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GAME DESIGN WORKSHOP

A Playcentric Approach to Creating Innovative Games

Second Edition

Tracy Fullerton

with Christopher Swain and Steven S. Hoffman

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Chapter 4

Working with Dramatic Elements

Exercise 4.1: Making Checkers Dramatic

The game of checkers is very abstract. There is no story, no characters, and no compelling reason why you would want to capture all of your opponent's pieces, except for the fact that it's the objective of the game. For this exercise, devise a set of dramatic elements for checkers that make the game more emotionally engaging. For example, you might create a backstory, give each piece its own name and distinctive look, define special areas on the board, or whatever creative ideas you can think of to connect the players to this simple, abstract system. Now play your new game with friends or family and note their reactions. How do the dramatic elements improve or detract from the experience?

We have seen how formal elements work together to create the experience we recognize as a game, but now let's turn to those elements that engage the players emotionally with the game experience and invest them in its outcome—the dramatic elements of

games. Dramatic elements give context to gameplay, overlaying and integrating the formal elements of the system into a meaningful experience. Basic dramatic elements, like challenge and play, are found in all games. More complicated dramatic techniques, like premise, character, and story, are used in many games to explain and enhance the more abstract elements of the formal system, creating a deeper sense of connection for the players and enriching their overall experiences.

One way to create more engaging games is to study how these elements work to create engagement and how they've been used in other games—as well as other media. Your exploration of these dramatic elements and traditional tools can help you think of new ideas and new situations for your own designs.

Exercise 4.2: Dramatic Games

Name five games that you find dramatically interesting. What is it about those games that you find compelling?

who is just learning to count might find a game of Chutes and Ladders particularly challenging, while an adult who mastered that skill long ago would probably find it boring.

In addition to being individualized, challenge is also dynamic. A player might find one task challenging at the beginning of a game, but after becoming accomplished in the task, they'll no longer find it challenging. So the game must adapt to remain challenging and hold the interest of the more accomplished player.

Is there a way to look at challenge that is not defined by individual experience? One that can give us some general ideas to keep in mind when designing a game? When you set out to create the basic challenge in your game, you might start by thinking how people really enjoy themselves and which types of activities make them happy. As it turns out, the answer to this question is directly related to the concept of challenge and the level of challenge presented by an experience.

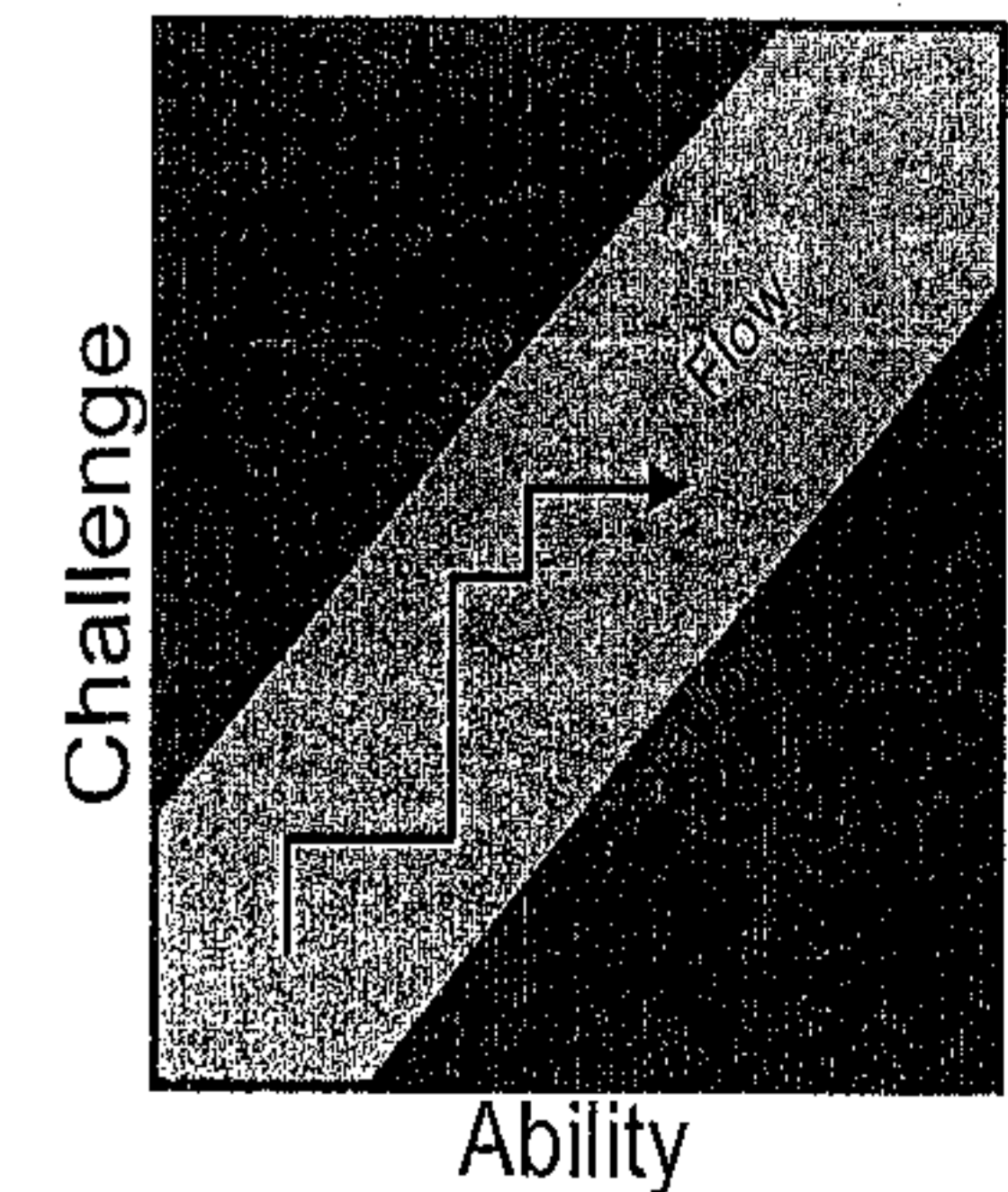
The psychologist Mihaly Csikszentmihalyi set out to identify the elements of enjoyment by studying similarities of experience across many different tasks and types of people. What he found was surprising. Regardless of age, social class, or gender, the people he talked to described enjoyable activities in much the same way. The activities themselves spanned many different disciplines, including performing music, climbing rocks, painting, and playing games, but the words and concepts people used to describe their enjoyment of them were similar. In all these tasks, people mentioned certain conditions that made the activities pleasurable for them:

First, the experience (of enjoyment) usually occurs when we confront tasks we have a chance of completing. Second, we must be able to concentrate on what we are doing. Third and fourth, the concentration is usually possible because the task undertaken has clear goals and provides immediate feedback. Fifth, one acts with a deep but effortless involvement that removes from awareness the worries and frustrations of everyday life. Sixth, enjoyable

experiences allow people to exercise a sense of control over their actions. Seventh, concern for the self disappears, yet paradoxically the sense of self emerges stronger after the flow experience is over. Finally, the sense of the duration of time is altered; hours pass by in minutes, and minutes can stretch out to seem like hours. The combination of all these elements causes a sense of deep enjoyment that is so rewarding people feel like expending a great deal of energy is worthwhile simply to be able to feel it.¹

Based on his findings, Csikszentmihalyi created a theory called "flow" that is illustrated in Figure 4.1. When a person begins performing an activity, they usually have a low level of ability. If the challenge of the activity is too high, they will become frustrated. As they continue on, their ability rises, however, and if the challenge level stays the same, they will become bored. Figure 4.1 shows a path of rising challenge and ability balanced carefully between frustration and boredom, which would result in an optimal experience for a user.

If the level of challenge remains appropriate to the level of ability, and if this challenge rises as the ability level rises, the person will stay in the center region and experience a state that Csikszentmihalyi calls "flow." In flow, an activity balances a person



4.1 Flow diagram

CHALLENGE

Most people would agree that one thing that engages them in a game is challenge. What do they really mean by challenge, though? They don't simply mean that they want to be faced with a task that is hard to accomplish. If that were true, the challenge of games would hold little difference from the challenges of everyday life. When players talk of challenge in

games, they're speaking of tasks that are satisfying to complete, that require just the right amount of work to create a sense of accomplishment and enjoyment.

Because of this, challenge is very individualized and is determined by the abilities of the specific player in relationship to the game. A young player

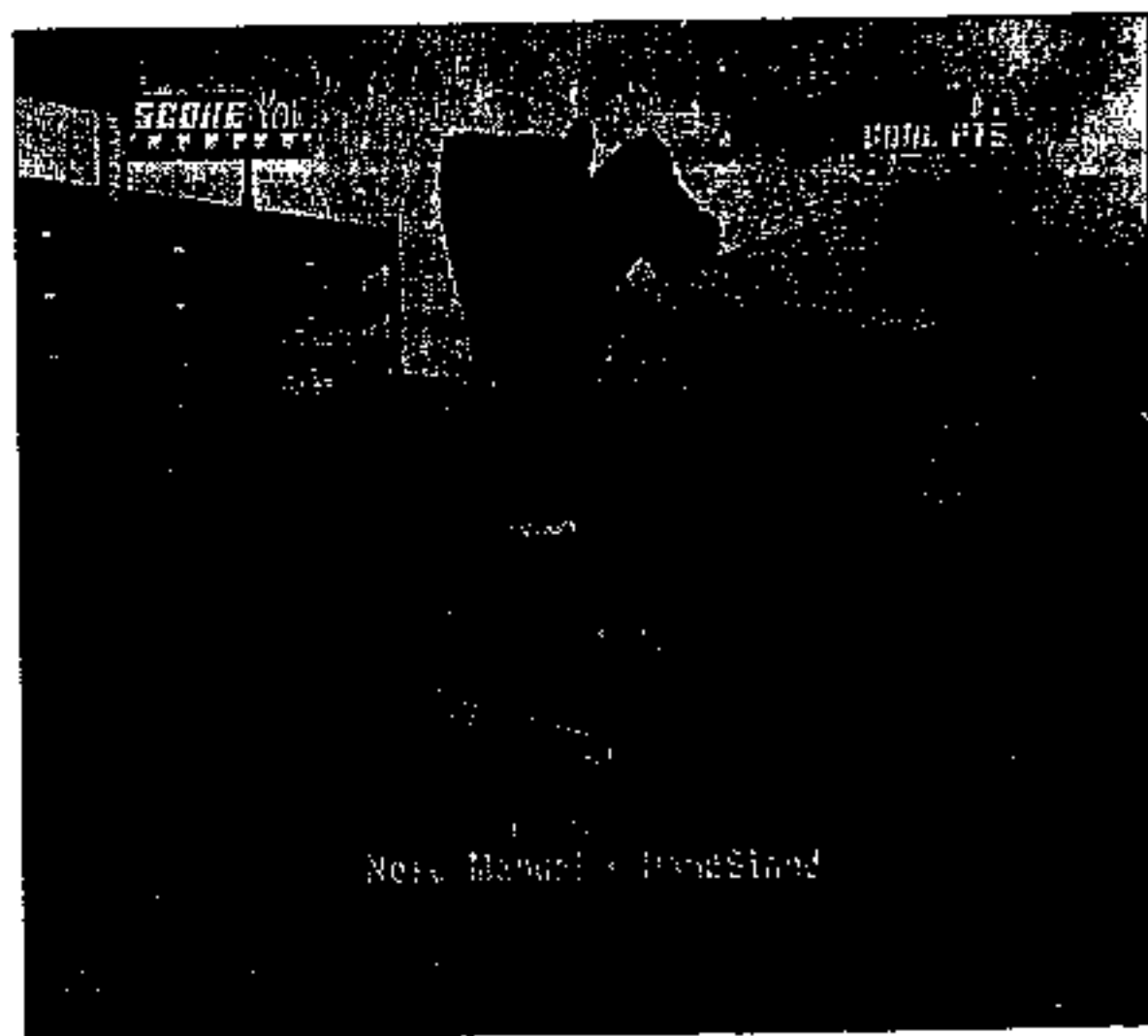
between challenge and ability, frustration and boredom, to produce an experience of achievement and happiness. This concept is very interesting for game designers because this balance between challenge and ability is exactly what we are trying to achieve with gameplay. Let's look more closely at the elements that help to achieve flow.

A Challenging Activity That Requires Skill

According to Csikszentmihalyi, flow occurs most often within activities that are "goal-directed and bounded by rules . . . that could not be done without the proper skills."² Skills might be physical, mental, social, etc. For a person who does not have any of the skills a task requires, it is frustrating and meaningless. For a person who has the skills but is not completely assured of the outcome, a task is challenging. This is particularly important to game design.

Exercise 4.3: Skills

List the types of skills required by the games you enjoy. What other types of skills do people enjoy that you could incorporate into the games you design?



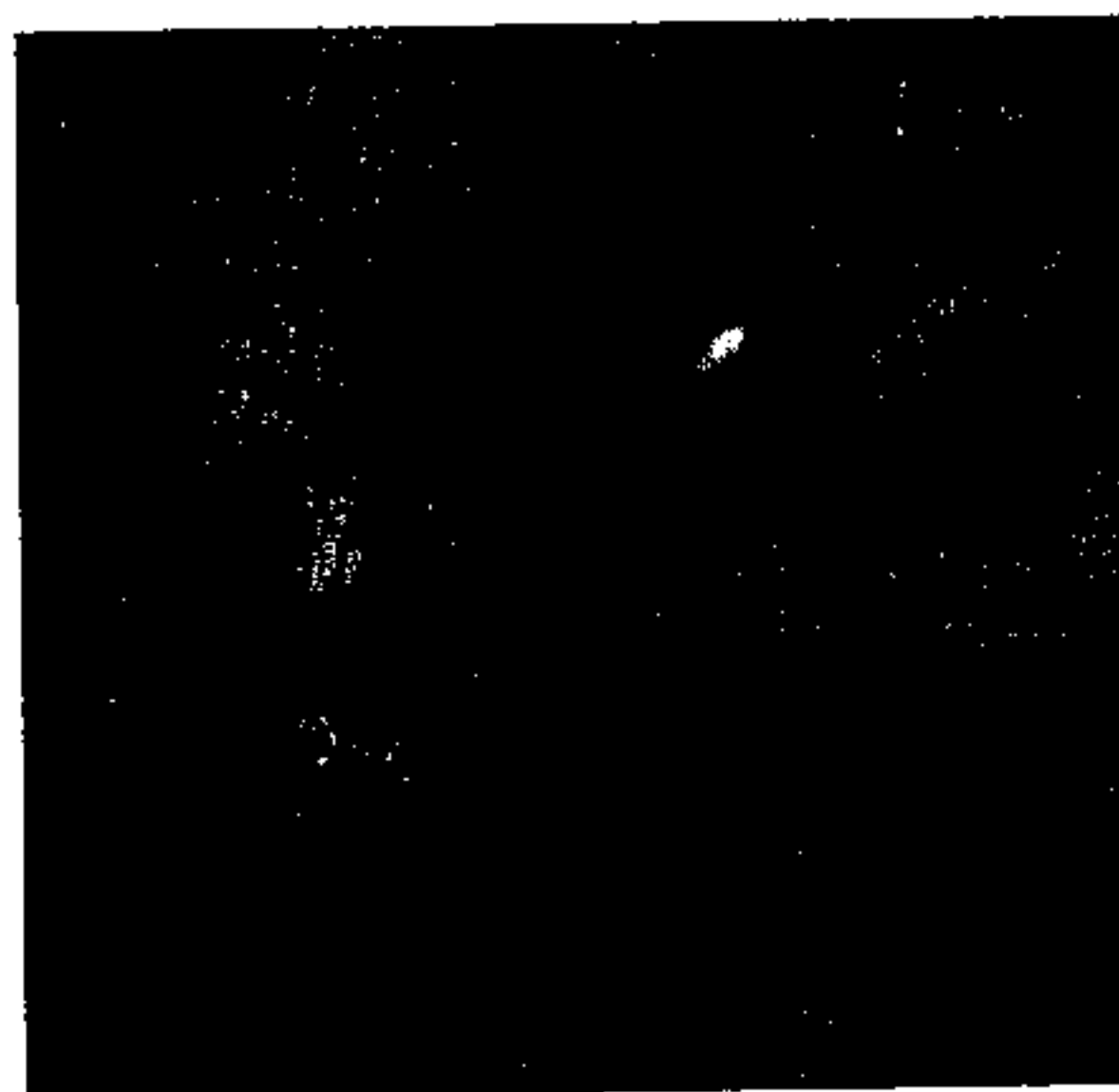
4.2 An activity that requires skill: Tony Hawk's Pro Skater

The Merging of Action and Awareness

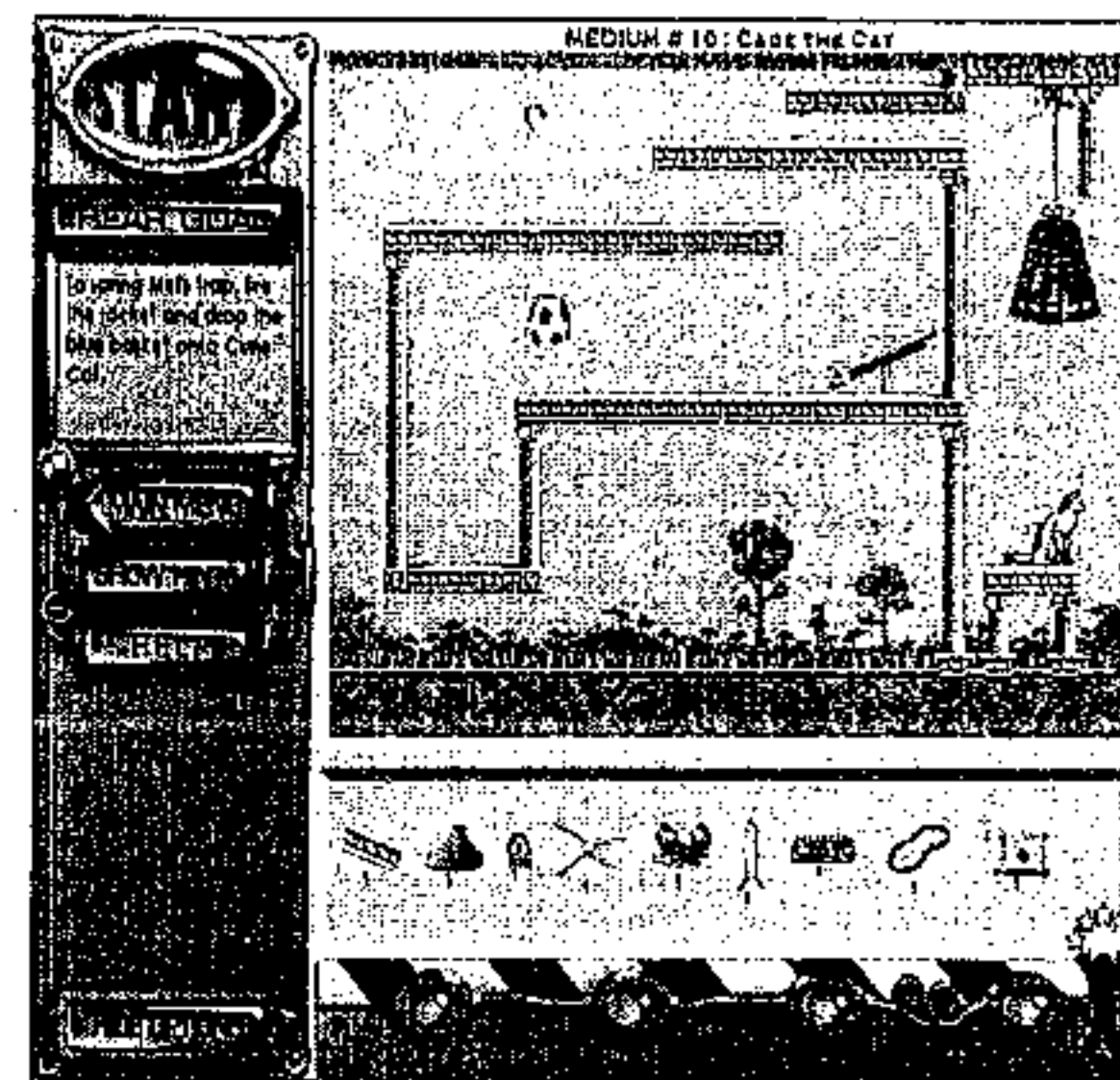
"When all of a person's relevant skills are needed to cope with the challenges of a situation, that person's attention is completely absorbed by the activity," Csikszentmihalyi goes on to say. "People become so involved in what they're doing that the activity becomes spontaneous, almost automatic; they stop being aware of themselves as separate from the actions they are performing."³

Clear Goals and Feedback

In everyday life, there are often contradictory demands on us; our goals are not always clearly defined. But in flow experiences, we know what needs to be done, and we get immediate feedback on how well we're achieving our goals. For example, musicians know what notes to play next and can hear when they make mistakes; the same is true whether it's playing tennis or rock climbing. When a game has clearly defined goals, the players know what needs to be done to win, to move to the next level, to achieve the next step in their strategy, etc., and they receive direct feedback for their actions toward those goals.



4.3 Merging action and awareness: Metal Gear Solid 3



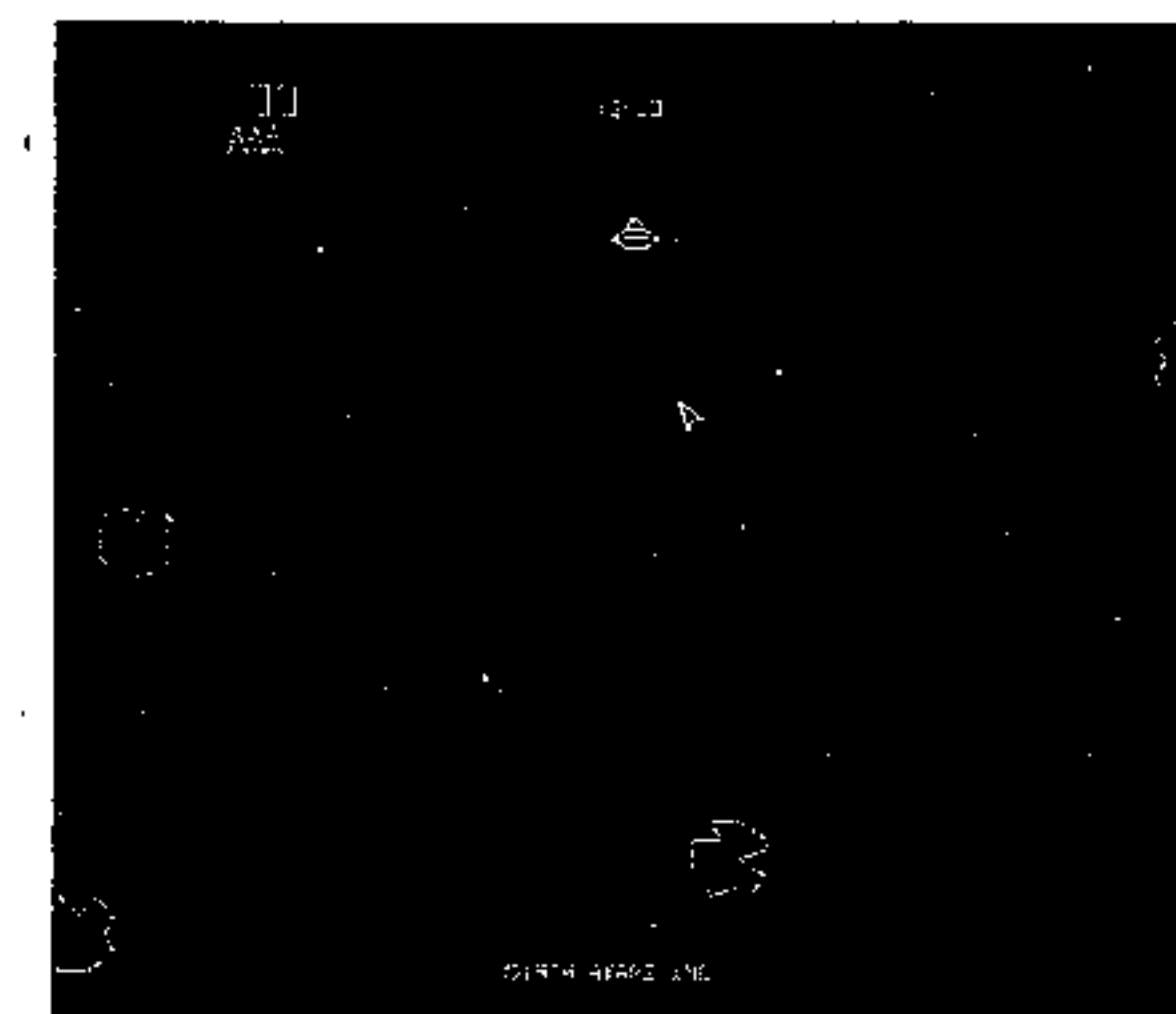
4.4 Clear goals and feedback: Incredible Machine: Even More Contraptions

Exercise 4.4: Goals and Feedback

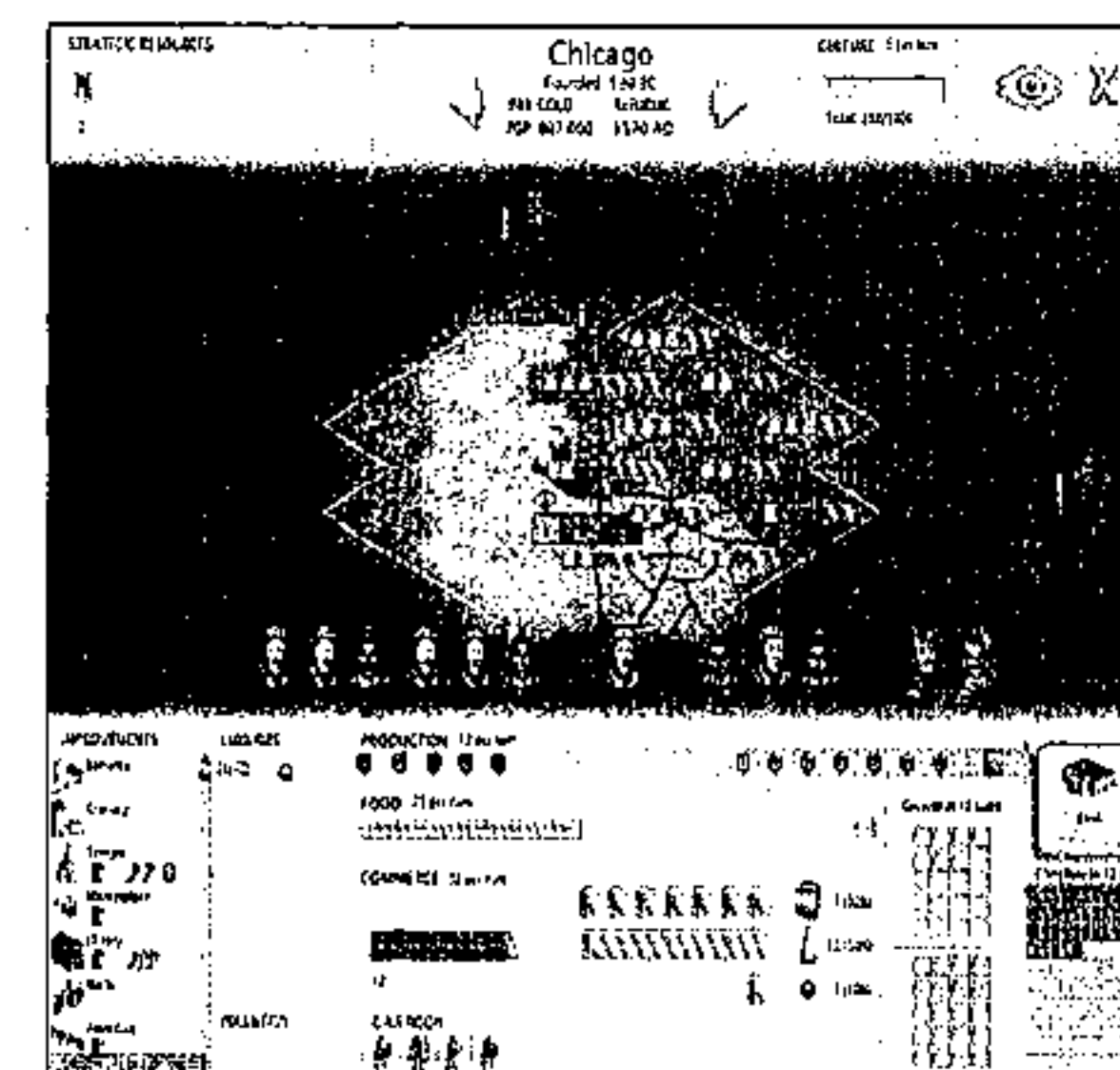
Pick three games and list the types of feedback generated in each. Then describe how the feedback relates to the ultimate goal of each game.

Concentration on the Task at Hand

Another typical element of flow is that we are aware only of what's relevant here and now. If a musician thinks of his health or tax problems when playing, he is likely to hit a wrong note. If a surgeon's mind wanders during an operation, the patient's life is in danger. In game flow, the players are not thinking of what is on television or how much laundry they have to do; they are focused entirely on the challenges presented in the game. Many game interfaces take over the entire screen of the PC or build impressive audiovisual worlds to focus our attention. Here is a quote from a mountaineer describing a flow experience (but these might as well be the words of an EverQuest player): "You're not aware of other problematic life situations. It becomes a world unto its own, significant only to itself. It's a concentration thing. Once you're in the situation, it's incredibly real, and you're very much in charge of it. It becomes your total world."⁴



4.5 Concentration on the task: Asteroids



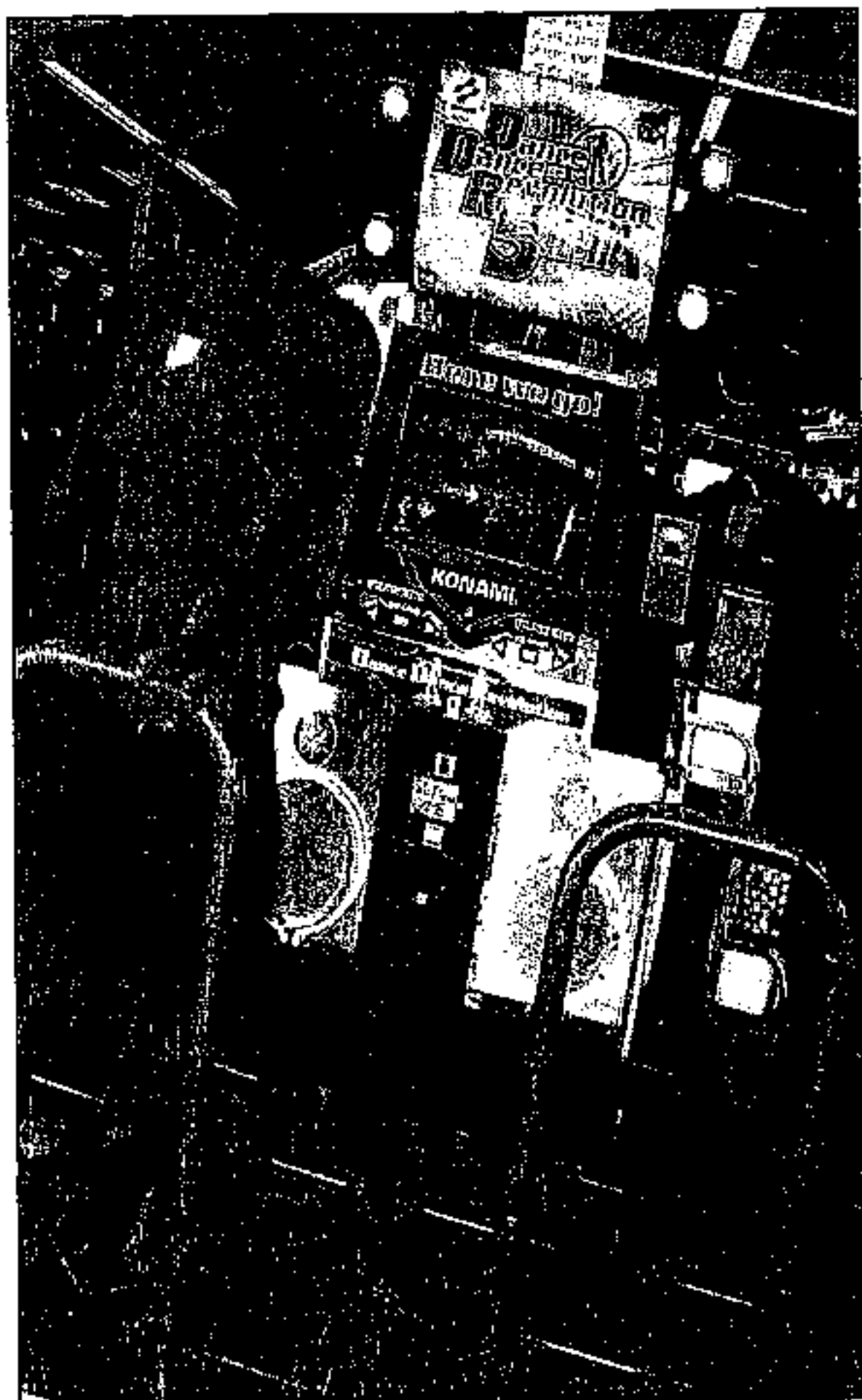
4.6 Paradox of control: Civilization III

The Paradox of Control

People enjoy the sense of exercising control in difficult situations; however, it is not possible to experience a feeling of control unless the outcome is unsure, meaning that the person is not actually in complete control. As Csikszentmihalyi says, "Only when a doubtful outcome is at stake, and one is able to influence that outcome, can a person really know she is in control."⁵ This "paradox of control" is a key element of the enjoyment of game systems. How to offer meaningful choices to players, without offering complete control or an assured outcome, is a subject we will return to many times throughout this book.

The Loss of Self-Consciousness

In everyday life, we are always monitoring how we appear to other people and protecting our self-esteem. In flow we are too involved in what we're doing to care about protecting the ego. "There is no room for self-scrutiny. Because enjoyable activities have clear goals, stable rules, and challenges well matched to skills, there is little opportunity for the self to be threatened."⁶ Although the flow experience is so engrossing that we forget our self-consciousness while we are engaged in it, after a flow activity is over, we generally emerge with a stronger self-concept. We know that we have succeeded in meeting a difficult challenge. So, for example, the musician feels at one with the harmony of the cosmos; the athlete moves at one with the team; the game player feels empowered by the efficacy of her strategies. Paradoxically, the self expands through acts of self-forgetfulness.



4.7 Loss of self-consciousness: Dance
Dance Revolution

The Transformation of Time

"One of the most common descriptions of optimal experience is that time no longer seems to pass the way it ordinarily does," says Csikszentmihalyi. "Often hours seem to pass by in minutes; in general, most people report that time seems to pass much faster. But occasionally the reverse occurs: Ballet dancers describe how a difficult turn that takes less than a second in real time stretches out for what seems like minutes."⁷ Digital games are notorious for sucking players in for hours on end because they involve players in flow experiences that distort the passage of time.

Experience Becomes an End in Itself

When most of these conditions are present, we begin to enjoy whatever it is that produces such an experience, and the activity becomes autotelic, which is Greek for something that is an end in itself. Most things in life are exotelic. We do them not because we enjoy them but to achieve some goal. Some activities such as art, music, sports, and games are usually autotelic: There is no reason for doing them except to enjoy the experience they provide.

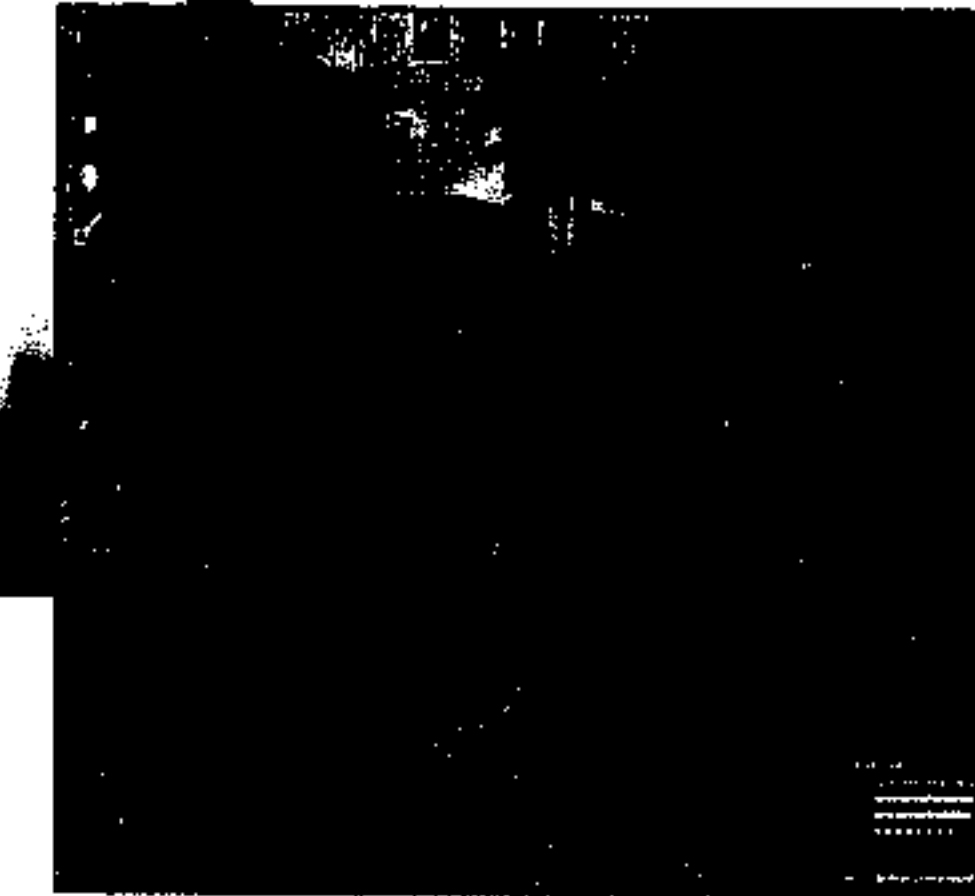
These elements of enjoyment are not a step-by-step guide to creating enjoyable, challenging game experiences; you need to work out for yourself what these ideas mean in the context of your own games. But the focus that Csikszentmihalyi places on goal-oriented, rule-driven activities with clear focus and feedback are clues that might point you in a beneficial direction.

Think about questions like these as you design your game:

- What skills does your target audience have? What skill level are they at? Within that knowledge, how can you best balance your game for your players' abilities?
- How can you give your players clear, focused goals, meaningful choices, and discernible feedback?
- How can you merge what a player is doing physically with what they need to be thinking about in the game?
- How can you eliminate distractions and fear of failure; that is, how can you create a safe



4.8 Transformation of time: Dark Age
of Camelot



environment where players lose their sense of self-consciousness and focus only on the tasks at hand?

- How can you make the game activity enjoyable as an end in itself?

Answering these questions is a good first step toward creating an environment where challenge becomes a central attraction rather than a feature that is too off-putting, or too simplistic, to engage players' emotions.

PLAY

The potential for play is another key dramatic element that engages players emotionally in games. As discussed in Chapter 2, play can be thought of as freedom of movement within a more rigid structure. In the case of games, the constraints of the rules and procedures are the rigid structure, and the play within that structure is the freedom of players to act within those rules—the opportunity for emergent experience and personal expression.

The Nature of Play

The Promise of Play, a documentary film investigating the subject, queried a number of people about the nature of play. Here are some of their responses: "Play is boisterous." "It's non-directed." "It's spontaneous." "It's not scripted." "Play is loud." "Not work." "It's physical." "It's fun." "An emotional state when you're

having a good time." "Play actually is meaningless behavior. You do it for its intrinsic value to you, but play can have utility. That is, you end up developing skills, and those skills can then be used in other arenas." "I think play is one of the ways that we get a feel for the shape of the world." "Play is the central item in children's lives. It's like work is to grown-ups. They play to learn." "Play is child's work. It's all that young children do to learn about the world that they're in."⁸

It's clear from these responses that play has many faces: It helps us learn skills and acquire knowledge, it lets us socialize, it assists us in problem solving, it allows us to relax, and it makes us see things differently. Play is not too serious; it induces laughter and fun, which is good for our health. On the other hand, play can be somewhat serious: Play as a process of experimentation—pushing boundaries and trying new things—is an area of common ground for artists and scientists, as

	Free-form play (<i>paida</i>)	Rule-based play (<i>ludus</i>)
Competitive play (<i>agôn</i>)	Unregulated athletics (foot racing, wrestling)	Boxing, billiards, fencing, checkers, football, chess
Chance-based play (<i>alea</i>)	Counting-out rhymes	Betting, roulette, lotteries
Make-believe play (<i>mimicry</i>)	Children's initiations, masks, disguises	Theater, spectacles in general
Vertigo play (<i>ilinx</i>)	Children "whirling," horseback riding, waltzing	Skiing, mountain climbing, tightrope walking

4.9 Examples taken from *Man, Play and Games* (diagram based on Rules of Play by Salen and Zimmerman)

well as children. In fact it is one of the few areas where children are seen as experts with something to teach adults. Play is recognized as a way of achieving innovation and creativity because it helps us see things differently or achieve unexpected results. The one thing that stands out from these meditations on play is that play is not any one thing but rather a type of approach to an activity. A playful approach can be applied to even the most serious or difficult subjects because playfulness is a state of mind rather than an action.

Play theorist Brian Sutton-Smith, in his book *The Ambiguity of Play*, describes a number of activities that could be considered play, including: mind play like daydreaming; solitary play such as collection or handicrafts; social play such as joking around or dancing; performance play such as playing music or acting; contest play such as board games or video games; and risky play such as hang gliding or extreme sports.⁹ Playful activities such as these were categorized by sociologist Roger Callois in his 1958 book *Man, Play and Games* into four fundamental types of play:

- Competitive play, or *agôn*
- Chance-based play, or *alea*
- Make-believe play, or *mimicry*
- Vertigo play, or *ilinx*

Callois modifies these categories further with the concepts of *ludus*, or rule-based play, and *paida*, or free-form, improvisational play. Figure 4.9 shows examples of types of play within each of these categories. What is interesting for game designers about this classification system is that it allows us to talk specifically about some of the key pleasures of the types of play associated with different types of game systems. For example, strategy games like chess or Warcraft III

are clearly competitive, rule-based play, while role-playing games involve both mimicry and competition in a rule-based environment. Examining the pleasures of each of these types of play can help you determine player experience goals for your game system.

Types of Players

After categorizing play itself, we can also identify the various types of players; each of whom comes to a game with different needs and agendas. Similar to the basic player types described by Richard Bartle in Chapter 3 on page 51, these categories address the pleasures of play from the point of view of the player.¹⁰

- *The Competitor*: Plays to best other players, regardless of the game
- *The Explorer*: Curious about the world, loves to go adventuring; seeks outside boundaries—physical or mental
- *The Collector*: Acquires items, trophies, or knowledge; likes to create sets, organize history, etc.
- *The Achiever*: Plays for varying levels of achievement; ladders and levels incentivize the achiever
- *The Joker*: Doesn't take the game seriously—plays for the fun of playing; there's a potential for jokers to annoy serious players, but on the other hand, jokers can make the game more social than competitive
- *The Artist*: Driven by creativity, creation, design
- *The Director*: Loves to be in charge, direct the play
- *The Storyteller*: Loves to create or live in worlds of fantasy and imagination
- *The Performer*: Loves to put on a show for others
- *The Craftsman*: Wants to build, craft, engineer, or puzzle things out

This list is not exhaustive, and not all of these types of players have been equally addressed by today's digital games, meaning that they offer an interesting area of study for the game designer looking for new areas of play with which to emotionally engage players.

Exercise 4.5: Player Types

For each player type described above, list a game you know that appeals to that variety of player. What type of player do you tend to be?

Levels of Engagement

In addition to thinking about categories of play and types of players, the level of engagement can also vary; not all players need to participate at the same level to find the same enjoyment. For example, spectators might find watching sports, games, or other events more satisfying than playing them. We don't tend to think of designing games for spectators, but the truth is, many people enjoy games in this way. How many times have you sat and watched a friend make their way through the level of a console game, waiting for your turn at the controls? Is there a way as a designer to take this spectator mode into account when designing the play?

Participant play is, of course, the most common way to think about play. As opposed to spectator play, where risk is minimal, participant play is active and involved. It is also the most directly rewarding for all the reasons we've already talked about. Sometimes participants experience transformational play: This is a deep level of play that actually shapes and alters the

PREMISE

In addition to challenge and play, games also use several traditional elements of drama to create player engagement with their formal systems. One of the most basic is the concept of premise, which establishes the action of the game within a setting or metaphor. Without a dramatic premise, many games would be too abstract for players to become emotionally invested in their outcome.



4.10 Peacemaker

player's life. Children experience this level when they learn life lessons through play; in fact, it is one of the reasons they engage in play naturally.

Some games in the emerging genre of serious games attempt to access this level of transformational play as a key goal of their player experience. For example, the game *Peacemaker*, in which players take on the role of a leader trying to bring peace to the Middle East, is an example of a game that attempts to educate players through direct experience with the intricate problems involved in that real-world situation.

It is an interesting area to think about if games are to advance as an art form. Certainly other forms of art inspire transformation and deep learning through their experience. Perhaps finding ways to create this level of play can raise the bar for games as an art form as well.

Imagine playing a game in which you are a set of data. Your objective is to change your data to increase its values. To do this, you engage other sets of data according to complex interaction algorithms. If your data wins the analysis, you win. This all sounds pretty intangible and rather boring, but it is a description of how a typical combat system might work from a formal perspective. To connect players to the game

emotionally, the game designer creates a dramatic premise for the interaction that overlays the formal system. In the previous example, let's imagine you play a dwarf named Gregor rather than a set of data. You engage an evil wizard, rather than an opposing set of data, and you attack him with your broadsword, rather than initiating that complex interaction algorithm. Suddenly, the interaction between these two sets of data takes on a dramatic context over and above its formal aspects.

In traditional drama, premise is established in the exposition of a story. Exposition sets up the time and place, characters and relationships, the prevailing status quo, etc. Other important elements of story that can be addressed in the exposition are the problem, which is the event that upsets the status quo and creates the conflict; and the point of attack, which is the point at which the problem is introduced and the plot begins. While there is not a direct one-to-one relationship, these last two elements of exposition are mirrored in our definition of formal game elements by the concepts of objective and starting action discussed in the previous chapter.

To better understand premise, let's look at some examples from well-known stories from films and books rather than games:

In *Star Wars: Episode IV*, the story is set in a far away galaxy. The protagonist, Luke Skywalker, is a young man who wants to get away from his uncle's remote farm and join the interstellar rebellion, but responsibility and loyalty hold him back. The story begins when his uncle buys two droids carrying secret information that is critical to the rebellion.

In *The Fellowship of the Ring*, the story is set in Middle-earth, a fantasy world of strange races and characters. The protagonist, Frodo Baggins, is a young hobbit who is happy right where he is—at home. The story begins when Frodo inherits a ring from his uncle, which turns out to be a powerful artifact, the existence of which threatens the safety of all of Middle-earth.

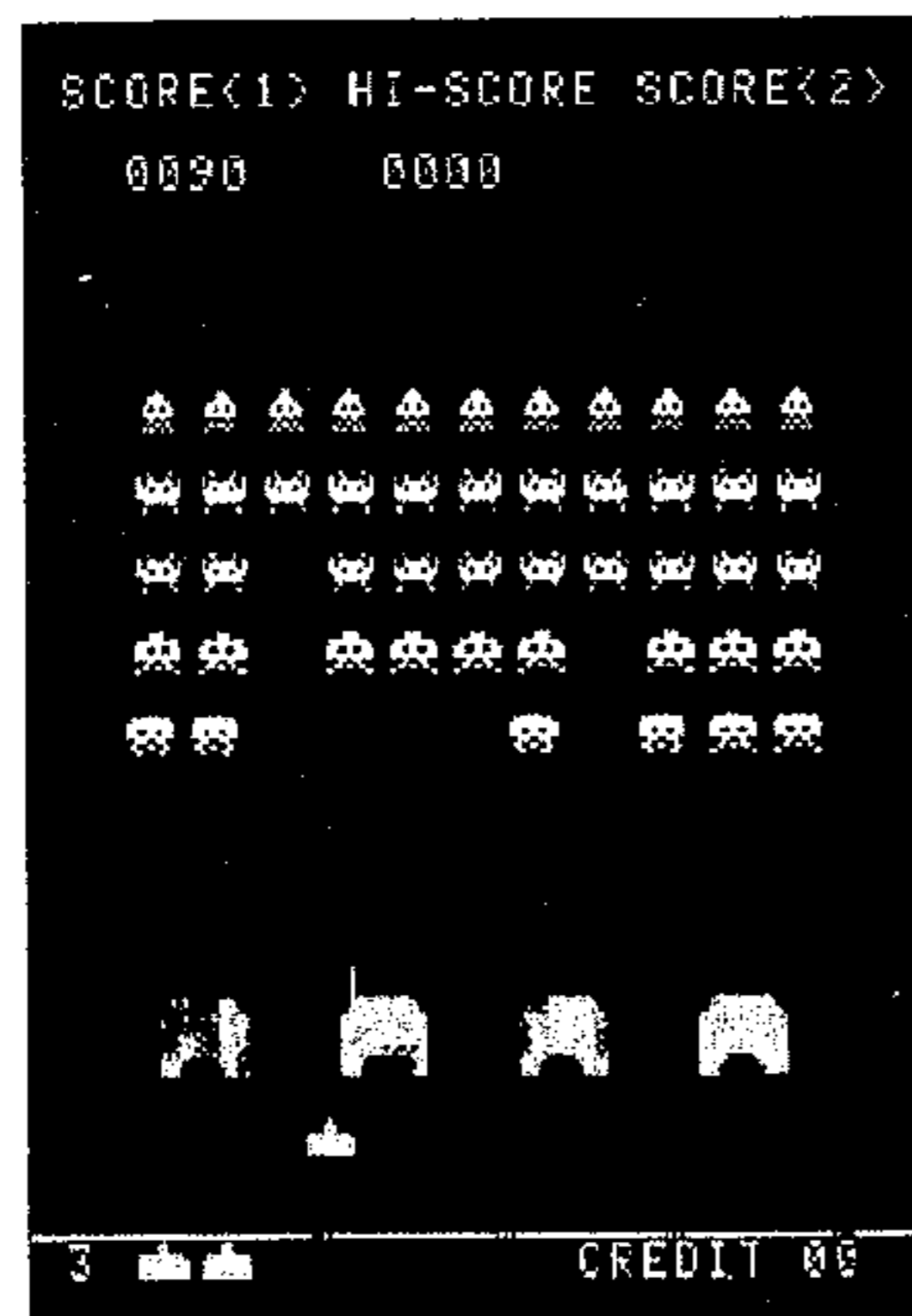
In *Die Hard*, the story is set in a modern office tower in downtown Los Angeles. The protagonist, John McClane, is an off-duty New York City police

officer who is in the building trying to make amends with his estranged wife. The story begins when the building is taken over by terrorists and McClane's wife is taken hostage.

These are each examples of how premise is defined in traditional stories. As can be seen, the premise sets the time and place, the main character(s) and the objective, as well as the action that propels the story forward.

Now let's look at examples of premise from games that you might have played. In a game, the premise might be as complex as those previously mentioned, involving characters with dramatic motivations, or a game's premise can simply be a metaphor overlaying what would otherwise be an abstract system.

First, here is a very simple game premise: in *Space Invaders*, the game is set on a planet, presumably Earth, which is attacked by aliens. You play an anonymous protagonist responsible for defending the planet from the invaders. The story begins when the first shot is fired. Clearly this premise



4.11 Space Invaders

has none of the richness that we see in the earlier stories. It does, however, have a simplicity and effectiveness that made it very powerful as a game premise. No player needed to read the backstory of *Space Invaders* to feel the tension of the steadily approaching aliens.

Now, let's look at some games that have attempted to create somewhat more developed premises. In *Pitfall*, the game is set in the "deep recesses of a forbidden jungle."¹¹ You play Pitfall Harry, a "world famous jungle explorer and fortune hunter extraordinaire." Your goal is to explore the jungle and find hidden treasures while surviving various hazards like holes, logs, crocodiles, quicksand, etc. The story begins when you enter the jungle.

In *Diablo*, you play a wandering warrior who arrives in the town of Tristram, which has been ravaged by Diablo. The townspeople ask for your help in defeating Diablo and his undead army, which is ensconced in the dungeon beneath the church. The story begins when you accept the quest.

In *Myst*, the game is set on a strangely deserted island filled with arcane mechanical artifacts and puzzles. You play an anonymous protagonist with no knowledge of *Myst* Island or its inhabitants. The story begins when you meet SIRRUS and ACHENAR, two brothers trapped in magical books in the island's library. The brothers, who accuse each other of betrayal,

each need you to find some missing pages of their books to help them escape, but both warn you not to help the other brother.

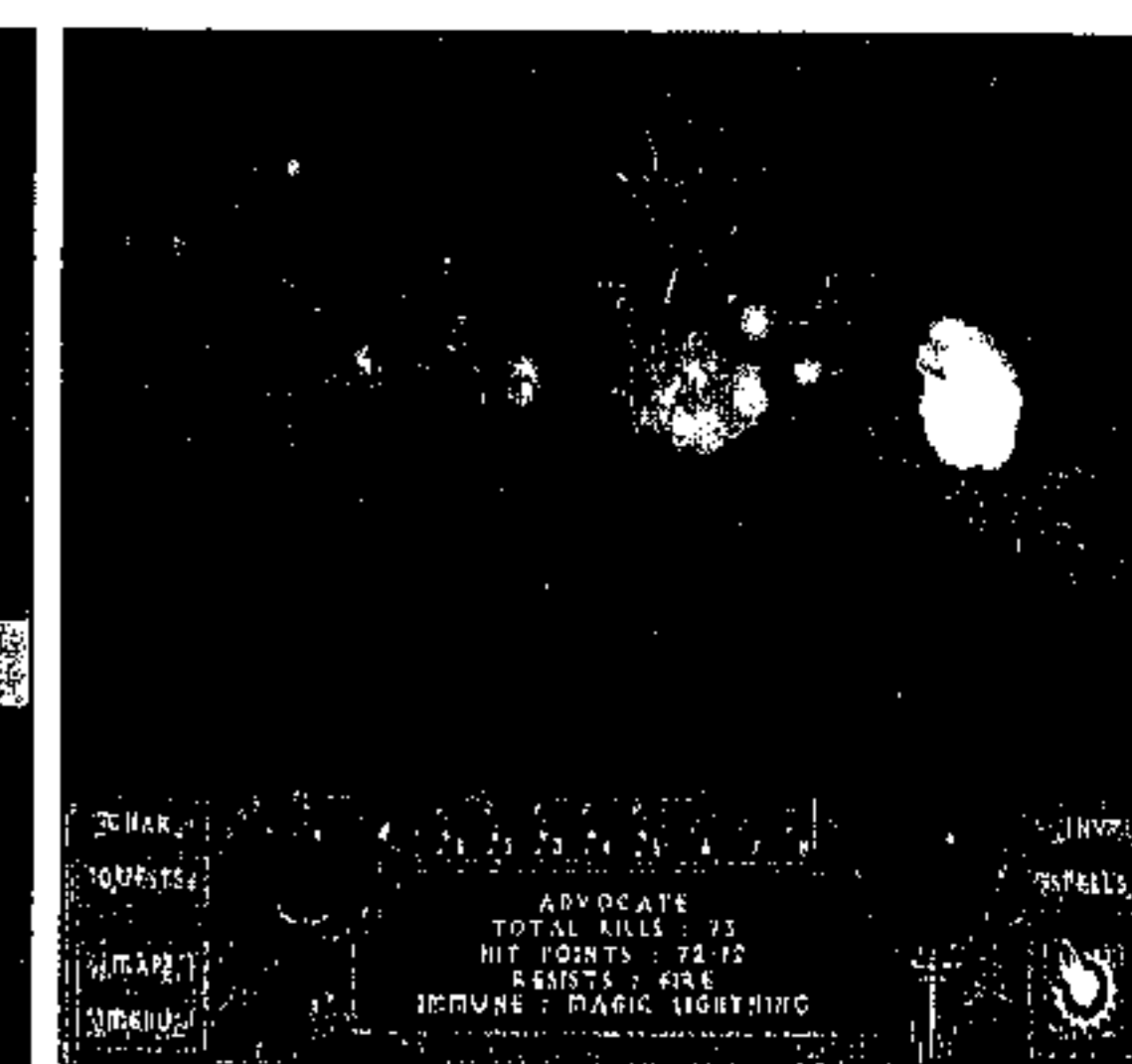
Exercise 4.6: Premise

Write out the premise for five games that you've played and describe how this premise enhances the game.

The first task of a premise is to make a game's formal system playable for the user. Rather than shooting at abstract blocks on a screen, players shoot at aliens in *Space Invaders*. Rather than searching for a generic resource worth 5000 points, players look for diamond rings in *Pitfall*. Beyond simply concretizing abstract system concepts and making the game playable, a well thought-out premise can also create a game that appeals to players emotionally.

For example, the premise of *Myst* not only sends the player on a quest to find the missing pages of one or both of the brothers' magical books, but it also implies that the brothers are not to be trusted and one or both of them might be duping the player. This makes the experience richer for the player, who must determine, by clues found in each age, which, if either, brother to help.

Creating a premise that unifies the formal and dramatic elements is another opportunity for the game



4.12 Pitfall and Diablo



4.13 *Myst*

designer to heighten the experience of players. As digital games have evolved, more and more designers have begun to make use of elaborate premises

in their designs, which, as we'll see, have evolved to the point where they can be considered to be fully realized stories.

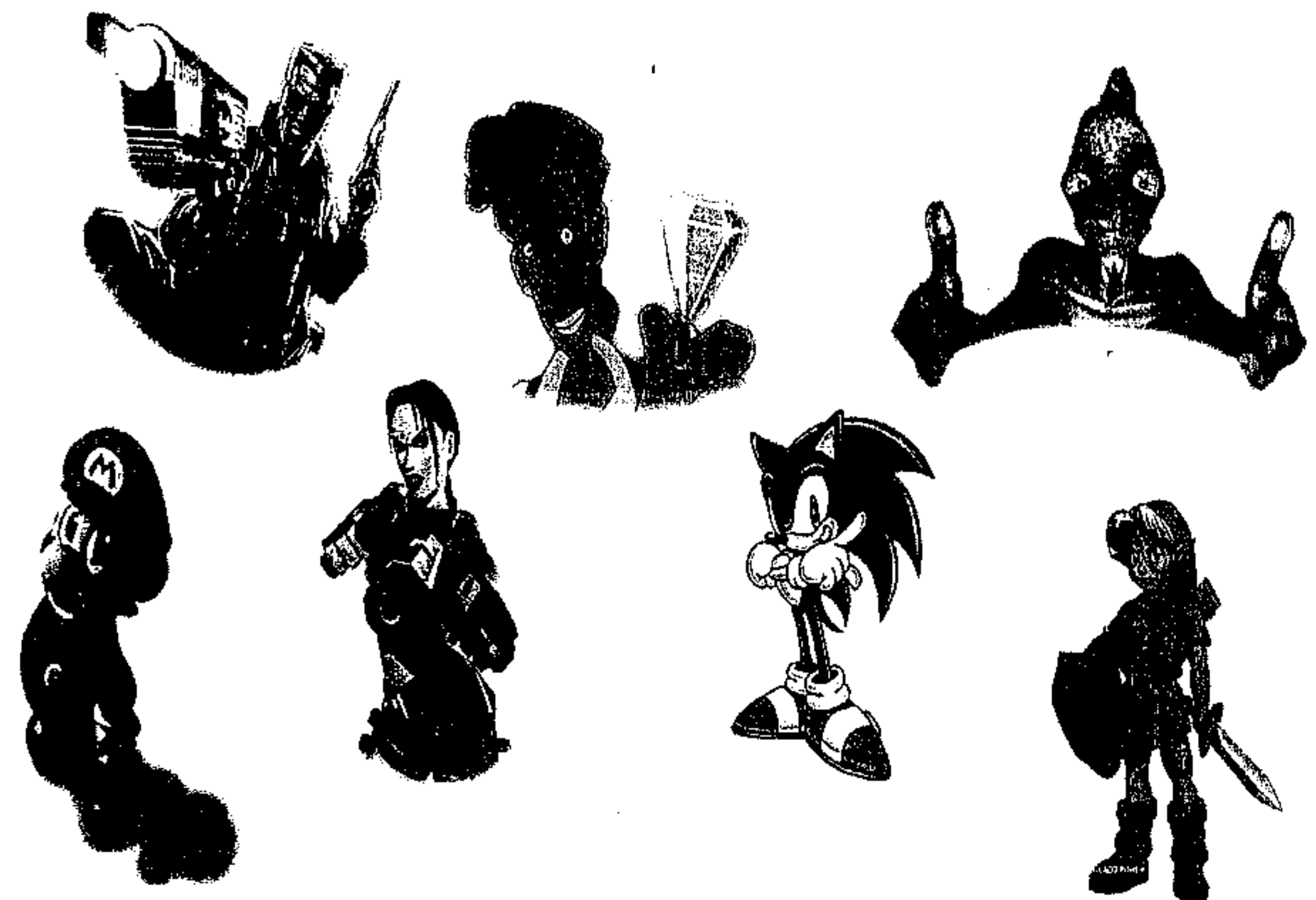
CHARACTER

Characters are the agents through whose actions a drama is told. By identifying with a character and the outcome of their goals, the audience internalizes the story's events and empathizes with its movement toward resolution.

There are several ways to understand fictional characters in stories. The first, and probably most common, is psychological—the character as a mirror for the audience's fears and desires. However, characters can also be symbolic, standing for larger ideas such as Christianity, the American dream, democratic ideals, etc. Or they can be representative: standing for a segment of people, such as socioeconomic or ethnic

groups, a group with a specific gender, etc. Characters can also be historic, depicting real-world figures. How characters are used in a story depends greatly on the type of story being told. An action adventure story might deal only with stereotypical characters who represent certain cultural clichés. Or perhaps it is an action story told as a metaphor or allegory. Perhaps the main character of this action story is symbolic of a larger idea, like truth, justice, and the American way.

The main character of a story is also called the protagonist. The protagonist's engagement with the problem creates the conflict that drives the story. Working against the main character is the antagonist,



4.14 Digital game characters (clockwise from top left): Duke Nukem, Guybrush Threepwood, Abe, Link, Sonic the Hedgehog, Lara Croft, and Mario

Guybrush Threepwood image courtesy of LucasArts, a division of Lucasfilm Entertainment Company Ltd.

who opposes the main character's attempts to solve the problem. The antagonist can be a person or some other force that works against the main character. Characters can be major or minor—major characters have a significant impact on the story's outcome, while minor characters have a small impact.

Characters are defined within the story by what they say, what they do, what they look like, or what others say about them. These are called methods of characterization. In addition to function and impact on the story, characters can vary in the complexity of their characterization. If a character has well-defined traits and a realistic personality or undergoes a significant change in personality during the story, they can be thought of as a "round" character. Examples of round characters would be Humphrey Bogart's Rick Blaine from *Casablanca*, Hamlet, or Scarlet O'Hara from *Gone with the Wind*. Characters who have few (if any) defined traits and a shallow personality are considered to be "flat." Flat characters show little or no

change in personality, and they are often used as foils to show off the elements of another character. They are also usually recognizable as stereotypes: the lazy guard, the evil stepmother, the jolly doorman, etc.

No matter what level of complexity a character is written with, there are four key questions to ask when writing to make sure you have really thought through the character's presence in your story:

- What does the character want?
- What does the character need?
- What does the audience/player hope?
- What does the audience/player fear?

These questions are applicable to game characters as well as characters in traditional media. In fact, game characters have many of the same characteristics and functions as traditional characters, and they are often created using the same techniques of characterization.

Game characters also have some unique considerations. The most important of these is the balance between "agency" and "empathy." Agency is the practical function of a character to serve as a representation of the player in the game. Agency can be completely utilitarian, or it can include aspects of creativity, role-playing and identification. Empathy is the potential for players to develop an emotional attachment to the character, to identify with their goals and, consequentially, the game objectives.

Agency and empathy must be considered at every level of the game design that involves characters. For example, are characters predesigned? Do they have an existing backstory and motivations? Or are they player-created characters? Do they allow customization and growth? Early game characters were completely defined by how they looked, with little or no attempt at characterization. Mario, in his first appearance in Donkey Kong, was defined by his funny nose and signature cap and overalls. While his motivation, rescuing Pauline, was integrated into both the formal and dramatic aspects of the game, he was ultimately a flat, static character who did not change or grow over the course of the game. More importantly, Mario would not do anything to accomplish his goal without the player's control.

Today many game characters have deep backstories and rich characterizations that affect the player's experience of the game. For example, Kratos, the main character of God of War, is a Spartan general who is sent to kill the god Ares. His duty is intertwined with

fate, and as the game progresses, we discover his motivation to be much deeper than a simple order; he blames Ares for the death of his family, and this mission is one of revenge. Another example is Wander, the protagonist of Shadow of the Colossus. Wander is motivated by his desire to resurrect Mono, a girl who has been sacrificed. We don't know much about the relationship between Wander and Mono or much about Wander himself. But his character is rounded by his actions and demeanor, and the changes that take place in him over the course of the game as he gradually transforms into the form of his own enemy, the Colossi he has been ordered to destroy.

Avatars, however, in games like World of Warcraft or City of Heroes, are player created, often with great investment of time and money. Player-created characters have as great a potential for empathy (if not more) as story-driven characters. The question is not which method is better but which is best for your game's design and player experience goals.

Another question for the designer in the creation of game characters is in regards to "free will" versus player control. Game characters that are controlled by the player do not always have the opportunity to act on their own. The player is assuming agency for the character's actions, which limits the degree to which characters can demonstrate their own personality and inner thought process. But sometimes game characters are not entirely in the control of the player. Sometimes the character is controlled by artificial intelligence (AI). AI-controlled characters

Characters vs. Avatars

Pre-designed characters; backstories, motivations

Player-created characters; role-playing, growth, customization

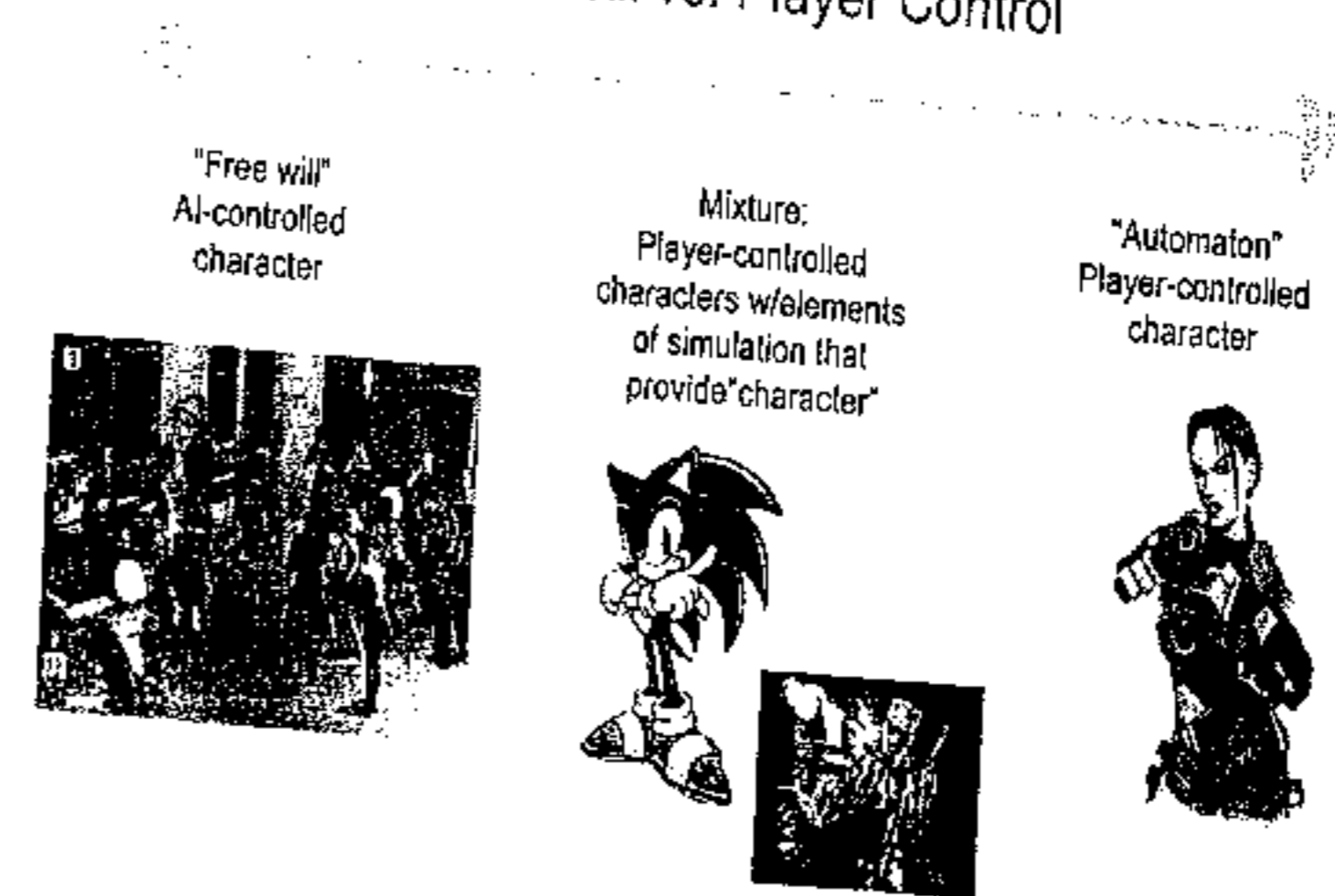


4.15 Characters versus avatars



4.16 God of War II and Shadow of the Colossus

Free Will vs. Player Control



4.17 Free will versus player control

exhibit a sense of autonomy that creates an interesting potential tension between what the player wants and what the character wants.

An early, primitive version of this autonomy is the character of Sonic the Hedgehog—Sega's answer to Mario. If the player stopped interacting with Sonic, the little hedgehog let the player know of his dissatisfaction by crossing his arms and tapping his feet impatiently. Impatience was central to Sonic's character: He did everything fast and had no time to spare. Unlike the blazingly fast actions controlled

by the player, however, the toe-tapping routine was Sonic's own, and it established him as a unique character.

Of course, Sonic's toe tapping had no impact on gameplay, but the tension between player-controlled action and character-controlled action is an interesting area that has been explored to great effect more recently in games like The Sims, Oddworld: Munch's Oddysee, and Black & White. If the free will feature is turned on in The Sims, characters will decide on their own course of action (assuming the player

ven them anything specific to do). Players stop a character from performing an action at any time, but with this feature on, the game usually unfolds as a complicated dance between what the player desires and what the character “wishes.” This sophisticated model produces dramatic results that the player feels both responsible for and yet surprised by.

Believable AI for characters like *The Sims* is a holy grail of game design these days both for player-controlled characters and nonplayer characters. Believable enemy and nonplayer characters in action games can make for more exciting, replayable game levels. For example, both the enemies and the nonplayer allies in the *Halo* series have a sophisticated AI that tracks their knowledge of the area (how many enemies are around, etc.) and their fear. If they are outnumbered and afraid, they might run away. Experimental games like Michael Mateas and Andrew Stern's *Façade* are breaking new ground not only in terms of believable character AI, but also believable story AI. In *Façade*, the main characters, Grace and Trip, invite you (the player) over for dinner. What happens at this fated dinner party is generated procedurally based on a unique “story beat” AI, the character AI, and the player input.

In general, game characters are evolving to become more rounded, dynamic individuals that play an



4.18 Façade

increasingly important part of many games' dramatic structures. A good understanding of how to create engaging characters using both traditional dramatic tools and developing AI concepts can add to the effectiveness and believability of characters in your games.

Exercise 4.7: Game Characters

Name three game characters that you find to be compelling. How are these characters brought to life within the game? What allows you to identify with them? Are they rounded or flat, dynamic or static?

STORY

We've said that the outcome of a game must be uncertain—that this is part of the formal structure of the game. This is true of a story as well. The outcome of a story is also uncertain (at least the first time we experience it). Plays, movies, television, and games are all media that involve storytelling and narratives that begin in uncertainty and that are resolved over the course of time. However, the uncertainty in a film or a play is resolved by the author, while the uncertainty of a game is resolved by the players. Because of this, it is very difficult to integrate traditional storytelling methods into games.

In many games, story is actually limited to backstory, sort of an elaborate version of premise. The backstory gives a setting and context for the game's conflict, and it can create motivation for the characters, but its progression from one point to the next is not affected by gameplay. An example of this is the trend of inserting story chapters into the beginning of each game level, creating a linear progression that follows a traditional narrative arc interspersed with gameplay that does not affect how the story plays out. Games like the *WarCraft* or *StarCraft* series follow this model in their single player modes. In these games, the story points are

laid out at the beginning of a level, and the player must succeed to move on to the next level and the next story point. Like a gameplay version of the Bill Murray film *Groundhog Day*, failure means playing the level again and again until you succeed; only then will the story progress.

There are some game designers who are interested in allowing the game action to change the structure of the story so that choices the player makes affect the eventual outcome. There are several ways of accomplishing this. The first, and simplest, is to create a branching story line. Player choices feed into several possibilities at each juncture of a structure like this, causing predetermined changes to the story. The diagram in Figure 4.19 shows an example of this type of story structure using a simple fairy-tale story we are all familiar with.

One of the key problems with branching story lines is their limited scope. Player choices might be severely restricted in such a structure, causing the game to feel simplistic and unchallenging. In addition, some paths can create uninteresting outcomes. Many game designers believe that there is better potential for use of story in games if the story emerges from gameplay rather than from a predetermined structure. For example, in *The Sims*, players have used the basic elements provided by the formal system to create innumerable stories involving

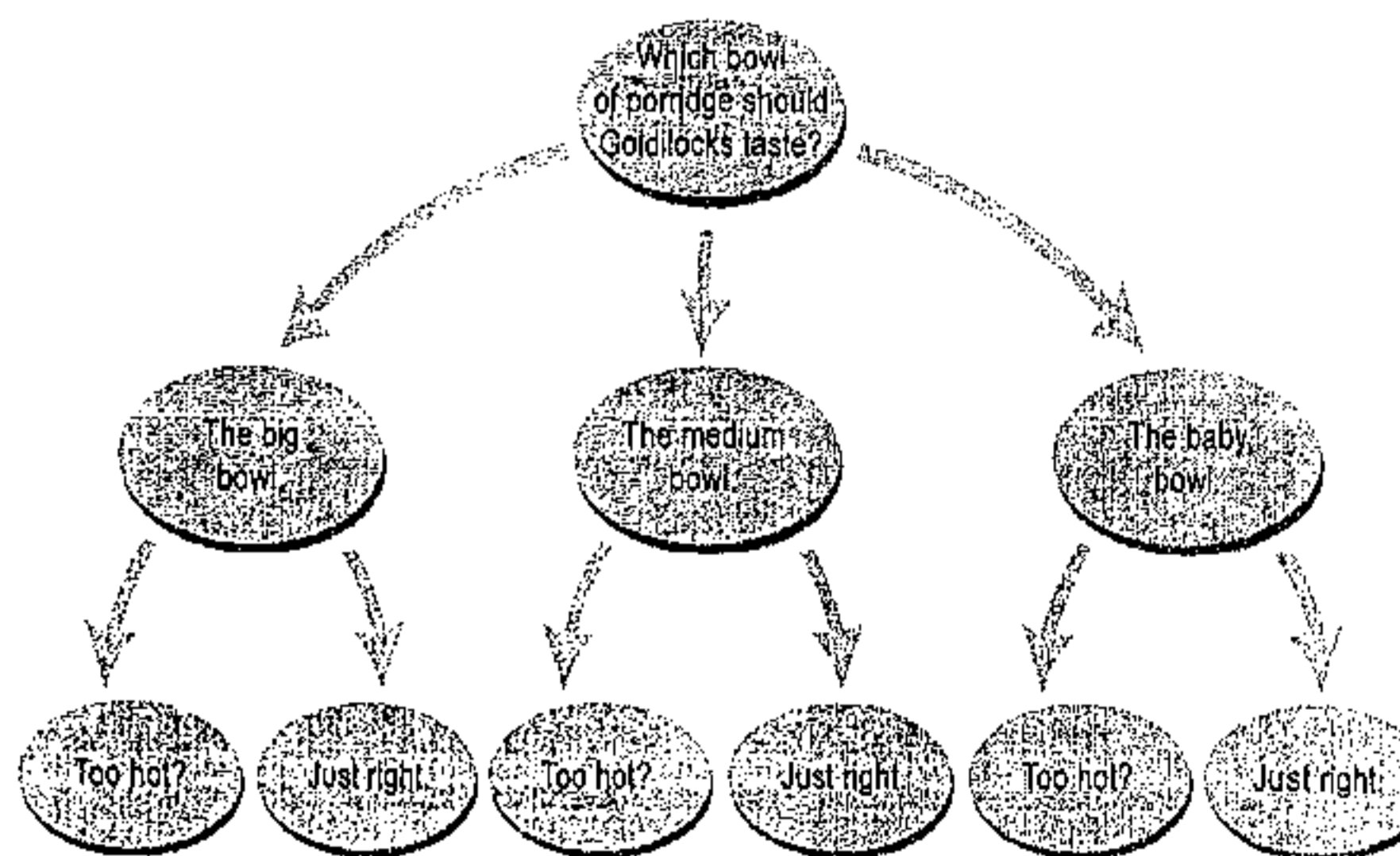
their game characters. The system provides features that support this emergent storytelling, including tools for taking snapshots of the gameplay, arranging the snapshots in a captioned scrapbook, and uploading the scrapbook to the Web to share with other users.

In addition to simulation games, other genres are also addressing the possibility of designing for emergent storytelling. This includes games like *Black & White*, which combine elements of simulation with strategy and role playing, as well as action games like *Half-Life*, which triggers story sequences depending on player actions, and *Halo 2*, which uses AI techniques in nonplayer characters to create unique and often dramatic responses to player actions.

While it remains to be seen if these attempts to allow emergent storytelling to arise out of formal game structures will have a significant impact on games, it is certain that game designers are still searching for better ways to integrate story into their systems without diminishing gameplay.

Exercise 4.8: Story

Pick a game that you feel successfully melds its story line with the gameplay. Why does this game succeed? How does the plot unfold as the game progresses?



4.19 Branching story structure

THE TWO GREAT MYTHS OF INTERACTIVE STORYTELLING

by Jesse Schell

Myth #1: Interactive Storytelling Has Little to Do with Traditional Storytelling

I would have thought that by this day and age, with story-based games taking in billions of dollars each year, this antiquated misconception would be obsolete and long forgotten. Sadly, it seems to spring up, weedlike, in the minds of each new generation of novice game designers. The argument generally goes like this:

"Interactive stories are fundamentally different from noninteractive stories because in noninteractive stories, you are completely passive, just sitting there, as the story plods on, with or without you."

At this point, the speaker usually rolls back his or her eyes, lolls his or her tongue, and drools to underline the point.

"In interactive stories, on the other hand, you are active and involved, continually making decisions. You are doing things, not just passively observing them. Really, interactive storytelling is a fundamentally new art form, and as a result, interactive designers have little to learn from traditional storytellers."

The idea that the mechanics of traditional storytelling, which are innate to the human ability to communicate, are somehow nullified by interactivity is absurd. It is a poorly told story that does not compel the listener to think and make decisions during the telling. When one is engaged in any kind of story line, interactive or not, one is continually making decisions: "What will happen next?" "What should the hero do?" "Where did that rabbit go?" "Don't open that door!" The difference only comes in the participant's ability to take action. The desire to act, and all the thought and emotion that go with that, are present in both. A masterful storyteller knows how to create this desire within a listener's mind, and then knows exactly how and when (and when not) to fulfill it. This skill translates well into interactive media, although it is made more difficult because the storyteller must predict, account for, respond to, and smoothly integrate the actions of the participant into the experience.



The way that skilled interactive storytellers manage this complexity, while still using traditional techniques, is through the means of *indirect control*, using subtle means to covertly limit the choices that a participant is likely to make. This way, masterful storytelling can be upheld while the participant still retains a feeling of freedom. For it is this feeling of freedom, not freedom itself, which must be preserved to tell a compelling interactive story.

Myth #2: Interactive Storytelling Has Little to Do with Traditional Game Design

I am amazed by the vast number of would-be game designers who whine that while they are brimming with great game design ideas, they lack the large team required to implement these ideas, and therefore they are unable to practice their craft.

This is nonsense of the highest order. A game is a game is a game. The design process for a board game, a card game, a dice game, a party game, or an athletic game is no different from the process of designing a video game. Further, a solo designer can fully develop working versions of these nonelectronic games in a relatively short time. Making and analyzing traditional games can often be far more instructive than trying to develop a fully functioning video game. You can learn much more about game design in a much shorter time, and you won't have to concern yourself with the technical headaches and limitations involved with interactive digital media. If you really want to understand how to create good interactive entertainment, first study the classics, and then try to improve on them. Riddles, crossword puzzles, chess, poker, tag, soccer, and thousands of other beautifully designed interactive entertainment experiences existed long before the world even knew what a computer was.

To sum up: New technologies allow us to mix together stories and games in interesting ways, but there are very few elements that are fundamentally new—most designs are simply new mixtures of well-known elements. If you want to master the new world of interactive storytelling, you would be wise to first understand the games and stories of old.

About the Author

Jesse Schell was formerly the creative director of the Walt Disney Imagineering VR Studio, where his job was to invent the future of interactive entertainment for the Walt Disney Company. Now he is professor of entertainment technology at Carnegie Mellon University, specializing in game design. He also is the CEO and chief designer at Schell Games, a studio that specializes in the design and development of unusual video games.

WORLD BUILDING

While story structure itself is a difficult problem for games and interactive media, there is an aspect of story creation that is a natural complement to game design, and that is world building. World building is the deep and intricate design of a fictional world,

often beginning with maps and histories, but potentially including complete cultural studies of inhabitants, languages, governments, politics, economies, etc. The most famous fictional world, and perhaps the most complete, is J.R.R. Tolkien's Middle-earth.

Tolkien began by creating languages, then the creatures who spoke them, and later the stories that took place in the world. Many games and films are created using world building techniques, which, though not as detailed as Middle-earth, give them a

sense of depth and story potential that keeps players interested over long periods of times. The World of Warcraft universe is a good game-based example, as the Star Wars universe is an example that spans both films and games.

THE DRAMATIC ARC

We have looked at a number of key elements that can help to create player engagement with the game system. But the most important of these elements is actually one that we have talked about already, and that is conflict.

Conflict is at the heart of any good drama, and, as we have seen in our discussion of formal elements, it is also at the heart of game systems. Meaningful conflict is not only designed to keep players from accomplishing their goals too easily, as we pointed out in the discussion of formal elements, but it also draws players into the game emotionally by creating a sense of tension as to the outcome. This dramatic tension is as important to the success of a game as it is to a great film or novel.

In traditional drama, conflict occurs when the protagonist faces a problem or obstacle that keeps her from accomplishing her goal. In the case of a story, the protagonist is usually the main character. In the case of a game, the protagonist can be the player or a character that represents the player. The conflict that the player encounters can be against another player, a number of other players, obstacles within the game system, or other forces or dilemmas.

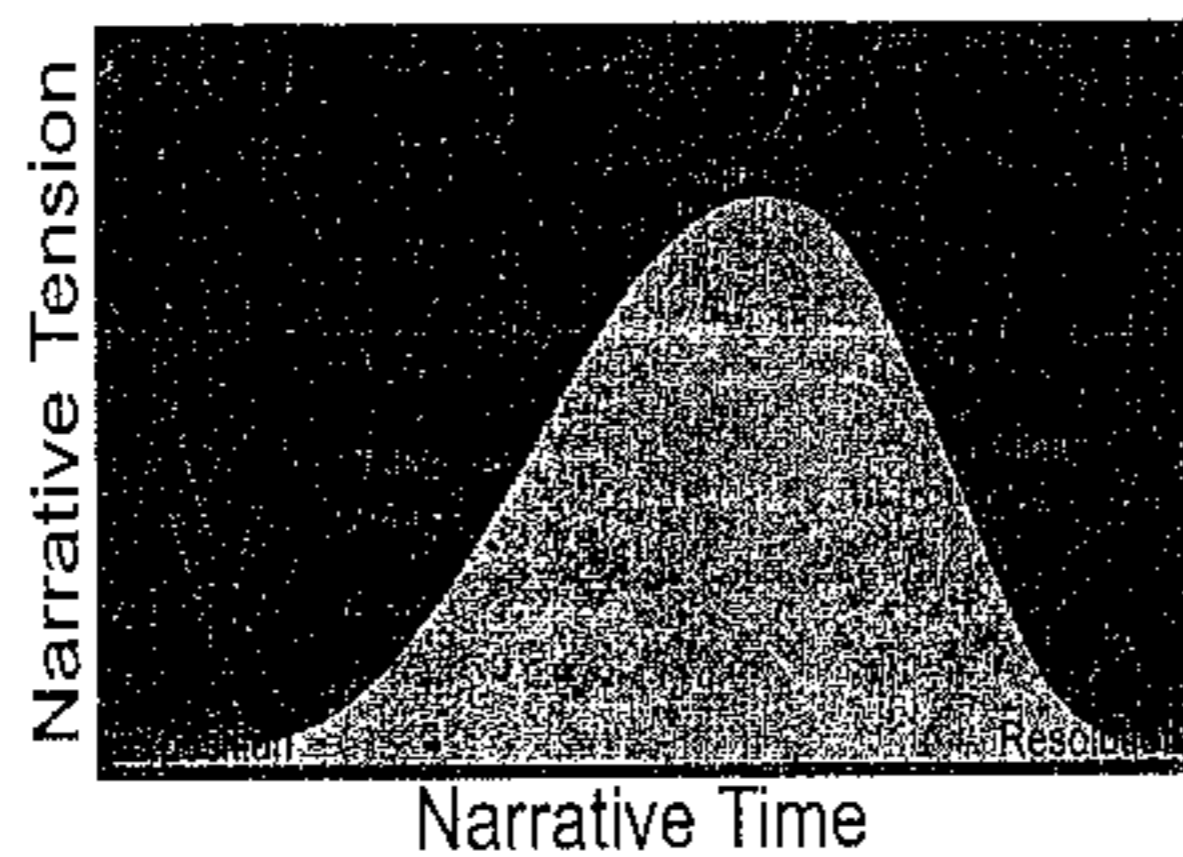
Traditional dramatic conflict can be broken down into categories such as character versus character, character versus nature, character versus machine, character versus self, character versus society, or character versus fate. As game designers, we might overlay another group of categories, which are player versus player, player versus game system, player versus multiple players, team versus team, etc. Thinking about game conflict in this way helps us to integrate a game's dramatic premise and its formal system, deepening the players' relationships to both.

When the conflict is set in motion, it must escalate for the drama to be effective. Escalating conflict creates tension, and in most stories, the tension in a story gets worse before it gets better, resulting in a classic dramatic arc. This arc describes the amount of dramatic tension in the story as it progresses in time. Figure 4.20 shows how tension rises and falls during various stages of a typical story. This

arc is the backbone of all dramatic media, including games.

As the figure shows, stories begin with exposition, which introduces the settings, characters, and concepts that will be important to the rest of the action. Conflict is introduced when the protagonist has a goal that is opposed by their environment, an antagonist, or both. The conflict, and the protagonist's attempt to resolve it, causes a series of events that lead to a rising action. This rising action leads to a climax, in which some sort of deciding factor or event is introduced. What happens in the climax determines the outcome of the drama. The climax is followed by a period of falling action in which the conflict begins to resolve, and the resolution, or *dénouement*, in which it is finally resolved.

To better understand the classic arc, let's look at in terms of a simple story you are probably familiar with. In the movie *Jaws*, Sheriff Brody is the protagonist. His goal is to keep the people of Amity safe. The antagonist is the shark, who opposes Brody's goal by attacking the people of Amity. This creates a conflict between Brody and the shark. Brody, who is afraid of the water, attempts to keep the people safe by keeping them out of the water, but this plan fails. The tension rises as the shark attacks more people, even threatening Brody's own children. Finally, Brody must face his fear and go out on the water to hunt down the shark. In the climax of



4.20 Classic dramatic arc

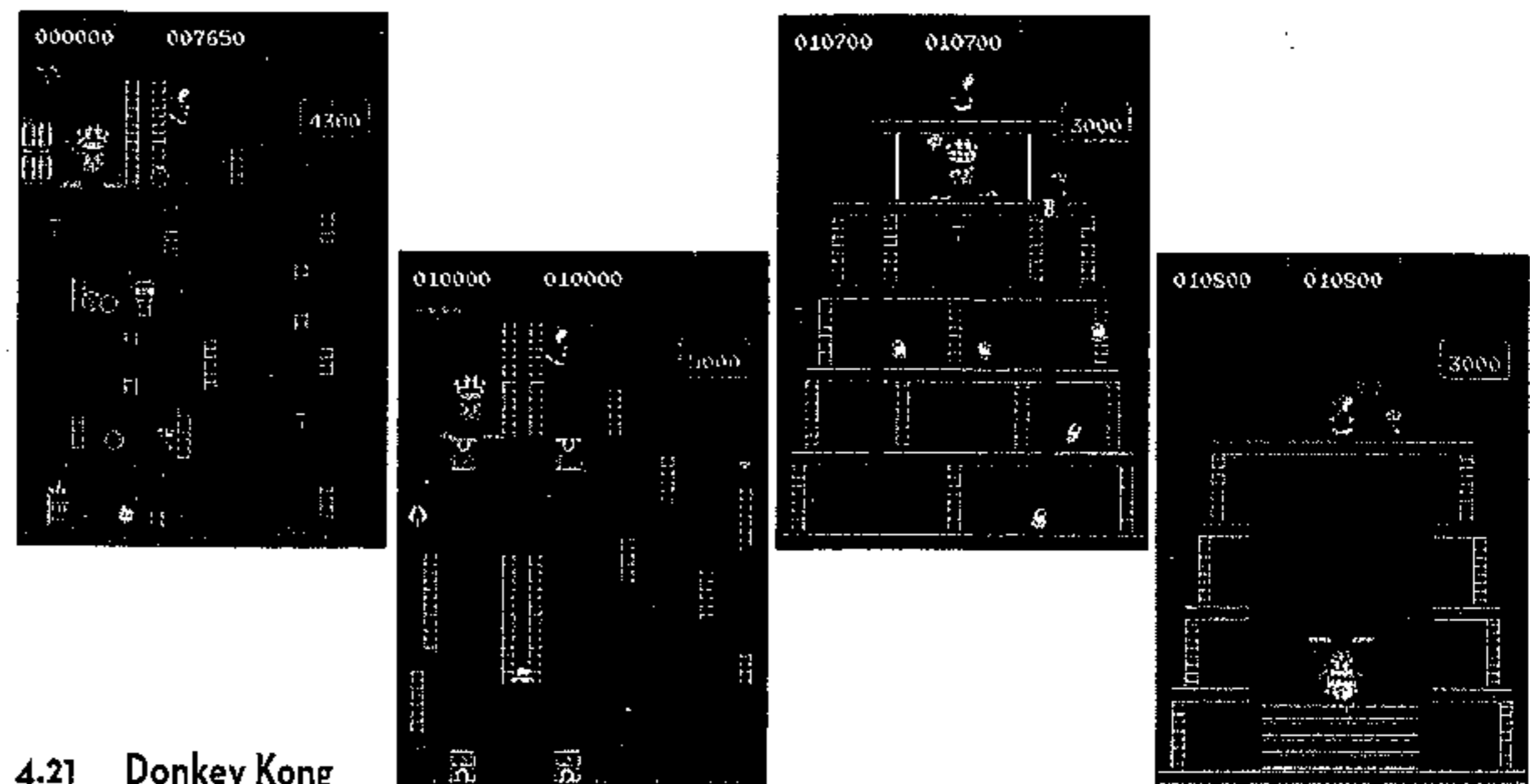
the story, the shark attacks Brody. The story resolves when Brody kills the shark and returns the story to the status quo. Simple, right? You can look at any story you know and you will see the dramatic arc reflected in its structure.

Now, let's look at the arc again, this time in terms of a game. In a game, the rising action is linked to both the formal and dramatic systems. This is because games are usually designed to provide more challenge as they progress. Games that also have well-integrated dramatic elements will intertwine those elements with the formal system so that as the challenge rises, the story develops. Here is an example from a classic game: In *Donkey Kong*, Mario is the protagonist. Mario's girlfriend, Pauline, has been kidnapped by the giant ape, Donkey Kong, and taken to the top of a building under construction. Mario's goal is to save Pauline before time runs out. To do so, he must climb the levels of the building, traversing girders, elevators, and conveyer belts, while avoiding flames, barrels, and bouncing rivets thrown at him by Donkey Kong. Each time Mario reaches Pauline, Donkey Kong grabs her and carries her off to the next higher level. Each level builds in difficulty, creating rising tension for the player. Finally, in the climax of the game, Mario must not only avoid Donkey Kong's attacks but also fight him directly by removing all the rivets on every floor of the level. After the rivets are removed, Donkey Kong falls

head first onto a stack of girders and is knocked out, allowing Mario to rescue Pauline and resolve both the formal and dramatic tension.

It is clear from even these simple descriptions that the story in *Jaws* is more developed as to character and story—Brody has a fear that he must overcome to solve the problem, and his character changes in motivation as he goes from protecting all the people of Amity, to saving his own family, to defending himself from the shark. While Mario has a goal, and he is certainly vulnerable to attacks from Donkey Kong, he does not have any internal conflict that keeps him from completing his goal, and his goal never wavers. The jeopardy that Pauline is in never increases either, a touch that would have made the formal and dramatic systems of the game better integrated.

What Mario has that Brody does not, however, is that his success or failure is in the hands of the player. It is the player who must learn how to avoid the attacks, moving closer and closer to the goal. And in the climax of the game, it is the player who must figure out how to topple Donkey Kong from his perch and knock him out. So while our response to the climactic moment in *Jaws*, when Brody figures out how to finally kill the shark, is a release of tension built up by our empathy for his character and the character's struggles over the course of the story, our response to the climactic moment in *Donkey Kong* is quite different.



4.21 Donkey Kong

In the case of *Donkey Kong*, we are the ones who have figured out the crucial action needed to resolve the tension, and that tension has built up over a number of levels of play. When we finally resolve that tension, there's a sense of personal accomplishment on top of any sympathetic response that we might have to the resolution of Mario and Pauline's story. This integration of conflict in the formal and dramatic systems can clearly provide a powerful combination for the players in a game experience.

Exercise 4.9: Plotting a Story, Part 1

Choose a game that you've played all the way through. Make certain it is a game with a story involved. For example *Halo 2*, *Deus Ex*, *Gears of War*, or *Star Wars: Knights of the Old Republic*, might be a good choice. Now, plot the story against the dramatic arc.

- How is the exposition handled? Who is the protagonist? What is the main conflict, and when is it introduced?
- What does the protagonist do to resolve the conflict?
- What causes the tension in the story to rise? What deciding factor brings the story to a climax?
- What happens in the resolution?

CONCLUSION

The elements of drama that we have looked at form the basis of a tool set that the game designer can use to elicit powerful emotional reactions from players. From integral game concepts like challenge and play, to complex integration of premise, characters, and story, these tools are only as powerful as the inspiration behind their use. Although the media palette of game design has grown to rival film and television, it is clear that the emotional impact of games still has not achieved the depths it is capable of and that will make it recognized as an important dramatic art form.

Exercise 4.10: Plotting a Story, Part 2

Now take the same game and plot the gameplay against the dramatic arc.

- What elements of gameplay, if any, support each of these points?
- How is the exposition of gameplay handled? Are controls and mechanics clearly explained? Are they integrated with the dramatic premise? Is the goal clearly stated and integrated with the main conflict of the story?
- How does the gameplay cause the dramatic tension to rise?
- What deciding factor in the gameplay brings the game to a climax?
- What happens in the resolution? Do the dramatic elements and gameplay elements help or hinder each other?
- How might they be better integrated to make the game work from an emotional standpoint?

Exercise 4.11: Plotting a Story, Part 3

Take the same game and come up with three changes to the story or gameplay that you believe would make the two better integrated.

What new areas of dramatic possibility do you see? What new ground will your designs break? To answer these questions, you must have a strong grasp of the tools of traditional drama and understanding of good gameplay and the process by which it can be achieved. Before going on to read about system dynamics in games, spend some time with the exercises in this chapter if you have not already done so, because they are designed to help you practice with some of these traditional tools.

DESIGNER PERSPECTIVE: DR. RAY MUZYKA

CEO and Coexecutive Producer, BioWare Corp.

Dr. Ray Muzyka is a game designer, producer, and entrepreneur whose credits include Baldur's Gate (1998), Baldur's Gate: Tales of the Sword Coast (1999), MDK 2 (2000), Baldur's Gate II (2000), Baldur's Gate II: Throne of Bhaal (2001), Neverwinter Nights (2002), Neverwinter Nights: Shadows of the Undrentide (2003), Neverwinter Nights: Hordes of Underdark (2003), Star Wars: Knights of the Old Republic (2003), Jade Empire (2005,) and Mass Effect (2007).



How did you get into the game industry?

My original background was training and practice as a medical doctor. Dr. Greg Zeschuk and I cofounded BioWare back in 1995 after working on the programming and art for a couple of medical education projects for our university. We met some talented programmers and artists who worked on what became BioWare's first game, *Shattered Steel*. We never looked back, and now we have over 160 talented, smart, creative, hard-working employees at BioWare, working on three to six projects at any one time.

On favorite games:

My favorite games cover a lot of platforms and a long time period. Back in the early 1980s I was a big fan of some of the great role-playing franchises, such as *Wizardry* and *Ultima* on the Apple II. Later on, I was a big fan of games like *System Shock* and *Ultima Underworld* on the IBM PC. These too were role-playing games, revolutionary for their time in their interface, graphics, and storylines, and still worth playing. More recently I've enjoyed a number of console RPGs including *Final Fantasy VII*, *Chrono Cross*, and the *Zelda* series. I also enjoy a bunch of other types of games such as real-time strategy (*WarCraft II*, *StarCraft*, *Age of Empires*) and first person action games like *Halo*, *Battlefield: 1942*, and *Half-Life*. All of these games share the common traits of being very good at what they set out to do. This is what we try to do in our games at BioWare; we try to make each game better than our last.

Advice to designers:

Be passionate but self-critical. Never compromise on quality, but do realize that there is a point of diminishing returns on effort and a point where every game is "as good as you can make it." Most games never reach this point, but if they do, you'll increase the chances of it succeeding by a lot. And for those entrepreneurial types out there, hire smart, talented, creative, and hard-working staff to work with and make sure you treat them extremely well—video games are not a solo endeavor, and the team sizes required to keep the production values high enough for the increasingly sophisticated video game audiences seem to grow larger every year.

DESIGNER PERSPECTIVE: DON DAGLOW

President, Stormfront Studios

Don Daglow is a pioneer of the game design industry whose credits include the preindustry PDP games *Baseball* (1971-1974), *Star Trek* (1972-1973), and *Dungeon* (1976-1978); as well as commercial titles ranging from *Utopia* (1982), *World Series Baseball* (1983), *Adventure Construction Set* (1985), *Racing Destruction Set* (1985), *Earl Weaver Baseball* (1987), *NASCAR 99* (1998), *NASCAR 2000* (1999), *Tony La Russa's Ultimate Baseball* (1991), *Neverwinter Nights* (1991), and *The Lord of the Rings: The Two Towers* (2002).



On getting into the game industry:

I had been writing games as a hobby on the university mainframe through my college and grad school years, and then while I was a grad school instructor, teacher, and writer.

When Mattel started their in-house Intellivision game design team, they advertised on the radio for programmers who wanted to learn how to create video games. I'd never have thought of looking in the paper for a games job, but I heard the radio ad and called them. When I said, "I don't have a computer science degree, but I've been programming games for the last nine years," I think they thought I was making up stories because Pong had only been out for about five years at the time. Fortunately, it all worked out, and I was selected as one of the original five members of the Intellivision game design team at Mattel. As the team grew, I ended up being director of Intellivision game development.

On favorite games:

- *Seven Cities of Gold*, design by Dan Bunten and Ozark Softscape, published by EA, 1984: The game has only a handful of resources to manage and a gigantic map to explore for treasure. It is proof that a simple concept with few moving parts on a primitive machine with basic graphics can be compelling if the tuning of challenge, suspense, and reward is elegant and subtle.
- *The original Super Mario Bros. for Nintendo*, design by Shigeru Miyamoto, 1985: The game style has been the subject of endless variations, but this game to me is the foundation on which all the others are built. Just the right balance of eye-hand coordination, environmental and enemy challenges, hidden goodies, and ongoing positive reinforcement made this a game that adults and kids could both play and love.

- *Sim City*, design by Will Wright, published by Maxis, 1989: This game redefined what a computer game could be and was fun despite breaking many of the commonly accepted design commandments: It had no true opponents (apart from an occasional visit by Godzilla), a score with no clear methodology as to how you earned it, and no clear final goal so you could play for as long as you wanted. Will Wright persevered through repeated rejections before finding a publisher for one of the biggest hits in the history of the industry.
- *John Madden Football for Sega Genesis*, design by Scott Orr and Rich Hilleman, published by EA, 1992: The first console version of Madden Football created a monster franchise in the industry, but what made it shine initially was a beautifully tuned head-to-head gameplay mechanic that made playing your buddies an incredibly fun way to pass an afternoon.
- *Metal Gear Solid 2 for PS2*, published by Konami, 2001: The cinematic coverage of both stealth and combat advanced the use of cameras in our craft. Where Final Fantasy featured episodic tours de force, Metal Gear Solid started to blur the line between film and game.
- *Lord of the Rings: The Two Towers*, design by LotR design team, developed by Stormfront Studios, published by EA, 2002 (conflict of interest note: our team created this game): We started out talking about making the transition from a movie to a game seamless so you reached a moment of interactivity thinking you were still watching a theatrical film. This is a dream many of us had discussed for years. Unlike many dreams, this time we actually pulled it off. Having now done it once, the result has inspired us about a much wider range of effects we can create in future games.

Advice to designers:

Enjoy the journey, not just the wrap party. I see many people enter our industry who are anxious to be the next Shigeru Miyamoto or Will Wright. Most well-known designers are the product of the special cases of their era, and rarely are they well known in later phases of industry history. For every Miyamoto and Wright there are many designers who were once trumpeted in the industry press but who have now faded from the scene and are forgotten.

If I look at the people who have had the most success in the industry over the last 10, 15, or 20 years, a simple truth emerges. You have to do what you love, and you have to keep growing as you do it, in all areas of your personal and professional skills.

If you love games and love the process of creating them, it will rub off on everyone around you. If you keep looking for how to do a task better than the last time you did it, you'll grow. Your career will still have ups and downs, but it will advance.

If you embark on a master plan to become a video game celebrity by age 30, you stop thinking about building great games and start thinking about your personal pride. At that moment the energy that should be going into the craft of game design and execution instead goes into career planning. Which, of course, is the fastest way to sabotage your career. The person who is unhappy until they achieve their goal spends most of their time unhappy. The person who enjoys the journey toward the goal—and is resolute about reaching it—is happy most of the time.

FURTHER READING

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END NOTES

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2. Ibid.
3. Ibid, p. 53.
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6. Ibid, p. 63.
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Chapter 5

Working with System Dynamics

In the previous two chapters, we looked at games in terms of their formal and dramatic elements. Now we will look at how the elements of games fit together to form playable systems and how designers can work with system properties to balance the dynamic nature of their games.

A system is defined as a set of interacting elements that form an integrated whole with a common goal or purpose. General system theory, the idea that the interaction among elements of systems can be

studied across a wide variety of disciplines, was first proposed by the biologist Ludwig von Bertalanffy in the 1940s. Variations of system theory have evolved over time, each focusing on different types of systems. Our goal here is not to investigate all the various disciplines of system theory but rather to discover how we can use an understanding of basic system principles to control the quality of interactions within our game systems as well as the growth and change of those systems over time.

GAMES AS SYSTEMS

Systems exist throughout the natural and human-made world wherever we see complex behavior emerging from the interaction between discrete elements. Systems can be found in many different forms. They can be mechanical, biological, or social in nature, among other possibilities. A system can be as simple as a stapler or as complex as a government. In each case, when the system is put in motion, its elements interact to produce the desired goal, for example, stapling papers or governing society.

Games are also systems. At the heart of every game is a set of formal elements that, as we have seen, when set in motion, create a dynamic experience in which the players engage. Unlike most systems, however, it is not the goal of a game to create a product, perform a task, or simplify a process. The goal of a game is to entertain its participants. When we talked about formal and dramatic elements, we

determined that games do this by creating a structured conflict and providing an entertaining process for players to resolve that conflict. How the interaction of the formal and dramatic elements is structured forms the game's underlying system and determines a great deal about the nature of the game and the experience of the players.

As we mentioned earlier, systems can be simple or complex. Systems can produce precise, predictable results, or they can produce widely varied, unpredictable effects. What type of system is best for your game? Only you can determine this. You might want to create a game in which there is a certain amount of predictability, in which case you might design a system with only one or two possible outcomes. On the other hand, you might want to create a very unpredictable system, in which there are countless possible outcomes determined by the