

Part

I



Building Blocks

1



The Basics

Game design is an art form, and as designers, we grow by challenging ourselves often. Some are fortunate and good enough to do it professionally. Others design games as a part of their education or do it for personal pleasure (and the hope of reward).

This book was written by professional game designers. That means that certain terms will be flung about with an assumption that the reader actually knows what these terms mean. However, the authors realize that not all readers have experience working in the game industry. If we didn't define them or if we didn't give you an overview of the basics of game design, we would have failed to properly analyze our audience or meet its expectations. That's one of the cardinal sins of game design itself.

This chapter then serves as a tutorial or "intro level" to this entire book. If you're relatively new to the field of game design, this chapter is for you.

WHAT IS GAME DESIGN?

Game design is the process of creating the content and rules of a game. Good game design is the process of creating goals that a player feels motivated to reach and rules that a player must follow as he makes meaningful decisions in pursuit of those goals.

IT'S ALSO ALL ABOUT THE PLAYER

Good game design is player-centric. That means that above all else, the player and her desires are truly considered. Rather than demanding that she do something via the rules, the gameplay itself should inherently motivate the player in the direction the designer wants her to go. Telling players they must travel around the board or advance to the next level is one thing. If they don't have a reason and a desire to do it, then it becomes torture.

In creating a game, designers take a step back and think from the player's viewpoint:

- What's this game about?
- How do I play?
- How do I win?
- Why do I want to play?
- What things do I need to do?

MEANINGFUL DECISIONS

Distilled down to its essence, game design is about creating opportunities for players to make meaningful decisions that affect the outcome of the game. Consider a game like a boxing match. So many decisions lead up to the ultimate victory. How long will I train? Will I block or will I swing? What is my opponent going to do? Where is his weakness? Jab left or right? Even those few, brief questions don't come close to the myriad decisions a fighter must make as he progresses through a match.

Games invite players into similar mental spaces. Games like *Tetris* and *Chess* keep our minds busy by forcing us to consider which one of several possible moves we want to take next. In taking these paths, we know that we may be prolonging or completely screwing up our entire game. *The Sims* games and those in Sid Meier's *Civilization* series force dozens of decisions upon the player every minute. Few of these decisions are as direct as "Do you want to go east or west?" but each little decision affects the gameplay overall.

Agribusiness (see Figure 1.1) presents the player with numerous choices. Where will the player place the next crop tile? If it's a cheap crop, does he want to use his valuable land or place it on his opponent's? Does he want to uproot a cheap crop to place a more valuable crop instead? The decision by other players to place rocks around this player's water holes affects the player's ability to get more land and thus more crops.



FIGURE 1.1

Agribusiness (a.k.a. Farmer)—prototype 2.

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Not sure if games are nothing more than a series of meaningful choices? Take a look back at the last game you played and lost. Odds are that you know precisely where things started to go wrong. Some decision or series of decisions ultimately led to your downfall. We remember these things in the rear-view mirror, and through repeated play, we become less likely to falter in our decision making the further we go. What if you don't remember where things went wrong, though? Odds are that you didn't entirely grasp the rules, and once those rules got in motion, it didn't get any better. When players don't grasp the rules, they don't grasp the cause and effect of those rules. Sometimes, they lose badly but don't understand why.

Each of these is an example of meaningful decision making in a game:

- Troop placement in a real-time strategy game (RTS) or a turn-based strategy game.
- Point allocation during character advancement in a role-playing game (RPG)
- Choosing which piece to move in *Chess*
- Aiming and firing your weapon in a first-person shooter (FPS)
- Pressing the right buttons at the right time in *Guitar Hero*

Whenever the player is allowed to exercise choice in a game and that choice affects the outcome of the game, then designers are creating *meaning*. In order to create choice, there has to be another option that has meaning as well.

Sometimes, however, the player has no choice at all. Consider a game like *Monopoly*. Once all the property is purchased, what choice is there beyond “roll the dice and pay”?

Mind you, “roll the dice and pay” isn’t even a choice, since there are no other options. Unless house rules are invented to take it beyond this limited scope, there’s nothing more to do, and there are no more decisions to make. The player fully understands everything he needs to know about *Monopoly*, and the outcome of any given game becomes predictable. That’s why *Monopoly* can become boring for people after just a few trips around the board.

WHAT GAME DESIGN IS NOT

Game design is one of the most misused terms in use today. Some seek to learn game design, but learn game art instead. Still others learn pure programming. While programming and art are important fields and indeed incredibly important to digital games, game design is its own art form and has been around long before computers, polygons, and even the discovery of electricity.

It is these basic principles of game design that we cover in this book—design distilled down to its basic essence. Not surprisingly, many of today’s greatest game designers got their start playing and designing non-digital games, and some still use paper prototyping in their present-day designs.

When thinking of game design, think in terms of the board game *Go*, a Chinese game thousands of years old (see Figure 1.2). It requires no computer programming or polygon models to play. Yet its rules, simple as they are, allow for a depth of strategy so great that it is still played heavily today. While many of the games enjoyed today may not be as popular as *Go* a thousand years from now, there is no reason why such a game could not be created.



TYPES OF DESIGN

Just as there are many types of games, there are many types of game design, too.

- **World design** is the creation of the overall backstory, setting, and theme of the game. While it's generally performed by the lead or sole designer, it often determines the scope of the other design tasks listed below.
- **System design** is the creation of rules and underlying mathematical patterns in a game. This is the only game design task that is common to all games, because all games have rules. Therefore, most of the challenges in this book involve system design. In particular, Chapters 2, 5, 6, 7 and 8 give a starting point for system designers.
- **Content design** is the creation of characters, items, puzzles, and missions. While it's much more common in video games, role playing and collectible card games also feature a significant amount of content. Chapter 3 gives plenty of practice creating puzzles, while Chapters 9, 10, 19, and 20 involve incorporating special kinds of content within a game.
- **Game writing** is the writing of dialogue, text, and story within the game world. Chapter 9 deals with stories in games.
- **Level design** is the crafting of levels in a game, including the layout of maps and placement of objects and challenges within those maps. Though level design is a shared discipline—dungeon masters have been mapping levels in tabletop paper games since the 1970s—when one refers to a “level designer,” it is a video-game level designer that they are referring to.
- **User interface (UI) design** consists of two things: how the player interacts with the game, and how the player receives information and feedback from the game. Chapters 17 and 18 include many challenges of UI design. All types of games have UI, even non-digital ones. Boards are designed to fit on an average table and cards are designed to be held in an average-sized hand. The game components must present information that is easily understood, used, and interpreted by the players.¹

In addition to these specific types of design, all designers need to have the aptitude to produce a game or their assigned portion of a game on the medium they've selected, whether it's a board game, a console game, or even a television game show.

WHAT IS A GAME?

There are many definitions of the word “game,” none of which has been universally accepted for the purposes of defining the limits of game design. One of the authors of this book put forth the following tentative definition: “An activity with rules. It is a form of play often but not always involving conflict, either with other players, with the game system itself, or with randomness/fate/luck. Most games have goals, but not all (for example, *The Sims* and *SimCity*). Most games have defined start and end points, but not all (for example, *World of Warcraft* and *Dungeons & Dragons*). Most games involve decision making on the part of the players, but not all (for example, *Candy Land* and *Chutes and Ladders*). A video game is a game (as defined above) that uses a digital video screen of some kind, in some way.”²

In this book, and in our own careers, when we speak of a game, we are referring to games in general—from the ancient *Go* to the latest *Madden*. Digital or non-digital, the underlying fundamentals of a game and therefore of game design are all the same. Though technology may advance, modern video game designers use the same core skills today that were used when designing games on paper.

THE CORE OF A GAME

The “core” or “core dynamic” of a game is the single thing gameplay is about—the single play experience the designer is trying to convey. For instance, games in the *Ratchet & Clank* series are about blowing stuff up in fun and creative ways. *Risk*, *Carcassonne*, and *Go* are about acquiring territory. A core is usually tied to a specific “core mechanic,” be it blowing your enemies away, flipping over tiles on your turn, or selling units to another person. These core mechanics can, in turn, lead to “core dynamics,” which is a particular pattern of play. In the industry, when someone says “core,” the dynamic is typically what they are referring to. “Core statements” (sometimes called the game’s “vision”) are usually written by the development team to reflect the core mechanic or the core dynamic and sum up what the game is about, often in a single sentence.

- “This game is about...”
- “This game is the experience of being...”
- “This game teaches...”
- “This game simulates the experience of...”

As is well known by those who have tried to pitch their game to a publisher, if you can’t sum up your game in two sentences, you don’t have a game.

In games, the following core dynamics tend to show up again and again:

- **Territorial Acquisition:** With this core, things are usually “zero sum,” meaning there’s only so much to go around, and when it’s gone, it’s gone. Other times, it’s a question of controlling a piece of territory, as it is in some first-person shooters. Games like *Risk*, *Carcassonne*, and many turn-based strategy games feature this core dynamic.
- **Prediction:** Some games are about doing the right thing or being in the right place at the right time. In many cases, these are children’s games, although numerous carnival or party games also feature this core dynamic. All the individual mechanics in the game work toward allowing the players to guess what will happen, and they are rewarded for predicting the possible outcome of a game before it continues to the next round. Most times, the player’s prediction involves luck or consideration of odds. Games like *Roulette* or *Rock-Paper-Scissors* fit this core dynamic.
- **Spatial Reasoning:** Puzzle games often incorporate spatial-reasoning skills into video games. Games like *Tetris* make the player think not only of the piece that they’re putting in, but also the piece they may put in, or the piece that they desperately need to put in before the whole pile goes to pot. Many board games also make use of spatial skills, such as *Tic-Tac-Toe*, *Connect Four*, and *Pente*. The prototype for *All Systems Down!* (see Figure 1.3) shows the use of spatial reasoning within a game.

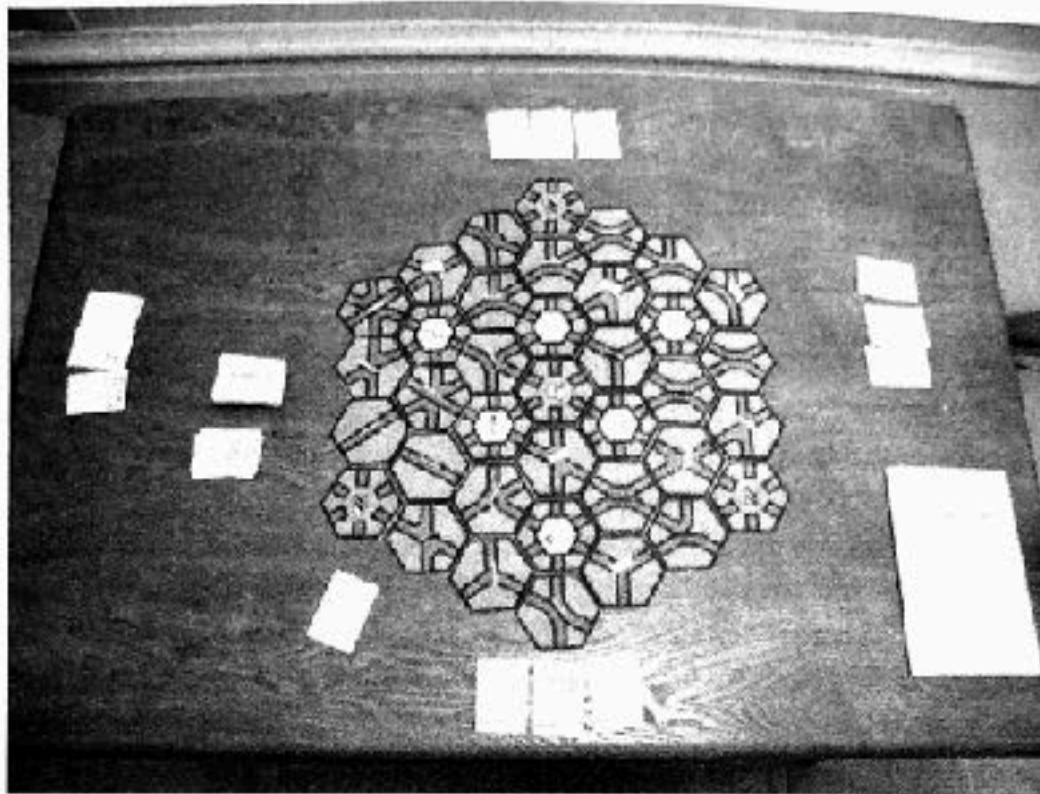


FIGURE 1.3

All Systems Down!—prototype 2.

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- **Survival:** Human beings are naturally wired to survive and thrive, and it's no different in the game world. We will protect ourselves out of sheer instinct before we're even told the point of the game. Survival is a core within many games. However, it's important not to confuse a core with a lose condition in a game. In many video games, you can die, and if you do it's game over. Still, some of these games do not involve constant life-or-death struggles as the primary activity of the game. If the player is concentrating on gaining power, killing enemies, or reaching the exit, then survival is a secondary activity that supports another core (such as building or destroying).
- **Destruction:** The flip side of the survival dynamic, or the companion side if it's a player versus player (PvP) game, is the wreck-everything-in-sight dynamic. Every FPS ever made features this core dynamic, but it is also common in board and card games with a warfare theme, like *Nuclear War*, *Plague and Pestilence*, and *Car Wars*.
- **Building:** In addition to their drive to survive, human beings are also naturally wired to build, even though they're not told that it's the point. It's not surprising then that building is a prime core mechanic featured in many games. In most RPGs, the core dynamic is character development—building up the power level of a character. Video games in the so-called "city builder" genre, such as the *SimCity* and *Caesar* series, feature building as their core. In some board games, like *Settlers of Catan*, players spend most of their time developing their own resources.

- **Collection:** As humans, we're also natural pattern matchers. As humans, we're also natural pattern matchers. You just noticed those two sentences were identical and put them together without even consciously thinking about it. As a human, you can't help it. We match similar objects together instinctively. Collection features prominently in collectible card games (obviously), casual games (match three things together), platformers (collect rings, bolts, or gold coins), or games where getting the most of a resource determines the winner.
- **Chasing or Evading:** Ancient humans had to run a lot, either to capture prey or escape predators. So it should not be a surprise to see this dynamic in many games. It is prominent in most contact sports, as well as video games like *Pac-Man* and board games like *Scotland Yard*.
- **Trading:** Not all play is necessarily competitive. In many games, players cooperate with each other (even if they are opponents). With games that have multiple kinds of resources that belong to each player, it is common to see players trading and negotiating with one another. Trading is a core dynamic of many non-digital games, such as *Pit* and *Settlers of Catan*. It happens outside of the game with collectible card games. Even video games like *Animal Crossing* and *Pokemon* feature the ability to trade with other players.
- **Race to the End:** Being the first to cross the street, the first to cross the finish line, or the first to learn a particular technology are each common uses of the "race to the end" core dynamic of gameplay (see Figure 1.4). Like survival, building, and collection, humans will also intuitively try to do things more quickly, in large part because the brain signals us that faster is better and is a sign of mastery over a given skill. Games featuring this mechanic are typically easy to create and play. The mechanic is often used in children's games.

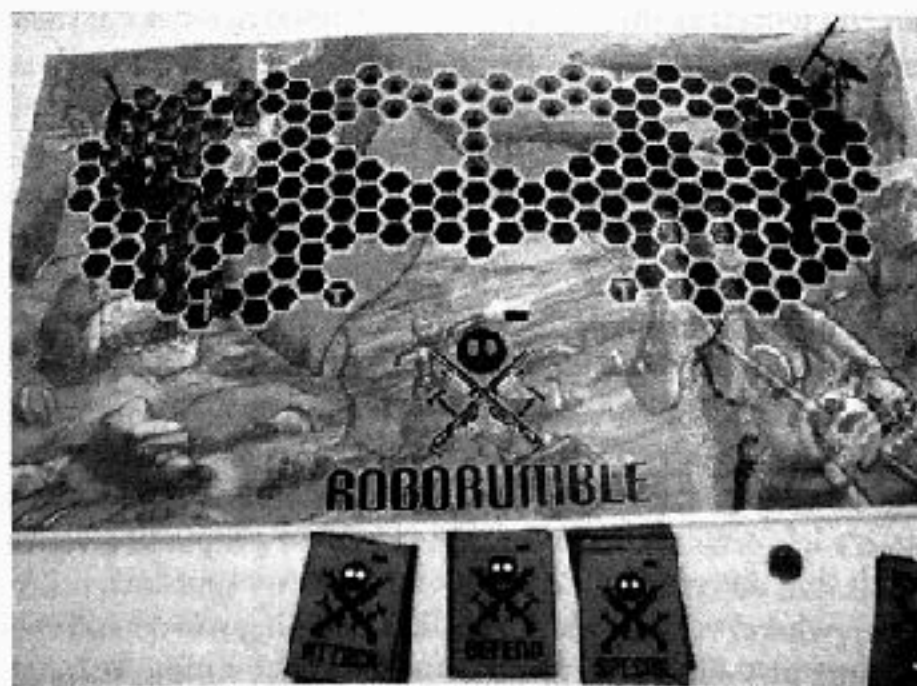


FIGURE 1.4

A "race to the end" prototype.

Robo Rumble prototype by Blake Harris, Nate Berna, Erika Scipione, AJ Rebecchi, and Keli Washington

In considering a feature list for a given core, designers tie every feature in the game back into that single core mechanic (or set of mechanics) in some way that ultimately makes the game stronger.

However, developing and implementing a feature set from that core mechanic is another matter entirely, and it represents the real craft of the game designer. Feature sets list all the individual features of the product. Within a feature set, designers generally try for part innovation, part improvement, and part convention. For a game's feature set, game designers use the standard conventions that define the genre and that players expect, but they try to find some way to innovate on previous games in the genre or with a similar theme, if there are any.

Digital games actually greatly expanded the core possibility that we as game designers can choose from since they are capable of so many things that non-digital games cannot do. Taking into account the whole variety of games—from big-budget titles to serious games—the range of game cores is tremendous.

WHERE DO IDEAS COME FROM?

Anything—anything at all—can be turned into a game. From bean farming, to sheep herding, to knitting, everything is fair game when it comes to game design. Nonetheless, for working game designers, the question “Where do you get your ideas?” is a common one.

There are multiple answers:

- **Playing lots of games.** Through playing games, you develop a vocabulary of mechanics and dynamics that are the necessary building blocks of successful game design. It is important to play many different kinds of games, not just those you are familiar with. Imagine if you were an architect and spent your entire life in a townhouse community, and then you tried to design a new house. That house would probably be similar to the ones you already know. Likewise, think of the level designer raised (for some odd reason) in an auditorium. All of his levels would reflect, in some way, the world that he grew up in. With exposure to lots of different games, however, your designs or the designs of your group are likely to reflect multiple influences (see Figure 1.5). Expose yourself to many new kinds of games to develop your range of knowledge and skills. Watch documentaries. If something interests you, look for the game inside.
- **Networking with other designers.** Two designers talking about the possibility inherent in a topic is a sure-fire way to produce a game. Mind you, it might be a bad game, so it's important to have a qualified pool of people to give you objective feedback as well. Still, designers share methods and always spur each other on to deeper thinking.
- **Everywhere.** Look for game ideas in everything you do and challenge yourself to make a game or think about making a game about a topic at least once a day. Right now around you, there are sounds you are completely tuning out: the flip of the page, the sound of your own breathing, and perhaps music or a television in the background. Game design can be tuned out or tuned in the same way. If you actively listen for the possibility and go with it, you will find game ideas everywhere.

