

CHAPTER 5

THE ITERATIVE GAME DESIGN PROCESS

Making games is an iterative process that helps game designers understand and refine their games. This chapter introduces the steps in the iterative cycle: conceptualize, prototype, playtest, and evaluate.

The Origins of Iterative Design

Designing games is challenging—think no further than the concepts and principles introduced in the four chapters of Part I—the basic elements that make up games, the tools we have to design play experiences, the incredible range of play types, not to mention the things video-games ask of players. Compounding all this is the fact that game designers can't really "see" their designs until they are played, and their games can't be played until they are made.

This is where the iterative design process comes in handy (see Figure 5.1). Iterative design is a cycle of conceptualization, prototyping, testing, and evaluation. Iteration is an **adaptive process** whereby designers move through cycles of conceiving of an idea, creating a prototype that embodies the idea, running playtests with the prototype to see the idea in action, and then evaluating the results to make the idea better. Adaptive processes stand in contrast to **predictive processes** in which the final product is well understood and can be produced without having to make changes to its design. Where predictive processes assume the designer is going to be right the first time around, adaptive processes leave room for error, but also new ideas that can improve upon the original.

An early version of iterative design comes from Walter Shewhart's work at Bell Labs in the first half of the twentieth century: the "Plan-Do-Study-Act" cycle.¹ Shewhart wanted a process that

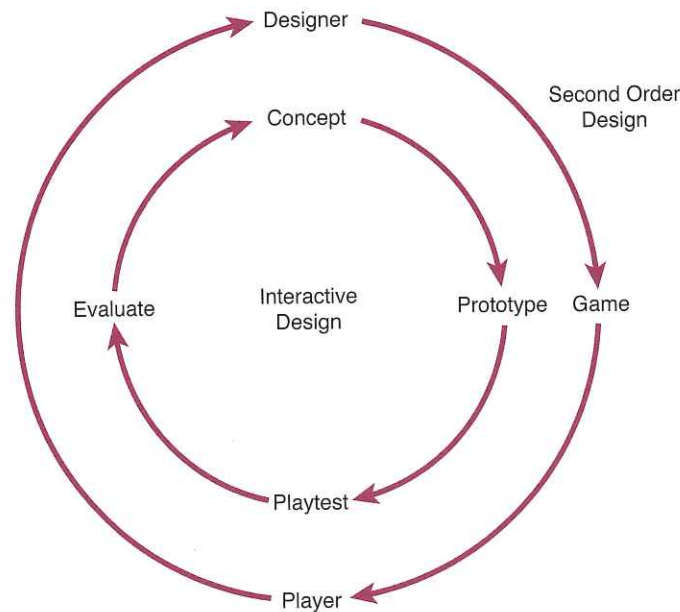


Figure 5.1 Second order design diagram nested in an iterative design diagram.

1 Andrew Walter Shewhart, *Statistical Method from the Viewpoint of Quality Control*. 1939.

increased the quality and consistency of Bell Lab's products and services. So he created a modified version of the scientific method that would help the company improve upon those metrics:

- *Plan*: Identify the problem that needs attention.
- *Do*: Design a solution to the problem.
- *Study*: Develop statistical tools for analyzing the success or failure of the design.
- *Act*: Repeat the cycle if the results of the study find problems with the design solution.

Around the same time, the industrial and theatrical designer Henry Dreyfuss began to approach product design from a similar perspective.² Instead of focusing solely on the object, Dreyfuss wanted to take into account the person who used the telephone, vacuum cleaner, or typewriter he designed. His goal was simple but unexpected: understand the experiences his designs provided, and refine the design to better meet the functional needs of the end user. Dreyfuss's process involved a similar set of steps to Shewhart's (not a surprise, as Dreyfuss likely worked under Shewhart at Bell Labs):

- *Think*: Consider the cause of the problem, and then use brainstorming techniques to consider solutions.
- *Sketch*: Develop the most simple and efficient means of exploring the most promising solutions.
- *Show*: Share the sketches, whatever form they may take, with stakeholders (clients, potential users, and so on).
- *Evaluate*: Reflect on the responses from the designers, clients, and users to determine the effectiveness of the solution and to more fully understand the problem.

In both Shewhart's and Dreyfuss's models, the design process unfolds in an incremental, cyclical process. Where Shewhart relied on hard data to improve product consistency, Dreyfuss used the then-emerging fields of ergonomics and human factors to consider the functional, experiential, and emotional responses to his products.

A more recent influence on the iterative game design process comes from software development and Human-Computer Interaction (HCI). Both of these use approaches derived from Shewhart and Dreyfuss:

- *Requirements*: What is the function of the software or hardware?
- *Prototype*: Based on the requirements, create a functional prototype.
- *Review*: Have all stakeholders use the prototype and provide feedback.
- *Revise*: Based on the feedback, revise the requirements and plan.

2 Henry Dreyfuss, *Designing for People*. 1955.

It is from these three foundations that the iterative game design process emerges. While some people approach game design from a perspective of metrics and statistics, most gamemakers take a more intuitive approach. And while some use a more traditional predictive process, most embrace the adaptive methods of iteration that allow game designers to design and refine the game through successive iterative loops.

This is because, unlike phone infrastructure, typewriters, and ATM machines, games are experiences and expressions more than tools or functional products. Games are about the play-driven moment-to-moment events, while typewriters and ATMs are a means to an end. Game designers are therefore addressing a mix of gamemaker intention and player experience. As a result, the four-step iterative game design process (see Figure 5.2) is a little different:

- *Conceptualize*: Develop an idea for the game and its play experience.
- *Prototype*: Make some aspect of the game's design into a "playable" form.
- *Playtest*: Have players play the prototype to see what kind of experience they have.
- *Evaluate*: Review the results of the playtest to better understand and strengthen the game's design.

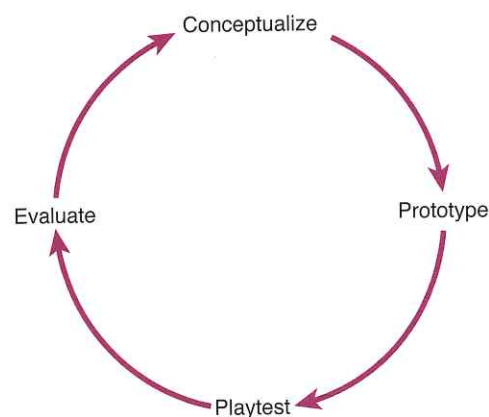


Figure 5.2 Iterative design diagram.

This is how the iterative game design process works: a series of steps toward the complete design of a game. Each loop through the cycle is an iteration on the design of a game: an incremental step toward better understanding the game being made so that the designer can work out the full design of the play experience. Sometimes an iterative loop will help the designer flesh out and tighten up the game's design; sometimes an iterative loop will point out problems that break aspects of the design. Either way, it's all part of the process toward a finished game.

The Four Steps

Let's look at each of the four steps in more detail: conceptualize, prototype, playtest, and evaluate.

Step 1: Conceptualize

In the beginning, there's just an idea (see Figure 5.3). And it could come from anywhere. Maybe it's a dream about unicorns jousting with dinosaurs. Or, it's something from everyday experience, like walking through the park or having a difficult conversation with a loved one. Maybe it starts with an idea for a cool action or an unusual use of a common game object. Maybe it starts with the need to explore or share a feeling that is difficult to put into words. In other words, a game concept can start from anything.

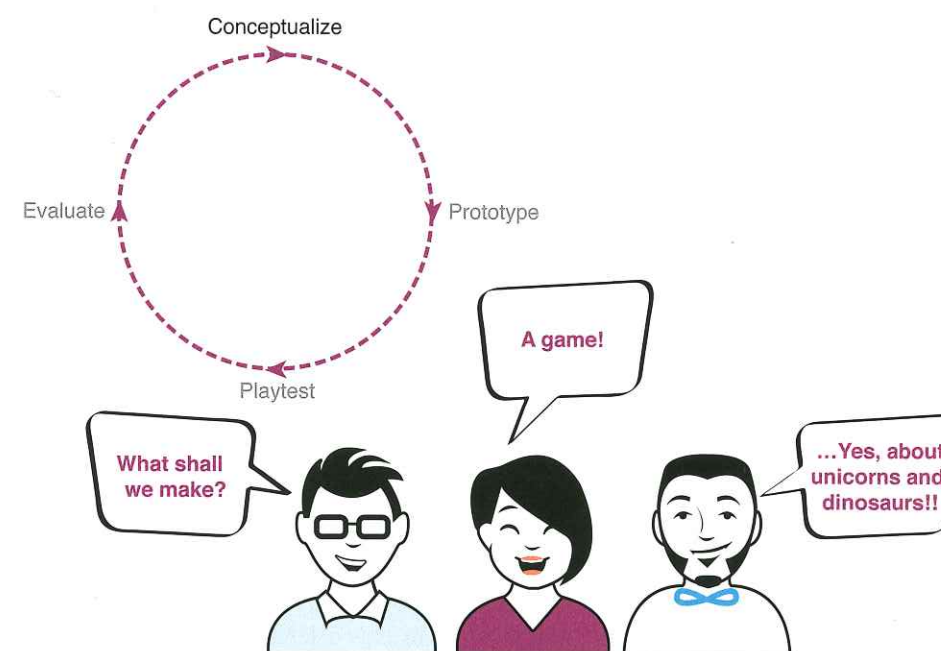


Figure 5.3 Conceptualize, the first step in the iterative cycle.

The conceptualization of a game begins with a number of different techniques to generate and shape ideas at the beginning of the game design process and continue to support the design through successive iterative loops. The main thing to keep in mind is that all that's needed is a kernel of an idea. It's not important to have every detail figured out. In fact, the thing to arrive

at in this earliest stage is not an answer, but a simple, “How might we...” question.³ For example, “How might we make a game where unicorns joust with dinosaurs?” or “How might we share the feeling of walking through the first snow of the year?” This question will become more refined with time and will generate even more questions. But at the start of the game design process, all that is needed is this one question.

Once a basic question is in place, the next step is brainstorming. Brainstorming is a process with specific rules meant to help participants explore all the possibilities around an idea or question. In fact, brainstorming is like a game—one that generates as many concepts as possible. And those concepts come in the form of even more questions, ones that begin with “what if...?” For example, “what if unicorns and dinosaurs joust while driving monster trucks along a rickety bridge?”

Another important point about the conceptualization phase is that there is a difference between a game’s concept and a game’s design. The concept is just that—an idea, a theory about what might make a good game. As we discussed in the Introduction to this book, game design is the creation of “blueprints” for a game. Turning an idea into a design requires that the designer structure the idea so that it can be used to produce prototypes, which are then playtested, the results of which are then evaluated to see what they say about the original idea. And from there, the process loops back around to conceptualize and the expansion, revision, or refinement of the game’s design. Part of this process involves thinking through and answering more questions in the design process, including using **design values** as a way to identify the experiential and formal characteristics of the game.

We’ll go into more detail on conceptualizing and designing in Chapter 9, “Conceptualizing Your Game,” and design values in Chapter 6, “Design Values,” but for now, the important thing to know is that a designer doesn’t need much more than an idea and a question to get started creating a game.

Step 2: Prototype

The second step in the iterative game design process is turning the game idea into a prototype (see Figure 5.4). The best way to figure out how the game will look, feel, and act is to dive in and start making it. The faster the game moves from the pure ether of ideas and into a prototype, the closer the game will get to showing the kind of play experiences it can generate. The key to prototyping is to turn the most promising “what if...” question from the brainstorm, or a combination of “what ifs,” into something tangible. That could be paper, quick and dirty code, even the designer’s own body performing the actions of the game. The cool thing about prototyping is that it will help ideas get even more developed and might even lead to a discovery that

³ This question is from a method used by the design consultancy IDEO, and one we find incredibly helpful in the conceptualization stage of the game. “How might we” and other design exercises can be found on IDEO’s DESIGN KIT project: www.designkit.org/methods/3.

would have never come up during the conceiving phase. This is the point of the iterative process. Every step along the way initial ideas evolve—from a pie-in-the-sky idea about jousting unicorns to a fully designed game. It isn’t necessary to figure it all out in the beginning; being open to the whole process and where it takes the game is the important thing.

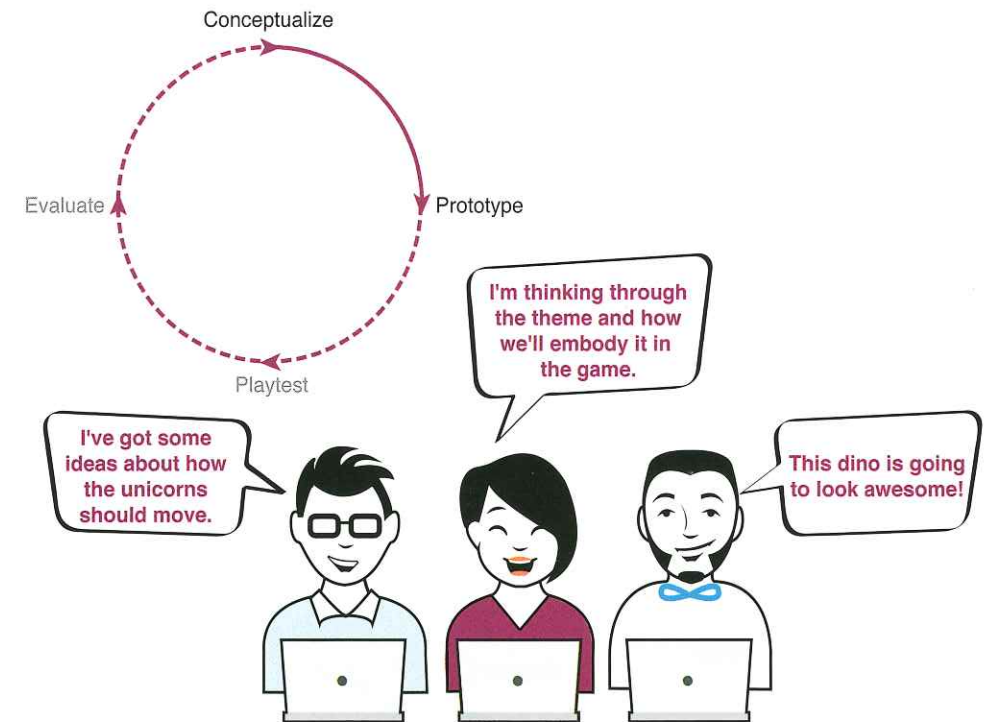


Figure 5.4 Prototype, the second step in the iterative cycle.

Prototypes should remain focused on the ideas and questions from the conceiving phase, including the “what if...” question. Prototyping requires a game designer to get more concrete. So, in the jousting unicorns and dinosaurs example, prototyping around “what if unicorns joust with dinosaurs?” requires some understanding of what it means for these creatures to joust, where it would happen, and how players would participate. To keep things focused, the team might decide to prototype on paper by making little cutout unicorns and dinosaurs that they move around on a table. Or maybe they get some rough illustrations moving in 2D onscreen.

There are a lot of different kinds of prototypes, each suitable for different stages and questions. We’ll go more into these and the prototyping process in general in Chapter 10, “Prototyping Your Game.” For now, the most important thing to know is that the faster prototypes are made, the more quickly the game’s design will start to take shape.

Step 3: Playtest

Once a game designer has a prototype made, they will want to playtest (see Figure 5.5). After all, a game designer doesn't really know what the game is until they test it. Playtests reveal what is or isn't working in a game's design. In other words, the playtest is the answer to the "what if...?" question the prototype asks. In fact, playtesting is the one step in the process that we end with answers, rather than questions. And not only answers in the form of seeing what happens when playing with a prototype that asks "what if unicorns jousted with dinosaurs...?" Answers to other questions as well, like, "Do players understand the goal of the game, and what they are striving for? Do players have the hoped-for emotional response? Do players get the game's message? Is the user interface clear or difficult to understand? And, is there clear feedback about how well the player is doing in the game?"

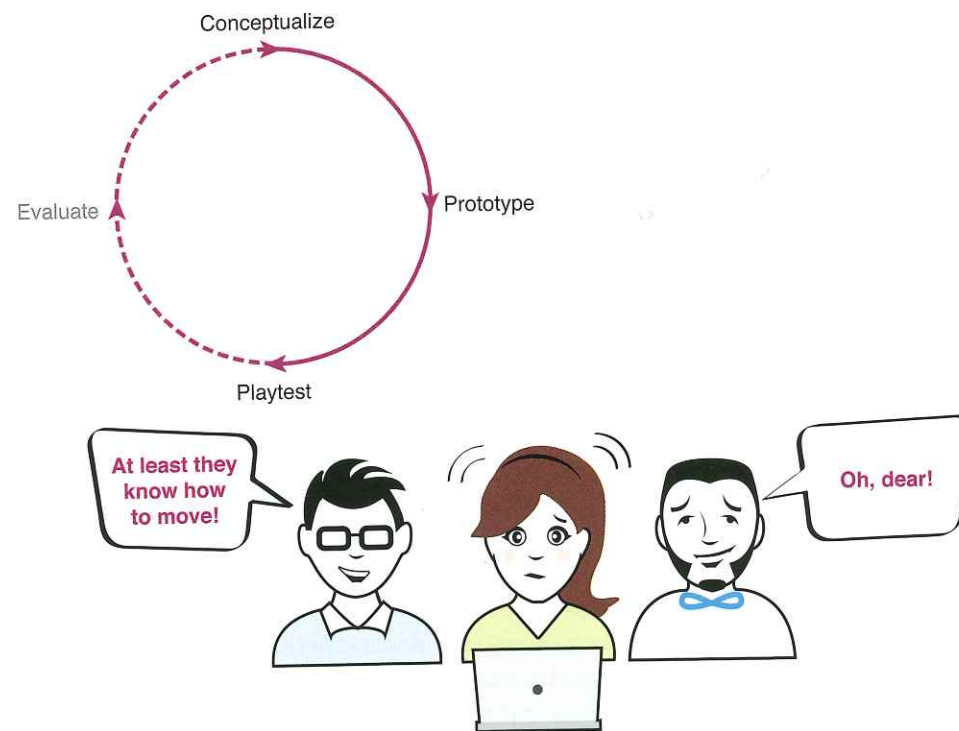


Figure 5.5 Playtest, the third step in the iterative cycle.

Playtesting is often the hardest and most revealing part of the iterative game design process. Often, what seems like a great idea that makes sense in a prototype falls apart when players get ahold of it. This might feel like a bad thing, but it's really a blessing in disguise. Seeing what fails in a playtest also sheds light on what is needed to fix it and make the game better. Failure is just part of the process. This is the most important lesson of the iterative process.

In the same way that a prototype can take different forms, there are many different types of playtests. Two of the most basic kinds are internal and external playtests. Internal playtests among the designers of the game are essential—and often the first kind of playtest the team engages in. External playtests are equally important and can involve friends, other game designers, the target audience, and more. No matter the kind of playtest, one of the most important things to do is capture the results. Whether simply listing the comments from playtesters or problems the designer observed, it's important to document the playtest to help in the next step in the iterative game design process: evaluate.

We look more closely at playtesting in Chapter 11, "Playtesting Your Game."

Step 4: Evaluate

Once a game designer finishes a round of playtesting, they evaluate the results to assess the game's design (see Figure 5.6). The art of evaluating the results of a playtest is taking what playtesters did and said and determining if and how the feedback necessitates changes to the game's design. For example, remember the dinosaur-unicorn jousting game? Let's say we observed players having a difficult time understanding how to get the creatures to pick up their lances.

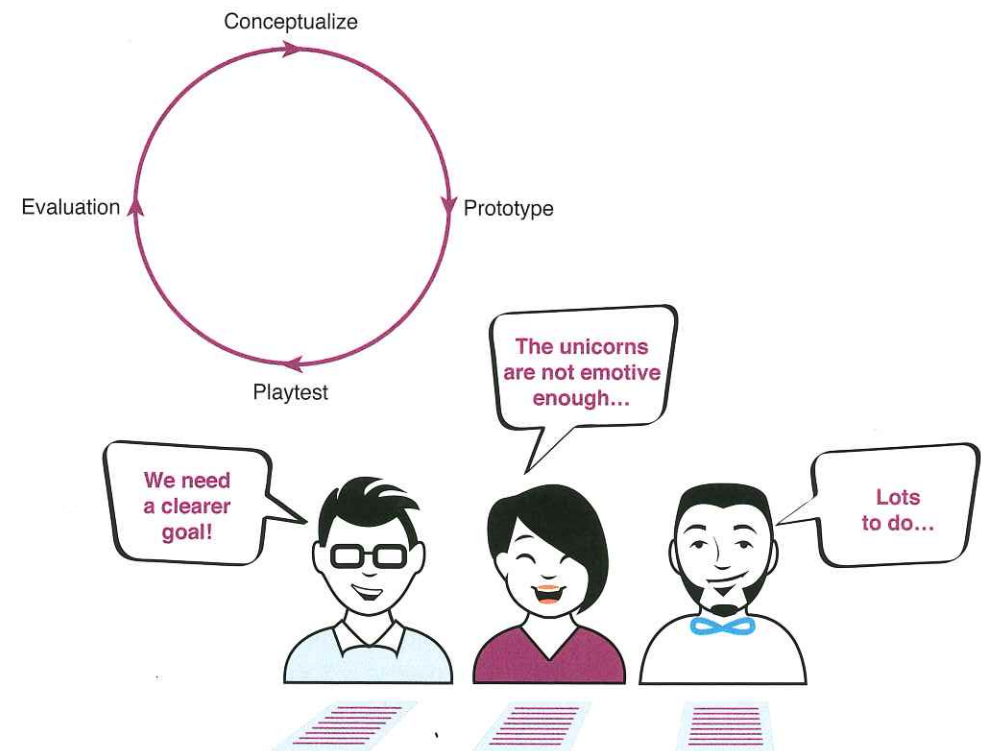


Figure 5.6 Evaluate, the fourth step in the iterative cycle.

Evaluating this observation involves more questions—this time along the lines of “why did players have a hard time grasping how a unicorn jousts?” or “how might we make it easier for players to understand how to get their brontosaurus to pick up a lance?” Does the “How might we...?” sound familiar? It should—once you have reached this last step of the iterative process, you return to the same kinds of questions we began with in conceptualize. The borders between evaluate and conceptualize can be a bit fuzzy—hence the circular nature of the process!

The other part of evaluate involves taking some time to let the playtest results sink in while solutions begin to take form. Some designers take walks, some go running, some take a nap.⁴ Others talk to other game designers and friends about the design problems they are working out. Still other game designers play games, watch movies, or read books and generally look outside of games for inspiration and influence.

Being a game designer is not about coming up with perfect ideas right off the bat. The challenge of game design is paying close attention to how other people engage with game prototypes and then translating that feedback into design revisions to be tried out in the next prototype. Some of the feedback from players will be pretty straightforward. Other feedback is more difficult to diagnose, like, “I feel like this game is too intense.” It takes practice, kind of like a doctor hearing a patient talk about their symptoms and then from that, building up enough evidence to make a diagnosis. It involves not only listening to what the patient says, but observing them and including all of that into the evaluation. In Chapter 12, “Evaluating Your Game,” we look more closely at the role of evaluation in the iterative game design process.

A Repeated Process, Not a Single Cycle

Because there is no single motivation for creating games, no two games follow an identical iterative cycle. There are many paths the process can take, and they may loop through the iterative steps several times in different ways for different reasons (see Figure 5.7). The design of some games resolves quickly after three or four loops through the process. Other games take dozens of loops through the process. The most important thing to bring to the iterative game design process is patience. It takes time, but more often than not, the method brings great results. Iterative game design is a cycle that steers a game’s design in all sorts of directions the designer may never have imagined. For game designers who want to create a particular kind of play experience, the iterative cycle helps them home in on delivering exactly what they have in mind. For game designers who are more concerned with expression, the iterative cycle helps them find just the right way to do so. For game designers who just want people to enjoy themselves, the iterative cycle helps discover what players enjoy about a game. Ultimately, we iterate because we are making games, and to build them we need to prototype and playtest them to fully understand what they can do.

⁴ We know a game designer who ponders design problems by lying under his desk.

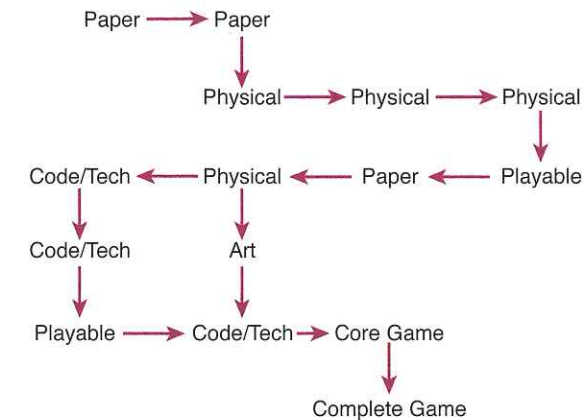


Figure 5.7 A theoretical path for the design of a game.

And, of course, there is life after game design. Indeed, the game design process is just the beginning, as a whole range of tasks remain—production, marketing, release, and then maintaining the game. We’ll get into some of this in Chapter 13, “Moving from Design to Production,” but mostly, we’re focused on the design process in this book and not production.

Embracing Failure to Succeed

In addition to patience, another key to the iterative game design process is being open to failure. It is going to happen. In fact, it is really important that it happens. Early in the design process, failure can make visible the problems in a game and help the designer find solutions for fixing them. Even the best game designers fail early in the design process. Reiner Knizia, a boardgame designer with dozens and dozens of successful games to his name, once said that all his game designs were perfect until they were playtested.⁵ That’s the power—and the pain—of the iterative game design process. A game designer has intuitions about their game, but until they get all the way through an iterative loop, they just don’t know what they have. That’s why game designers want to find the quickest way possible through early loops in the cycle so they can fail early and often.

Failure is what helps us learn and make our games better. The key is to be aware that it will happen, and when it does happen, to address it as a team and identify possible solutions. The best way to leverage failure to improve the game’s design? By failing fast, with purpose, early in the game design process. This means doing your best not to get discouraged by it and view it as a learning experience. Another way to put it is that your first time at anything will inevitably involve learning from failure. Remember the first time you played your favorite videogame?

⁵ Overheard at Practice 2012, a conference on game design hosted by New York University’s Game Center.

When we play videogames, failure teaches us how the world works in the game. In game design, failure teaches us how to make better games.

The iterative design process can be used to support a wide range of creative intentions and play experiences. The next three chapters provide a set of useful tools for guiding the iterative process. Chapter 6, “Design Values,” introduces an important tool for capturing the important factors in a game’s design. Chapter 7, “Game Design Documentation,” outlines the three main tools for capturing a game’s design—design documents, schematics, and tracking spreadsheets. Chapter 8, “Collaboration and Teamwork,” rounds out Part II with a discussion of important considerations around working in teams.

Summary

Don’t worry about getting it right the first time. Making games is always an iterative process punctuated by failure and incremental improvement. Once you have conceptualized your game, you should move as quickly as possible to prototyping it. There’s no need to worry about coding your game at the start; prototype it on paper, with your body, any way you can. The key is to get it as quickly as possible to the playtesting stage. Here you will actually see your played game for the first time and see it for what it really is. In most cases, there will be some things about your design that fail. This is where you evaluate the results of your playtest and return to your initial concept, including your design values, and begin the process again.

- *Conceptualize*: The initial idea and the subsequent ideas about the game explored in prototyping and development.
- *Prototype*: A form of some aspect of your game, or the entire game in a prerelease stage that helps you work through the design questions your game poses.
- *Playtest*: An answer to the question the prototype poses, and a moment when you or other people play your prototype and you observe and document the reactions.
- *Evaluate*: Reviewing the playtest observations and diagnosing the results into next steps or new ideas.

Exercise

Find a partner and in 10 minutes, design a game the two of you can play using your own bodies and anything in the room. You will have to move quickly, coming up with an idea, prototyping it, playtesting between yourselves, and then refining it. Make note of each step in the process. At the end of 10 minutes, write down the rules to your game and give them to two other players to playtest. How did they interpret the rules? Did they discover anything new about the game? Did they use any strategies that might break the game or point in new directions for the design?

CHAPTER 6

DESIGN VALUES

Most simply stated, design values are the qualities and characteristics a game’s designer wants to embody in the game and its play experience. Design values help designers identify what kind of play experience they want to create and articulate some of the parts that will help their game generate that experience.

Designing games can be challenging in large part because of the way games work. Game designers have many reasons for creating games. Sometimes they want to share a certain kind of play. Sometimes they have ideas that are best expressed through a game. Regardless of the reasons, being able to fully realize the goals you have for a game can be difficult. This is because of the second-order design problem we discussed in Chapter 1, “Games, Design and Play;” the designer doesn’t have direct control of how players will play; instead, they simply define the parameters within which players play.

One of the best tools to guide the creation of play experiences is **design values**, a concept we borrow from the scholar Ivar Holm¹ and the game designers Eric Zimmerman and Mary Flanagan. The term value here isn’t referring to the financial worth of the game. Instead, design values are the qualities and characteristics you want to embody in a game. This can reflect your own goals as a creator, but also the experience you want your audience to have.

The broadest conception of design values is found in Ivar Holm’s work with architecture and industrial design. Holm identifies five key approaches: aesthetic, social, environmental, traditional, and gender based.

- *Aesthetic:* Aesthetic design values focus on the form and experience.
- *Social:* Social design values focus on social change and the betterment of society.
- *Environmental:* Environmental design values address the concerns of the environment and sustainability. This has more obvious application to architecture and product design, but is also of importance to games.
- *Traditional:* Traditional design values use history and region as inspiration. In the context of architecture, this might apply to restoring a building to its original state or building in the local, traditional style. For game design, this might involve working within a genre, or reviving a historically important game.
- *Gender based:* Gender-based design values bring feminist conceptions of gender equality into the design process.

The first game-specific conception of design values comes from Eric Zimmerman’s “play values,” which he describes as “the abstract principles that the game design would embody.”² At times, this sort of design value relates directly to the “mechanical” nature of the game and its play—the actions players perform, the objects used, the goal of the game, and so on. Sometimes design values are adjectives like fast and long and twitchy—descriptions of what the game will feel like while playing. Other times design values refer to the “look and feel” of

1 Holm, Ivar. *Ideas and Beliefs in Architecture and Industrial Design: How Attitudes, Orientations, and Underlying Assumptions Shape the Built Environment*. Oslo School of Architecture and Design, 2006.

2 Although Zimmerman uses the term “play values,” our conception of design values is very much based on this idea. “Play as Research: The Iterative Design Process” www.ericzimmerman.com/texts/Iterative_Design.html.

the game. Sometimes design values are more about the kind of player the designer envisions playing their game in the first place. Other times, design values are reminders of context—the location the game is to be played, the technological parameters of the platform, and so on. These fit within Holm’s aesthetic and traditional design values.

In addition to the kind of play experience the designer wants to create, design values can be derived from different personal, political, or cultural values as well—in other words, social design values. Social design values might reflect a desire to express an idea about the human condition, an experience the designer once had and how it felt, or a political position based on personal or collective values. A good example of this notion of design values as an embodiment of political, feminist, and personal values comes from Mary Flanagan and Helen Nissenbaum’s project and book *Values at Play*.³ Flanagan and Nissenbaum developed a framework and toolkit for identifying political, social, and ethical values in games and exploring how designers might express their own perspectives. These connect to Holm’s social and gender design values but can as well extend to the environmental if we frame it more broadly.

Generating Design Values

Creating design values is a process of determining what is important about the game—the play experience it provides, who it is for, the meaning it produces for its players, the constraints within which it must be created, and so on. We’ve found the best way to get started is with a series of questions that explore the who, what, why, where, and when of a game. While not every game begins with all of these, the following are the general questions to discuss while establishing the design values for a game.

- *Experience:* What does the player do when playing? As game designer and educator Tracy Fullerton puts it, what does the player get to do? And how does this make the player feel physically and emotionally?
- *Theme:* What is the game about? How does it present this to players? What concepts, perspectives, or experiences might the player encounter during play? How are these delivered? Through story? Systems modeling? Metaphor?
- *Point of view:* What does the player see, hear, or feel? From what cultural reference point? How are the game and the information within it represented? Simple graphics? Stylized geometric shapes? Highly detailed models?
- *Challenge:* What kind of challenges does the game present? Mental challenge? Physical challenge? Or is it more a question of a challenging perspective, subject or theme?
- *Decision-making:* How and where do players make decisions? How are decisions presented?

3 Mary Flanagan and Helen Nissenbaum, *Values at Play in Digital Games*, 2014.

- *Skill, strategy, chance, and uncertainty:* What skills does the game ask of the player? Is the development of strategy important to a fulfilling play experience? Does chance factor into the game? From what sources does uncertainty develop?
- *Context:* Who is the player? Where are they encountering the game? How did they find out about it? When are they playing it? Why are they playing it?
- *Emotions:* What emotions might the game create in players?

This may seem like a lot to think about before designing a game. And it is a lot. But all these are important factors to consider at the beginning of the design process for a number of reasons. For one, design values establish the overarching concept, goals, and “flavor” of a game.

Just as important is the way design values create a shared understanding of the game. Most games are made collaboratively, and everyone on the team is likely to have opinions and ideas about what the game is and what its play experience should be. Design values allow the team members to agree on what they are making and why they are doing it. They also are an important check-in when great ideas come up but might not fit the game’s design values. Continuing to ask, “does this fit our design values?” will help resolve team conflicts, and, even if it’s a great idea, know whether it should be included in this game or a future project.

Example: Pong Design Values

Having examples to draw from can be really helpful, particularly when exploring a new idea or concept—that’s why Part I, “Concepts,” is filled with examples drawn from games. Now that we’re moving from basic concepts into the design process, we’re going to use a speculative design example to illustrate things—*Pong* (see Figure 6.1). We’re going to pretend like we’re designing the classic arcade game. To start, the design values are the following:

- *Experience:* *Pong* is a two-player game based on a mashup between the physical games of tennis and ping pong. It uses a simple scoring system, allowing players to focus on competing for the best score.
- *Theme:* Sportsball! Head to head competition!
- *Point of view:* *Pong* is presented from a top-down perspective, which takes the challenge of modeling gravity and hitting the ball over the net away from gameplay—focusing on the act of hitting the ball back and forth and trying to get it past your opponent’s paddle. The graphics are simple and abstract, also keeping the focus on fast and responsive gameplay.
- *Challenge:* The game’s challenge is one of speed, eye-hand coordination, and hitting the ball in ways that your opponent is not expecting.
- *Decision-making:* Decisions are made in real time, with a clear view of the ball’s trajectory and your opponent’s paddle.

- *Skill, strategy, chance, and uncertainty:* *Pong* is a game of skill, with some chance related to the angle of the ball when it is served and some uncertainty of how your opponent will hit the ball and thus in how you will counter.
- *Context:* The game is played in an arcade context, with your opponent next to you, enabling interaction on the game screen and in the real world.
- *Emotions:* *Pong* is meant to generate the feeling of being completely focused, grace, intense competition, and excitement.



Figure 6.1 *Pong*. Photo by Rob Boudon, used under Creative Commons Attribution 2.0 Generic license.

Case Studies

To help see how design values play out in real-world examples, following are three real-world case studies: thatgamecompany’s *Journey*, Captain Game’s *Desert Golfing*, and Naomi Clark’s *Consentacle*.⁴

⁴ John writes about additional examples (including the writing of this book) in his essay “Design Values.” www.heyimjohn.com/design-values.

Case Study 1: thatgamecompany's *Journey*

thatgamecompany's *Journey* (see Figure 6.2) was an idea Jenova Chen, the company's cofounder and creative director, had during his time as a student in the University of California's Interactive Media and Games Division MFA program. He had been playing a lot of Massively Multiplayer Online games (MMOs) but was increasingly dissatisfied with the inability to really connect with other players on a human, emotional level. At the time, well before thatgamecompany formed, the game concept was beyond his abilities to pull off on his own. Years later, after thatgamecompany had *Flow* and *Flower* under its belt, Jenova thought it might be time to take on the challenges of *Journey*.

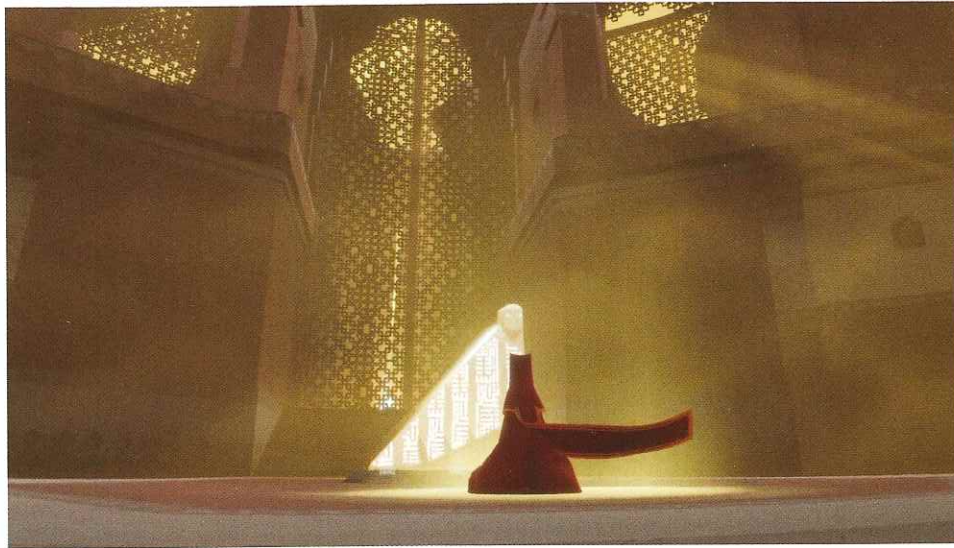


Figure 6.2 *Journey*.

In his talk at the 2013 Game Developer's Conference about designing *Journey*, Jenova described the goal of designing a game that makes the player feel "lonely, small, and with a great sense of awe."⁵ This was a design value: make a game that generates this kind of feeling in the player.

Jenova also wanted the game to involve multiplayer collaboration (in the case of *Journey*, two players). This led to a second design value for the game—being able to share the emotional response with another player and to have that act of sharing heighten the overall emotional impact.

⁵ For more, see Jenova Chen's Game Developer's Conference 2013 talk, "Designing Journey." www.gdcvault.com/play/1017700/Designing.

In addition to these initial interests, the game's design is informed by where it is played. *Journey*'s design values were influenced by the fact that it was being made for the PlayStation 3. Sony asked thatgamecompany to make a single-player game, which influenced how the cooperative mechanic was implemented. It's seamless, and the experience doesn't actually rely on other players being online and playing with you. Players appear and disappear as a natural occurrence in the world. And, of course, a game created to be experienced in your living room is going to be more cinematic and immersive than a game you might play on your phone while waiting for the bus, so the PlayStation platform informed the visual style and gameplay.

Another design value for *Journey* relates to the emotional and narrative arc of the play experience. Jenova was inspired by Joseph Campbell's work on the Hero's Journey, which builds upon the three-act structure common to theater and film. Jenova and his team began by creating a landscape that literally and emotionally tracked the arc of a traditional three-act narrative. This was intended to create an emotional flow from the highs of players sensing freedom, awe, and connections to the lows of being trapped, scared, and alone, and finally, closure through resolution.

During the design process, the design team went to visit sand dunes for inspiration for the game's environment. While there, they noticed how enjoyable it was to move through the sand, climbing a tall dune and experiencing the anticipation of seeing what was at the top. This led to the idea of sliding in the sand, moving up and down the dunes with grace. This action fed well into the initial design value of creating a sense of awe as you move through the environments, and creating experiences that felt realistic—yet better than reality. Because on a real sand dune, unless you have a sled, it's not really possible to slide down them—but in *Journey*, you surf the sand as if it were a wave (see Figure 6.3).



Figure 6.3 The player character sliding in the sand of *Journey*.

To achieve all these goals, Jenova and the thatgamecompany team had to work through a number of problems around player expectations and the conventions of multiplayer gameplay. In early prototypes, the game included puzzles involving pushing boulders together, or players pulling one another over obstacles.⁶ The goal was to create a multiplayer environment that encouraged collaboration. However, while playtesting, the team observed players pushing one another and fighting over resources. They soon realized that the kinds of actions allowed in the game and the feedback players were getting were all working against the collaborative spirit they were hoping to encourage. So they devised a solution that led to players being able to complete the journey alone as well as together, have equal access to resources, and have little effect on the other player's ability to enjoy the game. And when players tended to use the in-game chat to bully or otherwise act in unsociable ways, the team had to make some difficult decisions about how to support player communication without allowing players to treat one another badly. This meant removing "chat" and replacing it with a single, signature tone. All of these decisions were informed by the design values of meaningful connection and a sense of awe.

Having the design values for the game allowed the team to remain focused on its goals and understand what they were aiming for as they developed prototypes. It took a good number of cycles through the iterative process to get the game to meet its design values and the goals initially set by Jenova. This was in large part because he wanted to do things that differed from most other games—there wasn't a set formula or a precedent to work from. And so he and the thatgamecompany team had to experiment and try things out to craft, refine, and clarify the *Journey* player experience, and as they went, revisit their design values to make sure they were staying true to the team's goals. In the end, all of the hard work paid off. *Journey* went on to win many awards, including The Game Developer's Choice award for best game of the year.

Case Study 2: Captain Game's *Desert Golfing*

Desert Golfing (see Figure 6.4) is a deceptively simple game: using the tried-and-true *Angry Birds*-style "tap, pull, aim, and release" action, players hit a ball through a desert golf course of 3,000 (or more) holes. The game is deeply minimal in all ways: a single action for achieving a single goal (get the ball in the hole), yielding a single score (the total number of strokes) over an enormous number of holes, all with spare, flat color graphics and minimalist sound effects.

Desert Golfing began with a simple idea: make an "indie *Angry Birds*." For Justin Smith, the game's designer, this was shorthand for keeping all the pleasurable aspects of the "pinball stopper" action of *Angry Birds*, while removing a lot of the extraneous details that he felt detracted from the potential of this action. This was the first and primary design value for the game. It meant keeping the gameplay minimal, which kept a clear focus on the core action.

⁶ Jenova Chen and Robin Hunicke, IndieCade 2010: "Discovering Multiplayer Dynamics in Journey Parts 1–4." <https://www.youtube.com/watch?v=0BL0Tk6cmWk>.

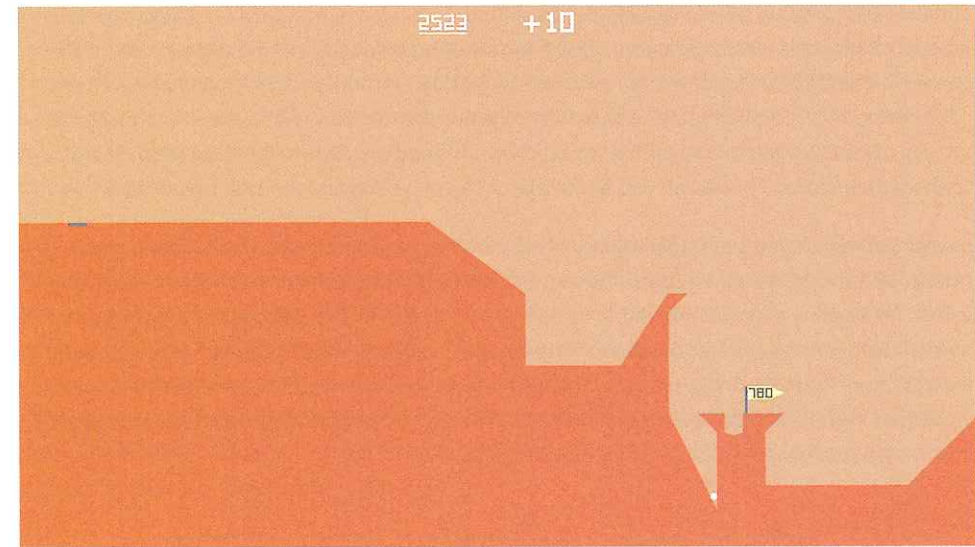


Figure 6.4 Captain Game's *Desert Golfing*.

Justin describes his design approach as "asynchronous"—he collects ideas in a notebook (jotting down things like "indie *Angry Birds*") and then when ready to work on a game, he flips through his notes to find ideas that connect. Justin always had an interest in sports games, and golf games in particular, which happened to lend itself well to the "pinball stopper" action. The interest in golf led to a thought experiment in which Justin imagined putting a golf game on top of thatgamecompany's *Journey*. Though he didn't do that, it did inspire the color palette and environment of the game. This provided the next design value: the characteristics of the game's world.

Justin also thought about the minimum play experience and wanted players to be able to have a satisfying play session that was as small as a single stroke of the ball. This created the third design value: a deeply satisfying and discrete sense of pleasure from each action. This put a lot of importance on the "pinball stopper" action—the way it felt and how much nuance players could get from a simple gesture. Justin had to tinker with the responsiveness of the pull-and-release gesture, how feedback was visualized, and how the sound effects supported players' understanding of what they did.

Knowing he wanted a golf game, Justin thought about how he might generate the holes. He was much more interested and attuned to procedurally generating the holes with code than manually designing them. This led to the idea of creating a seemingly endless golf course in a desert and a fourth design value: a sense of infiniteness to the game. To achieve this, Justin had to develop a set of more concrete rules to procedurally generate the first 3,000 holes of the game. This came through a series of trial-and-error experiments as he moved through iterative cycles of generating levels, evaluating the results, and making changes to the rules controlling the golf hole generation.

The final design value related to how players shared their *Desert Golfing* play experiences. He wanted to allow players to organically find things they wanted to share and discover about the game. This led to a couple of things. One was the gradual shifting color palette. It created a sense of discovery that players wanted to share with one another. Similarly was a player's stroke total. Instead of creating leaderboards that would drive competition, Justin left it to players to find ways to share their scores. This led players to talk about this in person and through social media.

Desert Golfing is a great example of how design values can develop over time. Keeping a notebook for ideas and then returning to those ideas can begin the process of forming design values for a game, even from a simple notion, like an action or a setting inspired from another game. Justin Smith's process of establishing design values was also influenced by the things he was interested in trying, such as the procedural generation of each level. Ultimately, design values are highly personal, based on choices about what you want the player experience to be and what you are interested in exploring as a designer.

Case Study 3: Naomi Clark's Consentacle

Naomi Clark's cardgame *Consentacle* (see Figure 6.5) is an example of a game created in response to the designer's experiences with other media and playing other games. *Consentacle* grew out of a dissatisfaction with a particular strain of anime—Hentai, a genre notable for sexual acts that are often nonconsensual and violently portrayed, between tentacled monsters and young women. The traditions of the genre had the monsters in the position of power. Naomi wondered what might happen if she created a game in which both characters had equal power. The idea of a game where characters have equal power and engage in consensual activities formed the core design value for *Consentacle*, one that manifests in how the game is played, but also its politics.



Figure 6.5 Naomi Clark's *Consentacle*.

There was one other thing from Hentai that Naomi drew inspiration from: the idea of developing alternative genders—the tentacled monster's gender was ambiguous in Hentai anime. Naomi thought this worked as a perfect metaphor for queering gender, though at first she wasn't exactly sure what form it would take. Together, these provided the theme of *Consentacle*, which is a strong guiding form of design value: finding ways to embed or express a theme through a game's play.

With these ideas tucked away for a future project, Naomi began playing *Android: Netrunner*. Thanks to fellow game designer Mattie Brice, Naomi noticed that if you approached *Android: Netrunner* as a role-playing game, there was an intimacy to the interactions between the Corporation and the Runner. The Corporation was always vulnerable to the Runners, who in turn were continuously probing to gain information and points. It reminded Naomi of the dynamics of her game idea, *Consentacle*, so she decided to use this as a point of reference. This led to the second design value: exploring the inherent intimacy of collectible card game economic systems as a system for emotional engagement.

Naomi realized that a good deal of the intimacy came from the interactions around imperfect information spaces—the Corporation always had hidden information that the Runner had to think about and try to learn. Naomi began looking around for other cardgames and boardgames that used hidden information in similarly intimate ways. She began playing Antoine Bauza's *Hanabi* (see Figure 6.6), a cardgame in which players can see one another's cards, but

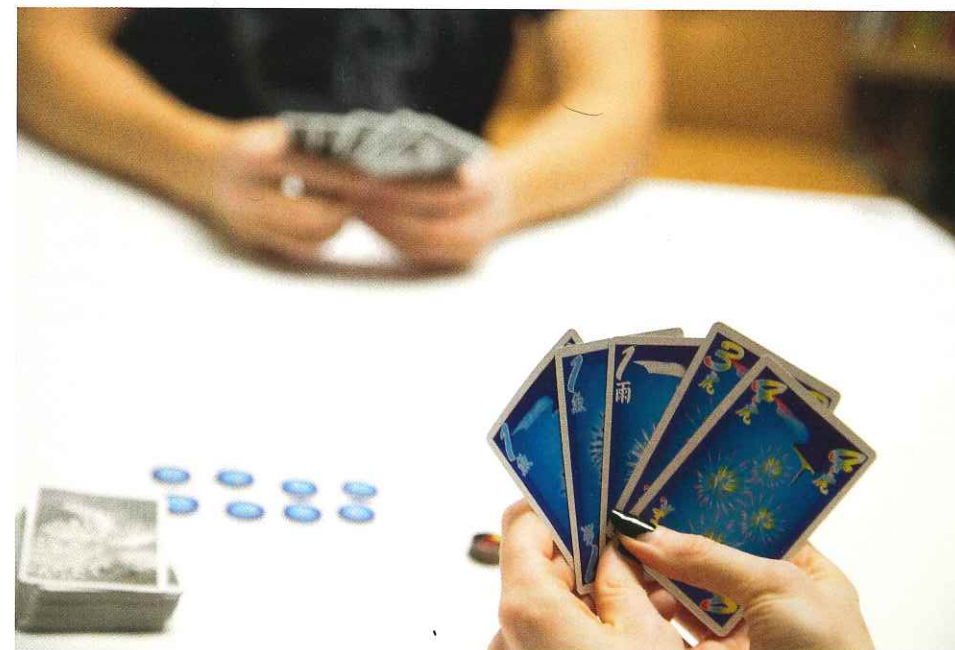


Figure 6.6 Antoine Bauza's *Hanabi*.

not their own. In Hanabi, players must collaborate to help one another make the right decisions. This led Naomi to her next design value: collaborative gameplay as an exploration of consensual decision-making.

With these components in place, Naomi quickly conceived of the basic play experience of Consentacle. Players—one a human, the other a tentacled alien—work together to build trust, which leads to satisfaction. This is done by simultaneously playing a card that, when combined, describes actions players can make around the collection of trust tokens and satisfaction tokens. In the beginner's version of the game, the players can discuss which cards they will play, but in the advanced version, they are not allowed to talk and must develop alternate means of communicating with one another.

With constraint being a big part of a game designer's toolkit, Naomi began to think about ways she could constrain the player's ability to collaborate in a fun way. This led Naomi to think about the ways players could work together without regular communication. She came up with the idea of using what she calls "collaborative yomi"—players trying to guess one another's actions in order to help one another, instead of the normal understanding of yomi as trying to best one another in a competition. This was the third design value for the game.

Because the game was seeking to encourage collaboration, Naomi decided fairly early on that she didn't want the game to have an absolute win/lose condition. This was the fourth design value for the game. With this in mind, Naomi began thinking about ways to give players feedback on how they did without declaring a winner or loser (which would push against the collaborative nature of the game). Naomi took inspiration from the quizzes in *Cosmopolitan* magazine that rate along a scale. So the game used a scale to evaluate the collaborative score as well as the spread of points earned by the two players.

Consentacle's unique gameplay is crafted around a set of design values reflecting real-world issues around consent. As she developed Consentacle, Naomi looked to games and other forms of media to provide insights into the design process, leading to interesting and ultimately unique solutions. Throughout the process, the design values in the game led Naomi's research. This is important—it is easy to get lost looking at other games and media for influence—but if you have a strong set of design values, your search will have direction and purpose.

Summary

As you can see from our *Pong* thought experiment and the three case studies, design values are helpful in guiding the design process. They are guideposts in the journey through a game's design. This is important because as you create your game and test it with others, you need a goal to work toward. Design values can also answer many of the questions that arise in the process of making a game. They function as tools for calibrating the team's understanding of the game they hope to create, and they keep everyone working toward a unified play experience.

Here are the basic questions of design values:

- **Experience:** What does the player do when playing? As game designer and educator Tracy Fullerton puts it, what does the player get to do? And how does this make them feel physically and emotionally?
- **Theme:** What is the game about? How does it present this to players? What concepts, perspectives, or experiences might the player encounter during play? How are these delivered? Through story? Systems modeling? Metaphor?
- **Point of view:** What does the player see, hear, or feel? From what cultural reference point? How is the game and the information within it represented? Simple graphics? Stylized geometric shapes? Highly detailed models?
- **Challenge:** What kind of challenges does the game present? Mental challenge? Physical challenge? Challenges of perspective, subject, or theme?
- **Decision-making:** How and where do players make decisions? How are decisions presented? Is the information space perfect or imperfect?
- **Skill, strategy, chance, and uncertainty:** What skills does the game ask of the player? Is the development of strategy important to a fulfilling play experience? Does chance factor into the game? From what sources does uncertainty develop?
- **Context:** Who is the player? Where are they encountering the game? How did they find out about it? When are they playing it? Why are they playing it?
- **Emotions:** What emotions might the game create in players?

Exercises

1. Take a game and “reverse engineer” its design values. Pay close attention to how the game makes you feel and how you imagine the designer might have captured those feelings in design values. Follow the list of design values from this chapter as a guide.
2. Take that same game and change three of the design values. Then modify it (on paper, or by changing the game’s rules) based on the new design values. How do these changes affect the whole? How different is the play experience?

CHAPTER 7

GAME DESIGN DOCUMENTATION

To keep the iterative design process from feeling like an ever-shifting state of chaos, we use three kinds of documentation: design documents, schematics, and tracking spreadsheets. Design documents record the specific design decisions made about the game, including a game’s design values. Schematics illustrate how the design is manifest onscreen to make the abstract ideas of a game partially tangible before being implemented in a prototype. And the tracking spreadsheet captures big-picture and moment-to-moment tasks necessary to design, prototype, and playtest a game.