DUNGEONS & DESKTOPS

THE HISTORY OF COMPUTER ROLE-PLAYING GAMES
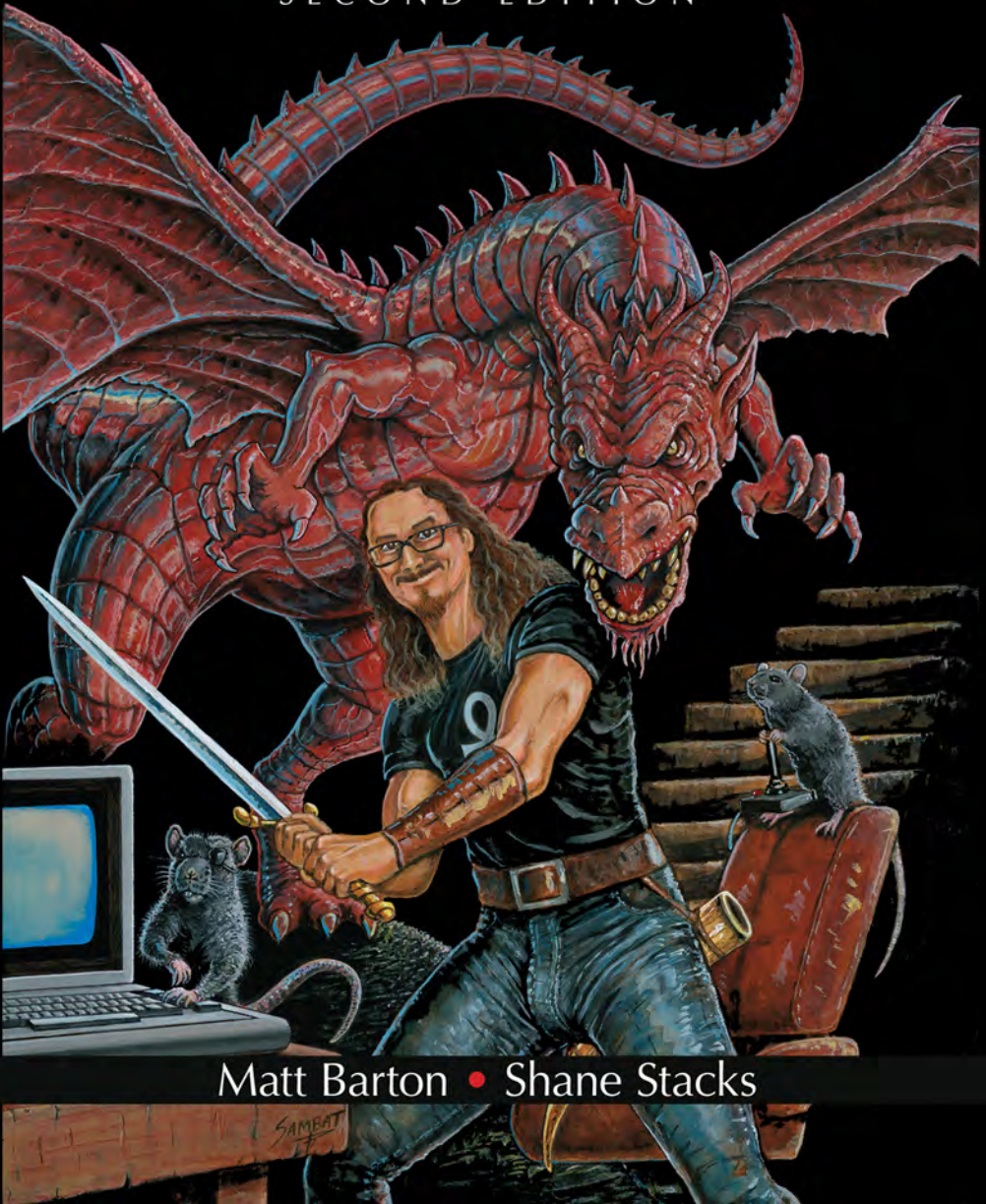
SECOND EDITION

Matt Barton • Shane Stacks

Dungeons and Desktops

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The History of Computer Role-Playing Games

Second Edition

Matt Barton
Shane Stacks

From Shane

I would be doing a disservice to my personal history with CRPGs if I didn't dedicate my efforts on this book to my friend and game developer Johnny Wood, who first introduced me to Pool of Radiance *in high school (not to mention* Red Dwarf, Doctor Who, *and* Blake's 7!).

Also, most likely to their surprise, a nod to my friends at the RPG Codex. The faint of heart fear to tread their forums (and rightly so), but they collectively have a true love of CRPGs and have done their part to keep the genre alive. And, yes, Codex, I enjoyed Sword Coast Legends *for what it was. Revel in my decline.*

Finally, many heartfelt thanks and a lusty "kill that rat!" to the King Rat himself, Matt Barton, for allowing me to journey with him on this quest to make a great (and important) book even better.

From Matt

I'd like to dedicate this book to my dearly departed grandfather, or "Papa," Edward E. Barton (1932–2018). Papa served in the United States Army in the Korean War receiving the Army of Occupation Medal, Combat Infantry Badge, Purple Heart Medal and Korean Service Medal with Four Bronze Service Stars. He was also my grandpa. He never let me give him a free copy of any of my books—no, he insisted on going to his local bookstore and demanding they order him a copy of my latest "bestseller." Well, were I to sell a million and a million more, the ones I sold to you paid the highest royalties.

We co-authors would both like to extend a shoutout to the staff at Milky Way Ink, Inc. You are all passionate for your projects, and may your respective efforts prove successful.

Contents

Introduction to Computer Role-Playing Games

"Beware, foolish mortal, you trespass in *Akalabeth,* world of doom!" These foreboding words, printed in a suitably gothic typeface, graced the card insert of Richard "Lord British" Garriott's initial foray into computer role-playing games: *Akalabeth,* "a game of fantasy, cunning, and danger." Inside the humble Ziploc bag lay the ultimate loot—a 5¼″ Apple II floppy diskette containing "10 different Hi-Res Monsters combined with perfect perspective and infinite dungeon levels." For obsessed *Dungeons & Dragons* fans, this was the Holy Grail: unlimited fantasy role-playing at the touch of a button!

First published in 1979, *Akalabeth: World of Doom* (Figure 1.1) is one of the earliest computer role-playing games (CRPGs). CRPGs are a genre of video games as well as a subcategory of role-playing games, a broader category that covers everything from *Dungeons & Dragons* (*D&D*) to some forms of therapy and training exercises. *Akalabeth* and later CRPGs were and continue to be greatly inspired by *D&D* and other tabletop RPGs such as *Shadowrun* and *The Dark Eye,* but they are much more than their computerized equivalents. By combining elements of tabletop RPGs and computer games, Garriott, his peers, and millions of players realized that computer RPGs were more than the sum of their parts.

FIGURE 1.1 Richard "Lord British" Garriott's first commercially released CRPG established many conventions still in use today. Note the rather excellent rat in the lower left corner.

A diehard fan of Halloween, haunted houses, Renaissance fairs, and *Dungeons & Dragons,* Garriott lacked neither the imagination nor the ambition to turn his dreams into reality. Perhaps

Akalabeth, like many early computer games, was packaged in a humble plastic bag instead of a custom printed box.

he inherited such traits from his father, Owen K. Garriott, whose own role in history is secured as an astronaut. Richard's father made his living exploring space, spending months aboard the Skylab space station. His son would also experience the wonders of space travel as a tourist on a Russian spacecraft. For now, though, the young Garriott's mission was not to leave this world, but to bring us to his: Akalabeth.

As he described in the game's manual, Akalabeth was a paradise where "man and beast lived in peace," enjoying abundant food and opulence. This Golden Age came to an abrupt end when Mondain, the second brother of the great King Wolfgang, coveted his elder brother's inheritance and embraced evil. He created vast dungeons, protected above by thieves and skeletons and guarded below by demons and balrogs (Figure 1.2). This once prosperous land was ravaged by sickness,

FIGURE 1.2 *Akalabeth*'s dungeons are drawn with wireframe graphics to simulate a 3D environment. Shown here is a thief, one of many vile threats you'll find roaming the dungeons.

pestilence, and war. In this age of darkness, "Man and beast lived in constant fear."

Rising to face this challenge, Lord British, Champion of the White Light, defeated and banished Mondain. Now Protector of Akalabeth, Lord British must leave it to adventurers like us to finish the job, ridding Akalabeth once and for all of Mondain's evil creatures still lurking in those dank, dark dungeons.

As an experienced *D&D* Dungeon Master, the Society of Creative Anachronisms, and Renaissance Fairs (Figure 1.3), Garriott had no trouble coming up with epic stories, settings, and lore for fantasy role-playing campaigns. But how would any of this work as a computer game? As far as he knew, he was going where no one had gone before. There were no commercially successful CRPGs he could imitate or even a proven market for such a product, and he certainly didn't see anything like it in the arcades.

It's one thing to have a great idea for a computer game. It's quite another to put in the many long hours of hard work required to make one. Even today, with so many do-it-yourself game-making tools at our disposal like Unity, Unreal Engine, or RPG Maker, making a CRPG is a serious commitment. Garriott had to make do with books like the *Apple II Basic Programming Manual* and simple trial and error. He taught himself BASIC, designed and programmed the game, and even published it himself. In short, like his fictional counterpart Lord British, Garriott had

FIGURE 1.3 There's not much that Lord British loves more than a good Renaissance fair. As a game designer, he strives to capture some of the magic of these events, whether in single-player games or his later massively multiplayer online games.

cleared the way for ordinary adventurers—folks who'd rather fight with rats in dungeons than errors in syntax.

There were plenty of desktop heroes ready to answer his call. Later teaming up with California Pacific Computer Company, Garriott sold tens of thousands of copies, providing himself with a lordly income during his years at college. One wonders how many of his classmates neglected their literature to battle monsters in those infinite dungeons. As he himself once said to Steven Levy, "I can't spell, have no grammar techniques, and have read less than twenty-five books in my life."

While much has changed since Garriott (shown in Figure 1.4) sold his first copy of *Akalabeth,* much remains the same. CRPG fans are still obsessed with leveling up characters, acquiring the best arms and armor, and vanquishing ever more powerful foes. They're out there now, stomping around one proving ground or another, searching for their next grand adventure. There are many other genres of computer game, but none offers its cocktail of thrilling combat, tactics and strategy, character

FIGURE 1.4   The creator of *Ultima* and founder of Origin, Richard "Lord British" Garriott is a key figure in both the CRPG and MMORPG genres. Photo courtesy of Conley Swofford Media.

development, branching storylines, fantastic worlds to explore, and personal enrichment. It just doesn't get any better than a quality CRPG.

> *Shane:* Go to fantastical places, meet new and interesting exotic peoples, and waste them with your crossbow … all from the comfort of your own chair, baby.
>
> *Matt:* That's enough out of you.
>
> *Shane:* What if the new and interesting exotic peoples are rats?
>
> *Matt:* Now you're talking!

Bethesda's *The Elder Scrolls V: Skyrim* (2011) and *Fallout 4* (2015); Larian Studios' *Divinity: Original Sin 2* (2017); CD Projeckt Red's *The Witcher 3: Wild Hunt* (2015); and Warhorse Studios' *Kingdom Come: Deliverance* (2018) are currently five of the most popular CRPGs, but there's a plethora of respectable titles from independent studios such as Whalenought Studios' *Serpent in the Staglands* (2015), Iron Tower Studio's *The Age of Decadence* (2015), and Harebrained Schemes' *Shadowrun: Dragonfall* (2014), just to name a few. This vibrant independent movement is fueled not only by access to affordable, yet powerful development tools like Unity, but also by crowdfunding apps such as Kickstarter and Fig, which let developers bypass publishers—the game industry's traditional gatekeepers. Crowdfunding has
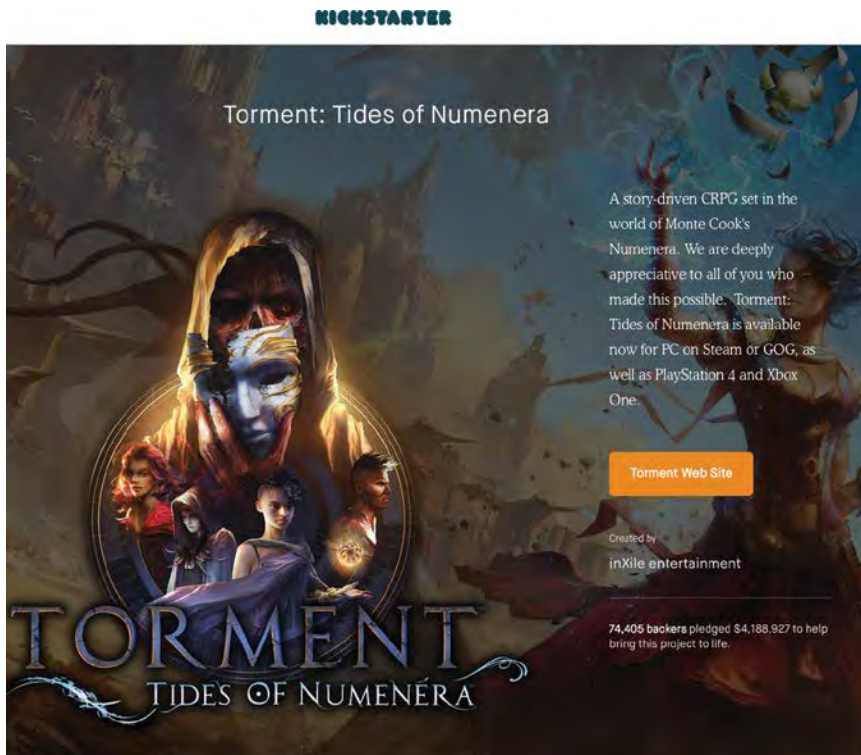
FIGURE 1.5   Kickstarter and other crowdfunding platforms have led to an explosion of CRPGs. InXile's *Torment: Tides of Numenera*, a spiritual successor of the classic *Planescape: Torment* from 1999, raised over $4 million.

paved the way for more of what we might call "alternative" CRPGs, such as inXile's *Torment: Tides of Numenera* (2016) (Figure 1.5) and, indirectly, Obsidian's *Tyranny* (2016). While these games arguably lack mainstream appeal, they are bold experiments that push the boundaries of CRPGs.

The best CRPGs require a diverse set of skills, such as long-term planning, problem solving, teamwork, and resource management. Some demand advanced navigation and even cartography; inept players would end up hopelessly lost in a maze or dungeon. Others are loaded with puzzles and riddles. Several punish players for winning in an unethical way. CRPGs are not a matter of agility with a gamepad or mouse clicks-per-minute. Rather, they demand that players weigh risks, make decisions, manage, and lead. They delay gratification and teach the value not only of perseverance, but of experimentation and adaptation in the face of progress. Many challenge players to create or assemble a whole crew of

characters, each with a diverse skill set and specific strengths and weaknesses; success in these games takes effective team management.

CRPGs AS A GENRE OF VIDEO GAMES

Before we advance further into the amazing history of our favorite genre, let's define it—or at least narrow it down. CRPGs frequently blend into other genres, and it's hard to isolate features that are mutually exclusive. Dozens of successful games span multiple genres and are best described as hybrids, such as Infocom's *Zork Zero* (1987), a fusion of text adventures and CRPGs, and Ion Storm's *Deus Ex* (2000), a first-person shooter/CRPG.

> *Shane:* Oh man, there's not much more of a ravenous sucking abyssal maw of a debate topic among gamers than "what is a CRPG?" I once almost lost control of an entire hour's radio show topic by bringing this up.
>
> *Matt:* I feareth not and have tread these paths before. Keep me in sight!

Even among games commonly regarded as CRPGs, there can be enough variation to make you wonder if they really belong in the same category. Take FTL's *Dungeon Master* and Masterplay's *Star Saga*, both published in 1987. Whereas *Dungeon Master* is a real-time, colorful three-dimensional game depicted in first-person perspective and based on a fantasy setting, *Star Saga* (Figure 1.6) is a science fiction CRPG with a text-only display, physical booklets, and a printed game board (shown here) upon which players move small tokens.

We can put these two together because, in this book, what primarily distinguishes CRPGs from other genres is their statistical-based role-playing systems. CRPG designers rely on statistical calculation rather than physical manipulation for the bulk of their gameplay mechanics. In other words, they are more about statistical reasoning than facility with a mouse, joystick, or game controller.

The other crucial factor, which we'll get into later, is that players control a single character or small group rather than an army. Identifying with an *avatar* allows you to experience a virtual world in a more intimate fashion than is possible with the more abstract relationship between, say, the player and a battalion or fleet. In the tabletop realm, this is the key difference between role-playing and wargaming.

It's helpful to consider how CRPG designers think differently than most other game designers. Let's say you were making an archery game. What
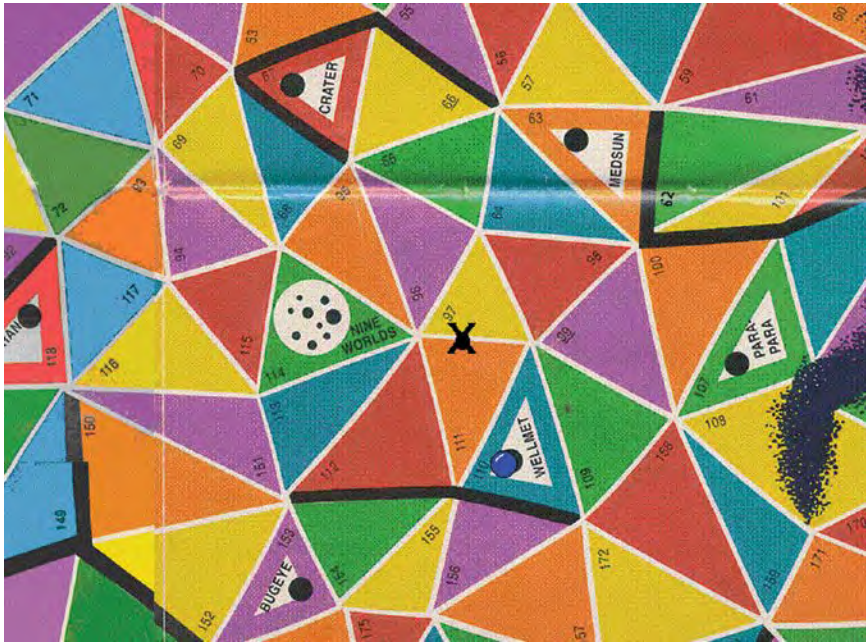
FIGURE 1.6 *Star Saga* is a hybrid tabletop/CRPG game that includes this colorful map and small tokens to track movement. Photo courtesy of CRPG Addict.

would it look like? How would players control it? How closely would it approximate the real thing? Most importantly, how could you make it fun?

In action games, such as *Track & Field* (1983) for the Nintendo Entertainment System, players hold down a button and release it at just the right moment to hit a moving target (Figure 1.7). The game also factors in wind speed and direction. In *The Elder Scrolls V: Skyrim* (2011), a hybrid CRPG/first-person shooter (FPS), players aim a bow using on-screen crosshairs, compensating for longer distances by aiming above the target. In the archery activity on *Wii Sports Resort,* the designers implemented the Wii Motion Plus and Nunchuck to introduce some truly remarkable physicality. This game goes so far as to simulate the pulling of the string and the positioning of the bow. Virtual reality (VR) technologies such as Oculus Rift and HTC Vive already offer several archery games. The "Longbow" portion of Valve's *The Lab* is essentially a VR-enhanced version of the abovementioned *Wii Sports Resort* game, albeit with cartoonish violence.

As these examples show, there are countless ways game designers have attempted to answer the questions we posed earlier. Each of these games looks and feels entirely different, and all of them are fun. Yet they have as

FIGURE 1.7 *Track & Field* tries to mimic the sport of archery with gameplay mechanics based on precision and timing. You might get lucky occasionally, but it takes practice and skill to reliably hit the moving target.

much in common with shooting a bow as reading this book has with playing a CRPG. Nevertheless, there is undeniably some physical skill required to reliably hit the target in these games. They all attempt to mimic the physicality of archery in some fashion, whether it's a simple timing mechanism or an elaborate system of accelerometers and motion sensors.

By contrast, in a pure CRPG there is no attempt whatsoever to match what's happening on the screen with what's happening with the keyboard, mouse, or controller. Most, if not all, of the physicality called for in these games is to move the characters, navigate menus, and, above all else, constantly save the game. Otherwise, only the character's skill matters. In such a CRPG, the outcome is not determined by manipulation (a word that derives from the Latin word for "hand"), but calculation. For this reason, it is possible to play a CRPG without ever touching a keyboard or mouse; you could simply direct someone else to do it for you. This often happens when multiple players huddle around the same PC to play games like *Wizardry* or *Pool of Radiance* together. In these cases, the player at the keyboard simply asks the others what they'd like their character to do (attack, cast a spell, etc.) and executes it for them. Imagine, by contrast, how awkward and boring this would be with a game like *Track & Field*!

FIGURE 1.8   Archery in *Skyrim* also requires some physical skill to pull off. You can make things easier with certain perks, but accuracy and speed are still essential.

Let's consider now how archery is represented in *Akalabeth* and a few later CRPGs such as *Skyrim* (Figure 1.8). The first important thing to know about bows in *Akalabeth* is that magis can't use them (sorry, Gandalf). The second is that their maximum damage score is 4 (whereas a rapier's is 10). Third, the bow is a ranged weapon, meaning it can hit enemies that are up to five steps ahead of where the character is facing. Otherwise, the weapon is treated like the others; it either hits or misses depending on the character's dexterity attribute as well as the level of the monster and dungeon. The amount of damage it does is determined by the weapon's damage range (1–4) and the character's strength attribute. Firing the bow is done by pressing the letter *a* for attack followed by *b* for bow. Quite a lot is left to the player's imagination; we don't hear the twang of the bowstring or see arrows flying toward monsters.

Later CRPGs such as *Pool of Radiance* (1988) take several more factors into consideration, such as the type and quality of the bow (short, long, composite, etc.); range; dexterity; a score called THAC0, or To Hit Armor Class Zero; and the armor class of the target. We don't need to get into the math of any of this here; the point is that this model, which is based on TSR's *Advanced Dungeons & Dragons* rules, strives for complexity and realism by bringing more variables into the equation. Keep in mind, however, that as a system devised for tabletop play, it still strives to keep these calculations manageable with a handful of dice and some scratch paper. The computer just makes this process more accurate and efficient. Incidentally, one nice difference from both *Akalabeth* and *AD&D* is that in *Pool of Radiance* we do get to hear the twanging string and see an arrow fly across the screen.

Naturally, not every CRPG designer feels obligated to stick with the limitations imposed by tabletop games. Indeed, some games factor in so many elements that it would be all but impossible to calculate them by hand. Tim Lang, a veteran of New World Computing (makers of the *Might & Magic* series), recalls a conversation he had with Jon Van Caneghem, the company's founder. Lang asked him why the combat system of *Might & Magic* is so complex compared to *Dungeons & Dragons'*. Caneghem responded, "It's more complicated because it can be, and it makes for a better game. We don't have to worry about teaching all this stuff to players because it's all handled behind the scenes for them." It's a valid point, but I argue that even if the computer can easily handle far more calculations than a poor human, it doesn't necessarily make for a better game. As we'll see, to be effective as a role-playing system, it must be simple and intuitive enough for humans to handle in their head.

Later games became quite good at not only handling all the math for the player, but also in effect hiding the fact that there was math there at all. For instance, in BioWare's classic *Star Wars: Knights of the Old Republic* CRPG, a player can easily play all the way through and never realize it was actually using the *Dungeons & Dragons,* 3rd Edition–based "d20 System" for its core game mechanics.

But let's get back on target with the archery example: Regardless of whether an individual CRPG is based on a tabletop RPG, the player's first crucial task is to learn how ranged combat is modeled in the game (if at all!), and then what aspects of it he or she can manipulate to improve the odds for an archer character. This could include improving an archery skill, raising a dexterity attribute, or acquiring a better bow. The point is that in a pure CRPG, the player's own speed, timing, or accuracy with the keyboard, mouse, or game controller makes no difference (outside of accidentally hitting the wrong button or issuing the wrong commands). As soon as these things begin to matter, we've crossed over into action RPGs.

Shane: See! Look there! The definition of a CRPG's already going wonky, not straight as an arrow one might say. And there are some gamers who say an action RPG **is** a—

Matt: Keep quiet! How can I knock that apple off your head if you keep talking? Twang!

If the sales of games like *The Elder Scrolls V: Skyrim* and other action RPGs are any indication, mainstream gamers desire more physicality than we

find in games like *Akalabeth.* As we'll see, much of CRPG history amounts to how (and how well) individual designers balance physicality or action with statistical reasoning or tactics in their games. Nevertheless, for us, a pure CRPG requires only trivial physical ability on the part of the player.

CRPGs AS A GENRE OF ROLE-PLAYING GAMES

Though CRPGs have much in common with their tabletop ancestors, they are in crucial ways fundamentally different. Whereas the tabletop games benefit enormously from the players and the Game Master's (GM's) ability to improvise story and dramatic elements on-the-fly, the CRPG's underlying hardware lets it perform millions if not billions of operations per second. This makes CRPGs better at following and enforcing complicated systems of rules, but this power comes at a price when it comes to improvising.

For tabletop GMs, in-depth knowledge and enforcement of the rules are not only unnecessary, but in many cases undesirable. Many great GMs never bother to learn all the rules of the systems they play; their priority is an imaginative gameplay experience, not slavish fidelity to a rule system. This point was nicely illustrated at PAX Prime in 2014, where GM Chris Perkins (who wrote the rules for multiple editions of *Dungeons & Dragons*) ran into a situation he didn't know how to handle: the players wanted to impale a dragon with a zeppelin. After admitting he didn't know how the rules would apply in this situation—and perhaps none would apply— Perkins simply concluded, to great applause from the audience: "You just do it. You just run this thing right through!" RPG players will constantly try creative new approaches to the same set of problems, or at least say different things than they said during previous sessions. Otherwise, they would not be playing a game at all, but rather performing one.

It's practically a law of the universe that tabletop RPG players will do things and tear off in directions the GM never considered. It may drive some GMs nuts, but it's a huge part of the fun. While this ability to improvise solutions to unanticipated problems is routine in a tabletop RPG, it's cumbersome in a CRPG. This is because computers can do nothing *but* follow rules. If the option to impale a dragon with a zeppelin was not implemented into the program, it simply can't happen. For fans of tabletop RPGs, this is a serious limitation, as it was for Garriott:

> What's interesting about the early days of *Dungeons & Dragons* was that rules were irrelevant. The rules were insufficient and nobody cared. Instead, it was a group of people sitting around

the people having an interactive narrative. When the gamemaster described a scenario, as long as the rest of the participants came up with something that sounded clever, sure, it worked. Since there were no rules, the only things that mattered was whether you had a good storyteller at the helm and highly participative players.

My *D&D* campaigns were laid out very logically, but they had another part that we've still never mastered in computer gaming. There were lots of very custom portals and gateways to get past, such as a big door with a pentagram on the front and lots of spots for colored gems. You had to go find the gems and put them in the right spots to open the door. It's very easy to describe all this verbally, but in a computer game, that's a custom piece of code for just one moment in the entire scenario. My *D&D* campaigns were moment after moment of these little puzzles that were very difficult to execute cost-effectively in a computer game.

However, the same hardware that makes CRPGs limited in some ways can make them unlimited in others. In fact, the entire gameworld of a CRPG can be generated on-the-fly by algorithms. *Akalabeth* creates its own "infinite" dungeons in just this way. While the quests are simplistic compared to the tabletop RPGs of the era—you do little more than slay monsters for Lord British—the game's procedurally generated maps let you play it over and over again without getting bored. Unless the player inputs the same "lucky number" asked for at the beginning of each game, the dungeons will be laid out in a fresh pattern, making any of the players' maps from previous sessions obsolete. Thus, even Garriott himself wouldn't know his way around *Akalabeth*'s dungeons!

A case can be made that *Akalabeth* and other procedurally generated games are the best sort of CRPGs, turning their most severe limitation into their most powerful asset. Rather than strive to imitate the social and creative dynamics of tabletop RPGs—something CRPGs are generally terrible at—they take the opposite approach, leveraging the computer's strengths to create procedurally generated content, which computers are great at.

To put it another way, what the tabletop RPG is to custom manufacturing, the CRPG is to mass production. What is trivial for a custom auto shop—such as letting buyers choose what color paint to use—is cost-prohibitive for the other. As Henry Ford quipped, "Yes, any color so long as it's black!" As Garriott describes above, it's trivial for a GM to describe a door surrounded by sockets for gems and the actions involved in opening it. In

a computer game, of course, all of this would be implemented with custom code and a number of assets (e.g., animations of the gems going into their sockets, sound effects, code to track the state of the sockets, etc.). Needless to say, computer game developers have to weigh the costs involved with every idea. Perhaps it's critical to the plot, or the game has several such doors, meaning these elements could be recycled. Otherwise, this element would likely be scrapped. It's a safe estimate that for every good idea that makes it into a finished game, there were a dozen better ones that didn't.

Of course, more sophisticated procedurally generated CRPGs, such as *Diablo* or *The Elder Scrolls II: Daggerfall* (Figure 1.9), go far beyond *Akalabeth*'s capabilities—indeed, their complexity can lead to "emergent gameplay," or outcomes that even the designers didn't realize were possible. Even an outright bug can end up as a celebrated feature. One of the best examples of this phenomenon is called "the abyss" or "the void," and it comes from *The Elder Scrolls II: Daggerfall*. Whether by accident or intention, players can find themselves outside the game's intended boundaries, yet still able to move about otherwise inaccessible areas and attack enemies who can't strike back. A video on YouTube by David Caldarola

FIGURE 1.9 *The Elder Scrolls II: Daggerfall* is one of the most ambitious procedurally generated games to date. Here, Matt's about to fight a particularly vicious little imp.

demonstrates this phenomenon, and a comment there by Karen Elizabeth says it all: "I'd like to think that going into the void is magic or botched inter-dimensional travel, since this universe has some precedent for this."

Such fun oddities aside, most CRPG fans seem to prefer games with as much custom-made content as possible. With a few notable exceptions such as the games already mentioned, few hit CRPGs are primarily procedural. Instead, they balance computation with craft, fleshing out the trappings of a procedurally generated system with predefined characters, stories, lore, and events. As we'll see, over the decades designers have tried different approaches to finding the right balance. For example, in *Diablo,* Tristram Village is always the same, whereas its dungeons are different for each play-through. Other games have little to no procedurally generated content, relying instead on the players themselves to expand their games (user-generated content). We'll return to these and related topics throughout this book.

EDUCATIONAL BENEFITS OF CRPGs

It may come as a revelation to some readers to learn that CRPGs can be educational as well as entertaining. Indeed, they hone the four basic skills that Robert Reich, author of *The Work of Nations*, argues are absolutely critical for the workplace of the future: "abstraction, system thinking, experimentation, and collaboration." Like literacy scholar James Paul Gee, author of *What Video Games Have to Teach Us About Learning and Literacy*, we want to avoid the "video games = waste of time" model and "say some positive things about them," because there is so much more going on here than the violence and sex that dominate the media's coverage of the subject. Indeed, CRPGs are not only the most fun and addictive type of computer game, but also an excellent way to learn the crucial skills identified by Reich—even if their creators aren't necessarily experts in grammar or literature.

To clarify this point, let us return to one of those twenty-five books Garriott did manage to read at college, namely Jef Raskin's *Apple II Basic Programming Manual.* Raskin, who later conceived the Apple Macintosh, insists that no amount of study was sufficient to learn programming. As he writes in the book's introduction, "Be warned that programming, though not difficult, can only be learned by *doing.* This is a book to be used, not merely perused." For aspiring game designers like Garriott, this wasn't a turn-off, but a turn-on. Indeed, Garriott adapted this "applied" or "experiential" approach to learning, as we'd call it today, to *Akalabeth*. Indeed, in all CRPGs, any sort of rote memorization or out-of-context learning

is an aberration. Compare Raskin's statement with these from Garriott's five-page manual for *Akalabeth*:

> Though doest now know the basics of the game, experiment with the commands. There is much left unsaid for thee to discover in the future…. Go forth unto Akalabeth and seek adventure where thou wilst!!!

Indeed, the only explicit instruction Garriott provides is to "be sure to buy enough food so as not to starve to death." Incidentally, this is still great advice for any aspiring game designer.

> *Shane:* Didn't you say that if enough people bought this book **we** wouldn't starve to death?
>
> *Matt:* Actually, I said **I** wouldn't starve.

What could possibly be educational about slaying monsters in a dungeon? According to Gee, "Video games situate meaning in a multimodal space through embodied experiences to solve problems and reflect on the intricacies of the design of imagined worlds and the design of both real and imagined social relationships and identities in the modern world." In other words, the actual *content* of a game, such as its story, characters, lore, and so on, is less important than the roles and skills it nurtures. A gamer playing a new CRPG must act like a scientist, exploring and probing the gameworld, devising theories based on observations, re-probing, and finally reflecting and rethinking those hypotheses in light of what amounts to experiment. Here we see two of Reich's skills being developed—system thinking and experimentation.

Imagine playing *Akalabeth* for the first time. Some of the most important decisions are made at the start. After the game rolls some virtual dice to compute hit points, strength, dexterity, stamina, wisdom, and gold, the game asks, "Shalt thou play with these qualities?" Even if you read the in-game instructions and the manual, there's little useful advice for determining whether you should indeed play with these qualities or reroll. Wisdom, for instance, is described as being "used in special (quest) routines." Gee's point is that much of our educational system is like this explanation; we may read and memorize such facts, but outside of context or "embodied experience," they mean nothing. You really learn about wisdom in *Akalabeth* only by repeatedly playing the game, adjusting the

score, observing the results, and reflecting on the playthrough. Eventually, an understanding of the wisdom score's effect on the system emerges, but by that time the manual's definition is valuable only as a reminder of what you learned by doing.

Gee is not saying that knowing how wisdom works in *Akalabeth* is useful in the real world. Rather, his argument is that the mental habits such games demand and reward end up being far more useful than much of the disembodied learning we get in traditional schools. In the same way that playing *Akalabeth* is more fulfilling than reading its manual, playing a CRPG is closer to doing science than memorizing definitions out of a science textbook, even if its gameworld is entirely fictional. Once a child (of any age) has thoroughly internalized this critical thinking process, he or she can apply it anywhere, even, perhaps, to that boring science class. The ability to abstract knowledge from one realm and apply it to another is, of course, another of Reich's key skills for success, yet criminally undervalued in schools.

Lincoln E. Moses, a pioneer in the field of statistics, defines his field as "a body of methods for learning from experience." This definition applies equally well to CRPGs, which as we've discussed are themselves elaborate statistical models of experience. CRPG designers use statistics to model their systems, working out formulas for computing a myriad of probabilities— what are the odds that the character will spot a rat or be surprised by it? Will the rat hit or miss when it swipes at him? If its claws connect, how much damage is absorbed by the character's armor—plate, chain, or leather? These formulas can get complex as armor durability, the character's dexterity, and even magical effects are factored in. Yet players are able to learn from their experience just as their characters do, gradually getting a feel for how all of these intertwining mechanics function together as a system. They may be unable to write out the formulas for any of it, but they've learned by doing it.

Compare this type of learning to what happens in schools, which, as Gee points out, privilege the retention of facts (such as formulas), spoon-fed without any sort of context, with few opportunities to question, experiment, or innovate upon any of it. Students are not expected to figure out their own solutions, but merely to follow a narrowly prescribed path. No wonder so many students find school boring and video games like CRPGs so engrossing!

Reich's final skill for success in the careers of the future is collaboration, and here is where we can best distinguish CRPGs from wargames in terms of benefits. Both Reich and Gee (and countless other education experts) stress the importance of collaborative learning; students learn as much (if not more) by discussing topics with each other as they do by quietly

listening to a teacher. This social dimension of education is all but absent in many schools, where often the greatest challenge is just staying awake.

> *Shane:* I once stayed up all night in high school reading *Dragonlance* and fell asleep during the last class of school the next day. Great nap but the teacher let me sleep through the final bell and told the students not to wake me up on the way out. I bolted awake with slobber all over the desk and sort of lurched around the room like a dazed zombie trying to get oriented while the teacher just watched.
>
> *Matt:* Wake up, Shane!

Arguably, this is the area where CRPGs have less to offer than either tabletop games or massively multiplayer online role-playing games (MMORPGs). In both of these game types, players must frequently work together to learn and play the game. Kids can learn a great deal about collaboration from tabletop RPGs. Just having an opportunity to talk to each other face-to-face seems worthwhile, and shy people are more likely to open up when acting out a role rather than "just being yourself." This said, access to a group of friends willing to play these games is not guaranteed, especially in rural areas. Even if such a group exists, it can be next to impossible to get everyone together for weekly or even monthly sessions. Thus, these groups tend to be quite small, dedicated, and not necessarily open to casual players dropping in and out of their campaigns.

For these and other reasons, MMORPGs seem like a better option. However, here we have the opposite problems—a massive player base, but one that's anonymous. Sure, it's easier to find people to play with, but they may be less than ideal. Beyond dealing with the "toxicity" of degenerate player communities or scammers, new players may find themselves harassed or excluded by veteran players who have no wish to mingle with "n00bs." Indeed, far from teaching effective collaboration skills, these games may well end up teaching players how to be hermits or elitist jerks! Even if an MMORPG community seems perfectly benign, parents might not like the idea of their children playing with strangers (Figure 1.10).

For this and related reasons, even if CRPGs tend to be single-player, they may teach effective collaboration better than MMORPGs. Many CRPGs let players control more than a single character. Some games allow players to create and control an entire crew or party of adventurers, as in *Wizardry,* or directly or indirectly control predefined characters, as in the

FIGURE 1.10   While you can find plenty of friendly people in games like *World of Warcraft,* you'll also find players with no tolerance for novices. Getting booted out of a group for making a simple mistake can be discouraging, so avoid groups like this one if you're new to the raid—and maybe even if you're not.

later *Ultima* games, *Baldur's Gate,* or *Dragon Age: Origins.* Winning these games requires that these characters successfully leverage each other's strengths and weaknesses. While it's a stretch to call this "collaboration" from an educator's perspective, players are clearly managing a (mostly) idealized form of collaboration, and designers like Garriott take pains to use this opportunity to promote good ethics (see our discussion of *Ultima IV* in Chapter 7). To the extent that these characters are realistically autonomous and capable of arguing with or even turning on the player, successful players must learn to collaborate with people unlike themselves. Abusing or neglecting them can result in their leaving the party, possibly causing the players to lose the game. Thus, as paradoxical as it may seem, CRPGs can be more effective at teaching people skills than communities of other human players in MMORPGs!

Hopefully, I've shown the educational benefits that CRPGs have to offer, which are precisely the skills that Reich and Gee have identified as crucial for thriving in the workplaces of the future. Tireless reformers like Gee have made some progress innovating our schools with lessons gleaned from good game designers—a movement awkwardly labeled "gamification"—but there's still plenty of room for growth.

THE EVOLUTION AND TAXONOMY OF CRPGs

CRPG development has not taken a linear path, and, as we'll see, the most successful games of any given era are not necessarily the most technologically sophisticated or innovative. Indeed, time and time again, we'll see good design and attention to detail trump advanced graphics or interfaces. We can see this advantage clearly in the late 1980s and early 1990s, when turn-based two-dimensional games sat comfortably alongside the new real-time 3D games on the shelves.

Nevertheless, we'll need some way to keep our bearings, and what seems most logical is to proceed more or less chronologically. For the sake of the narrative, in these chapters we will focus on the most influential games, many of which spawned new subgenres as others rushed in to imitate and innovate upon them. For instance, *Rogue* and *Diablo* popularized the *Rogue*-like and *Diablo*-like subgenres, respectively. Meanwhile, Garriott's *Ultima* series introduced new innovations with each iteration. Some of them were more successful than others, but they always sent ripples across the entire computer games industry. More obscure but still notable games are listed in the appendix, where we provide basic information and brief reviews and commentary on what makes them notable.

Before we get into all these games, though, we'll discuss the Dark Age, so named because many of these games are lost to history. Comparatively little is known about these progenitors apart from the recollections of those few lucky enough to have played them. The Dark Age begins in 1974, when the first CRPGs were being developed for mainframe computers such as DEC's PDP-10, and ends in 1979 with the publication of the first two CRPGs for personal computers, Garriott's *Akalabeth: World of Doom* and Epyx's *Dunjonquest: Temple of Apshai*. These two games mark the beginning of the commercial era and the beginning of the CRPG as we know it.

We'll start, however, not with the first CRPGs, but rather with the games that inspired them: pen-and-paper strategy games like *Strat-O-Matic*, wargames like *Chainmail*, the fantasy role-playing game *Dungeons & Dragons*, and finally, *Colossal Cave Adventure*, the first adventure game. Each of these games exerted a profound influence on the CRPG.

> *Shane:* Hey, what kind of switcharoo are we pulling here? They want to read about computer RPG games, not some flippin' sportsball paper-based game simulators.
>
> *Matt:* Have patience, grasshopper, it all comes together.

Origins

When pondering the origins and inspirations of CRPGs, most writers begin with Gary Gygax and Dave Arneson's *Dungeons & Dragons* fantasy role-playing game. *Dungeons & Dragons,* or *D&D* for short, was published in 1974 and quickly swept across the country. It's still actively played today—indeed, Wizards of the Coast (the company that purchased *D&D* from TSR) reported that 2017 was the biggest year of sales for the game, ever.

There's no doubt that *D&D* played a vital role in the development of the first CRPG. Richard Garriott, creator of *Akalabeth* and *Ultima,* is a dedicated fan of the game. *Pool of Radiance, Baldur's Gate, Neverwinter Nights,* and *Icewind Dale* are just some of the *Dungeons & Dragons* CRPGs licensed by TSR and later Wizards of the Coast, publishers of the popular tabletop role-playing game ([Figure 2.1](#)).

However, if we look a bit further into the issue, we can identify four other influences that are at least as important as *D&D,* if not more: sports simulation games, tabletop wargames, the writings of J.R.R. Tolkien, and Will Crowther's *Colossal Cave Adventure,* the first true computer adventure game. Each of these made a unique and significant contribution to the genre.

BASEBALL SIMULATION GAMES

Although you might assume that fantasy football and other "fantasy" sports are a recent phenomenon, tabletop sports simulation games were popular in the 1960s and 1970s. There were dozens of spinoffs and competitors, but the most popular games were *Strat-O-Matic* (1961)*, APBA* (1951)*,* and *All Star Baseball* (1941). The first two of these games attempt to recreate the excitement of baseball using a combination of cards and dice; *All Star*

FIGURE 2.1 Countless players all over the world continue to enjoy tabletop role-playing games. Not all such games require miniatures as shown here, but they're still fun to collect—and paint, if you're so inclined.

Baseball uses spinners instead and is intended for younger players. Real statistics from current professional baseball players are used in these games, thus necessitating annual updates and creating a steady revenue stream for the game makers. It isn't just a marketing ploy; players value the accuracy of these statistics and their ability to predict actual seasons. Steven Johnson, author of *Everything Bad Is Good for You,* sums them up as "games of dice and data." *Strat-O-Matic* and *APBA* have been and remain quite popular and boast celebrity players such as Spike Lee (moviemaker), Trip Hawkins (founder of Electronic Arts), and both President Bushes.

> *Shane:* I guess you could say these games hit a home run?
> *Matt:* You're out!

Although the games are not identical, both *Strat-O-Matic* and *APBA* put players in the role of team managers. Players make decisions about batting order, starting lineups, and pitchers, then use the dice and tables to simulate the ballgame. In the case of *Strat-O-Matic*, gameplay involves cards for every baseball player and five different dice: three six-sided dice (one white,

two colored), and, notably, a twenty-sided die. Players roll the six-sided dice to determine the outcome of the batting (the numbers correspond to tables on the cards). There are a fair number of rules to learn, and the more advanced versions of the game even take into consideration the weather and differences among ballparks. In any case, the game can be quite complex, and expert players learn the minutest details of professional baseball. The baseball-themed games were the most successful, but there were also versions for football, hockey, boxing, and other sports (Figure 2.2).

It's easy to see how much these games have in common with *D&D* and CRPGs. First, dice and statistics are used to realistically model fantasies, though here it's imaginary sporting events instead of battles with fantastic creatures. Rather than just watching sports and discussing them with friends, *Strat-O-Matic* and *APBA* players feel more actively involved in the sport, even if it is from the comfort of their bedrooms. Later on, we'll see the same sort of trend among *D&D* players, when Tolkien-obsessed fans wanted to do more than simply read about fantastic battles with orcs and dangerous treks into dank, dark places.

FIGURE 2.2   Baseball and other sports simulation games were a key influence on, among others, Brian Fargo and Joel Billings of Interplay and SSI, respectively. *Strat-O-Matic* is still played today, though now there are online and mobile options in addition to the board game.

All of this involvement comes from what some would see as a very unlikely source: the mathematical science of statistics. While this subject seems hopelessly dry and abstract to many people, it nevertheless drove some of the most compelling and addictive games ever designed.

> *Shane:* Speaking of statistics, isn't it statistically improbable they would be so important to pursuits of imagination and fancy?
> *Matt:* Never tell me the odds!

While we're on the subject, it's worth asking a few questions about why these statistical games emerged when and where they did. The formal study of statistics is a relatively new field, becoming important only after World War I, when the United States and other nations emerged as industrial leaders. Leaders of both government and industry needed more accurate ways to measure increasing populations and the effects of policies. Of particular interest to the government, of course, were better ways to conduct the census and collect taxes. These needs fueled the launch of the nascent computer industry—companies like IBM were called upon to help the government manage the massive amount of occupational data needed to comply with the Social Security Act of 1935.

Avid players of games like *APBA* and *Strat-O-Matic* found themselves well prepared for new careers that required familiarity with statistics. Incidentally, one of many such gamers-turned-professionals was Trip Hawkins, founder of Electronic Arts, who credited *Strat-O-Matic* and *D&D* with helping him make "invaluable social connections" and making his brain "more active."[1]

These games are still going today but have been eclipsed by the rise of fantasy sports, hugely popular games based on many of the same principles—but typically involving a computer to handle the statistics. Some other key differences are that players draft their own teams and follow their statistics through the real-time season (rather than the previous one). Several prominent commercial sports hubs offer fantasy sports for free on their websites to stoke interest in their team as well as professional sports in general.

TABLETOP WARGAMES

Wargames have a much longer pedigree than the sports simulation games mentioned above. The first such game probably arose among Prussian officers in the early 19th century, where it was used as a training exercise.

The game, called *Kriegspiel* ("war play"), involved both dice and an experienced officer who could referee the game based on his own combat experience (much like the DM in *D&D*). This practice spread to other countries and other branches of the military, such as the U.S. Naval Academy, where it continues to serve as a useful tool for training officers and analyzing actual tactical situations. Although the professional activity and the hobby have much in common, we're concerned with the hobbyist game.

In the early 20th century, H. G. Wells, one of the godfathers of science fiction, wrote two books outlining rules for games involving toy soldiers and spring-loaded miniature cannons. There were also naval wargames available, such as *Naval War Game*, developed by Fletcher Pratt in 1940. This game involved small wooden ships, complicated mathematical formulas, and a tape measure to mark off distances to scale. In each case, the key factor was a random element (usually dice) to make the outcome of any battle realistically unpredictable. This random factor is what differentiates wargames from games like chess (Figure 2.3).

"Miniature wargames," whether involving toy soldiers or ships, could be expensive hobbies, owing to the large number of materials they required. Nevertheless, gaming clubs arose throughout the 20th century, and by 1952, Charles S. Roberts had published the first mass-market wargame, *Tactics*.

FIGURE 2.3   Wargaming with miniatures is a fun hobby enjoyed by players all over the world. Shown here is a game from the 2015 Festival del Gioci in Italy. It uses miniatures made from paper. Photo by Moroboshi.

This game included maps and cardboard counters rather than miniature soldiers. It was played on a square grid and factored in the effects of the terrain on troop movement. Roberts went on to found Avalon Hill, which soon

Gary Gygax was an avid wargamer and tried to shop *Dungeons & Dragons* to a baffled and bemused Avalon Hill before publishing it himself.

dominated the war and strategic board games market. Later wargames from Avalon Hill introduced many features now common in CRPGs, such as hexagonal movement and zones of control. Avalon Hill went on to publish several highly successful wargames based on specific historical battles, such as *Panzerblitz* (1970), *Midway* (1964), and *Blitzkrieg* (1965).

Miniature wargaming made a return in the 1970s, when economies of scale placed them at last within reach of the average teenager. In ways similar to train modeling, fans of miniature wargaming lavish time and energy on painting miniatures and reproducing scenery to look as realistic (or as fantastic) as possible. These games are much more tactile and visual than other wargames, allowing gamers to think in three dimensions well before the rise of advanced computer graphics.

Of particular interest for our purposes is a 1971 miniatures wargame named *Chainmail*, designed by Gary Gygax and Jeff Perren. *Chainmail*, as the name implies, is a medieval-based wargame, and it introduced several conventions that would become standard in later fantasy role-playing games and CRPGs. The famous "fantasy supplement" adds fantasy creatures made popular by J.R.R. Tolkien, including hobbits, balrogs, and ents. It also has wizards who can cast powerful spells to produce fireballs and lightning. Some of the game's miniatures represent individual heroes rather than corps of troops, an important step away from traditional strategy games and toward what would soon become proper role-playing.

Indeed, it is this game that led most directly to *D&D*, and the first edition of *D&D*'s rules even suggest players own a copy of *Chainmail*. Both Gygax and Dave Arneson (co-creators of *D&D*) were avid wargamers, and *Chainmail* is a clear precursor to what would soon evolve into fantasy role-playing as we know it today. There are other connections between wargaming and CRPGs. Strategic Simulations, Inc. (SSI), one of the most influential CRPG developers, first made its mark publishing computer-based wargames. There has also been a persistent tension between the more wargaming aspects of CRPGs (e.g., the strategy and tactics component) and the role-playing aspects (i.e., stories, characters, and dialog).

Throughout this history, we'll see that developers have experimented quite often to find the perfect ratio of math to make-believe.

> *Shane:* A lot of gamers call that "roll" playing versus "role" playing. Many heated and prolonged debates have occurred since the dawn of tabletop RPGs over which is "better," and they still continue today. I've considered selling tickets.
>
> *Matt:* Roll up! Roll up! See the fight of the century!

J.R.R. TOLKIEN AND FANTASY ROLE-PLAYING

In some ways, games like *Strat-O-Matic* are the most socially acceptable of the games we've identified as precursors to the CRPG. The reason for this acceptance is the close association with professional sports, a traditionally manly activity and thus an appropriate interest for men and boys of all ages (indeed, *Strat-O-Matic* was frequently played by fathers with their sons). Wargaming, particularly of the historical variety, can also seem acceptable. Famous men throughout the centuries have been interested in famous battles and brilliant tactics, and, if nothing else, few parents have a problem with their teenagers learning history.

However, to outsiders, fantasy role-playing may seem juvenile, alien, or both. It's one thing to walk past a group of boys passionately discussing the stats of their favorite pitchers and batters, or to saunter past wargamers in a heated discussion of the Battle of Gettysburg—even if the sight of grown men "playing with toys" strikes some as childish.

It's quite another matter, however, when people are displaying the same sort of passion for sorcery and dragons, much less for demons and priests of darkness. Indeed, many parents and concerned citizens considered fantasy role-playing games a serious threat—both to the people who play them and to society at large. A variety of memes show that this tension still exists today. A typical one shows a man in a football jersey watching a game; the text reads, "Knows statistics of every player on his fantasy football team. 'Wow, you play role-playing games? Nerd!'" However, before we get into the social and cultural aspects of this topic, let's take a look at the history of fantasy role-playing and try to determine the scope of its influence on CRPGs.

> *Shane:* I like the meme that says: "*D&D*: Nerdiest game ever. Requires friends". Gimme a hug, you lovable rat-killing galoot!
>
> *Matt:* Nerd!

Perhaps the best place to start is with the English novelist J.R.R. Tolkien, specifically his *The Lord of the Rings* novel (Tolkien intended for the work to constitute one massive tome, but it was broken into multiple volumes and first published during 1954 and 1955). However, it wasn't until the ready availability of the authorized mass-market paperback editions by Ballantine Books in the 1960s that the Tolkien phenomenon really kicked off. Of course, nowadays it's hard to find anyone who hasn't read Tolkien or at least seen the movies. It's even more difficult to find a *D&D* or CRPG fan who hasn't read and watched them all at least twice. For instance, Garriott's game, *Akalabeth,* which we discussed in the previous chapter, derives its name from *Akallabêth,* a reference to *The Silmarillion,* one of the more obscure works from the Tolkien canon (it's also evident that Garriott wasn't lying about his trouble with spelling).

Tolkien's work influenced much of what later became staples of the fantasy genre, such as our conceptions of magic, elves, dwarves, orcs, and so on, and plenty of role-playing games (computerized or otherwise) borrow directly from his stories. What's more critical, though, is his obsessive attention to detail. He didn't just write novels; he spent the better part of his life creating a vivid fictional world.[2] Unlike the typical "swords and sorcery" novels and stories that appeared in pulp magazines, Tolkien's works are much deeper and more complex, involving epic struggles rather than the antics of a single swashbuckling hero.

Tolkien's key academic interests were language and philology, and he created artificial languages for the various peoples in his book. Finally, he studied ancient mythologies, particularly those of the Celts, Scandinavians, and Germans, assimilating this diverse information into a coherent whole. These interests were, of course, shared by Garriott, who also created his own rune system and a rich lore for his *Ultima* games.

Tolkien's grand achievement was Middle-earth, a fantastic setting so vivid and detailed that it seemed to many readers to be a real place, an alternate reality they longed to visit. Passing references and allusions in the books hinted at vast, untold stories and mysteries. Adoring fans pored over the many appendices, references, and other materials devised by Tolkien or others. In short, the Tolkien phenomenon paved the way for a new type of game, one that would allow fans to go beyond reading and actually enter exciting worlds of fantasy to play a role in their own adventures.

Two diehard wargamers offered them that chance. In 1974, Gary Gygax (Figure 2.4) and Dave Arneson created *Dungeons & Dragons*, published by Gygax's company, Tactical Studies Rules (TSR). Arneson had been
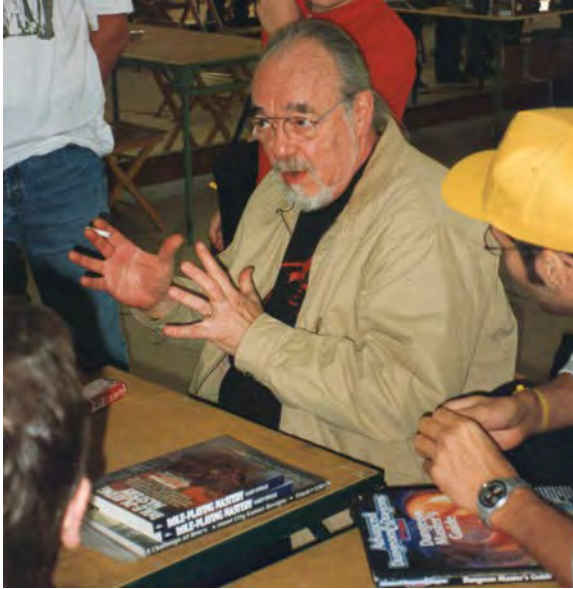
FIGURE 2.4   Gary Gygax is often credited as the father of *Dungeons & Dragons,* though he had plenty of help from Dave Arneson and others. He did, however, do more to popularize it than anyone else, and was a frequent fixture at gaming conventions. He passed away in 2008. Photo by Moroboshi.

experimenting with fantasy-based miniature wargames with *Blackmoor*, a medieval barony of his own creation. Instead of corps or armies, *Blackmoor* lets players control a single character who gains increased strength and new abilities as he or she wins battles. Arneson's players were pleased with the game, but unhappy with the rather arbitrary way Arneson handled combat. Fortunately, he was in contact with Gygax, who sent him a copy of *Chainmail* to provide a more coherent structure to the fighting portions of the game. When Gygax himself sat down with Arneson to play the new game, he knew they had a hit on their hands. The new rules worked up by Gygax and Arneson became *Dungeons & Dragons*.

However, we must note that the history of *D&D* is more complex and controversial than this casual summary implies. Though Gygax and Arneson rightly receive much of the credit, there were many others involved, including David Wesely, an avid wargamer who also helped revitalize wargaming as a training exercise for the U.S. Army. According to Wesely, it was he who took the crucial step when he created a scenario in which players did not control armies, but rather individuals such as a

mayor or tavern owner. However, Wesely left for Vietnam soon after this innovation, leaving the nascent game in Arneson's hands.

Since this is a book about *computer* role-playing games, we'll refer readers interested in these matters to Shannon Applecline's three-volume series *Designers & Dragons* (2015), Jon Peterson's *Playing at the World* (2012), and Michael Witwer's *Empire of Imagination* (2015). Your plucky co-authors have also had the pleasure of discussing these topics with the experts on their respective interview shows: Refer to *Matt Chat* episodes 344–347 (with Michael Witwer), 369 (with David Wesely), and *Shane Plays Geek Talk* episodes 61 (with Michael Witwer), 65 (with Jon Peterson), and 112 (with Witwer and Peterson).

In any case, the combination of *Chainmail* and Arneson's *Blackmoor* was the special sauce. *Dungeons & Dragons* offers several key innovations to the well-established wargaming model. Playing a character rather than commanding a large force feels fundamentally different; the emphasis shifts from abstract tactical considerations to something more like improvisational theater. Players love creating and acting out characters such as a noble elf wizard, a cunning hobbit thief, or a gruff dwarf warrior. The game also shifts the role of the Game (Dungeon) Master from a referee into a full-fledged narrator, who keeps the story going in addition to enforcing the rules and arbitrating disputes among the players.

In a typical game of *D&D*, players go on an adventure, or story-based quest, either designed by the Dungeon Master or derived from a published module. A series of interconnected adventures is called a campaign, and the shared setting of these campaigns is called a campaign setting. TSR is still widely regarded today for its detailed and imaginative campaign settings, such as Forgotten Realms and Dragonlance, which are also used in some of the most successful CRPGs. Most are fantasy based, though there are others with science fiction and horror themes such as Spelljammer and Ravenloft. Of course, TSR was not the only publisher of role-playing games. Following in the wake of *Dungeons & Dragons* came a number of competitors with a wide variety of genres, such as Flying Buffalo's fantasy RPG *Tunnels and Trolls* (1975), Game Designers' Workshop's "hard" science fiction RPG *Traveller* [sic] (1977), Fantasy Games Unlimited's superhero-themed RPG *Villains and Vigilantes* (1979), and the *Generic Universal RolePlaying System* (*GURPS*), published in 1986 by Steve Jackson Games. The advantage of *GURPS* is that it can be applied to any setting whatsoever, fictional or historical.

Fallout, one of the best-known and influential CRPGs, actually started life as an adaptation of the *GURPS* tabletop RPG.

Between 1977 and 1979, TSR published *Advanced Dungeons & Dragons (AD&D)*, a better-organized and expanded version of the original that many consider less a sequel than an entirely new game (a reasonable view, considering "Basic" *Dungeons & Dragons* and *Advanced Dungeons & Dragons* were published simultaneously with new books and resources each for several years). Volumes like the *Monster Manual* provide rich detail to the game, making it seem nearly as vivid as Tolkien's Middle-earth. For our purposes, the most significant later editions are *Advanced Dungeons & Dragons,* 2nd Edition (1989) and *Dungeons & Dragons,* 3rd Edition (2000) (which was updated to "3.5" in 2003). These games make significant and sometimes controversial innovations and are used in several important CRPGs that we'll discuss in later chapters.

> *Shane:* Although mentioned in the first edition, *AD&D,* 2nd Edition is when the (in) famous THAC0 system became a widely used game mechanic. It stands for "To Hit Armor Class Zero (0)" and helped streamline the combat attack rules. OUCH! What the heck?
>
> *Matt:* What? I was just testing my THAC0.

Early *D&D* players often used miniatures imported from *Chainmail* or other wargames, though this feature was soon pushed to the fringes of fantasy role-playing. Since combat and other matters could be handled verbally, the miniatures seemed unnecessary or even a hindrance to some, even if they did help players visualize combat. Significantly, there have been very few purely text-based CRPGs, and even the earliest CRPGs were quite graphically advanced for their time. This difference makes sense when we consider that it is the verbal nature of *D&D* that makes it so appealing; a great part of the fun is the playacting. Specifically, players are asked to speak in character and to use first-person to describe their actions (e.g., "I cast a lightning bolt at the minotaur!"), preferably with an appropriate accent.

The most realized form of such play is called live-action role-playing, or LARPing, which can be described as improvisational theater with rules. LARP players dress up in costumes, wield (harmless) weapons, and address each other strictly as characters within the setting (Figure 2.5). In some ways, LARP

Playing through encounters and combats in a tabletop RPG without the use of a battle map and miniatures is called "theater of the mind" by most players.

FIGURE 2.5 Live-action role-playing, or LARPing, often involves elaborate props and costumes. Shown here is the Hardenstein Adventurers Group: (left to right) Anja Arenz, Chris Kunz, Dossmo, Niamh, Paolo Tratzky, and Svenja Schoenmackers. Photo by Ralfhuels.

is comparable to the activities of the Society for Creative Anachronism. Founded in 1966, the SCA is a historical reenactment group focused primarily on the Middle Ages and the Renaissance. SCA events typically include jousting, fencing, and archery, as well as non-combat-related skills like cooking, dancing, and even embroidery. A related activity is Renaissance fairs, though these are much more audience-oriented—visitors aren't expected to dress up or act in character, though doing so may be strongly encouraged (not to mention fun!). The SCA and Renaissance fairs are much less rule-oriented than LARP, but they're worth keeping in mind as part of the cultural milieu that led to (and continues to fuel) the CRPG. Garriott is just one of many CRPG designers active in the SCA, and he begins his masterpiece *Ultima IV* with a virtual visit to one of these "RenFairs." If you would like to learn more about the SCA, refer to *Shane Plays Geek Talk* episode 103 for a full discussion with a longtime member as well as the president of the SCA himself (who once wrestled a bear, no foolin').

If playacting is so vital to fantasy role-playing, you might wonder where the statistics come in. During the typical role-playing game, much of the number crunching is provided by the Game Master, who has a bevy

of tables and charts at his or her disposal. Players are asked to roll their dice at certain intervals to determine the outcome of various events (such as who will strike first in combat, whether a trap is successfully spotted or disarmed, and so on). One of the key questions in all such gaming is whether the math should be the focus of the gameplay or transparent, handled mostly behind the scenes by the Game Master.

For example, a warrior might be described in the game as a level 3, but it's ridiculous to think that warriors themselves would actually use this kind of terminology. Parodies make this point quite humorously, usually involving some arrogant wizard warning his enemies, "Back off—I'm a level 20." Other wits have poked fun at the idea of experience points. Several role-playing games introduce alternative systems, such as the skills-based system introduced in the 1977 science fiction game *Traveller*. The key difference there is a character creation system that factors in education and background. Basically, players can opt to have their characters begin with more education and better skills, but then face penalties incurred by age. Rather than striving to gain levels, characters follow a chosen career path, rising in rank to acquire wealth, titles, and political power (we'll see this model adapted for several CRPGs). In *Traveller*, player characters can suffer injuries or even die during character creation before the game actually begins! The 1978 game *RuneQuest* further refines the skills-based system, abandoning the class system and focusing entirely on skills (comparable to the role-playing system in Ion Storm's *Deus Ex*). Combat is considered just another branch of skills, and gamers can easily adapt the system to cover other genres. *D&D* itself has adapted its rules in modern editions to allow players to either roll their characters randomly with dice or use a point-based buy system.

Nuances aside, all fantasy role-playing games require a statistics-based rule system to provide structure for the playacting and make-believe; without them, the game would seem hopelessly arbitrary and, assuming you're not in it totally for the improv, probably not much fun to play. What we'll see over the course of this history of CRPGs is this tension between math and narrative, with some games hiding most of the math from the player, whereas others foreground it.

In 2000, Wizards of the Coast (who had acquired TSR in 1997) published the aforementioned *Dungeons & Dragons*, 3rd Edition, introducing a "skills and feat" system and fewer class restrictions. These changes allow players significantly more options for personalizing their characters. The 3rd Edition also simplifies some of the more complicated calculations

such as altering THAC0 to the "AC 10" mechanic, while at the same time adding crunchier tactical combat mechanics like attacks of opportunity. Not everyone is happy with these changes, naturally, arguing that in some cases they simply dumb down the game so that younger or less-dedicated players can understand the gameplay (the old anti-"n00b" elitism we noted in the preceding chapter) and in other cases change the game simply for the sake of selling more books. We'll see a similar sort of complaint when we discuss the action role-playing games like Blizzard's *Diablo* (1996), which some old-school CRPG fans argue are too simplistic and designed purely for the masses.

As noted previously, it is all-too-easy to get carried away and assume that CRPGs are little more than computerized adaptations of *D&D*. This claim disregards one of the most critical aspects of conventional *D&D*—namely, the playacting. As Daniel Mackay, author of *The Fantasy Role-Playing Game*, puts it, "In the role-playing game the rules are but a framework that facilitates the performance of the players and the game master." Though it's certainly possible for a CRPG fan to pretend to be a character, even going so far as to dress the part, it is doubtful that the computer appreciates these antics. Furthermore, the scope of possible actions is greatly reduced when a gamer is playing with a program rather than a creative and deft Game Master, who can always find ways to deal with unexpected developments and even reward such behavior. This limitation is particularly felt during dialog sequences in CRPGs, where the player is often presented with only a small menu of preprogrammed choices instead, of, well, the whole range of human language.

Of course, one place where we see this distinction wearing away is in online role-playing games, first in MUDs (multiuser dungeons) and now in MMORPGs (massively multiplayer online role-playing games). With now-ubiquitous equipment such as headset microphones and ever more realistic graphics, it is possible that the performance aspects of traditional fantasy role-playing will reemerge. However, let us table this discussion for now (pun intended).

COLOSSAL CAVE ADVENTURE

So far, we've identified sports simulation games, wargaming, and fantasy role-playing games as the progenitors of the CRPG. The technical correlations are easy to see. Each of these games relied on statistics and random numbers (dice) to model imaginary events, be they baseball games, Civil War battles, or wizard duels. More important, however, is their cultural

impact. Although people have played games in every society, it's still common to hear them described primarily as activities for children, with the few exceptions (board, card, and dice games) viewed either as frivolous amusements or opportunities to win money.

Games like *Strat-O-Matic, Chainmail,* and *D&D* helped form a subculture of gamers, particularly among teenagers and young adults. The more hardcore of these gamers spend a great deal of time not only playing but thinking about and discussing these games with others. Many create their own variations or even entirely new games to share with friends. For a small but increasing number of people, gaming is no longer "just a hobby" or something to be grown out of, but a lifestyle—one that demands active engagement. It's not, however, entertainment for the masses. According to one large manufacturer, "It's not a mainstream hobby; it requires too much active participation from the participants to ever capture a significant part of our society who have been spoon fed passive entertainment all their lives." Of course, these gamers have long been viewed with suspicion or disdain by many around them. Undoubtedly, the game that caught the most flak was *D&D*, which was the subject of all manner of wild and unfounded accusations that we need not rehearse here. Fortunately, it would take more than a few naysayers to quash gaming culture.

One man who contributed greatly to that gaming culture is Will Crowther, known to history as the author of the famous *Colossal Cave Adventure* and the founder of the interactive fiction or adventure game genre. Also known as *Adventure* or simply *Advent, Colossal Cave Adventure* immerses players into a virtual world full of puzzles and perils (Figure 2.6). Although graphical games had existed at least since 1962, Crowther's game is composed entirely of text, a fact that hastily led to its label as "interactive fiction." Gameplay consists of reading brief passages of text (describing the character's location or visible objects) and responding with simple, two-word commands (e.g., "GET TORCH," "GO NORTH"). Although certainly primitive by the standards of later text-based adventure games, *Colossal Cave Adventure* nevertheless established a new gaming paradigm.

Crowther, a professional programmer, designed his game sometime in 1975 and distributed it on the ARPANET, the progenitor of today's Internet. Since it was available only on large and expensive mainframe computers, its audience was limited, but word got around. While many *Colossal Cave* fans were content just to play the game, others wanted to improve it. In 1976, a twenty-two-year-old Stanford graduate student named Don Woods

```
Colossal Cave Adventure ▸ Score: 36 ▸ Turns: 3

Please answer the question.  Would you like more instructions?

> no

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.

> look

Sorry, but I am not allowed to give more detail.  I will
repeat the long description of your location.
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.



What's next?
```

FIGURE 2.6   Text adventure games like *Colossal Cave,* shown here, rely entirely
on textual descriptions and inputs for immersion. They're not as popular today
as they were in the early 1980s, but new ones are still being made and enjoyed by
fans of the genre.

acquired Crowther's permission to improve and expand his game, adding
several fantasy elements (though Woods officially denies using Tolkien's
works or *D&D* as inspirations for his work). Later adventure games like
Infocom's *Zork* (c. 1977) and Sierra On-Line's *King's Quest* (1984) descend
from Crowther and Woods' groundbreaking game.

Although many people acknowledge the link between *Colossal Cave
Adventure* and the first CRPGs, the relationship is not obvious. *Colossal
Cave Adventure* is not a CRPG, though it introduces several key innova-
tions that paved the way to that genre. To help us better understand the
relationship between this early adventure game and CRPGs, it's worth-
while to compare Crowther's original game with Woods' revised version.

Crowther was an avid caver, and he and his wife Pat had spent a great
deal of time exploring Mammoth Cave in Kentucky. The cave, with its
spectacular caverns with wonderful names like "Hall of the Mountain
King," made a lasting impression on Crowther. Crowther wanted to create
a game for his daughters that would combine the pleasures of caving with
that of his other hobby, fantasy role-playing. The end result was mostly a
caving simulation, albeit with a few fantasy elements, treasures, and puz-
zles thrown in for fun. Woods' contribution was to make these "fun" ele-
ments much more central to the gameplay.

In effect, by focusing the player on puzzles, Woods pushed the game away from role-playing and further toward what would eventually become the adventure game as we know it today. The text-based version of this genre would peak in the 1980s with the many hits of Infocom, but it is survived by independent developers and even limited commercial operations. Sierra On-Line introduced the first graphical adventure game, *Mystery House*, in 1980, but it really wasn't until its *King's Quest* series (1983) that the industry moved away from text. Later, companies like LucasArts and Cyan innovated or refined the genre. As immersive as these games may be, their lack of a statistical-based combat or skills system means we shouldn't conflate them with CRPGs.

Indeed, the brilliance of *D&D* is precisely this statistical system for determining the outcome of combat and other unpredictable events (whether characters spot a trap, detect an illusion, and so on). Rolling some dice and looking up the outcome on a standardized table seems much fairer than, say, a Game Master declaring a character dead because the player swiped the last Mountain Dew. As Lawrence Schick, the "Lore Master" of *The Elder Scrolls* series puts it, "The rules hold the group creation together and keep it from becoming mere chaos by committee." In short, what's really clever about *D&D* is the way it's able to combine the illusion of "anything goes" with this practical and formalized set of rules that make it seem fair for all involved.

It's revealing to consider how adventure games handle the same issue. Although adventure games *Colossal Cave Adventure* and *Zork* may provide the illusion of total freedom, in actuality the player is limited by the relatively small set of commands recognized by the parser. Indeed, one of the most common invectives hurled against any adventure game (textual or graphical) is that only one solution to a problem has been implemented, when the player can easily imagine several very plausible alternatives. Espen Aarseth, a key figure in the academic study of video games, goes so far as to call these games "autistic." In any case, their linearity allows even the brightest players to get hopelessly stumped on a puzzle and unable to continue.

As we'll see, CRPGs ease this problem by channeling the players' energies into a much smaller set of activities, particularly combat. Players fight wave after wave of monsters, usually in pursuit of some quest or mission. However, the trade-off here is that even though these battles may be difficult, there's always a chance the player will succeed if he or she is persistent (eventually those dice rolls will work out to the player's advantage).

> *Shane:* Let's be honest, a longtime "advantage" of many CRPGs over their tabletop cousins is that you can save your game right before a battle and then embark on a "save scumming" spree, reloading over and over until you win the battle either through sheer random luck, better tactics, or trial and error. Most people look down their nose in public at this practice, but still do it when no one's looking. Prove me wrong, baby!
>
> *Matt:* Reload that comment and try again.

On the other hand, if an adventure gamer gets stuck on a puzzle, the game comes to a grinding halt. Furthermore, even though a CRPG might seem linear because players have no choice but to engage in so many battles, they can usually take these opportunities to improvise new strategies. Indeed, in all but the most uninspired dungeon crawls, players are offered a wealth of options for dispatching their foes (i.e., combinations of spells, melee or ranged combat, party configurations). Particularly difficult battles can require substantial trial and error before players stumble upon a viable means of achieving victory.

Furthermore, the randomness of CRPGs makes them fun to play over and over, even after the last dragon is defeated. By contrast, with games like *Colossal Cave Adventure,* once players have figured out all the puzzles, there is little reason to replay the game. One approach for dealing with this issue is simply to make the games longer and longer, adding more puzzles and rooms, or ratcheting up the difficulty level to force players to spend more time getting through the puzzles (this tactic usually leads more to frustration than satisfaction, however). Modern adventure game developers still wrestle with these issues.

Other programmers who played Crowther's game took it in a much different direction than Woods and Infocom. These programmers, whom we'll discuss later, took the concept of text-based exploration pioneered in *Colossal Cave Adventure* and wedded it to the statistical combat system made popular by TSR's fantasy role-playing games. Who did what first is controversial, but in any case, one of the earliest and most influential games is Roy Trubshaw and Richard Bartle's *MUD*, created in 1978. *MUD* (*Multi-User Dungeon*) allows many players to explore the virtual world together, teaming up to fight monsters, and the word *MUD* is now commonly used to describe any game that matches this description. We'll discuss MUDs and other early mainframe CRPGs much more later.

In short, Crowther and Woods' *Colossal Cave Adventure* performed a number of feats that proved essential to modern CRPGs. The most important of these is the creation of a virtual world and the means to explore it. The game also contains magic and monsters to overcome, even if the combat is not based on a statistical system. For instance, players must periodically throw an axe at dwarves to kill them. However, the character doesn't level up no matter how many dwarves are slain. Furthermore, when the player encounters a dragon, the solution is simple (spoiler alert!)—the player just kills it with his or her bare hands. This battle seems more like a spoof of *D&D* than anything else, since players expect a battle with a dragon to be a serious undertaking. The way such encounters are lampooned here suggests a line in the sand between the two genres.

In the next chapter, we'll turn to the first true CRPGs, which emerged as early as the late 1970s. Unfortunately, many of these games are not extant, and a great deal of critical information (release dates, names of programmers, and so on) is lost to history—thus warranting the name Dark Age for this obscure but historically vital period.

NOTES

1. See J. Fleming's "We See Farther—A History of Electronic Arts" at https://tinyurl.com/ybvmw75n.
2. For religious reasons, Tolkien preferred to call himself a "subcreator" rather than a "creator," which to him sounded blasphemous.

The Dark Age

"Let's have fun with rules and statistics!" Saying this to a group of young people will garner more groans than gratitude. However, rules and statistics are what make games such as *Strat-O-Matic, Chainmail,* and *Dungeons & Dragons* possible. Take them out, and these games are no more than make-believe. While there's nothing wrong with kids pretending to be knights and orcs, a real game needs more formal structure—rules or guidelines that players can refer to in times of disagreement ("Whoa— you're a wizard! You can't wear plate mail!"). Without such rules, these games would be arbitrary; some kid would always be making up whatever rules were needed to win the game.

However, the rules need to be flexible enough to accommodate the unpredictable and the unexpected. In real life, we seldom know precisely what will happen as a result of even our best-informed decisions, and a realistic game should take the whims of fortune into account. On the other hand, if the game is too random, it can quickly get absurd. Sure, it's possible that a tiny kobold might kill a giant ogre with a well-aimed stone from his sling, but it'd take a miracle. What's needed is a careful balance, with just enough randomness to make the game exciting. One of the many reasons *Dungeons & Dragons* became so popular was the rational and sophisticated way it handled so many unpredictable phenomena, requiring just the right ratio of dumb luck to smart planning.

> *Shane:* Most RPG systems, tabletop and otherwise, will use game
> mechanics such as the critical hit (i.e., rolling a "natural
> 20" on a twenty-sided dice) and critical fumble (i.e., rolling

> a "natural 1") to allow for rare but spectacular successes (such as that kobold and ogre scenario) and failures while still maintaining carefully crafted game balance.
>
> *Matt:* I'm still trying to decide which one of those I rolled the first time I met you.

However, working with so many complex calculations gets cumbersome, and it's easy to make mistakes. Furthermore, the rules are often ambiguous, leading to conflicts among players and Game Masters more reminiscent of courtrooms than Camelot. Today, of course, the solution is obvious—let a computer handle the math and objectively enforce all those rules. However, affordable personal computers were still out of reach in the late 1970s, and players had to make do with oddly shaped dice, pocket calculators, and a set of thick volumes to help resolve disputes. Many of the rules and conventions were borrowed from the world of wargaming, in which an obsession with accuracy and meticulous calculation was the norm. For many players, though, these features of the game were but necessary evils. A computer could shoulder some of this burden and allow players to focus on the activities they found much more appealing.

Thankfully for the future of CRPGs, at least one group of gamers did enjoy at least intermittent access to computers—college students. By the early 1970s, it was rare to find a major college campus that didn't have at least a few mainframes, such as DEC's PDP-10. The earliest CRPGs and MUDs emerged during the 1970s on these powerful but expensive machines. Of course, many university administrators, faculty members, and no doubt a few boards of regents didn't want to see these machines being "wasted" on gaming. On most campuses, computer gaming was strictly forbidden, and when games were noticed by the wrong people, they were promptly and unceremoniously deleted. Sadly, until programmers learned to print out their source code as a backup measure, many historically critical CRPGs were lost to history.

PLATO AND THE MAINFRAME ERA

Many students had access to a powerful and flexible learning system called PLATO, an advanced time-sharing system that supported many simultaneous users on one mainframe. Unlike today, when many of us have our own dedicated machines, back then the typical model was to connect a giant mainframe computer to several "dumb" terminals. Although PLATO had been designed and promoted as a way for students to work on

lessons, users quickly discovered the joys of chatting and gaming; it led to the first online communities. It also let users make new programs or "lessons" using a programming language called TUTOR.

It didn't take long for enterprising students to put together the first CRPGs. We know little about these early efforts—they were, after all, often forbidden by campus policy, and few people had the foresight to realize that history was being made. All they saw were some unruly students breaking the rules. The result is that we have only the sketchiest details of these early CRPGs—they truly existed in a Dark Age, with few credible sources to verify what people at the time so fondly remember. In any case, it is certainly irresponsible to declare any of these early games the first CRPG until more reliable information becomes available. Indeed, at least a few websites claim that one or another CRPG was created before Gygax and Arneson published *Dungeons & Dragons* in 1974! Such a feat seems unlikely at best, though not impossible—after all, Gygax and Arneson had been developing and play-testing the system before 1974, and it's possible that word leaked out to programmers.

The best we can do here is discuss a few of these early efforts to create CRPGs and try to give some impression of what playing these games was like. One such game was *pedit5,* authored by Rusty Rutherford for PLATO. Rutherford, a PLATO programmer for the Population and Energy Group, had been playing *D&D* since 1975 and heard that a computer game called *DND* was already in development, but he still decided to try his hand at it. According to Rutherford,

> I had to compromise a lot. First of all, the multiplayer feature was often promised but never implemented, so I wrote a solitaire game. The available storage space only allowed for a single-level dungeon with 40–50 rooms. The dungeon design was the same for every user, but the monsters and reassures were random—created at the same time as a new character, and stored with the character record. Only about 20 characters could be stored; when the game became popular, this turned out to be a real hassle.
>
> I used the basic features of *D&D* as much as possible: hit points, monster levels, experience and treasure awards, and so on; the character was a combined fighter/magic user/cleric; in a monster encounter, the character had a choice of fight (F), cast a spell (S) or run (R); after that, if the monster was not defeated or avoided, it was a fight to the finish run entirely by the computer.

It should be apparent that this was a very primitive game, but the visuals (the PLATO plasma panel) made it quite tense and surprisingly addictive. I wrote it all in about 4–6 weeks in the fall and winter of 1975.

Another game that might lay claim to being the first CRPG is Don Daglow's *Dungeon,* written sometime between 1975 and 1976 for the PDP-10 mainframe. Daglow's game offered multiple players the chance to band together to explore a dungeon, earning experience points and leveling up as they progressed. Though represented entirely in textual characters, it features a line-of-sight display, realistically depicting what the characters could and couldn't see. The game was distributed by DECUS, a user group composed of DEC programmers. DECUS also played a role in distributing and popularizing other important games of the era, such as the mainframe versions of *Colossal Cave Adventure* and *Zork.*

We know more about *dnd*, a graphical CRPG for the PLATO platform programmed by Gary Whisenhunt and Ray Wood in the mid-1970s. The game contains most of the genre's staples, such as the ability to create a custom character, a leveling system based on experience points, a general store, and monsters that get tougher the deeper a player descends into the dungeon. The game also has a plot: enter the Whisenwood Dungeon, kill a dragon, and retrieve his orb. This orb-fetching quest will show up again and again in later CRPGs. The game was in continuous development until 1985 and influenced many pioneering CRPG developers.

Incidentally, around this time Daniel Lawrence created a game named *DND*, not to be confused with Whisenhunt and Wood's game, *dnd*. Lawrence's game was written for the TOPS-10 operating system, which ran on DEC's PDP-10 mainframe. The game was a hit at Purdue, where Lawrence was a student. Lawrence later ported it to the TOPS-20 system, and it circulated among DEC's employees. The game would later cause a legal headache when Lawrence used *DND*'s code in his *Telengard* game, a commercial product published by Avalon Hill for home computers. In September 1983, DEC officially ordered the game purged from all of its computers to avoid litigation. Further legal issues over *DND* arose in 1984, when a company named R.O. Software ported the game to MS-DOS under a $25 shareware license—without bothering to get Avalon Hill's or Lawrence's permission.

There are several other CRPGs written for PLATO between 1976 and 1979, such as *Oubliette* (1977), *Moria* (1978), *Avatar* (c. 1979), and *Orthanc*

(1978). These games are largely based on *dnd*, though they offer innovations. For example, they all allow simultaneous multiplayer romps through their dungeons. Except for *Orthanc*, they also have a first-person, 3D view of the dungeons, which crops up later in Sir-Tech's *Wizardry* games.

Moria, Avatar, Orthanc, and *Oubliette* are all currently available for play at https://www.cyber1.org, a modern reincarnation of PLATO. The version of *Moria* was updated in some fashion in 1984, though the earliest copyright notice was 1978. The authors credited are Kevet Duncombe and Jim Battin, and they did some impressive work. The in-game user guide and help options are highly detailed and well written, in stark contrast to most of the early CRPGs for personal computers, which were forced by memory restrictions to print such material in a manual. Like *Oubliette*, *Moria* has a tiny first-person, 3D view of wireframe dungeons and allows for multiple players (indeed, many of the more interesting aspects of the game require players to group up with other adventurers). There are many intriguing innovations here that aren't seen in other games, such as a magical string that players can tie in a room and then follow back if they get lost (the manual warns that monsters will occasionally chew through the string). The screen also displays other useful information, such as the player's condition and inventory (Figures 3.1 and 3.2).

> *Shane:* Perhaps the first time someone speculated it was a monster that had eaten through his or her string, players referred to it as "early CRPG string theory."
>
> *Matt:* I theorize your string was chewed through years ago.

There are only four player stats in *Moria*: cunning, piety, valor, and wizardry, which link up nicely with the four guilds advanced players may join: the Thieves' Guild, the Brotherhood, the Union of Knights, and the Circle of Wizards. Members of these guilds gain special powers that affect the entire group the player is traveling with—for instance, a wizard can teleport the party to a new location. There is also a skill system here that tracks the players' actions and awards skill boosts depending on their frequency. Instead of hit points, characters have vitality, which is used up by engaging in combat or other actions. Vitality will recharge automatically if the player has food and water on hand. All in all, *Moria* is an enjoyable and sophisticated game.

Avatar is in many respects comparable to *Moria*, though perhaps less inviting to novices. One version lists 1979 as the earliest release date, but

FIGURE 3.1 Shown here is the title screen of *Moria,* a multiplayer CRPG running on the PLATO system.

several later versions were produced (up to 1984). Though it's not clear who did what or when, the six authors credited on the menu screen are Bruce Maggs, Andrew Shapira, David Sides, Tom Kirchman, Greg Janusz, and Mark Eastom. *Avatar* is a good example of a game that was freely modified and built up over time—what we now call the open-source or free-software model of development.

The screen setup is almost identical to *Moria*'s, though the small first-person view of the dungeon is located in the top center of the screen rather than on the left. *Avatar* offers ten races (including uncommon ones such as "cirillian" and "morloch") and a more traditional stat system with hit points and standard attributes (strength, intelligence, wisdom, constitution, etc.) One of the game's strengths is its extensive inventory of items that range in quality—such as bronze, iron, or steel swords. Combat is very similar to *Moria*'s; the player simply exchanges

FIGURE 3.2   Another screen showing *Moria's* gameplay.

blows in the random encounters until one combatant prevails. The game is quite challenging; you may create and equip a character only to have him or her die a few minutes after leaving the safety of the city. Clearly this game would be easier (not to mention more fun) with a group of friends (Figure 3.3).

Oubliette is yet another first-person, 3D game, again with plenty of options for creating rather diverse characters. Of the lot, it's probably the one most closely based on TSR's official rules and J.R.R. Tolkien's writings. There are fifteen races with various stat bonuses and penalties, as well as fifteen available classes, each with a preferred type of armor, shield, helm, and weapon. Although single characters can wander the dungeons, it's advisable to travel in parties (the manual recommends at least four companions), who can be found in the various taverns in the city. There are also guilds for players to join and "charmees," or animal companions. Combat is also loaded with options, including the option to seduce, which can only be performed by females. A failed seduction can result in instant death, whereas success will force the opponent to become a loyal and dedicated companion. All in all, it's another highly sophisticated game. In 1984

```
m242
*m242
1st player of 1                    ⌐∏⌐          No Companions
Good (Good)                   1         ++
Wanderer (1)

                        ☠      ☠      ☠
    1.    1 Giant Centipede

                  You hit for 5 damage.


Hits          10/ 10   See the help lesson for complete list.
Spells           36    Keys that are active in city and dungeon
Spell level       1    M,Y    message/yell    +,- move in company
Att/Def        1/  4   p,l    pick up/drop body K leave company
Exp              63    T      track             H untrackable
Gold            214    U,P    use items/powers  G give gold/item
Age              18    I      level info        R save character
Human male             LAB    items, personal information, users
Str  12                Keys that are active only in the dungeon
Int   6                j,f,+,^ join/fight/autofight/autospell
Wis   6                1,2,3,4 select group to fight
Con  18                a,x,d  turn   A,X,D  turn, then move
Cha   6                W       forward   w  forward unless door
Dex   9                O,q,Q  open/exit/abandon treasure chest


Slot #5 now contains your Leather Cap.
Slot #6 now contains your Leather Gloves.
*Slot #7 now contains your Bronze Sword.
```

FIGURE 3.3 *Avatar*, shown here, puts a lot of emphasis on groups and clans, rather like the guilds of modern MMORPGs.

it was ported for personal computers by the main author, Jim Schwaiger. It was also a direct influence on Robert J. Woodhead, one of the creators of the commercial hit *Wizardry*.

Unlike the previous three games, *Orthanc* (Figure 3.4) offers a top-down perspective and a wonderful automapper tool in the lower right corner. It's quite helpful while exploring the game's twenty levels (based on 24 × 20 cell grids). It seems largely based on *pedit5* and is still undergoing development.

Though PLATO is not so well known today, it served these pioneering CRPG developers well, and no doubt many successful CRPG developers cut their teeth on these early programs. However, we should of course bear in mind that only a select few had access to these powerful systems; many,
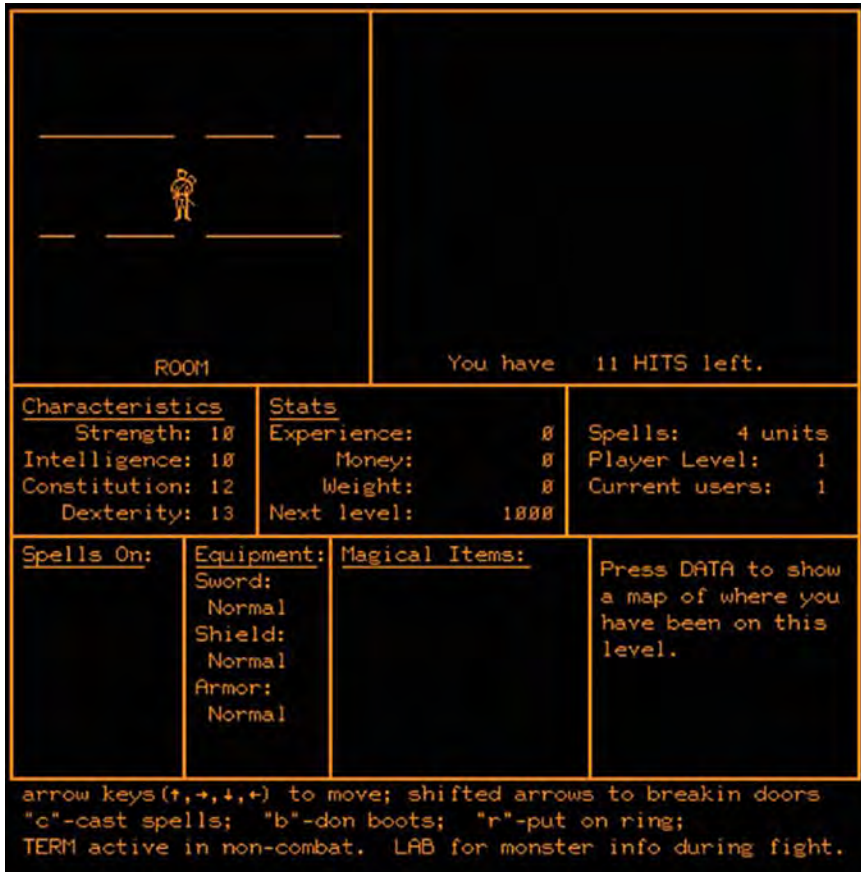
FIGURE 3.4   *Orthanc*, shown here, has a top-down view and a handy automapper.

if not most, CRPG fans would have to wait for the personal computer revolution before getting hands-on experience with one of these fascinating games.

ROGUES IN THE COMPUTER LABS

The most famous of all the mainframe CRPGs is *Rogue* (Figure 3.5). This game was created in the early 1980s by Michael Toy and Glenn Wichman for the UNIX operating system. Unlike PLATO, which as we've seen allowed for rather sophisticated graphical displays, the more common terminals of the era were limited to ASCII, a set of numerals, letters, punctuation marks, and other characters for displaying information. Furthermore, the way each terminal handled text and cursors varied from brand to brand, another major obstacle for anyone attempting graphics.

```
You scored an excellent hit on the hobgoblin--More--



                                    --------------
                                    !............!
                                    !............!
                                    !............!
                                    ----+---------
                                        ##########
                                      ----------+---
                                      !.........+
                                      !.......@..!
                                      !.......H..!
                                      +.........!
                                      !...*......!
                                      -----------+-




Level: 2   Gold: 31      Hp:  5(12)   Str: 16  Ac: 6    Exp: 1/4
```

FIGURE 3.5   This early version of *Rogue* may not look like much, but its innovative procedurally generated dungeons spawned a whole subgenre of CRPGs that are still being made today.

The missing ingredient was Curses, a "cursor optimization library" developed by Ken Arnold. Toy and Wichman used Curses to control the display and arrangement of the ASCII characters on the screen to form dungeon walls. It also let the player move the "cursor," or in this case his or her character, within these dungeons. Finally, it ensured compatibility across the smorgasbord of rival UNIX terminals.

The game really gained a boost when it was included with BSD UNIX, a very popular version of the operating system developed at the University of California at Berkeley (where Toy was a student). This meant that the game was now available at university campuses all over the world. Later on, the *Rogue* team signed a deal with Epyx to distribute the game for home computers, but, sadly, their commercial efforts failed miserably. However, the game was wildly popular on the public domain and shareware scenes and has been ported to hundreds of different platforms.

There are three features that set *Rogue* apart from most CRPGs. Perhaps the most obvious is the graphics, which are entirely composed of the character set available on any particular platform; numbers, letters, and symbols are mixed together to depict the scene. For example, the player's character is usually represented with the @ sign; monsters are depicted by letters of the alphabet (*a* for aquator through *z* for zombie). A more fundamental characteristic of *Rogue* is that the dungeons are randomized

each time a player starts a new game with a procedural content generation system—thus, there are always new areas to explore. Though we've seen this in plenty of other games, *Rogue*'s greater availability and accessibility gave it significant advantages over the PLATO games.

The mission is simply to descend into the Dungeons of Doom and fetch the Amulet of Yendor (it's easy to see the similarity to Whisenhunt and Wood's earlier *dnd*). A less typical aspect of the game is that it doesn't offer a General Store where the player can buy new equipment. Instead, all arms, armor, and magic items must be found in the dungeons, either on the floor or on corpses. Finally, the game implements the "fog of war," which means that instead of showing the entire map, players uncover it gradually as they explore. Monsters roam freely in these dungeons, but players can only see the ones in the room they're currently exploring.

Wichman was rightly proud of *Rogue,* which quickly became the most popular game on college campuses. "It was interesting to see the surge of adrenaline you'd get when you'd see a *T* on the screen," recalled Wichman. "That *T* was a troll, the first really threatening monster you'd see if you were doing well. You could watch people hitting the keys harder, thinking it would help them beat it. We'd hear screams."

Rogue inspired hundreds of other games that are usually categorized as "Roguelikes." These include *Hack* (1982), *Larn* (1986), *Moria* (1983),[1] *Ancient Domains of Mystery* (1994), and *Angband* (1990), to name just a few. *Hack* adds stores and pets, which follow the player's character and serve as sidekicks, fighting and even leveling up along with the character. *Nethack* (Figure 3.6), released in 1987, is a later version of *Hack*, whose development was facilitated by the Internet (one of the earlier projects to benefit from it in terms of development as well as distribution). *Angband* is based on Tolkien's works and has also spawned many derivatives. *Ancient Domains of Mystery* (also known as *ADOM*) is the most hardcore of the bunch. It offers a myriad of options for character development and is celebrated for its die-and-learn gameplay—players are not allowed to have multiple saved versions of their character, so there is no way to restore a dead character.

In 1984, Toy joined with Jon Lane to form Artificial Intelligence Design, a company that published the first commercial version of *Rogue* for the IBM PC and Apple Macintosh platforms. We'll have more to say about these efforts in Chapter 6.

For some CRPG fans, *Rogue* or one of the many Roguelikes are the best games the genre has to offer despite their humble graphics. Indeed, efforts to update these games with a graphical interface, such as Hansjörg

FIGURE 3.6 *Nethack* is one of the best of the Roguelikes with near infinite replay value. Here, the player has stumbled upon a djinni.

Malthaner's *Iso-Angbad*, have failed to impress many fans of the originals. Indeed, Malthaner claimed that "some people were openly hostile towards the idea of a graphical front-end." To date, most Roguelikes are still based on character set-graphics.

> *Shane:* Reinforcing the popular maxim in game development of gameplay first, graphics second. Which as a longtime gamer I fully, unwaveringly, and unequivocally support until my dying breath without exception. Unless, y'know, there's a quick buck to be made!
>
> *Matt:* You're reinforcing my popular maxim that you're an unwavering and unequivocal knucklehead.

WALLOWING IN THE MUD

We've already mentioned a few games that cater to groups of players rather than solo adventurers. These games typically focus more on social interaction among players than on tactical combat and earning experience points. They were well suited for mainframes, where users were already connected via a series of terminals. Since users were already networked together, making a multiplayer CRPG was a relatively straightforward endeavor.

By contrast, the majority of home computer users were limited to stand-alone games. The Internet as we think of it today did not exist. Instead, proprietary online services such as America Online and CompuServe granted fee-based access to multiplayer online games (at a price that was compounded if the gamer had to dial long-distance). Furthermore, slow modem speeds and lack of graphics support made anything beyond ASCII-based graphics infeasible. Since playing these games could get quite expensive, it wasn't until the rise of the Internet in the 1990s that graphical MUDs (multiuser dungeons, precursors to modern MMORPGs) hit the mainstream.

In short, when we study the history of the MUD (Figure 3.7), we see a lag between the dawn of personal computing and the rise of the Internet. Although plenty of single-player CRPGs were released for machines like the Apple II and Commodore 64, online multiplayer games were mostly limited to gamers with access to a mainframe. As noted above, the bulk of these were noncommercial, free-to-play games that had few graphics beyond what could be done with text or ASCII characters. Nevertheless, thousands of gamers would come to love these games, and it's understandable why many of them would scorn the humble offerings on personal computers, which didn't allow any of the social elements that made MUDs so addictive and compelling.

```
This is a pleasant dale, hugging the slopes of a huge forest-covered
escarpment which rises to the south. East is more forest, but the dale curves
southeastwards behind it. West is a slope of scrubland, which rolls down to
the sea beyond. North is a railway line, which runs from east to west,
standard gauge.
A nanny goat is tethered here.
*examine goat
You can examine 'til your heart's content, you won't find anything special.
Heavens, if I let folk examine things they'd spend the whole game doing it!
*slap goat
You'll have to try something else, I don't understand the first word
(which should be an action).
*kill goat
*The force of a forehand by the goat sends you staggering.
Yet courageously you pull through, and hurl yourself into the fight.
*Your follow-through blow sends the goat backwards!
*You are wounded by the weight of a lunge from the goat!
Summoning strength you concentrate, and start into the slaughter.
*Your retributive whack sends the goat staggering!
```

FIGURE 3.7 Early versions of MUDs closely resembled text adventure games, but looks can be deceiving. These are multiplayer games with persistent worlds and plenty of combat.

The original MUD was created in 1979 by Roy Trubshaw and later expanded and improved by Richard Bartle. Both men were students at the University of Essex in the UK. Written for the DEC PDP-10 with the TOPS-10 operating system, the game is simply titled *MUD*, an acronym for *Multi-User Dungeon*. The name pays homage to an adventure game named *Dungeon*, which would later be published as the *Zork* trilogy by Infocom (both Trubshaw and Bartle had played both *Zork* and *Colossal Cave Adventure*). When Trubshaw was introduced to *Dungeons & Dragons,* he "got to thinking about writing my own version of *ADVENT* but based on *D&D* type character generation."[2] When Trubshaw serendipitously uncovered the source code for *Colossal Cave Adventure,* he was finally inspired enough to begin work on *MUD,* incorporating a database to make the system more efficient to program. When Bartle joined the project, he began creating a dungeon and requested that Trubshaw extend the parser to enable more creative gameplay—including the all-important randomized combat system. After Trubshaw left the project, he handed Bartle roughly a quarter of the code that Bartle expanded into *MUD.*

MUD became wildly popular—so popular, in fact, that administrators worried the game was wasting too much of their computers' resources. However, the officials allowed gamers to play—so long as they logged on only in the wee hours of the morning, with a bit more flexibility for weekends. Even with these restrictions, the game had no shortage of players. Several derivatives were soon underway, including *MIST*, *BLUD*, and *Rock*, a game based on the TV show *Fraggle Rock*. *MUD* was eventually hosted by the commercial CompuServe network under the name *British Legends*, where it attracted a large American following. Once he realized that the game had commercial potential, Bartle officially placed the name *MUD* into the public domain so that it could be used as a generic term rather than a trademark. Besides, according to Bartle, CompuServe found the name unattractive.

The influence of the early text adventures is easy to see in *MUD*, where the main goal is simply to gain enough points to "make wiz." The *Zork*-tradition of finding treasures and depositing them in the right location (in this case the swamp) is preserved, as well as the tongue-in-cheek descriptions of rooms. Furthermore, players earn points by performing various actions (e.g., shaking a baby rattle) in addition to combat. Combat is a relatively simple affair—players simply tell the parser what to kill and what weapon to use. Success boils down to three variables—the character's strength, dexterity, and stamina. As players accumulate points, their

characters gain levels, a process that boosts their stats. Furthermore, characters at higher levels have a better percentage of success when trying to cast spells. However, it seems safe to say that the appeal of the game is more about interacting with other players than roaming about the countryside killing things.

Another early MUD was *Milieu*, a program written by Alan E. Kleitz in 1978. *Milieu* was written in a language called Multi-Pascal and ran on a CDC Cyber mainframe. It was originally intended only for educational purposes, but Kleitz rewrote the game in C and ported it to the IBM XT in 1983, renaming it *Scepter of Goth*. Kleitz ran the system on a pay-to-play system, supporting up to sixteen simultaneous users who connected via modem. The system was franchised, with rates running somewhere between $2 and $4 per hour (in addition, of course, to relevant long-distance charges).

Later MUDs, such as *M.U.D. II* (Figure 3.8), *Mirrorworld*, *AberMUD, Gods,* and *Shades*, added loads of new features and improvements to the design. Some of these were free, but others charged for access and

FIGURE 3.8 Later MUDs integrated color text and more sophisticated ANSI graphics and even simple animation. Shown here is *M.U.D. II,* still in operation.

were located on commercial rather than public networks. For instance, Simutronics' *GemStone* series ran on the commercial network GEnie. The game was first demonstrated in 1987 (*GemStone*), playtested in 1988 (*GemStone II*), and finally officially launched in 1990 (*GemStone III*). By the third iteration, the game was stable and attracting a healthy following. GEnie used an interesting gambit to promote the game: some players who found gems in the game would receive real gems as prizes. The game was based on Iron Crown Enterprises' *Shadow World* campaign setting, a competitor with TSR's *Dungeons & Dragons* franchise. Unfortunately, the relationship faltered, and the developers removed all references to the setting from *GemStone*, a move that also entailed substantial changes to the gameplay mechanics. Shortly afterward, the game became available on CompuServe and Prodigy, generating another large surge of players. The latest version of the game, *GemStone IV*, is available at https://www.play.net/gs4/.

Flying Buffalo, the role-playing game publisher of *Tunnels and Trolls*, took a different approach to commercial online role-playing. In 1982, it converted its popular play-by-mail game *Heroic Fantasy* for use on an early commercial network called TheSource. When the costs are tallied, this was quite an expensive game to play, even though gameplay consisted of only one to two turns per week. It cost $100 to register and $10 per hour to access TheSource, and each turn on *Heroic Fantasy* cost $2.50 (these figures are all in 1982 dollars; adjusting for inflation more than doubles these numbers). The system was no doubt more popular in its play-by-mail pen-and-paper version, in which such costs could be kept within the budgets of more gamers. The high costs of most commercial online games kept them out of the hands of most gamers until well in the 1980s.

Of course, there was nothing stopping groups of *D&D* fans from forming their own groups to play with over commercial networks. Special interest groups (SIGs) like the GameSIG on CompuServe were popular hubs for this type of grassroots gameplay. Players and Game Masters simply typed out the things they would ordinarily have said in a tabletop game, such as the results of dice rolls and room descriptions. Participants were often avid gamers who couldn't find fellow gamers in their local area, and again the members of these impromptu groups often became good friends who explored other mutual interests. Players might also be folks too shy to participate in face-to-face sessions; one magazine describes how a "five-foot tall teenager with a poor complexion can become a courageous fighter" or

an "overweight housewife with a sink full of dishes may be transformed into a sylph-like minstrel or a cunning sorceress." Despite these advantages, however, the games came at a high price: two hours of gaming per week cost up to $50 on CompuServe.

In 1989, an American named James Aspnes authored *TinyMUD*, based largely on an older MUD named *Monster*, an ambitious but poorly written program. *TinyMUD* lets players work together to create and extend virtual worlds. Aspnes envisioned it as a "vehicle for user-generated *Adventure*-style puzzles" but soon realized that the "social aspect seemed to be much more important." Though many users found the creativity liberating and fulfilling, at least a few critics complained about the haphazard construction of the worlds. Furthermore, players spent more time creating new areas than exploring the ones already there. Bartle quipped, "TinyMUDs are indeed limited only by the imagination of the builder—with heavy emphasis on the word 'limited.'"

As just one example of the kind of creativity allowed in world building by continuing iterations of MUD-like software, in the 1990s, a MUSH (described below) called *DarkMetal* (Figure 3.9) launched that allows the

FIGURE 3.9 DarkMetal, a MUSH first created in the early 1990s, is still accepting telnet connections.

vampires and werewolves of White Wolf's *World of Darkness* RPG set-ting to coexist (often in conflict) with a dystopian cyberpunk setting and its cyber-enhanced denizens. Your humble co-author Shane may or may not have spent entirely too much time telnetting into this amazing text-based world in the early days of widespread dial-up Internet access. He played a cyberpunk character named Slider with stylized lightning bolts on his pupils and who would make cyberspace runs with an electric blue mongoose as his avatar. Slider may have never burned Chrome, but Shane definitely burned precious hours at the keyboard more than once when he should have been sleeping!

TinyMUD became one of the most popular MUDs available on the Internet. Aspnes eventually made the source code publicly available, and derivative projects such as *TinyMUCK*, *TinyMUSH*, and *TinyMOO* quickly followed. One revealing aspect of these derivatives is their new acronyms (for example, MUSH was most often described as multiuser shared hal-lucination, and MOO as MUD object oriented); the multiuser dungeons were evolving away from their roots in fantasy role-playing and toward more general uses as online social environments, in essence becoming little more than sophisticated chat programs.

What's interesting about the history of MUDs is how they slowly evolve (or, as some might say, "devolve") from gaming to socializing. Even in MUDs that place more priority on combat and leveling up, there is still a strong emphasis on conversing with other players; indeed, MUD weddings are commonplace, and many people have found their real-life spouses on MUDs. In our own extensive experiences playing MUDs throughout the mid-1990s, we saw the pattern repeated many times. First, players are obsessed with finding the best equipment, fighting monsters, gaining lev-els, and rising in rank. Eventually, though, they are drawn into parties of other adventurers, where they not only pool their resources to fight bigger battles but also make friends. Inevitably, the player will spend more time socializing with these friends than going on quests or earning experience points. After a certain point, actually playing the game is worthwhile only when a player's friends are not online. Bartle describes this phenomenon as the main sequence, borrowing the term from the entropy of the life of stars (Figures 3.10 and 3.11).

It's for this reason that we insist on maintaining a distinction between MUDs (and their descendants, MMORPGs) and CRPGs. Although the two are related and have much in common, the socializing impulse of MUD players makes them into much different animals. We'll come back

FIGURE 3.10 Many people still play MUDs, though graphical interfaces have evolved to make them easier to play and navigate. Shown here is *Gemstone IV*.

FIGURE 3.11 *Lusternia: Age of Ascension* is a popular MUD with a constantly evolving world, extensive crafting system, and a vibrant community.

to this topic in later chapters that explore the rise of MMORPGs, so let's end our analysis of MUDs for the moment.

> *Shane:* You might even say we're going to get our feet out of the mud for now, eh?
> *Matt:* Here's mud in your eye!

THE END OF THE DARK AGE

As we've seen, the early history of both CRPGs and MUDs is often obscure. Since so many of these early yet pivotal games were intentionally deleted, poorly documented, or simply forgotten, reliable facts are hard to come by. There's no shortage of folks claiming to remember "for sure" about this or that, even if they frequently contradict each other's accounts on key details. This makes identifying the first CRPG a risky business. Indeed, as we'll soon see in the next chapter, it's just as difficult to name the first CRPG available for home computers, since publishers had a bad habit of postdating their copyright notices, and few had an adequate understanding of copyright law (a dire situation that led to countless court cases throughout the 1980s and well into the 1990s).

Nevertheless, with the arrival of the first commercial games for home computers, history becomes easier to document. For one thing, it's much easier to acquire these games and run them on a modern computer, whereas we must rely on secondhand accounts of games such as *pedit5* and *Orthanc*. Emulating a PLATO system, while certainly possible, is not an endeavor to be undertaken casually, particularly by people who aren't already familiar with the platform. Also, once game developers began releasing their games commercially, they had a greater stake in asserting authorship and protecting their code. In the next chapter, we'll explore the earliest CRPGs available for home computers. They debuted during a period of bold but often crude experimentation we've termed the Bronze Age.

NOTES

1. Not to be confused with the earlier *Moria* for PLATO.
2. See http://archive.gamespy.com/articles/january01/muds1/index5.shtm. Also, remember that *ADVENT* and *ADVENTURE* are other common names for Crowther and Woods' *Colossal Cave Adventure*.