

EXPLORING THE FOUNDATIONAL PRINCIPLES BEHIND  
**GOOD GAME DESIGN**



A GAME  
**DESIGN**  
VOCABULARY

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## Praise for *A Game Design Vocabulary*

"*A Game Design Vocabulary* succeeds where many have failed—to provide a broad-strokes overview of videogame design. Utilizing analytic smarts, an encyclopedic knowledge of games, and subcultural attitude, Naomi Clark and Anna Anthropy get to the heart of how games work.

"Why is this book important? Videogames are the defining mass medium of our time, yet even those who make games lack a clear language for understanding their fundamental mechanics. *A Game Design Vocabulary* is essential reading for game creators, students, critics, scholars, and fans who crave insight into how game play becomes meaningful."

—**Eric Zimmerman**, Independent Game Designer and Arts Professor, NYU Game Center

"*A Game Design Vocabulary* marks an important step forward for our discipline. Anna Anthropy and Naomi Clark's extraordinarily lucid explanations give us new ways to unpick the complexities of digital game design. Grounded in practical examples and bursting with original thinking, you need this book in your game design library."

—**Richard Lemarchand**, Associate Professor, USC, Lead Designer, *Uncharted*

"Anthropy and Clark have done it! Created an intuitive vocabulary and introduction to game design in a concise, clear, and fun-to-read package. The exercises alone are a great set of limbering-up tools for those new to making games and seasoned designers, both."

—**Colleen Macklin**, Game Designer and Professor, Parsons The New School for Design

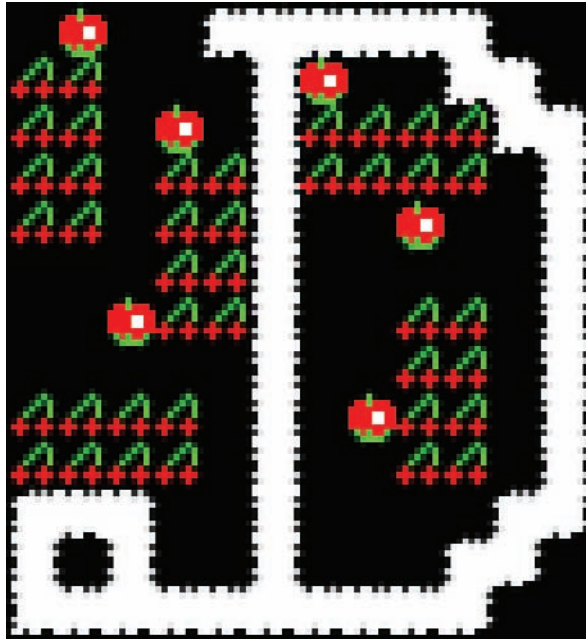
"Two of my favorite game design minds sharing a powerful set of tools for designing meaningful games? I'm so excited for this book. *A Game Design Vocabulary* may very well be the best thing to happen to game design education in more than a decade. I can't wait to put this book in the hands of my students and dev friends alike."

—**John Sharp**, Associate Professor of Games and Learning, Parsons The New School for Design

"Some of the greatest challenges to the intelligent advancement of game-making can be found in the ways we conceptualize and discuss them. This simple yet profound new vocabulary is long-overdue and accessible enough to help new creators work within a meaningful framework for games."

—**Leigh Alexander**, Game Journalist and Critic

possible for many shapes to emerge—safer and more dangerous juxtapositions of cherries and apples, patterns of tunnels that players can turn to their advantage or be trapped in.



**Figure 3.13** The first scene of *Mr. Do!* provides the player with numerous choices.

As we consider the shape of a scene, we can also think how the space of possibilities in that scene changes. Remember the first image in this book, the opening scene of *Super Mario Bros.*, which is shown again in Figure 3.14. The possibility space—the cloud of possible player choices—starts open but small. In this initial open space, a jump in one place or another is inconsequential. Then there's the first monster, whom the player can deal with in one of a few ways—jump on top of it, jump over it, jump while moving, jump straight up and rely on the monster's motion to bring it under Mario—but it must be dealt with. The space narrows.



**Figure 3.14** The possibility space in the opening scene of *Super Mario Bros.*

Past the monster, the shape opens even wider: there are a lot of tiny choices to make on and in between these hanging platforms. Will the player climb up to the top or the middle? Will the player collect the mushroom? Will she break some of the blocks? Break all the blocks? Just run straight through? And then, after that, it narrows again. Mario has to get over this pipe to see the rest of the game. There are a few different choices again. The player can jump from next to the pipe, from on top of the platforms, she can run and jump, or she can jump from a standing position. But she must prove she understands that she can use her verb, Mario's "jump," to navigate obstacles.

As we change the shape of a scene from beginning to end, alternating wide spaces of choice and narrow spaces, we create the pacing of the game. We can guide the motion of a scene in a particular direction, toward a particular point, without taking away the player's ability to choose. We can open our scenes wide and then slowly narrow them down until the player is performing our script word-for-word. We can choose the shape that is truest to the purpose of a scene. Then we can decide what kind of scene comes next and how the shape of that scene will relate to and continue from the scenes that came before. Will the next scene be more difficult, pushing back against the player's desire to continue? Will we develop new verbs, opening more possibilities?

We can also think of the shape of a scene in terms of how it is presented visually, how it leads the eye around and draws the player's attention to the most important elements of a scene. We talk about that in Chapter 4.

## Scenes with Purpose

For every scene in your game, you should be able to answer two questions: what's the purpose of this scene, and how can you accomplish it using established game vocabulary? If you want the player to feel tense in this scene, what rules and objects are in the game that will allow you to create that feeling? Are there objects you can use to add an element of timing, for example? As we saw with the examples of the electric fence at the beginning of this chapter, timing can also help develop a verb. Are there aspects of a verb or other rules that a scene could help the player understand? When we fail to tell the story we want to tell using the vocabulary of our game, remember this: that's when we resort to using devices that have no connection to our game, like movies with no player interaction.

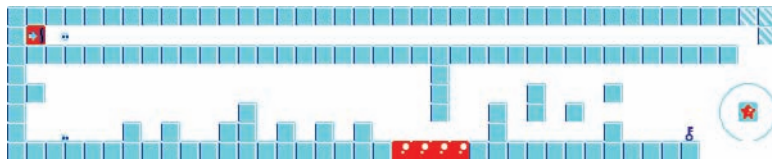
The game *Condensity* ([www.newgrounds.com/portal/view/598331](http://www.newgrounds.com/portal/view/598331)) is about guiding a group of water droplets, who all move as one but may be in different positions on the screen, to an exit that they all must occupy at the same time. This is the critical idea of the game: that the water drops may be navigating spaces that are arranged differently, with different configurations of obstacles, using the same instructions from the player. To emphasize this disparity, the droplets can be transformed (by heated or chilling elements) between two different states: the liquid state, which is affected by gravity, and the gas state, which is able to fly (see Figure 3.15).

Naturally, it is possible to have droplets that are in liquid form and droplets that are in gas form at the same time, which makes coordinating them trickier.



**Figure 3.15** Liquid and gas states of the water droplets in *Condensity*; a liquid droplet will fall, but a gas droplet can move in any direction.

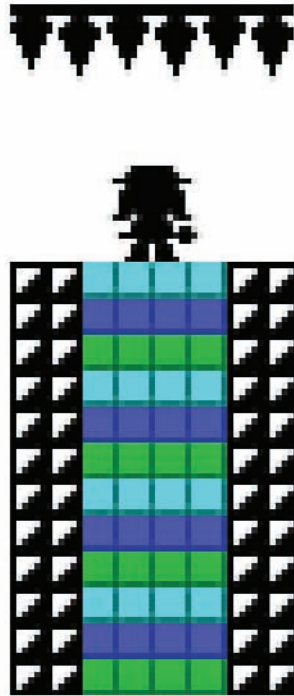
Droplets in gas form have properties that are different from the liquid form. There are fan objects that blow them around, pushing them relentlessly in a single direction. Usually these fans function like gates: to pass a fan, a gas droplet has to find a way to become liquid, or a liquid droplet needs to avoid being transformed into gas. But one scene (see Figure 3.16) finds another use for the fan: it propels a gas droplet helplessly along a path while a water droplet below, steered by the player, tries to keep up so that they can meet at the exit (where the gas droplet is transformed to water, and will fall past the exit unless the other droplet is there to catch it).



**Figure 3.16** Introducing timing in a scene puts pressure on the player.

This introduces an element of timing—of racing, of struggling to keep up—into a game that doesn’t normally have that kind of pressure. And it does it using rules that are already established. The player understands the interactions that conspire to create this situation for her; she knows why she’s running.

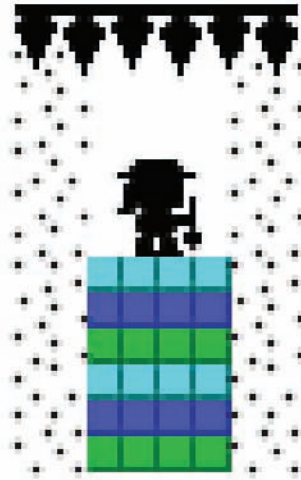
Remember the game *Tombed* we looked at in Chapter 2, “Verbs and Objects”? The one with Danger Jane and the descending spiked wall? Figure 3.17 is an early scene from that game. The purpose of this scene is to make the player aware that she can use the spiked wall’s destruction of objects as a strategy. Rules that have been established so far: “soft” blocks, the cyan, blue, and green, can be dug through. Metal blocks cannot—except by the spiked wall. It’s the latter rule that we want to develop in this scene to give it a relationship to the player that’s nontrivial.



**Figure 3.17** An early scene in *Tomb Raider* shows the player how to use spiked walls strategically.

How do we develop a rule like this—one that’s not a verb, but which governs the relationship between objects like the spikes and the various kinds of blocks? By giving the player a choice. Chased by the descending spikes, Jane has to dig through the soft blocks in the middle because she can’t dig through the metal barriers on the sides. That’s not much of a choice.

The choice comes as the spikes grow closer—and destroy the metal barriers. Once the spikes touch any part of a continuous shape, remember, the whole thing crumbles instantly (see Figure 3.18). Jane is likely somewhere in the middle of the soft-block column at this point. There are many thin layers of soft blocks, so digging through them is slow work. In fact, it’s so slow that the spikes will almost certainly catch up to Jane should she continue this route. (It might be possible to dig through all the soft blocks, if one’s timing is good enough to dig at a rapid pace. But it’s not easy.)



**Figure 3.18** The metal blocks crumble as soon as the spikes touch them.

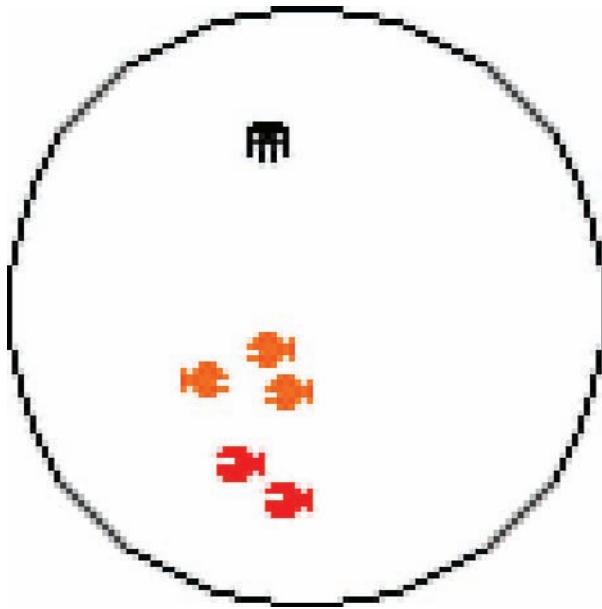
The solution is to walk left or right off the soft blocks into the open columns that have been cleared up by the crumbling of the metal barriers: to become cognizant of the fact that the spikes' transformation of the game world can be exploited by the player. The player's choice here is whether to keep digging or to escape to the side. One of these choices seems right and the other wrong, but making the "correct" choice requires cognition of the fact that destruction by the spikes presents opportunities for the player, and having to make a choice based on that knowledge helps the player internalize the rule more than merely observing the rule would.

Later in the game, other scenes revolve around the player's understanding that some of her options come from the spike wall's destruction of other game objects. Early in the game, this scene's purpose is to develop the "spike wall destroys things" rule to the point where that's clear, to establish the player's understanding of that rule.

## Layering Objects

I learned an important lesson in 2005 while tinkering with one of my first games. The game started out being about a pig that projected her astral form into a higher plane to somehow disrupt the machinations of slaughterhouses and ended up being about a squid in a pond being pursued by fish. The game is called *Pond Squid* (see Figure 3.19).

In the space of this small pond, the player has to keep the squid out of the reach of the relentlessly pursuing fish. Eventually (though unpredictably), she gains opportunities to trap fish and use them as projectiles to remove other fish, who by this point have consolidated into a giant lump that is chasing the squid around.



**Figure 3.19** Fish pursue a squid in *Pond Squid*.

All the fish follow a really simple rule, you see. They just move directly toward the squid. So though their numbers grow continuously, they all merge into a single cloud that basically moves as one. Now, at that point I wasn't the Baba Yaga of game design I am today, but I realized the solution called for another object, another kind of fish. The fish that I added followed the same rule for pursuit as the first one—move directly toward the squid—but at half the speed.

And that worked, or it would have if I hadn't made the type of fish that appears totally random—meaning the player could see fish that move at the same speed for a really long time without ever seeing a slower fish. But when there's a mix of fast and slow fish, the game is much more interesting to play than when there's just fast fish or slow fish. You can see similar design in "bullet curtain" shooting games—different layers of bullets that are moving at different speeds at the same time are much more complicated to navigate than a field of bullets moving at the same speed.

The lesson is that *layering* is important. Having objects that stack in interesting ways creates more interesting choices. Six years after I made *Pond Squid*, I was confronted with the importance of this rule again while working on *Lesbian Spider-Queens of Mars* (<http://games.adultswim.com/lesbian-spider-queens-of-mars-twitchy-online-game.html>). In this game, a Martian spider-queen pursues her escaped slaves through a maze, attempting to zap them with a bondage laser and recapture them. The slaves are armed, so if one of them manages to get