fair successes convinced the administration that, unlike other students, Richard worked well when left alone with his own projects. Now he'd see just how far he could push that reputation.

A secretary waved him to the back. There Richard launched into a long rant about his proposal before the principal could utter so much as a hello. His pitch was simple: He'd conceive, develop, and program fantasy computer games using the school's computer, presenting the principal and the math teacher with a game at the end of each semester. There wasn't even a computer teacher on staff to grade him on his skills. To pass the class, he'd simply have to turn in a game that worked. If he did, he'd get an A. If it didn't, he'd fail.

It was an easy sell. Making a computer game absolutely seemed like an educational activity to school administrators living in the shadow of NASA. Richard smiled as he walked out of the office, pulling one of his favorite spiral notebooks out of his book bag and labeling it *D&D 1* as he walked down the hallway. By the time the bell rang for first period, he'd already started writing lines of code.

His initial plan was to build an epic story based on parts of his adventures at the Oklahoma camp. As Richard's own *D&D* group grew, however, he began incorporating its tales as well. It was clear to him that the

appeal of his *D&D* games was grounded in the interaction between players, and he wanted to replicate this in some way. To give the games a more fantastic touch, he began work on a language of runes, mystical looking symbols that were much like Tolkien's Elven script. All this was enough to seed a dungeon adventure.

Like most similar institutions at this time, his school lacked its own personal computer, a technology still in its infancy. Instead, students had access to a central machine through Teletype keyboards and terminals that they could use to input code. Richard thus spent his free period at the Teletype keyboard in the math lab.

Progress was slower than he'd hoped. Limited Teletype access meant he spent most of his "programming" time going over code in his head, trying to anticipate problems before they happened. Considering the electronic wonderland at home, this situation was intolerable. Unfortunately for Richard, Owen saw video games as having little future and ignored his son's constant pleas for an Apple II, the machine that was then almost singlehandedly igniting the infant home-computer market. Increasingly frustrated, Richard finally marched into his father's den one evening, notebook in hand.

"Dad, if I can make this game work at school, without any bugs, then you buy me an Apple II," Richard said, handing his dad the *D&D 1* notebook with 1,500 lines of code, scribbled symbols, and charts outlining the mathematical rules for determining the results of combat.

Owen laughed. He'd long ago stopped doubting his son's ability to attack a problem until it had been solved. "If you can make it work without any flaws," he said, "I'll split the cost with you."

Satisfied, Richard stood up and walked out, a grin spreading across his face. It was a devil of a deal. The game was nearly finished, save for a few bugs that needed working out. Not that he was satisfied just with making a game that worked. He had bigger ambitions. Throughout the year he burned through notebooks, labeling each one sequentially: *D&D 2*, *D&D 3*, and so on, until he reached *D&D 28*. Whenever he hit a snag or came up with a better idea than the one he was working on, he'd start over with a new version of the game. He would flip through his most current notebook during other classes, scribbling notes and ideas on the cover. He was obsessed with making a game that mirrored those weekend roundtable games.

With the final bell of his junior year, Richard had aced his independent study project and nearly worked out the idea for a much larger adventure. The stories that would go into the game were falling into place. His BASIC programming was rock solid. Even the language he was creating was nearly complete. While his weekly game group served as inspiration and a venue for play-testing his own stories, he used his school days to test the efficiency of his game's language. He created crib sheets for his tests using his runic script, scribbled on his notebooks and book covers. Throughout his entire junior year, he cheated in front of the uncomprehending eyes of his teachers.

As his programming skills were improving, Richard's desire to recreate his communal gaming experiences reached a seemingly insurmountable obstacle. His simple games lacked the social appeal inherent in a community of people led by a storytelling dungeon master. For Richard, creating the game was just as fun as playing, but he recognized that even a single-player computer game was fundamentally about sharing the experience. Playing basketball alone on a court was practice, but playing with a group of people was a game.

Great storytellers could transport players into a game, creating rich worlds where anything was possible. Sitting at a terminal alone seemed somehow less exciting. Richard hadn't figured out how the computer could solve that problem. For the moment, *D&D 28* was just practice.

Three *Machines at Play*

The collision between computers and game players was already an old one by the time Richard first started typing his *D&D 28* code into his school's Teletypes. For nearly two decades, university computer departments had been continuously populated by a playful subculture of programmers who saw games as a valuable way of testing the limits of the giant new machines to which they'd gained access. In this early environment, the distinction between players and designers was often moot. Almost anyone with access to a computer also had the ability—and often the desire—to create or modify games.

The first real computer game to spark a lasting community was created by a group of students at the Massachusetts Institute of Technology in 1961. The computer science program there was one of the most advanced in the country, with brilliant minds studying topics ranging from artificial intelligence to database construction. This particular group, initially associated with the campus model railroad club, fell in love with the ability to manipulate the mainframe computers in unconventional ways, and its members spent virtually all their free time playing. They created a series of software programs ranging from the whimsical to the intensely practical that had little to do with their official curriculum.

Among these was a game they called *Spacewar!*, which featured two spaceships stalking each other around a screen, firing torpedoes while trying to avoid the gravitational pull of a sun in the center of the screen. It looked much like Atari's *Asteroids* would many years later, minus the giant rocks. At the time, it was a stunning leap forward in the virtually nonexistent field of graphics technology. It was also fun. MIT students gathered for all-night

tournaments, and the game quickly spread to other campuses and computer facilities.

As the years went on, each new wave of students found ways to improve or modify the version of the game created by their immediate predecessors. Tens of millions of dollars in U.S. Defense Department funding poured into the computer research labs at MIT, Carnegie Mellon, and Stanford, earmarked for serious research, while recipients of the funding spent hundreds of hours figuring out better ways to model space battles. As early as 1963, Stanford administrators ordered students and faculty to stop playing *Spacewar!* during daytime hours. [1] In 1973, *Rolling Stone* magazine reported that IBM had instituted a total ban on the game, but had rescinded it after a few months due to employee complaints. [2] In that same *Rolling Stone* article, reporting on the Stanford "Intergalactic Spacewar Olympics," writer Stewart Brand wrote: "Reliably, at any nighttime moment (i.e. non-business hours) in North America hundreds of computer technicians are effectively out of their bodies, locked in life-or-death space combat computer-projected onto cathode ray tube display screens, for hours at a time, ruining their eyes, numbing their fingers in frenzied mashing of control buttons, joyously slaying their friend and wasting their employers' valuable computer time."

Two parallel computer networks in particular served as conduits for the spread of this and other games and as early hosts for communities of game players in the United States. ARPANET (the Advanced Research Projects Agency Network), the public university and research network that would ultimately evolve into the public Internet, was home to much of this development. A separate, university-supported network called PLATO (Programmed Logic for Automatic Teaching Operations), first developed at the University of Illinois in the early 1960s and expanded throughout the country in the 1970s, carried much of the most advanced technology of the time and attracted some of the most dedicated game hackers.

A few of these early games fired imaginations nearly as much as *Spacewar!* A simple game called *Hunt the Wumpus*, written by Gregory Yob in 1972 for the Berkeley-based People's Computing Company, was translated into several computer languages and spread quickly and freely around university computer departments and ARPANET-connected research companies. Presented with text descriptions of a dodecahedron-shaped maze ("If you don't know what a dodecahedron is, ask someone," the

game's cursory instructions read), the player's task was to hunt and shoot the Wumpus, a mysterious creature with a taste for the player's flesh. Other hazards included playful giant bats and bottomless pits. A sample of a very short game might have run something like this:

>BATS NEARBY!
>YOU ARE IN ROOM 2
>TUNNELS LEAD TO 1 3 10
>SHOOT OR MOVE? (S-M)? M (the player has chosen to move)
>WHERE TO? 1 (the player has chosen room 1)
>ZAP—SUPER BAT SNATCH! ELSEWHEREVILLE FOR YOU!
>YYYIIIIEEEE . . . FELL IN PIT
>HA HA HA—YOU LOSE! [3]

When Gygax's *Dungeons & Dragons* game rippled through these circles in the mid-1970s, programmers immediately saw the potential for new computer games. In many ways, *D&D* was already like a computer program overlaid with a dungeon setting. This game progressed on an if-then model familiar to programmers: *If* the character slays the orcs, *then* he is allowed to open the door and find the treasure. Many of the game's critical moments, from combat to success in picking a lock, were determined by rolling dice, the physical world's equivalent of a computer generating a random number.

Students and other programmers already primed by reading the *Lord of the Rings* series saw in Gygax's game a rich source of material and inspiration, and almost immediately began work trying to translate it into code. The game proved particularly inspirational for a talented young programmer named Willie Crowther at the Boston-based Bolt, Beranek and Newman (BBN), a computer company involved in creating much of the early ARPANET's basic technologies.

Not long after the release of Gygax's game, Crowther's marriage had begun to fail, and he separated from his wife. In a bid to maintain contact with his two daughters, he decided to write a computer game for them, basing it in part on the tabletop dungeon games he'd played, and partly on the real-life spelunking he and his wife had avidly pursued. His wife Pat had been immortalized in spelunking circles for finding a passageway

connecting two segments of the world's largest cave. Willie turned parts of that cavern into the setting for his daughters' game, which he dubbed *Colossal Cave Adventure*.

Crowther's *Colossal Cave Adventure* (often simply called *Colossal Cave*) lacked even the simple graphics of *Spacewar!* or the *Pong*–style games just beginning to sweep the market. Like *Hunt the Wumpus*, it was all text, and like *D&D*, it relied on players' imaginations to fill in the most visceral elements of the world. Crowther wanted to let ordinary non-programmers like his daughters play the game, so he made the game respond to natural language commands like "go north" or "take stick." The details of the environment itself were drawn from the weird beauty of the real Mammoth Cave in Kentucky, from the soaring domes and twisting narrow passageways called "crawls" to a massive column of orange stone based explicitly on a real-life counterpart. [4] [5]

Released in 1976, Crowther's project turned out to be one of the most influential computer games in the medium's early history. He'd put a copy of the game on a computer at Boston University, and the code spread quickly as programmers made copies and passed it around. At night, players installed it on the giant computers they worked on during the day, and other people would find the code there, start playing it, and then pass it along to others on the ARPANET.

A few months later in 1976, Don Woods, a first-year student in Stanford's graduate computer science program, stumbled across a copy of Crowther's game. He liked it enough to want more. Crowther was still credited in the much-copied code, but without any contact information. Woods was too much of a programmer's programmer to let a simple hurdle like that stop him. He sent an email to every single one of the sixty-plus host machines then on the ARPANET looking for a "crowther@[thatmachine]." One mail didn't bounce; he'd found the author. After a short exchange of emails, Crowther readily gave Woods permission to modify the game.

Woods was a game player, but unlike Crowther he hadn't played *Dungeons & Dragons* or any of its spin-offs. It didn't matter. His first task was to debug and streamline the code, eliminating rooms that had entrances but no exits, for example. He also began adding puzzles to the game with the aim of making it more challenging to play. "Crowther had really developed the program more as an 'explore and find stuff' game than as a 'solve the puzzles'

game," Woods said years later. "I wanted to make it trickier so it would take longer for a player to finish the game." That model, along with a wry sense of humor in responding to players' commands ("Don't be ridiculous," the game would tell someone that tried to eat a lamp, for example), helped make the final game enormously popular and hugely influential for later game writers.

When Woods re-released the game as *Adventure* on the ARPANET in late 1976, and again with improvements in 1977, players around the country were entranced. The first step into the building or down the road led players into the most richly developed computer game world any of them had ever experienced.

> *You are standing at the end of a road before a small brick building. Around you is a forest. A small stream flows out of the building and down a gully. In the distance there is a tall gleaming white tower.*

Crowther and Woods' game quickly proved a stepping-stone for other programmers interested in creating these *D&D*-influenced worlds. While hundreds of other games were created, the work of one group at MIT stands out for the influence of its games and the commercial impact the team would have a few years later. By early 1977, *Adventure* had made its way back to Boston, to the same department where *Spacewar!* had been created sixteen years previously. Just as that game had, *Adventure* captured the imagination of the programmers at MIT, and many of them spent weeks trying to solve the game (one tongue-in-cheek estimate of the game's influence said *Adventure* "set the entire computer industry back two weeks"). [6]

A group of MIT students initially led by former political science student and committed *D&D* player Dave Lebling decided they could do better. Lebling had already worked on several games, including a network 3D exploration game called *Maze*, in which several people at once could wander around a labyrinth trying to shoot each other. Almost immediately after playing *Adventure*, Lebling started writing a command parser, a software component like the one Crowther had built into *Colossal Caves*, writing a natural language command parser.

As Crowther and Woods had understood, this kind of intuitive interface

made games more accessible to players and created more opportunities for interesting interactions between player and computer.

Another pair of students, Marc Blank and Tim Anderson, used Lebling's work to create a rudimentary four-room game prototype similar to *Adventure*, with all-text descriptions. It was a simple world that contained a band that played "Hail to the Chief," a bandbox, a "peanut room," and a "chamber filled with deadlines." They showed it to Lebling, who tested it, found it promising, and almost immediately went on vacation for two weeks, which left the pair to their own devices.

Unable to wait for his return, Blank, Anderson, and another student named Bruce Daniels started mapping out a more complicated world with puzzles and problems scattered throughout that would make it a real game. They dove into all-night programming sessions, barely stopping to eat or sleep, and by the time Lebling returned, they had a real prototype. Lebling pitched in, and by the end of the summer of 1977, they had a functioning version of the game. The world wasn't nearly as large as it would grow to be over the next two years, but was recognizably the game that would come later. Players entered the Great Underground Empire to contend with the forces of Lord Dimwit Flathead the Excessive, and found the deadly grue in dangerous dark corners of the world. The programmers called their project *Zork*, a hacker-slang nonsense word they often used as a name for unfinished projects, and which wasn't intended to be the game's real name. This time, however, the name stuck.

The game's *Adventure* lineage was evident from its opening.

> *"You are standing in an open field west of a white house, with a boarded front door. There is a small mailbox here."*

Entering the house would provide the player entree into a dangerous underworld where thieves and monsters abounded. Walking into a dark room would result in a message reading:

> *Oh no! You have walked into the slavering fangs of a lurking grue!*
> ***** You have died *****

They put the game on MIT's computers, where it quickly gained a following well beyond the school itself. Many people could use the school's big mainframes simultaneously and the access software had been written with the idealistic mores of the programming community in mind; it had almost no security provisions built in. As a result, anyone who could use a modem and had the right equipment could call up the MIT computers, log in, and browse around to see what might be interesting. That wasn't a large number of people in the late 1970s, but it was enough to create a little community of "Net randoms" who found their way to the students' game to try it out. These early players ranged from MIT artificial intelligence luminaries to twelve-year-olds in Virginia who'd gained access to a computer and a modem.

About halfway through the process, the group decided to name the game *Dungeon*. That didn't go over well. TSR, *Dungeons & Dragons* creator Gary Gygax's company, claimed trademark rights in the name. MIT lawyers told the team that TSR was probably overreaching, but Lebling and the others didn't want a fight and elected to keep the *Zork* name after all. In the meantime, a clever hacker at Digital Equipment Corporation who'd figured out how to break through the authors' attempts to encrypt it had downloaded the game's source code. Another programmer rewrote the source code in the FORTRAN computer language so it could run on machines other than the giant mainframes. That unfinished version of the game kept the name *Dungeon*, and wound up spreading around the ARPANET as a separate game.

Zork wasn't initially intended to be a commercial product. As the game was being finished in 1979, some of its main programmers were putting the early touches on a plan to create their own company. They didn't know what they wanted to sell, exactly; they just knew that they were smart, creative people who could surely offer the world something and have fun doing it. Lebling and Anderson were part of this group, as was the assistant director of the lab, Al Vezza. Everyone kicked in a little money of their own to start the company, and they settled on Infocom as a name. After deliberation, a home version of *Zork* was launched. [7] [8] [9] [10]

"Would you shell out $1000 to match wits with this?" read one of the company's subsequent full-color magazine ads, showing an absurdly primitive, pixilated, red video-game–style monster against a black

background. They were determined to make a virtue of their dependence on text, even as Atari and other home console games sold millions of machines by emulating the graphics of arcade games. Another ad depicted a glowing brain, reading: "We unleash the world's most powerful graphics technology."

Without access to these university connections, Richard was largely oblivious to what was happening on these networks as he grew up. A few of his future colleagues were already seeing these network games and falling in love, however. One of these figures was a quirky programmer later known as "Dr. Cat," who would weave in and out of Richard's personal and professional life for the next several decades. In 1977, Cat was a high-school student in South Bend, Indiana, still using his real name of David Shapiro. His mother was a professor at the local Indiana University campus, where they were experimenting with a PLATO network connection. "My mom had access to this, and told me about it," Cat said later. "She said no one was using it on Saturday or Sunday, so I immediately rode across town on my bicycle to try it out."

A friendly hacker who was guarding the trial terminal told him that if he wanted to play a game, all he had to do was type the words *BIG JUMP* into the keyboard. He did, and immediately a list of more than three hundred games scrolled down the screen in blurry orange text: space games, adventure games, and quite a few titles that were obviously inspired by *Dungeons & Dragons*. Cat was thrilled; he returned the next day to spend hours devouring as many of the games as possible, and then pedaled across town to tell the bookstore owner who had brought *Dungeons & Dragons* to town. *D&D* was at the university too, but on a *computer*, Cat excitedly told the older man.

Cat's high-school brush with PLATO was typical of the experience many tech-savvy programmers had in the early days of public networks. The discovery of games on a network supposedly dedicated to dry research and education topics often came as a kind of revelation, highlighting the quirky, creative side of computing culture. Moreover, people wanted to share their discoveries, to tell other people about this new thing they'd found, and especially let other people play games they'd written themselves. Word of

mouth, like Cat's message to the bookstore owner and the helpful hacker's instructions to Cat, was a powerful means of advertising.

Many of the most influential of these early network games were written at about the same time Richard was starting his programming. Despite the significant graphical limitations of the networks and screens of the time, games such as *dnd*, *Orthanc* (the name of the wizard Saruman's tower in *Lord of the Rings*), *Oubliette* (French for "dungeon"), and *Avatar* displayed simple line drawings of dungeon maps similar to the graphical interfaces that Richard would develop over the next few years.

These games proved incredibly popular with the research and student communities on the PLATO network, inspiring some of the same tensions that had accompanied *Spacewar!* in the late 1960s and early 1970s. Cat later told of a pair of enterprising Indiana hackers who had become obsessed with *Avatar*, one of the most advanced of the *D&D* spin-offs in the late 1970s. Anxious for their characters to improve in the game, they'd driven all the way to PLATO's home on the University of Illinois campus, somehow made their way into the central operations room housing the machine where all the *Avatar* files were stored, logged into the computer, and changed their characters to make them all the highest level possible and give them the most powerful weapons available.

"It was so blatant, they were quickly caught," Cat remembered. By the time he arrived at Indiana's Bloomington campus in 1980 as a seventeen-year-old freshman, an automatic "enforcer" program had been installed to make sure none of the students there could waste PLATO network time playing games. He started to write a hack to get around the block but then realized there was another way: One of the computer lab's system administrators was a dedicated game player, and whenever he was on duty, he would simply turn off the enforcer.

Cat and other students in the know timed their visits to the school's computer lab to coincide with this staffer's hours, allowing them to spend hours fighting through line-drawn dungeons or programming their own games at one of the system's terminals. Other administrators at other schools pursued similar attempts to stop the games from taking up so much computer resources, usually with similarly little effect.

As Richard found for himself in Houston, once the computer game bug bit, it didn't let go.

Four *ComputerLand*

As university students and older programmers swapped programs online in 1978, Richard was concerned only about getting his own computer. He'd completed his game, winning his bet, and his father promised him the family would get its first computer before the end of that summer. When his father finally walked through the front door carrying the Apple II computer box, Richard nearly ran the astronaut over. He'd been working on *D&D 28B*, the latest and most advanced version of his continually evolving game, but without access to the school's Teletype during the vacation, progress had been difficult.

With the Apple II now hooked up at home, Richard could dive into his passion unhindered. He tore into the machine, poking around the instruction manuals and prodding the machine with simple code. He came across *Escape,* a simple game that asked players to find their way out of a maze. He popped it in the tape drive (very early computers stored data on magnetic cassette tapes rather than floppy disks or CD-ROMs) and watched as lines began appearing on the screen, giving him an overview of a labyrinth.

He was taken aback at the apparent simplicity of the problem. The answer to the puzzle was appearing on the screen as he watched.

Then something magical happened, which would change how he would think about games for the next two decades. As the map was drawn to completion, the screen went black. The next view was a first-person perspective looking down a long hallway drawn with vector graphics. Long, straight lines reached from the edge of the screen to connect in the middle, giving the illusion of depth and allowing him to wander through the maze seeing only what would be in his direct line of sight.

"As the maze dropped down into that low perspective, I immediately realized that with one equation, you could create a single-exit maze randomly," he recalled. "My whole world changed at that moment."

As students on the PLATO and ARPANET networks were also discovering, this rudimentary 3D view went a long way toward transporting players inside the game. Richard too saw the possibilities. His games to this point had included graphics, but he had used simple ASCII characters such as asterisks, parentheses, and ampersands to represent objects. As he now walked down hallways, turned corners, and ran into dead ends, he began to understand the computer's potential to put players directly in the hero's boots, something even his *D&D* games couldn't do. Here on screen players saw through the hero's eyes—became the hero—as they sought escape from the labyrinth.

He played for an hour, trying to figure out how the game worked, looking at the code, and sketching out dungeons while revamping 28B. When players went into his next dungeon, he decided, they too would see only what was in front of them, just as if they were exploring a real maze. It would be like an Alfred Hitchcock film, in which the viewer's imagination was forced to invent details of menaces only hinted at on screen.

This new perspective came with a new set of complicated problems, however, taking him into unfamiliar mathematical territory. He imagined a character standing at the beginning of a hallway, facing south, for example. The player would see both walls bracketing the corridor. But turn directly east and only a single wall would be visible, without the character having shifted position. Enabling the computer to redraw this perspective as the player turned in all four directions would require Richard to understand and program a complex series of mathematical relationships, well beyond the coding skills he'd previously honed.

In the end, creating the mathematical equations and graphical representations he needed for his game became a Garriott family affair. For days, Richard doodled in his notebook, trying to visualize the creatures that would inhabit the new world. Helen occasionally appeared over his shoulder, and before long, she was drawing next to her son. Richard sketched out ladders, bats, skeletons, and chests using geometric shapes, but it was his mother who helped him create 3D graphics by explaining the use of perspective. For instance, to create the illusion that a corridor ran

off into the distance, objects had to appear to get smaller as they became increasingly distant from the character's position. A treasure chest several feet away would correspondingly become larger as the character walked toward it. It was a simple concept for an artist, but less immediately obvious to a high-school student.

Richard wrote the graphics code using geometric equations to plot the lines needed to draw each shape. Next, he needed to create the dungeon housing these items. He tinkered with the math that created the *Escape* maze on the Apple, but wasn't sure he'd gotten it correct. Owen solved this problem, whipping out a few trigonometry equations and assuring his son that he was on the right path.

Once the graphics issue was solved, Richard was ready to start working on the game code. As he'd done the previous years, Richard again proposed an independent study project that focused on his new obsession. He even got a helping hand from the administrators—while the old Teletype remained, the school's principal persuaded the school board that an Apple II was needed on site to help with administrative duties. This gave Richard unfettered access to computers both at school and at home. He attacked the code relentlessly, writing the game by hand and debugging as he went.

Again, he had a built-in test audience on the weekend as the *D&D* games picked up. During breaks, Richard would borrow his friends Chuck Bueche or Bob White to evaluate his latest work. As they skulked through his dungeons, battling demons and searching for treasure, Richard played the role of computer-mediated dungeon master, watching to see whether his creations had the desired effect on players.

By this time, Richard and Elizabeth, the young woman he had asked to play in the first *Dungeons & Dragons* weekend game the year before, were spending much of their time together. An avid gamer herself, she'd drive over on weeknights and watch Richard code. Engrossed, he'd sit intent on the screen, typing with his girlfriend's arms wrapped around his waist, her head resting on his shoulder. He'd bang away for an hour, then shake her awake, step back, and watch as she played his game. It may not have been the most traditional foundation for a relationship, but it was certainly good for his productivity. Once again he found gaming mixed well with socializing, even if their date nights looked a little different than those of most other high-school couples.

Indeed, programming the game had fully become a community activity. His father, his mother, his game group, and his girlfriend each added something to the experience, helping him create a software engine capable of depicting a rich, rudimentarily realistic world. His friend Keith, one of the early *D&D* game-night players, sketched a knight walking into a dungeon that Richard used as cover art. The game—his first complete one, in his own opinion—was finished before the first semester was over. He dubbed it *Akalabeth*, a mystical-sounding word he believed he'd made up (but which sounded suspiciously close to "Akallabêth," a word in J.R.R. Tolkien's fictional Adûnaic language).

With his game complete and a high-school diploma in hand, Richard's game development could easily have ended there. School was out, and the *D&D* group disbanded. Computer gaming was a nice hobby, but Richard had already been accepted to the University of Texas, located three hours north in Austin. He'd decided to major in electrical engineering, just as his father had done. He'd been surrounded his whole life by the best technical minds in the country, but that wasn't going to get him a job at a game company. There wasn't even anything like a game industry around. The real programming action was happening on the coasts, at MIT and in California, hundreds of miles away.

He'd heard of Silicon Valley's West Coast Computer Faire and Homebrew Computer Club, two of the dozens of computer hacker groups at the heart of the emerging home-computer industry in 1979, at which hackers shared information with each other by toting their homemade computers to meetings. Among hackers and programmers, those years in the Valley are remembered fondly as the golden era of hacking, and it was in that environment that Steve Wozniak had created the Apple II, the computer Richard would use religiously for years. [11]

But that was a world away, and Richard didn't consider himself a hacker. He ended up settling for a job at a local ComputerLand store. While hardly the epicenter of the American hacker community, it was at least a way to keep close to computer culture. When the store's manager discovered he'd created a game, Richard gave him a demonstration of *Akalabeth*. Gratifyingly, the manager loved it, and pushed Richard to publish it himself. People would actually pay money for the game, he said. It was good enough that it might even help persuade people to buy a computer to play it.

Self-publishing didn't take much work. Richard made his own packages, spending two hundred dollars on resealable bags and photocopying for the cover sheet and manual. "Beyond adventure lies Akalabeth," the black-and-white cover hand-drawn by his mother read. "10 different Hi-Res Monsters combined with perfect perspective and infinite dungeon levels create the world of Akalabeth."

With only limited funds available, and fearful that he'd end up with a mass of unused five-dollar disks, he produced only sixteen copies of the game. He hung plastic-bagged packages on ComputerLand's wall and waited for customers to discover the magic. Fifteen copies sold. It wasn't much, but Richard was thrilled with the sales. Fifteen strangers had wandered into a store looking for something to make their computer more interesting, and they'd chosen his game.

Excited by his game sales, Richard hadn't noticed a copy was missing.

A few weeks later, he got a phone call at home from someone who evidently wanted to talk about *Akalabeth*. Richard didn't recognize the voice, which confused him. As far as he remembered, he hadn't spoken with anyone about the game outside his gaming group and his boss at ComputerLand. The man introduced himself as Al Remmers, the owner of California Pacific, an actual game company based on the West Coast. It emerged that Richard's boss, himself enthusiastic at his employee's success, had sent the company the missing disk. Now Remmers wanted to fly Richard out to California to talk terms. "You need to publish this game professionally," he told Richard. "This could be big."

By the time the phone call ended, Richard's heart was thumping. Twenty minutes before, he had been thinking about what he was going to do next. *Akalabeth* represented two years' worth of programming, but he had never envisioned it extending beyond his friends. It was a school project meant to get him out of class. Yes, he was proud of the game, and of the packages hanging on ComputerLand's wall, but this was like taking a job in the IBM mailroom and having the president of the company stroll into the basement to invite him upstairs to talk strategy. He was overwhelmed.

He talked to his parents about the phone call and the potential for his game to go nationwide. Together, they decided he should go to California to investigate a business partnership. He was thrilled; in just a few years, he'd gone from being a gaming geek to a computer programmer with a vision. He

had wanted to recreate the weekend gaming experience that had evolved at his house: the camaraderie, the excitement, and the total immersion players felt in entering a skilled storyteller's world. Now it looked like he might get the financial backing he'd need to realize this vision. "Until that point, I'd never considered gaming a career," he said years later, sitting in the office of his second game company. "I had been happy just doing what I had fun doing."

He was in for a surprise. The first hackers' era was coming to an end as academics left their labs and hobbyists left their basements for the lure of profits. With Apple now selling tens of thousands of computers a year, the consumer software business looked like a gold mine, and entrepreneurs of widely varying degrees of reliability were pouring in.

As with other past gold rushes, the reality would often be something less than pretty.

As Richard's plane rolled to the gate in northern California, he let himself imagine a publishing success that would make the fifteen copies he'd sold to date seem like a joke. Yet even this was secondary to a more immediate draw. In just a few hours, he thought, there was a good chance he'd be standing face-to-face with Bill Budge, one of his programming idols, who published games for California Pacific.

Budge had first made his name by writing a *Pong*–style game called *Penny Arcade*, which he traded to Apple Computer in return for a printer while still a graduate student. The game also drew the attention of California Pacific's Remmers, who hired Budge to write Space Album, a title subsequently ranked by computer hobbyist magazine Softalk as the eleventh most popular game of 1980. Over the next few years, Budge would gain more prominence as the author of a 3D graphics system for the Apple II, the self-published *Raster Blaster* pinball simulation, and *Pinball Construction Set*, which let players create their own virtual pinball tables.

Yet even at this point, in 1979, Budge was one of the few programmers Richard admired. The older programmer seemed to have similar ideas about how to make games, even if Budge's products were worlds away from Richard's *Akalabeth*. Both were concerned with taking games from another

medium and translating them to the Apple computer, despite its limited graphics and technical capabilities. Budge's work to date had largely been focused on arcade–style games, but his success had been undeniable. Richard was already running into trouble figuring out how to bring the experience of paper role-playing games to the computer screen, and he hoped that Budge's experience and expertise might help him.

"These guys publish Bill Budge," Richard repeated to himself. His heart pounded as he left the airplane. Memories from his year-long exile in Palo Alto flashed through his head. The computer culture had been springing up all around him, almost literally in his backyard, and he'd barely been aware of it. He'd spent most of that year dismissing it, longing for Houston. Maybe that'd been a mistake; but now he had a second chance.

He emerged from the walkway to see Remmers holding a handwritten sign with Richard's name on it. For Garriott, the sight was like something out of a Hollywood movie. Nor did the next few hours change his impression. Although the plan was to head back to the California Pacific offices, where Richard had hoped to run into Budge, Remmers claimed he had to make a stop first. "It's too late to get you back home, anyway," the man said.

They drove to a one-story apartment near the airport. Remmers hopped out of the car without explanation, and Richard, feeling a bit uneasy, followed. Inside, Remmers introduced him to a tall, scruffy man, and the two disappeared into the back of the house. Shaken and travel-weary, Richard stood in the middle of the room, his heart racing. Was something illegal happening here? He'd grown up next to NASA, where there was barely any drinking and certainly no drugs. Evidently life among California's young software developers was different.

"Houston wasn't the Bible Belt. It was just that that kind of thing wasn't heard of," he remembered later. His would-be publisher had disappeared, he was 1,700 miles from home, and he didn't know anyone else in the area he could call. He waited nervously until he eventually passed out on the couch, exhausted from the adrenaline of the trip and his current adventure.

Remmers shook him awake at the crack of dawn, and they left as quickly as they'd arrived. Ghost-white, Richard climbed into the front seat. Though still convinced that everything would end well, he was underwhelmed when they finally arrived at the California Pacific office, a small building with few offices and fewer people. He was also disappointed

to find out that his idol, Budge, was nowhere to be found (although the two would meet later). The company contracted for most of its work, so there was little overhead and there were few full-time employees. It was the antithesis of Richard's experience both in Oklahoma and in Houston. There was no community here, and he had no desire to stay. He'd been half-scared out of his wits since he got off the plane. He signed his contract and left as quickly as he could.

Yet even if the experience had been less glamorous than Richard had imagined, the success excited him. With *Akalabeth* finished and a contract in his hand, he couldn't complain. A few days after he returned home, he called Ken Arnold, a boy about his age he'd met while working at the computer store. They'd decided to work together on a new game, and Richard wanted to get started as quickly as he could. Time was short. He was leaving for the University of Texas in just a few weeks, and the three-hour drive to Austin would limit their ability to work together.

He and Arnold were determined to make a better version of *Akalabeth*. The basic structure of the game remained the same—a hack-and-slash, hero-driven adventure—but the two didn't want to replicate the first game's experience completely. The weekend *D&D* games had formed the backbone for *Akalabeth*, but now Garriott wanted a grander experience, with richer interaction between the player and the world. Arnold began constructing a basic graphics subroutine using assembly language, which Richard hadn't yet bothered to learn, while Richard hammered out the rest of the game's particulars. When they were finished, Richard wanted to have a game that every *D&D* player would want to play.

Meanwhile, the professionally published version of *Akalabeth* was starting to take off. The game eventually sold thirty thousand copies, earning Richard royalties in the neighborhood of $150,000, about three times what his astronaut father earned in a year. Not bad at all for a school project.

Five *The Expansion Pack*

The computer games business Richard was entering was a decidedly amateurish enterprise in the late 1970s and early 1980s, with isolated pockets of like-minded people often having little idea of what was happening elsewhere. Many of the era's software companies were haphazard outfits, often launched by people who had started programming as a hobby rather than as a profession. Brøderbund software founder Doug Carlston, at the time a lawyer in Connecticut, later told of writing games for his RadioShack TRS-80 computer largely as a means of supporting his own computer habit. Monetary royalties weren't even the biggest draw at first; many publishers would pay for games simply by sending free copies of all the other software they published. "I'd send the software off, and get thirty or forty freebies back in the mail," Carlston remembered.

Computer software publishing companies were often tiny affairs, run out of homes and dorm rooms, conducting business through ads in local publications or one of the growing number of national hobbyist computer magazines. They were hungry for software to sell, particularly games, and some of the more obvious business standards that would develop later in the industry's history were simply ignored. Carlston, for example, often sold the same program to two or more publishers. A lawyer by day, he told his correspondents at the companies clearly that the games had already been released elsewhere, but few cared. It helped that most publishers had little ability to distribute their wares nationally. At the time, only a few chain stores sold computer software, and most sales were regional or occurred through the mail. There was little likelihood that the same game, released by two separate companies, would end up sharing shelf space somewhere. Crowther

and Wood's *Adventure* was a beneficiary of this phenomenon, released for the Apple II by Microsoft, Apple Computer, and a company called Frontier Computing. [12]

In these early days of hobbyist computing, many games also came from something other than what would today be viewed as a traditional software publisher. According to *Softalk* magazine, the most popular pre-1980 game for the Apple II was a *Space Invaders* clone called *Super Invader*, distributed by the popular *Creative Computing* magazine in 1978. The founder of that magazine, David Ahl, had earlier written a book called *BASIC Computer Games*, which in 1979 became the first computer book to sell more than a million copies. [13]

As personal computers spread, hobbyists increasingly turned pro. Richard's surprise at seeing *Akalabeth* suddenly selling thousands of copies wasn't a unique experience, though the scale of its success was somewhat exceptional. Budge's first game with Remmers earned him a surprising $7,000 in its first month. [14] Carlston too saw royalty checks start trickling in from publishers he'd almost forgotten about, hundreds of dollars at first, and then thousands.

The years 1979 and 1980 proved important ones in the formation of several influential gaming companies. Carlston packed his computers into his Chevy Impala early in 1980 and drove across the country, winding up in Oregon, where his brother Gary lived. The two agreed to start publishing Doug's software themselves. They called the new company Brøderbund (*broder* means "brother" in Swedish, while *Bund* is German for "alliance"), and the company started off with barely $7,000 in working capital, mostly donated by family members. Sales were slow at first, hampered by distribution difficulties. Doug drove across the country again, stopping at retail outlets wherever he could find them, trying to sell the company's software. The tactic worked, and he simultaneously gained a clearer idea of the young computer industry's noncorporate character.

"It was as if it had been left to geeks to create the universe. It was kind of warm and fuzzy from top to bottom," he said. "The people who were running the stores were the kind of people who wanted to invite me home and show me all the hacks they had running on their own computers."

Infocom's *Zork* was also released for the Apple II in 1980 by an outside publisher, although the game did poorly until Infocom's ex-MIT

programmers took control of distribution themselves. Sirius Software was formed in Sacramento, California, by a Vietnam veteran and computer store manager named Jerry Jewell, who had found in college student Nasir Gebelli a brilliant programmer with a talent for bringing arcade–style games to the Apple II. On-Line Systems, later to be renamed Sierra On-Line, released its first game that year. That company would touch Richard's life more deeply than the others.

On-Line Systems was the product of collaboration between husband and wife Ken and Roberta Williams, both of whom were new to computer games in 1980. Ken had begun as a temperamental corporate programmer with little interest in games but with an ambition to create his own company. His decidedly nontechnical wife, Roberta, had fallen in love with a copy of Crowther and Woods' *Adventure*, and decided to write her own adventure game called *Mystery House*. After initial skepticism, her husband pitched in and added a graphic element that pushed the boundaries of Apple II display technology beyond anything that had been done before. They toyed with taking it to a "real" software publisher, but instead decided to keep the profits themselves, and took out a magazine ad for their *Hi-Res Adventure #1*. They made $11,000 in the course of the next month. On-Line Systems was renamed Sierra On-Line when the Williamses moved to a little town near the California Sierra mountain range not long afterward. [15]

These publishers grew to be a part of a small network of friendly companies, and their founders came to know each other well, developing a sense of community that would stay intact through much of the 1980s. They met at trade shows like the West Coast Computer Faire and Applefest, and spent time together away from the shows when they could. The Williamses hosted a series of rafting trips over the years that would often draw fifty to seventy people from various companies out into the woods for water fights. The programmers were drawn together in large part by a shared sense of purpose, and occasionally by a beautiful and incredulous sense of having lucked into their new lives.

"We were all in it out of a sense of wonder," Carlston remembered. "All of us either had no lives before or had thrown them over because of these stupid machines. We hung out together because we were all the same sorts of jerks."

That didn't make them good business people. Some of their

companies did very well, borne aloft by their programmers' talents and a market hungry for whatever software it could find. The computer games market represented a tiny fraction of the billions of dollars being spent on arcade and home consoles like the Atari, but it didn't matter. For the most part, these people were in the industry because they loved programming on the temperamental new machines, and the draw of bigger money elsewhere simply wasn't a factor. Over time, real-world business concerns would swamp some companies, and would undermine the hacker culture in others, but as these companies first found their way, financial and accounting issues were simply new problems to be solved as quickly and painlessly as last week's graphics hack.

"Most of these guys were in the industry because they loved it," Brøderbund's Carlston said. "It was a very hackery kind of thing. You didn't go to business school, you didn't read the rules, you were just going to go out there and figure it out. It was a blissful ignorance of the real world that united everybody."

Six *Creative Anachronism*

Richard and Arnold certainly fit the blissfully ignorant hobbyist-hacker mold, even as *Akalabeth* proved to be wildly successful. For the moment unconcerned with distribution and contracts, the two plunged into work on *Ultima*, the name for their planned follow-up to *Akalabeth*. They plotted a story in which the player would try to stop the evil wizard Mondain from wreaking havoc throughout a land called Britannia. Yet with school and life commitments looming, they didn't have much time together to finish the project. Just a few weeks after returning from California, Richard piled into the car with his parents and headed three hours north to Austin's University of Texas, where the plan was to master the more advanced arts of computer programming.

His first days in Austin weren't so different from his first days at computer camp just a few years before. He was cut off from his community and miserable. Gone were the weekly games of *Dungeons & Dragons* and the friends that had developed over two years, which had been such a source of inspiration for him. He was separated from his creative partner, but in some ways this helped him get his work finished. With few friends in Austin, he spent weeks sequestered in his room tinkering with the new game. On weekends he'd drive back to Houston, holing up in his house with Arnold and kicking around ideas, but they were keenly conscious of their lack of progress. As hard as they tried, the extended breaks retarded the game's development. By the time Richard came home for the Christmas holidays at the end of 1979, he was depressed. He was too far away from Arnold to get serious work done, and too much commuting meant he wasn't acclimating up north. He made a New Year's resolution: It was time to explore Austin

and find like-minded people and interesting groups to join.

He tried the fencing team first, but there was little time for social interaction there. He picked up a campus newspaper one day after class—fittingly, while wandering through the student union's arcade—and found an advertisement for a group called the Society for Creative Anachronism (SCA). Each week these people would get together to recreate aspects of medieval society, complete with full garb, role-playing, and sword fighting. In a way they were the real-life manifestations of the *Dungeons & Dragons* games he'd played and the computer games he hoped to create.

The SCA was a curious group started in the shadow of a different kind of renaissance. Formed on the weird streets of Berkeley in 1966 by a handful of science-fiction and fantasy fans who wanted to bring the worlds they were reading about to life, the group was imbued with a sense of honor and mutual trust its early members felt were missing from 1960s culture. By the late 1970s, the group had spread nationwide. The Austin chapter had existed since 1977, and was started by Steve Jackson, another game designer who was preparing to start his own company out of the large metal barn behind his two-story house. A longtime tabletop gamer, Jackson wanted to create a hybrid of the war games released by established companies such as Avalon Hill and Simulations Publications and role-playing games like Gygax's *Dungeons & Dragons*.

That was business. The SCA was something different: part fun, part philosophy, and part medieval craft. Over a bottle of whiskey, SCA members would discuss the guiding principles of chivalry they thought should rule not only their weekly fencing matches but also their lives. It quickly became a safe haven for the science-fiction crowd, the tabletop gamers, and the computer programmers—three distinct groups that were starting to realize their common interests.

After reading the SCA's newspaper ad, Richard tracked down the group in Waterloo Park, a grassy area southeast of the university, where it held weekend gatherings and fencing matches. Two fencers were thrusting and parrying when he arrived, and he watched with a practiced eye. The two fencers were David Watson, then a thirty-year-old craftsman, and twenty-year-old Greg Dykes, Watson's roommate. Richard asked to join them, and the trio soon became inseparable during the Sunday-afternoon fencing sessions. They practiced constantly, challenging the others to duels over any

issue that came up, no matter how trivial. When Dykes, known as Dupre in the Society, became agitated over Richard's insistence on calling him "Super Duper," he challenged Richard to a duel on Watson's front lawn. Richard quickly dispatched Dykes, winning the right to use the nickname for six months, after which the challenge would be reissued.

The older Watson seemed the odd man out in the trio, but his meticulous attention to detail and his eccentric personality meshed well with Richard's interests. Fascinated with archery since his days as a history graduate student in the early 1970s, he had by this time taught himself to craft functioning crossbows.

"The four of us—David Martinez joined the regular foursome—really all hung out and camped together at almost every SCA event," Dykes later remembered. "We got into the philosophy of the group. We'd sit around drinking and talking about proper behavior, the rules for living your life, and honor. Sure, there was some straight tavern stuff too, but we always did things with a certain style."

Richard found significant inspiration for his *Ultima* game in this crowd. He used the group's code of honor as a foundation for later games, and drew on his friends' personalities to make believable characters. Showing up at Waterloo Park one day with notebook in hand, he tapped people on the shoulder one after another and asked them, "What would you like to say in my game?"

"The thing about the characters is, Richard takes the best qualities from these people, from our friends, and he's used them in the game," Watson said years later over tea, his receding hair and goatee peppered with gray, belt and black-leather riding jacket doing little to hold in a now-considerable belly. "When Dupre," regarded by his friends as a good-hearted but flawed man, "is the Paladin, there is truth in that."

Richard also got feedback from gamers among the SCA crowd. He and Jackson in particular talked more abstractly about SCA-related issues and medieval combat than about computer game theory. Jackson was interested in computer games, but was so focused on his own projects that he never dug deeply into the world Richard was helping create. "I have always been very interested in the computer game world, but through bad decisions, bad luck, or both, I never got very far into it," Jackson said years later.

Meanwhile, California Pacific, mired in financial trouble, pestered Richard for his latest game for nearly a year. Richard refused to ship the game to them until he felt it was finished, which wouldn't happen until late in 1980. Soon after Richard delivered the finished *Ultima*, the company nearly collapsed. The game was distributed around the country, but by the time Richard was starting to expect royalties, the company had stopped returning his phone calls. It took him some time to realize that it had gone out of business.

He turned to his brother Robert for help in squeezing royalties from the defunct publisher, but this proved to be impossible. Yet while the failure meant he was adrift in the gaming world, it proved useful in some ways. What appeared to be a disaster provided an important lesson. His game would go on to be a success, giving him leverage as he looked for a new publisher. With Robert now at his side to help him with business issues, Richard began work on an Ultima sequel.

Seven *The British Invasion*

From Richard's dorm-room desk in Austin, and indeed throughout much of the country's programming community, this nascent gaming world looked like an American phenomenon. In fact it was anything but.

Beginning in 1980, home-computer sales in the United Kingdom were stronger even than in the U.S., driven particularly by inexpensive machines from Sinclair Research. Connections to the digital networks that had linked U.S. universities and computer businesses in the 1960s and 1970s were also spreading to schools, businesses, and governments in Europe. As in the United States, many programmers in Europe turned their developing skills toward game-making, sharing their creations with a growing audience of techno-geeks.

As on the other side of the Atlantic, many of these programmers had also been inspired by tabletop role-playing games and gaming communities. Those shared antecedents meant that games coming from outside the United States were often reminiscent of their North American counterparts. One such—perhaps the most advanced project of its time—was announced in the United States with a teasing cross-Atlantic email that went out across MIT's *Zork* email list in 1980.

"You haven't lived 'til you've died in MUD," the short message read.

MUD stood for "Multi-User Dungeon," and its British creators were taking the line of gaming started by Crowther and Woods' *Adventure* and the MIT programmers' *Zork* a step further. Like Lebling, Blank, and the rest of the Infocom crew, *MUD*'s authors were creating a rich, often funny text-based world in which players could explore, find treasure, and fight monsters. Unlike the other games floating around digital networks, *MUD* let multiple

people play in the same world simultaneously, opening up new possibilities: Gamers could explore dungeons together, battle one another, or even just hang out chatting. The authors of that transatlantic email, University of Essex students Roy Trubshaw and Richard Bartle, would soon be known in computer circles around the world.

MUD had grown out of much the same desire for a computer gaming experience that fueled Richard when he left behind his first *D&D* group in Oklahoma. Bartle had grown up in a tiny town called Hornsea on the English coast of Yorkshire, where there hadn't been much to do. His father had been an avid board-game player who instilled the love of dice and competition in his two sons. As Bartle grew older, he was attracted to science-fiction and fantasy books, and started playing increasingly advanced games at home with friends and through the mail.

In 1975, the fifteen-year-old sent away for a copy of the *Dungeons & Dragons* rulebook, and fell in love with what he found. He brought together a small group of other local gamers, and was soon leading them through fantasy worlds of his own creation. He began writing a small, locally distributed gamers' magazine, and in the last two years before college he took over a national gaming zine called *Sauce of the Nile*, where he printed the rules for his own swords-and-sorcery game, called *Spellbinder*.

Like Garriott, Bartle didn't apply himself overmuch to school. The games called, as did the zine and his computer classes. Academic topics didn't hold his interest. He passed his college entrance examinations unspectacularly, relying on "flair rather than hard work and revision," he later said. Still, his scores were good enough to bring him to the University of Essex, a school about an hour northeast of London with a good reputation for research.

Essex in 1978 proved to be something of a shock for Bartle. The school's cultural and social scenes were dominated by a left-leaning political element that felt far removed from the engineering and scientific frames of mind. A far-left Labour Club and the Socialist Workers dominated the student body's political voice, while communists were viewed as sellouts, Bartle remembered.

He liked computers, and that was enough to put him in a dangerous category in the eyes of much of the student body. Programmers were social misfits, able to master the mysterious beasts in the basement that no self-

respecting radical had any business playing with, at least in those days. Computers were still seen as instruments of a bureaucratic Big-Brother mindset, rather than as an artistic or a revolutionary tool. "All scientists were regarded as nerds, and computer scientists were the nerdiest of the nerds," he said later.

Yet, if he never quite fit into the broader social scene, his sense of isolation didn't last long. In Bartle's first week at the university, he met Roy Trubshaw, the secretary of the student Computer Society, and the pair hit it off. Bartle joined the group, eager for more time on the computers, and became an integral part of the little subculture. Although he'd gone to the school expecting to major in math, he soon abandoned that path to concentrate on computers. Plenty of people were better mathematicians than he. The same wasn't true for programming.

Like Lebling's group at MIT, the Essex Computer Society had found its way to Crowther and Woods' *Adventure* and was collectively captivated. Trubshaw loved it for the programming. Bartle just liked the game. They and others in the student group talked about creating their own version, making something better and more complex. *Adventure*, which allowed just a single player at a time to wander through the text-based environment, hardly compared to *Dungeons & Dragons*, where much of the fun lay in adventuring alongside a band of other people. The Essex group was determined to find a way to bring this collective experience to the virtual spaces of the computer.

Trubshaw began working on the infrastructure for a world of this kind in late 1978, ultimately calling it the *Multi-User Dungeon*, a reference to the hacked single-player version of *Zork* floating around the Net at the time. He created a database able to keep track of the changing states of all the objects and people inside each "room"; this allowed a number of different people to be in the room at the same time, and ensured that if one person picked up a chair, for example, it would stay picked up for everyone else.

By 1980, Trubshaw's last year at Essex, he had the basics of the project down. It had taken him most of his third and final year there to get this far, and had distracted him enough that his degree project had all but fallen by the wayside. His first version had a hundred locations and a simple set of commands. He called it a game, but it had really been more of a programming exercise. When the elder student left in 1980, Bartle took over and "gamified" the project, creating a framework that encouraged people

to interact with each other in a variety of ways. "My aim was primarily to attract players: A world with no inhabitants is no fun at all," Bartle said. "I understood that not all people would want to game when they got there, but its being a game would draw them in."

Bartle's first task was to make the world bigger. He expanded *MUD* and added a long list of new commands, allowing players a wide range of actions. He added tasks, puzzles, and ways to improve a character's skills and power. Points were awarded to players who discovered treasure and dumped it into the swamp where no one else could get it. Points were awarded for killing wandering monsters, or "mobiles," as they were known. Lots more points were awarded for killing other players. The game included a goal worthy of a newly created world: Players who accumulated enough points could become wizards, or even arch-wizards, with power to get behind the scenes of the game and exert godlike power over the environment or even over other hapless players.

The message Bartle and Trubshaw sent to the *Zork* email list at MIT in 1980 brought a few curious Americans into the game, but it was difficult for them to spend much time online until the transatlantic data network had improved. In the beginning, a majority came from within Britain. The university had allowed Bartle and the Computing Society to open the school's computers to outsiders, but only in the middle of the night; that restriction proved little hindrance. Singly and in small groups, people took up residence in *MUD*. The community that developed was tight—certainly as close as those in the games Gygax, Garriott, and Bartle had played with dice and paper—and almost wholly digital.

To gamers scattered across the United States and Europe, this freedom proved a revelation. Some began to consider building their own virtual spaces, not only to play games but also to develop friendships unrestricted by geography. The relative anonymity of *MUD*'s digital community helped create improbable mixes of players, bonded by their connection to the game. Because *MUD* was a role-playing game, players could be whoever they wanted inside the game, with their status in real life mattering little. In Richard Garriott's early games, people he knew had found their way into the story as fictional constructs. In *MUD*, the people Bartle knew *were* the game, and ultimately formed the basis for one of the first communities to form wholly inside the context of a game world.

"Jez" was one of those players. In real life, Jez's name was Jeremy San, a fifteen-year-old prototypical bedroom hacker living at home. His computer equipment was rudimentary. He didn't even own a modem cable, and so hand-connected his 300-baud modem to his computer with ordinary wires. Because they weren't shielded, the screen on his computer flashed into gibberish every time his younger brother used his CB radio in the bedroom next door, he remembered later.

When he stumbled upon *MUD*, he found the social aspects of the game most compelling. "Most players in *MUD* went there to converse and play with other players," he said later. "The game itself was quite good, but it was the multiplayer angle that made it addictive and compelling. The unpredictability of having real human opponents, as well as A.I. (artificial intelligence) ones, made it incredibly enjoyable." Nevertheless, the hacker in him drove him to achieve "wizard" status by solving puzzles and completing adventures. With his new power, he found he could spy on other players, travel invisibly around the world, and generally act as a benevolent or malicious god toward players who hadn't achieved his exalted status. For a fifteen-year-old, it was an enormous thrill.

Throughout the next few years he became a standby, popular character in the world, serving as storyteller, gossip, and collective memory for other players. He spent hours a day online, sleeping by day and playing by night, cutting classes when he went to college, or leaving for lunch to catch a few extra minutes of sleep in his little Datsun Cherry. Like so many of the hacker-gamers of that time period, his grades weren't stellar, but he was already working on the side doing computer consulting work for companies, including British Telecom. He'd even started his own games company. [16]

Much of *MUD*'s character was due to Bartle's influence, Jez said. Bartle was god the creator in the context of the *MUD* world. "He was omniscient and omnipresent. He seemed to know everything that was going on, and he ruled the game as if it was his creation and he had just created the Earth, and we players were the Adams and Eves of the place." However, Bartle trusted others who had "made wizard" with the ability to change and modify the game, so players felt like they had a stake in the world itself. That helped keep players in the game even after they'd reached the highest level possible. To Jez, Bartle seemed to be an "extremely nice and funny guy, very articulate and creative. He was quite a bit arrogant but deservedly so. He'd

regularly tell me his I.Q. was very high, something like 170 or 180," Jez said. "This was extremely annoying, mainly because it was probably true."

Other character-players became the stuff of legend. One of the game's most famous denizens was Sue the Witch, who dialed in to *MUD* from South Wales and played long hours every night. She worked her way to the game's highest rank in just four weeks, becoming what Bartle later called *MUD*'s "greatest player." Spending up to six hours a night online, her phone bill reportedly topped £1,000 a month. Particularly popular because she was female in a predominately male community, she was always online, she was always willing to help, and she always upheld *MUD*'s social ethos to the point of angering some other wizards. Bartle trusted her implicitly. Yet while other players met face-to-face, no one ever saw her. She claimed in handwritten letters to some of the players that she was agoraphobic. Jez was one of those who corresponded with her, and they developed a close relationship. She sent him pictures, and tapes of her favorite music. Occasionally, Jez or someone else would talk to her on the phone, but conversations were always short.

After long months playing, Sue disappeared. She sent a cursory note indicating she was going to Norway to be an *au pair*, and then stopped corresponding altogether. Some of the players were worried; this didn't sound at all in character for the Sue they knew. A few of them finally tracked down her address in South Wales and made the trip. A woman answered their knock at the door and gave them the bad news: Sue's real name was Steve. He'd been playing as a woman since the beginning, letting his wife—whose real name was Sue—answer the phone calls. He was gone, but not in Norway. He was in prison for defrauding a government agency, the woman said. Crestfallen, the players returned home.

While shocking to the players in this case, the ability to take on new identities and even genders had in fact been deliberately designed in to the game. In interviews long after the release of the game, Bartle said he had set up the flexibility of the game's role-playing system to encourage his fellow programmers at Essex to explore parts of their nature in ways they might not otherwise feel comfortable doing. One of his own first characters used to test and debug the game was named Polly. The persona was used in part to test the ability of the database to handle female characters after being created with solely male personas, but he said it was also used to encourage other people to explore other characters.

MUD's popularity sparked successors and imitators. While Bartle tended the first *MUD*, and then created a company that would operate its successor, others followed his lead. Source code for the original began popping up on university systems around the world. Other programmers created different software for doing roughly the same thing, and before long, hundreds of these text-based worlds, populated by hundreds or even thousands of people, were scattered across the world, hosted on university servers, bulletin board systems, or the young commercial online services like CompuServe. Some of these games kept Bartle's swords-and-sorcery theme. Some used other inspirations, drawing from science fiction, Western, or movie themes. Many of them weren't games at all and simply served as venues for social interaction or theatrical role-playing. Some were even explicitly sexual, with text-based actions describing graphic pornography of every conceivable variety.

All of them were played over the networks or online services to which most people had no access until considerably later. The commercial single-player worlds created by Richard and his peers would thus remain most people's main exposure to computer gaming for years to come.

Eight *Origin's Story*

Back in Austin, Richard was still looking for a way to bring his next game to market. Figuring he had little to lose at that point, he put the word out in the gaming industry in 1981 that he was a free agent. If he didn't get any bites, he'd stay in school. If a deal did come through, so much the better.

Initially it appeared as if Richard would have little trouble finding a publisher. He'd already shown that he could publish a game—two, in fact—so he asked for a huge amount of money by prevailing industry standards. He wanted a 20-percent cut of the game sales, a figure that was practically unheard of at the time. Programmers were a dime a dozen. Publishers could find any kid and teach him how to program an Apple II in a few weeks, and have him churning out *Space Invaders* clones in no time. Companies were making money, and none wanted to give Richard too much of it, particularly given his reputation for taking eighteen months to finish a game.

Richard didn't just want money. He also wanted control. He was creating *worlds* where players could bring their imagination to bear. For that virtual space to become something beyond just a series of puzzles on the screen, he wanted to treat its geography as something more than a disposable backdrop. Up to this time, games had typically been shipped in simple resealable plastic bags. Richard wanted his next game in a cardboard box with vibrant medieval-themed graphics on the cover. He wanted his manual included, as well as a cloth map that would give players a visceral sense for his world, something computer graphics were still too simplistic to provide.

When publishers heard that pitch, the offers dried up. Game publishers weren't out to create worlds. They were trying to capitalize on

a burgeoning business opportunity, and nobody knew how long this market would last. Speed was imperative for success. Moreover, the cardboard box, manual, and cloth map would eat into the profits. If Richard took 20 percent *and* his game included expensive add-ons, margins would fall sharply. Publisher after publisher turned its back on him.

One of the few exceptions was Sierra On-Line's Ken Williams, who saw potential in the young programmer. Williams knew how code-slingers' minds worked, and he knew Richard had something most of them didn't. For a product as potentially valuable as the *Ultima* franchise, Williams decided to give up more than he was used to. He signed Richard to a contract for *Ultima II*, and let the programmer go to work. He had enough games in the pipeline that he could afford to give the next *Ultima* some development time. Richard, in turn, began drafting a story that picked up where the first *Ultima* left off, featuring the wizard Mondain's apprentice, Minax, seeking revenge on Britannia.

By the summer of 1982, Richard still hadn't finished the game. For their part, the Williamses had moved their operation into the California foothills, and had bought a house where Sierra's growing group of programmers could stay, dormitory style, while they churned out game after game. To kids who'd never had much of a community before, this environment was better than camp. They got paid, they got to play with their beloved computers all the time, and if an occasional stress-related blowup occurred, it could all be taken in stride.

Richard initially had little desire to join this group, still wary after his first California experience. As development of his game dragged on, however, he realized he'd need to relocate for the summer.

"When I was working on *Ultima II*, I didn't know machine language very well at all," he said later. "I was always calling up there for help, so I went up there even though technically I was freelancing for them."

Once again Richard found himself a fish out of water. He rarely attended the weekend parties put together by the younger programmers and the Williamses. As productive as it was, the summer turned out to be the first wedge in a widening distance between the young programmer and his new publishers.

"From a personal standpoint, I really liked Ken Williams," Richard said, "but I didn't really fit into what was going on up there. I'm not sure they liked me."

The game nevertheless proved to be a success when it was unveiled at that year's San Francisco Applefest conference. Richard attended as Lord British in full medieval garb, a nod to his friends in the Society for Creative Anachronism. Soon afterward, he packed up his suitcase and returned to Houston for a short time before heading back to the University of Texas at Austin.

The success of his latest game only deepened the gap between Richard and Sierra On-Line. When Williams offered Richard what the young programmer thought were less than desirable terms to translate the Apple II version of *Ultima II* into a game for the new IBM PC, he decided to cut off his relationship with the company. This time he decided to strike out on his own. He hadn't been overwhelmingly impressed with either of his experiences with publishers, and figured he could do better.

His disillusionment with game publishers was matched by a growing disdain for his college professors. His computer classes in Austin were proving to be infuriatingly slow, and irrelevant to what he thought he needed to make great computer games. His annoyance came to a head when a professor in one class introduced assembly language programming for the latest Apple II, which used a 6809 processor. It was an important subject, one that would theoretically help Richard in his own work and if he wanted to get a job as a serious Apple programmer after graduation. But his work had used a different kind of processor, the 6502, than the class was using. It was a less advanced unit, but it worked for him. The work he'd done with it had made him hundreds of thousands of dollars.

He refused to learn what the new processor could do. He completed his assignments, but refused to include the latest features of the new processor in his work. Unamused, his professor knocked points off Richard's grade for each successive sign of intractability. With each dropped point, Richard's motivation waned until he finally hit bottom: an F in the class. It was the last straw, convincing him finally to drop out.

Free now from publishers and professors alike, Richard sat down with his brother Robert to concoct an alternative future. Together they hatched a plan to create their own company using the *Ultima* series as its primary revenue generator. There was only one problem: an overachieving NASA astronaut parent who hadn't ever been completely at ease with his son's fascination with computer games. Now here was Richard, the computer

genius of the family, coming home with his tail between his legs because he had failed, of all things, a programming class. Quitting was clearly the right choice for Richard, but as Robert said later of their father, "We were pretty sure he was going to kill Richard."

Instead their father surprised them: He cut another deal with Richard. The games-writing business just might make sense, he said, but only as long as they were making money. The practical-minded Owen was sure this computer games boom was a fad, albeit a profitable one in which an unfocused college dropout could make lots of money. With their father's conditional blessing, the two brothers launched Origin Systems with $70,000 in working capital, a sum Richard fronted largely with the profits from his previous games.

"When this ends," Owen told his son, "you'll go back to school and get a real job."

Nine *Brave New Worlds*

Out of school, Richard moved back into his parent's Houston house. Along with his friend Chuck Bueche, he set up residence in the loft of the three-car garage the Garriotts had built after Helen's art space had been commandeered by the weekly *Dungeon & Dragons* games. The space was mostly barren, with just a few desks and cots peppering the room. They gave their new company, Origin Systems, a motto full of hubris: "We Create Worlds."

The reality of Richard's company was much less impressive than that initial claim, but the little group was nonetheless promising. He gathered a close-knit collection of friends who could help create and sell the games. Robert, now living in Massachusetts with his wife Marcy, would handle the business operations, commuting between New England and Texas. Mary Fenton, a customer service representative from Sierra On-Line, joined the team, and Jeff Hillhouse, an ex-college-basketball player and fellow Sierra On-Line refugee, came with her.

Like any startup, it was a ragtag operation with little money and little in the way of management. What they lacked in resources they more than made up for in pests, Hillhouse recalled later. "My first look at the living quarters…," he said, his voice trailing off. "I'd never slept on a cot before, but that turned out to be all right. But if I left anything in the trash at night, I'd wake up and hear a scuffling, a rummaging. Houston has a reputation for huge cockroaches, and when I worked for Richard I found that the reputation is true."

The roaches took up residence in Origin's computers, too. The sweltering Texas heat and the ungodly humidity wreaked havoc on the Apple II machines. To combat the pest problem, the programmers would remove

the computer tops each night, prop them up against the wall, and allow the motherboards to cool down. The warmth acted like a homing beacon for the roaches. The employees' morning routine often consisted of peeling fried bugs off the computer and wiping up any water that had leaked through the windows in the course of the night.

One night a few months after they'd settled into their new digs, the doorbell rang as they were having dinner with Richard's mother. Richard got up, sauntered through the house, and opened the door. Standing in the doorway was his brother Robert, who'd flown in from New England, and a stocky man who was built like a fireplug—a bit round through the chest, with a long, bushy beard. He introduced himself as "Dr. Cat from Indiana." Cat had sent Robert a note after seeing an advertisement announcing the formation of Origin in a gaming magazine published by Steve Jackson. As Cat walked by, Richard gave him a distinctly skeptical once-over: On the newcomer's feet were fuzzy bear slippers, and he was wearing a Watchimal, a watch hidden in a stuffed animal that wrapped around his arm. A stuffed dragon perched on his shoulder.

Richard was flabbergasted. Robert hadn't said a word. Origin Systems was barely a company. They were just a bunch of kids crammed into the Garriotts' garage, and here Robert was already proposing new programmers without so much as consulting him.

Yet after a few minutes of discussion, it became clear that Dr. Cat was a believer. He sounded like a pretty good programmer as well, exactly the type of person the team needed. He had an encyclopedic knowledge of the game and computer industry, young as it was. It was clear he'd never fit into the corporate environment that Richard too was desperately trying to avoid. While Dr. Cat didn't join the team full-time until 1986, over one of Helen's home-cooked meals he became part of the family.

With his team growing, Richard found he needed a larger space in Houston. The move was also an indication to the outside world that he was committing more fully to his own role in this fast-growing industry. Indeed, if Origin sometimes felt from the inside that it was being held together by little more than string and chewing gum, outsiders saw something different—a young star in an industry that seemed to be growing without bounds.

Richard's Austin circle watched his rise into the forefront of the new computer gaming industry with bemusement. He had maintained his Austin

connections despite his move back to Houston, both because he valued the friendships and because they helped him understand how gaming industry and culture was changing.

And changing it was. Game players, even those enamored by the storytelling and community spirit of *D&D* and its followers, were increasingly defecting to video and computer games. Atari, Activision, Intellivision, and others were making millions of dollars a year in the home-console business. The computer gaming industry was expanding beyond the avid community of Apple II users thanks to the popularity of such systems as the Commodore VIC-20 and Commodore 64, respectively released in 1981 and 1982. The latter machine would ultimately reach more than twenty million households.

In Austin, Richard's friend Steve Jackson now had his tabletop gaming company up and running, and was producing successful if not gigantically profitable games. One of his early employees was the young Warren Spector, who would later go on to play a key role at Origin, but was at the time only a cash-strapped University of Texas graduate student. Spector later remembered Jackson's company as a bootstrap organization, where every dollar counted.

"It was total chaos working there," Spector said. "If you spent $1,000 badly, you were in serious trouble." One month, a dozen underpaid workers would work together into the wee hours of the night. The next month, double that number would show up, as contractors were brought in to help fill orders for *Car Wars* and *Illuminati*, two of Jackson's most popular games.

By contrast, the computer game industry seemed like a wholly different world. Spector got his own glimpse of just what this meant a few weeks after signing on with Jackson. Taking a break to stretch his legs, he wandered out of the barn that housed the company and noticed a black Mitsubishi pull into Jackson's driveway. It was an odd sight, particularly here. Most of the workers drove rundown beaters if they had cars at all. Curious, he walked up closer to get a better look. The door swung open, and Richard Garriott stepped out of the car dressed in black slacks and black shirt, with silver necklaces hanging across his chest, and his signature single braid falling down his back. The visitor walked to the front door, knocked, and Jackson, his longtime SCA friend, ushered him in.

"Now that is a success," Spector thought, shaking his head as he

walked back to the chaos of the barn.

Origin Systems' Houston tenure would ultimately last less than a year. The company was eating up much of Robert Garriott's free time, and he started pushing for a change. He was spending three weeks each month in Austin while his wife, Marcy, whose career at Bell Labs was taking off, stayed in Massachusetts. She was on the fast track to the upper echelon of management, expecting a promotion in two years that would allow her to move anywhere in the country. For now she was stuck in New England.

Late in the fall, Robert arrived in Austin with a proposal. If the programmers would move to New England for three years, the group could decide on a permanent home after Marcy's promotion came through. After a short debate, the ragtag crew decided to pack their bags and move to Massachusetts. Once again, Richard was being uprooted from his home. This time, however, he would bring his friends along for the ride.

"We were thrilled with the idea, because it would end my commute," Robert said later, recalling his wife's joy about the move. "This was going to end that separation."

The group loaded up their cars, and one pair volunteered to drive the rental trucks full of equipment. They'd head north through Arkansas, make for New York, and then turn east to Massachusetts. There was just one problem. The Texans hadn't considered that they were moving to New England in the middle of winter. They had walkie-talkies that kept them in touch as they slid back and forth across icy roads, however, and they all managed to make it to the same hotel that night to laugh about beating their first winter storm.

"The move itself was a disaster," Richard remembered later. "We had seven people, and seven vehicles. Some people were driving rental trucks, and this was in the dead of winter. By the time we got to New England, these southern Texas drivers, with rear wheel drive and no experience on snowy roads, had terrorized drivers across America."

Those hard roads and the dangerous drive were a portent of things to come. Richard's parents were hundreds of miles away, and he was responsible for a little community of seven people who'd followed him across the country because they believed in his vision. Life was about to get more complicated.

Ten *The Moral Code*

In Massachusetts, Richard, Chuck Bueche, and Mary Fenton rented a large, three-bedroom, two-story house on the edge of the woods. As might be expected, the young team began their New England tenure by turning their new home into a playhouse. Even before they'd finished unpacking, Richard used some of the money he'd made selling his first three games to outfit the house with $10,000 worth of electronics, stereos, televisions, computers, and enough gadgets to satisfy the team of programmers who'd braved the northern winter. The group spent so much time buying new equipment that they didn't have time to open everything before having to start work on Monday. That meant most of their gadgets remained boxed up in Richard's room. Unfortunately for the Origin Systems crew, the thick woods behind the house turned out to be a perfect hiding place for thieves. When the trio arrived home that night, they found their welcome to the neighborhood had taken the form of a ransacked house.

Richard called the police, filed an insurance claim, and, when the check came in, replaced every piece of equipment that had been stolen. Unbelievably, thieves broke into his house a second time, carting everything off on snowmobiles. This time, a neighbor spotted the heist and phoned the police, who gave chase unsuccessfully on foot.

The neighborhood at large was only marginally more hospitable. The Austin newcomers didn't seem to speak the same language as the staid, small-town locals. Richard and his band of merry programmers set off to the local bar as often as they could, but the locals seemed to distrust either their Texan openness or apparently frivolous lifestyle. They found themselves isolated.

This new adult world was proving much more complex than Richard had ever imagined. Adding insult to injury, it was bitterly cold. Within two months, the Origin Systems team was ready to leave this winter wasteland. There was only one escape: diving into developing games, which was the point of being there in the first place. With nothing else to distract them, *Ultima III* was released that year as the first Origin title. It became Richard's biggest hit to date, even if it was little more than an updated version of his previous hack-and-slash games. The first order for the game tallied ten thousand units, netting the company $350,000, which was more than enough to put the company in the black if they could figure out how to manufacture and distribute that many games.

At the time, Origin Systems consisted of just eight people: five programmers, two customer service representatives, and Robert. If the company was going to survive, they were going to have to fill the orders themselves. Every night, the group sat around the house watching television and folding boxes. During work hours, they copied disks one at a time. After the games were boxed up, they used a shrink-wrap machine to finish the job. Once the games were shipped, the team of programmers took over the massive customer service job, handing phone calls that ranged from people getting stuck in the game to people reporting defective products.

Yet, even as they focused on fulfilling the *Ultima III* orders, Richard was feeling at a creative loss. Part of this was the environment. While he was happy to be on his own, his surroundings were making him miserable. His house had granted him unprecedented freedom, but robbers had twice invaded it. A sense of uncertainty began slipping into his assessments of his own previous work. The simple graphics of *Akalabeth* and the *Ultima* series bore little resemblance to the images of the world of Britannia he painted in his head. He still wasn't sure how to create worlds even a fraction as vibrant as the role-playing he'd experienced within the Society for Creative Anachronism.

"I wasn't sure if I knew what I was doing anymore," he remembered later. "It was a time that I just sat back and tried to figure out who I was and what I was going to do next."

For inspiration, he turned to other projects. Three months before Halloween, he decided to transform his home into a haunted house. He enlisted the aid of Hillhouse and Bueche, along with other programmers

who could spare their time at night. It would be work, but an expression of the same principle that guided his game-making: Build a world where people could play.

The team spent weeks strategizing. A project like this had to be done right. Richard studied the internal floor plan for his house, first crafting the longest pathway possible through the house from entrance to exit, and then determining what they could do in each section. They carted in bales of hay and crafted mutilated bodies, monsters that could be controlled with electronics, and spooky sounds. Before long, the front lawn looked like a scene from a particularly grisly video game, while every nook and closet inside the house was pressed into service to launch some concocted horror. A staircase that climbed three stories was turned into a winding tower with walls of cardboard painted like stones. As a group ascended the tower, Richard rigged it so that one member of his team could yank a rope, collapse the walls, and then reset it before the next unwitting group came along.

The haunted house wasn't his life's work, but it was helping him stretch, letting him see people's reactions to the physical manifestations of his imagination. "It's not terribly exciting, putting together a video game," he said later. "You release it, and hopefully it sells well. What you rarely hear is positive feedback. It's mostly negative feedback. With the haunted house, you are standing there watching people going through. It's a real-life performance. It's like writing a song. You play it, and they clap. In our business, you don't get that." [17]

Richard's creation shocked his New England neighbors, particularly as they regarded the aftermath. Never particularly good about cleaning up after his experiments, Richard simply threw himself back into his computer work after Halloween, leaving little time for pedestrian thoughts like picking up after himself. As winter set in, hay bales turned into blocks of ice. Even that wouldn't have drawn as many raised eyebrows from neighbors if these ice bales hadn't still had remarkably realistic-looking decayed body parts sticking out of them at disturbing angles. As the snow came, Richard's yard became a virtual graveyard for monster and human body parts, with heads and bloody arms peeking out above the snow.

Years later, Robert still winced with the recollection, shaking his head. His house, next door, had been the neat one, with a meticulously kept lawn. "You have to understand," he said, "Richard would roll his garbage can

down to the curb, let it get emptied, and then leave it there until he needed it again. So you can imagine what happened when he had the mess of a haunted house."

But Richard didn't care, and even took a little pleasure at the disgust of his neighbors. He wasn't there to make friends. His goal was to create games around which communities would form. Sometimes that got messy.

Now that he and Robert were handling their own distribution, the brothers were also handling customer feedback, which meant they were discovering just how completely Richard's games had struck a nerve with players. Maybe his publishers had gotten mail before and had simply never forwarded it. Whatever the reason, he was hearing from players for the first time since he'd started developing computer games.

"I'd had very little feedback for the first two games I'd done, but *Ultima III* was different because we'd basically published that out of our garage," Richard said later. "When I started getting mail, everyone was telling me they were having a great time playing my games, and I began to see people reading things into my games that were simply statistical anomalies in the programming. They thought I was putting messages into the game."

He heard from more than just fans. On the basis of the red demon with fiery wings spread across the cover of the game, one person accused Garriott of being "the Satanic perverter of America's youth," he fondly remembered. He was in good company. Conservative Christian groups of the time were also attacking *Dungeons & Dragons*, accusing that game of encouraging violent behavior, suicides, and worship of the occult. This all served as an excellent reminder that he was creating his worlds partially as a refuge from those who either couldn't or wouldn't try to understand the games.

The mail also started Richard thinking about his next game. With each successive *Ultima* title, he'd attempted to take the expectations of the player and turn them upside down. Now he'd discovered that that dynamic caused players to search for hidden meaning beyond anything he'd imagined. If people were reading that much into his games without him actually putting messages there, the games were clearly vehicles for provoking thought.

He didn't want to be dogmatic about any particular message, but he was developing a more complex vision of the universe. He wanted his games to create moral quandaries for players as they moved through the game and faced problems with ambiguous solutions.

Until this time, most games had allowed their protagonists to act with little fear of consequence. The most evil characters in the games usually wanted nothing more than old-fashioned world domination, while players came into the world, killed virtually everything they saw, stole money from anyone or anything that had it, and walked off with smiles on their faces. The hero of an adventure should be held to higher standards, Richard now thought. His own experiences—the bills, break-ins, disappointments, haunted houses, even the office rubber-band fights—began coalescing for him into a vision of a morally more ambiguous world.

With *Ultima IV*, he decided to introduce a system of ethics into his game world. He wasn't interested in teaching any specific lesson. Rather, his next game would be about making people think about the consequences of their actions. He locked himself away with a whiteboard and books of literature, poetry, and philosophy, bound and determined to break life down into fundamental principles. It was very much a programmer's approach to moral philosophy. "I started writing down all the virtues and vices I could think of, throwing them on the whiteboard," he said later. "Many of them were overlapping. But what I started to see was that all the virtues and vices were derivatives of truth, love, and courage, just like the characters in *The Wizard of Oz*."

He decided the game would incorporate eight tests of virtue, focusing on honesty, compassion, values, justice, sacrifice, honor, spirituality, and humility, although none of this would be immediately obvious to the player. Gamers would visit eight cities, each representing some combination of these virtues. In each location, players would have two missions: one quest they'd been told about and one test that would take place without warning. Players whose Avatar (the game's main character) failed the moral tests would find themselves unable to complete the game as effectively as those who had acted to uphold the land's system of virtues.

Throughout the game, Richard hinted to players that the world no longer functioned on a consequence-free hack-and-slash basis. For example, a blind merchant repeatedly offered characters items that they needed for

successive elements of their quest. When players purchased an item, the merchant could tell if she was being paid enough money. If only one coin rattled in her tin cup, she'd make a comment that the player was being a bit cheap. If the player threw in two, she'd say nothing, even though it wasn't really enough. Many people quickly realized this and dropped in as little as they could, thus saving their funds to buy more powerful weapons or magic items.

Unbeknownst to them, the old merchant was remembering their avarice. No simple two-dimensional computer monster, she had a long memory and a temper to match. Near the end of the game, the player turned out to need the help of the blind woman again. If they'd been cheapskates throughout the game, she had only bitter words for them, and it was too late to apologize. If they'd paid her enough throughout, she helped graciously.

Fundamentally, Richard wanted his game to fall somewhere between the interactive stories of *Dungeons & Dragons*, the enthralling world of *Lord of the Rings*, and the social structure of the Society for Creative Anachronism. He wanted his games to reflect the spirit of a community, but also wanted every individual to consider his or her place within that environment.

While unlikely to describe his efforts this way himself, he was in fact trying to do what writers, filmmakers, and artists have always done. He didn't need his games to mirror the real world, but genuine elements of the world had to be reflected in them. The characters had to be believable, or at least exhibit some rudimentary sense of motivation. Plots and stories could be simple, but had to sweep up the player with a sense of urgency. He was seeing that assigning complex consequences—recognizable from real life—to interactions with non-player characters would make his worlds more compelling.

He was taking a gigantic risk with his new game. The fate of Origin Systems rode on his shoulders. If *Ultima IV* failed, his team would likely be out of work, thousands of miles from home. During the programming, his stomach would cramp up, forcing him to lie down to try to calm his nerves. "I thought people might completely reject this game because some folks play just to kill, kill, kill," he said later. "To succeed in this game, you had to radically change the way you'd ever played a game before."

For the first time, Richard was getting a taste of the business risks he'd ignored before, and he didn't like it. He sometimes wished he'd never agreed

to take responsibility for the young company. Fortunately, his instincts about how to make the world more compelling proved accurate. Released in 1985, *Ultima IV* was his first game to top the bestseller list, selling more than 200,000 copies, a considerable total for a computer game of the time.

Robert Gregg, a longtime *Ultima* fan then in his freshman year studying computer science at Carnegie Mellon, later remembered the game as a major leap forward in the industry. In school, he'd been writing little dungeon-crawl adventures like *Ultima II* himself, but the new game showed that the stakes were now higher.

"You had to be able to actually write, not just code," Gregg said. "When the scripting and interaction got to the level that you actually stopped and thought about the moral implications of what you were doing, computer games started to leave the realm of games that involved little more than tapping buttons and moving characters, and actually became art. The game was commenting on society, and on the observer himself, just like other forms of art. That was the most exciting part to me: watching the emergence of a new form of art coming right off the computer."

Eleven *Origin's Endgame*

By 1987, the Origin System team members had fulfilled their promise to stay in New England, and it was time to figure out the next step. The original team assumed they would relocate back to Austin, then a thriving, hip, and—a particular point in its favor—*warm* town. But Robert had another trick up his sleeve. Though Richard and his group of programmers assumed they would be the only ones voting on the move, the company had by now relocated to a larger office space in New Hampshire and hired forty new employees. Most of the newcomers were local, and any vote that included the whole employee base was likely to result in a resounding defeat for the Texas programming team. The prospect incensed Bueche so much that he quit the company, packed his belongings, and moved back to Austin on his own.

The brothers fought constantly over the issue. Arguments spilled out of closed-door meetings and into Origin's hallways. On several occasions, Richard insisted he'd start his own game company and leave Robert high and dry in New Hampshire without any games to publish unless Richard could move back to Texas. Tension around the office got so bad that the brothers brought in their parents to mediate. Richard eventually got his way, moving game development operations back to Austin, while the manufacturing, publishing, and marketing teams stayed in New England.

In Austin, the team rented a small office, just fifteen desks along a single hallway. Richard began assembling a new team, although it wasn't as easy as he'd imagined. Denis Loubet, the artist who helped with the box art on the original *Ultima*, jumped at the chance to join Richard and left his job at Steve Jackson Games. Talented new programmers, including Chris

Roberts, creator of the popular *Wing Commander* series, also signed on.

"Chris would sit down in a room, and he would describe from beginning to end, in every detail, a game that he'd be working on, and I'd go 'Jeez, why couldn't I think of that,'" Richard said later. "I'm a researcher. I go through massive amounts of data and pull out little pieces of inspiration. I consider that an incredible amount of labor, but when I finish, I can tell you everything about my world. Chris can just sit down in a room and do that off the top of his head."

Richard's own success with *Ultima IV* had emboldened him to continue pushing his work beyond the simple hack-and-slash adventure model that was still so common. His belief in the power of games to tell stories and provoke thought validated, he used his next game, *Ultima V*, to explore what would happen if dogmatic leaders were to use positive virtues as a force of social engineering. In the game, Lord British has been captured by the evil Shadowlords. His replacement, Lord Blackthorn, has turned the religious virtues from the previous game into law, punishing anyone who doesn't follow the strict code of behavior. The player, once again taking on the role of the Avatar, has to rescue Lord British in order to restore order to the kingdom.

Meanwhile, the New Hampshire team started transferring slowly to Austin, and by 1988, when *Ultima V* was released, Robert had relented and moved the rest of the team back to Texas. That same year, Warren Spector, now in Lake Geneva and working for TSR, the company in charge of the *D&D* franchise, packed up his office and came home to work for Richard at Origin. "He knew we were changing the gaming world, and that we weren't making games for kids," Spector said later. "This was like a family, and he was a visionary. He saw what the games could be."

The Austin office reflected Richard's own growing confidence, as well as his need for diversion. The team worked hard, but the atmosphere was fun. They played laser tag in the hallways after nightfall and went on spontaneous rock-climbing trips in the middle of the day. "He was a lightning rod for other guys that wanted to be just like him," remembered Brøderbund founder Doug Carlston, whose own company was more sober-minded. "It was a 24/7 kind of lifestyle thing. As long as you were dealing with a whole bunch of young singles, it was more important how you played, and that you lived and worked and played all in one place."

By this time, Richard and his team were hard at work on *Ultima VI*, the last in the Avatar series and the title that would complete his second trilogy of games. In the final installment, Richard would force the players to come to grips with the realization that their actions in the previous games had cast them as the villain in this installment. The Avatar begins the game tied down on an altar surrounded by gargoyles, with a sword raised over his body. Once the player escapes, he or she faces the task of figuring out why anyone would want to kill such a righteous hero. In the course of the game, the Avatar repeatedly fights the demons that had tried to kill him, until the player ultimately realizes the actions taken to defeat opponents in the previous games had caused earthquakes and devastation in these monsters' subterranean home world.

The moment is one of pure perspective switch. The religious texts of the demons, found in the course of the game, prophesy the coming of a figure like the Avatar who will destroy their race, and they quite naturally do their best to prevent their version of Armageddon. The player finds that he or she has become an antichrist instead of a hero, and faces the challenge of saving the creatures' world without also destroying Britannia.

For those who came of age playing the games, Garriott's second *Ultima* trilogy was a high-water mark both in terms of storytelling and game play. As much as any rival, he had managed to combine some of the best elements of games and stories to turn the computer into something more than just a machine. It became a transformative vehicle in the same way as a book, a film, or the *Dungeons & Dragons* tables of his youth could be. The gritty *Ultima VI* forced players to evaluate the consequences of their actions on other cultures, a theme Richard was only then beginning to explore for himself. The game, in which his characters and players were forced into moral dilemmas that weren't initially identified as vital tests, reflected his own experiences trying to assimilate into new environments without knowing the ground rules beforehand.

In real life, such ethical tangles are virtually always complicated by the presence of other people. But while familiar with *MUD*, Garriott hadn't yet made the leap into multiplayer gaming, which at the time still existed almost exclusively on university servers. For years he'd linked computers together in Origin's offices, first in Massachusetts, then in New Hampshire, and now in Austin. Makeshift networking and some clever coding allowed

players to go through *Ultima* adventures together, although the computers of the time weren't powerful enough to make joint adventures very enjoyable. Often, it took as long as thirty seconds for the graphics to be redrawn on the computer screen. For now, he had to settle for creating a game community for one.

Despite Origin Systems' success, it was increasingly clear that the technology world was changing. As they worked on *Ultima VI* and other games, the Origin programming teams continued to blaze away on code for the Apple II even as that machine was on the decline. His programming teams were also creating versions of their product for the Macintosh, Atari, Amiga, and Commodore 64. Richard toyed with the idea of porting *Ultima VI* over to the IBM PC, but, after testing the machine, he decided to ignore the cumbersome device. Surely nobody would waste time with such a clunky, slow computer.

"We looked at the IBM PC and thought it was a piece of garbage," Richard remembered later. "We had six games in development at that time, and we decided to go with the Apple and then convert the games to other systems. But we were a small company, and by now Electronic Arts and other large corporations were getting really big. They could afford to miscalculate a platform because their other sales would make up for it. We were small, and the industry wasn't about being small anymore."

Before *Ultima VI* was finished, it was clear that the company had miscalculated. Money was getting short. The company was overextended, and it was increasingly apparent that the bet against the IBM had been the wrong way to go. For the first time in his life, Richard could sense failure, and it nearly incapacitated him.

Tallying up their resources, Robert saw one chance to save the company. They had $1 million in credit from the bank. Richard had $500,000, though he'd just bought a house—his castle in north Austin. Robert had some money put away too. All told, they had enough money to last about a year, which would get them within thirty days of the release of *Ultima VI*. If the game tanked or if any delay cropped up in the publishing cycle, Origin Systems and its eighty employees would be dead broke, and Richard and Robert would be $1 million in the hole.

"We sat down and had a big strategy meeting, and we calculated our sales and added up everything we had in the bank: ten years' worth of

savings," Richard said later, wincing. "I was paying off a house, so I was going to lose my house if this didn't work. We chewed our nails. We had financial meetings every day. My stomach was in constant pain, and I'd just curl up in the corner."

Despite their financial concerns, the game came out on time. Like the previous *Ultima* games, it wowed the gaming public and gave the brothers a reprieve. However, the months of bitter stress had taken much of the fun out of the business. This wasn't an environment either brother could stand. They saw only three possible scenarios for the company: They could find venture capitalists willing to invest money in exchange for a sizable equity share, and perhaps control of the operation. They could purchase smaller companies in an attempt to diversify their game business, and thus be less reliant on individual titles. Or they could sell the company to a large corporation.

They dismissed the first option. The venture money would be only a stopgap. Eventually the money would run out, and they'd be in the same position again. Moreover, neither could imagine willingly turning over a large part of the business they'd built. The second option seemed more palatable, since it would leave them in charge of Origin. For two years, they looked around, targeting businesses, doing economic analyses, and meeting with developers, but eventually realized that adding more people to the payroll would simply add more pressure to the bottom line. Richard's stomach couldn't take that.

Left with few other options, Robert began looking for a corporate suitor while Richard threw himself into developing *Ultima VII*, the first game he'd create for the newly dominant PC. The latest game had a simple concept: An evil character called the Guardian was trying to take over Britannia by establishing a new religion called the Fellowship (an homage to Tolkien's first *Ring* book, *Fellowship of the Ring*) and the Avatar had to expose the group. However, the game would be anything but simple. Instead of building one large, complex game, the team released the game in two parts, *Ultima VII: The Black Gate* in 1992 and *Ultima VII Part Two: Serpent Isle* in 1993.

Meanwhile Robert was courting larger game companies. Some of these were offering buyouts that would have made the brothers millionaires ten times over, but the Garriotts were reluctant to pull the trigger. Ever since Richard's experiences with California Pacific and Sierra On-Line, they'd

both been skeptical of outside corporate influence. Grudgingly, they decided in 1992 to sell their company to Electronic Arts, then one of the premier gaming companies in the world. Origin Systems had originally been built on the premise that its programmers would become stars, and even if that idea had fallen somewhat by the wayside, Richard hoped he'd have the freedom he needed to finish out his third and final set of planned *Ultima* games, the end of a trilogy of trilogies. Electronic Arts was big enough that it wouldn't have to depend on Richard to pump out his games on a hard deadline to stay afloat, which was another advantage.

As it turned out, EA didn't really have much interest in the *Ultima* series. The company would release the second *Ultima VII* part and a related expansion game in 1993, but EA CEO Larry Probst was far more interested in Chris Roberts's *Wing Commander* series, whose cinematic scope offered the opportunity to create a movie and television franchise.

The *Ultima* series, for all the fervor of its fan base, was already being pushed out of the spotlight by action-oriented console–style games and new genres of play that reduced or removed the role of the storyteller. Richard would spend the next five years struggling to integrate his company with Electronic Arts, constantly fighting with executives whose eyes were squarely focused on the bottom line instead of creative goals.

He hated it. It was depressing. He was spending too much of his time playing corporate politics and not enough time developing games. He'd set out to create worlds where people like him could gather, interact, and play. Instead he was spending his time arguing with corporate executives who had little interest in the community of gamers. In many ways, the experience echoed what he'd felt at Sierra On-Line.

But as Richard began to fade into the margins of gaming culture, much like the tabletop gamers he had helped displace just a few years before, other developers were working to expand virtual spaces and game communities in unanticipated ways.