Chapter 24: Games as the Play of Pleasure

It's not that you have to "care" in order to get good, but rather that you have to be kept caring. You've got to be kept in the right state so you'll get to some places a little bit better all the time, so that a goal remains alive by always moving just ahead out of reach and you keep wanting to attain it without having to spend a fortune. - David Sudnow, Pilgrim in the Microworld

Introducing the Play of Pleasure

Video game arcades are sites of lucratively programmed caring, worlds of fun nourished by a seemingly endless stream of quarters, tokens, and plastic swipe cards. Players enter, they play, and if the game designers have done their job well, they stay to play some more. The carefully crafted arc of rewards and punishments that draws players into games and keep them playing connects pleasure to profitability.

Such intricate games of pleasure and play are not unique to the arcade. Pleasure is, perhaps, the experience most intrinsic to games. From the visceral excitement of an online death-match to the satisfying clink of a Go stone on wood, games provide an abundant variety of pleasures. We often take it for granted that games are fun to play, that they provide pleasure, that they embody enjoyable experience. Players derive many kinds of satisfaction from play, from the imaginative adventures of a narrative role-playing game to the social camaraderie of a team sports match. But what is the pleasure that underlies the appeal of games, the pleasure at the core of game play, the pleasure that provides the enticement to begin play and to continue playing? What connects pleasure to the design of meaningful play?

The word "pleasure" evokes associations with activities of leisure or self-indulgence. Sex, drugs, and rich foods come to mind, as do stolen naps, deep friendships, or dancing to a favorite song. Pleasure is commonly understood as a fundamental feeling that is hard to define but that people desire to experience. [1] Words such as delight, amusement, gratification, satisfaction, or happiness describe the kinds of feelings pleasure evokes. When we speak of pleasure in games, we are referring to the fundamental feelings derived from the intense concentration of a game of Memory, the exhilaration of a winning touchdown, the charged socio-sexual maneuvers of Twister, the hypnotically satisfying patterns of Tetris. Pleasure can include any physical, emotional, psychological, or ideological sensation. Of course, pleasure's opposites (pain, frustration, despair) are equally important in understanding the play of pleasure in a game.

Within Games as the Play of Pleasure, a game's space of possibility is defined as more than a mathematical entity. It is a space in which a player's emotions and sense of desire undergoes manipulation and coercion,
teasing and seduction, frustration and reward. As the sculptor of the space of possible pleasure, the game designer faces a truly challenging set of problems. Managing the pleasure of a game's players means translating the formal intricacies of the rules into an engaging experience of play. Although the emergent math of formal rulesets may be complex, the tangled puzzles of pleasure and desire are surely enigmatic dilemmas of an even higher order.


Rule-Bound

Picture a child poised excitedly at the starting line of a footrace, ready to run down the track, breathlessly awaiting the starting signal. Rather than giving in to her intense desire to leap from the starting line, she waits for the signal that the race has begun. What's going on here? Why does our player anxiously hold back when she really desires to run?

Developmental psychologist L. S. Vygotsky notes that "Play continually creates demands on the child to act against immediate impulse, i.e., to act on the line of greatest resistance."[2] Certainly the child in our example wants to begin running, but the rules of the game order her to wait. At the same time, the runner knows that the rules are artificial, describing systems that are in some way outside ordinary life. So why follow the rules? Vygotsky argues that players accept the rules of the game not in order to restrict pleasure, but instead to maximize it. "To observe the rules of the play structure promises much greater pleasure from the game than the gratification of an immediate impulse."[3] Through mechanisms of restraint and the withholding of immediate impulses, games transform the player's experience of constraint into one of abundant pleasure.

Footnote to a Footnote

In Defining Play, we noted that we would not be investigating the purpose or function of play in this book. Rather, we focus on the way that play creates meaningful experiences for players, when considered from a game design perspective. Likewise, in the study of the play of pleasure, we will not suggest a root cause or mechanism, nor argue a unified theory of pleasure. There is a tremendous amount of existing research on the philosophical, psychoanalytic, cognitive, and cultural qualities of pleasure, some of which we reference in this chapter.

The notion that pleasure is an effect of submitting to the rules of a game, that pleasure delayed and constrained is pleasure enhanced, offers a powerful model for understanding all kinds of pleasure. Think of examples from your own experience: waiting to eat a particularly enticing dessert until completing the main course, or not skipping ahead to the end of a suspenseful murder mystery. The delayed gratification of orgasm is heightened when it is initially resisted, as is the urge of opening a fine wine before it has properly aged.

Submission to constraint is certainly not the only way to understand pleasure, but it is an appropriate starting point for a discussion of the play of pleasure in games. Consider, for example, how the notion of constraint intersects with several core game design concepts:

- **Rules and Play.** The idea that players subordinate their behaviors to the restrictions of rules in order to experience play-and its pleasures-is a fundamental aspect of games. The restrictions of rules
facilitate play, and in doing so, generate pleasure for players.

- **Free Play.** A player's sense of pleasure is explicitly derived from being a part of the system of a game, from being "at play" within the more rigid structures of a game. In *Man, Play, and Games*, Caillois makes an explicit link between a player's free action within the limits set by the rules and player gratification: "This latitude of the player, this margin accorded to his action is essential to the game and partly explains the pleasure which it excites."[4] Free play is dependant on, yet also resists, the rigid structures that give rise to it.

- **The Lusory Attitude.** Playing a game means abiding by artificial restrictions, which make game actions seemingly inefficient. Runners not only wait for the starting gun, but, as Bernard Suits points out in *Grasshopper*, they also run around a circular track, instead of cutting through the middle of the field to reach the finish line first. Games are constituted by these kinds of constraints, which simultaneously restrain and enable pleasure. The willingness of players to step into these artificial systems in order to experience the resulting pleasure is at the heart of the lusory attitude.

- **Stylized Behavior.** Although play is a free and improvisational activity, the rules of a game stylize the actions and behaviors of players in very particular ways. Think about the patterned movement of players engaged in a game of Ping Pong, or the tightly constrained movements of Simon Says. There is something very pleasurable in the way that games stylize play through a ritualistic, collective orchestration of movement and action. Children derive pleasure not just from the dramatic tension at the start of a race, but also from the collective experience of running together in formation, pumping their arms and kicking their heels toward the finish line.

Rules give rise to the dramatic structure of pleasure, the link between constraint and pleasure binding tightly the formal and experiential qualities of a game. But players don't simply stumble into a game. Unlike other forms of ludic activities (such as playing with a toy), a game demands that players know the rules before play begins. What provides the enticement to begin play? What makes players stay in a game once it starts?

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**Autotelic Play**

The magic circle of a game is, by definition, removed in some way from what Huizinga calls "ordinary life." The victories and losses, the triumphs and failures that a player experiences in a game are in a very real sense contained within the magic circle. As DeKoven puts it, a game provides "a common goal, the achievement of which has no bearing on anything that is outside the game."[5] We know, of course, that there are many ways winning or losing games can impact players: affecting their lifestyles, their sense of self, their relationships to friends, even the amount of money they have in their pockets when the game is over. There are certainly extrinsic ways that winning a game matters. At the same time, every game implicitly asserts the premise that the value of the game is intrinsic; that the game is self-contained, that the fiction of the magic circle will be upheld, that winning or losing the game is separate from everyday lived experience.

If one considers the self-contained nature of the magic circle, the way that games create their own meanings and provide their own goals, it is clear that games are strongly autotelic. We borrow the term from psychologist Mihaly Csikszentmihalyi, who in his book *Flow* explains that "The term 'autotelic' derives from
two Greek words, *auto* meaning self and *telos* meaning goal. It refers to a self-contained activity, one that is done not with the expectation of some future benefit, but simply because the doing itself is the reward."[6] When an experience is autotelic, it is participation in the activity alone that counts. Games are, to a greater or lesser extent, pursued for their own sake, for their own intrinsic stimulation. Although there are always some extrinsic reasons for play, there are always intrinsic motivations as well. In playing a game, part of the incentive is simply to play-and often, it is the prime motivator.

Because they have such a strong autotelic component, games are largely non-utilitarian. Most forms of design serve an external function, or utility. Architecture houses and shelters our families, government, and industries. Typography enables visual communication. Automotive design supports mobility through the design of cars. Game design, on the other hand, simply enables its own play. Please note, in saying that game design exists in contrast to other forms of design, we are *not* proposing that games do not serve external functions, or that other forms of design don’t also serve non-utilitarian ends. Our point is that games posit their own intrinsic needs or goals, such as abstract winning conditions, which gives them a distinctly artificial and non-utilitarian status.

Contrast an online medical database program with an online multiplayer game. A hospital worker looking for a particular patient's record comes to the software experience with a clear extrinsic goal in mind, such as finding out what meds the patient needs to take that day. The database does not contain its own set of goals; it supports the goals of the user. The database program is used as a tool, as a means to an end, rather than as an end in itself. When the worker finds the record he is looking for and extracts the prescription information, the database has successfully fulfilled a goal that was brought to the system from an external context. In an online multiplayer game, on the other hand, there is no clear utilitarian purpose that the game serves. Why is the player exploring the game world, customizing her character, killing monsters, and accumulating treasure? Because she is playing the game. The game is not a tool being used to fill an external, utilitarian need. The player is not playing the game in order to feed her cats, or tune her car's engine. The explicit interaction of the game is not a means to an end, as in the case of the medical database program; rather, the play of the game represents an end in itself. We play, in some measure, for play's own sake.

Consider the way that the experience of play as an end, rather than a means, has affected the development of digital game technology. One of the reasons why games have been so innovative—pushing the envelope of computer processing power, creating experimental hardware interfaces, pioneering graphics rendering and spatial audio—is because games must provide their own motivations and pleasures. The medical worker will suffer through an awkward interface and ugly visual design in order to find the record he needs. A game player, on the other hand, is a much more fickle user: why play a game that isn't fun? The computer and video game industry is continually spurred on by an audience hungry for ever-more spectacular games and ever-more meaningful interaction. People play games because they want to; game designers must create experiences that both feed and satisfy this sense of desire.


Enter. Play. Stay.

Why go to such lengths about the non-utilitarian nature of games? In order to make a larger point about the challenge of bringing players into a game and keeping them at play. Because games are premised on needs intrinsic to the game, it is necessary for game designers to both entice the player into crossing the boundary of the magic circle and also keep them there until the goals of the game have been met.

Beginning a game means entering into the magic circle. Players cross over this boundary to adopt the artificial behaviors and rituals of a game. During the game, the magic circle persists until the game concludes. Then the magic circle dissolves and players return to the ordinary world. These two actions, crossing into the magic circle as well as maintaining its existence, represent two of the chief challenges of designing meaningful play. The two actions require a carefully orchestrated double seduction. First, players are seduced into entering the magic circle of a game. Second, players are seduced into continuing to play.

Both events are challenging to design. The first seduction, bringing players into the magic circle, requires players to cross a threshold that will take them out of their ordinary lives and into the world of the game. The difficulty in making this happen comes from the formal quality of game play. It is much easier to slip into and out of ludic activities that aren't games. Are you eating peanuts and feeling playful? Just toss one up and see if you can catch it in your mouth. How about those building blocks on your desk? Stack them up, knock them down, or just let them be. In *The Magic Circle*, we looked at the way a child might play with a doll, at how smoothly a player can slip in and out of play, at how permeable the borders are between playing and not playing. In games, however, the transition between not playing the game and starting to play the game is more clearly defined. Games usually require formal preparation: finding players, reading the rules, opening a saved game file, shuffling cards, setting up the board, and so on. Players must learn the system and “officially” enter into the game and begin play. This is a genuine hurdle for players of your game: they must attend to the initial set of chores that lie on the border of the magic circle; they must properly perform the rituals of entry.

What does this mean for game designers? Designers create not just the game itself, but also the ways that players enter into the game system. This event involves consideration of not just the formal elements of the game, but also the way that the game interfaces with external contexts. How and when does a player enter into a game? Where does the initial seduction begin? Does it begin the first time a player sees a commercial or reads a review of a game that encourages or discourages the player to make a purchase? Does the seduction emerge from peer pressure and social values (*Barbie Fashion Designer is for girls! Quake is cool! Everybody is playing P.O.X.*). Does it begin with the installation of a downloaded game, the first reading of a game’s rules, or the menu screen of a console title? Does it start the moment a newbie shoots his first monster?

Clearly, there is no single factor to which the act of seduction can be attributed and no single, isolated moment when the player decides to begin play. Designing the seduction of a game means understanding all of the formal, social, and cultural factors that contribute to the player’s experience. It is important, for example, to understand how marketing, promotion, and distribution work in the game industry. It is important to scout out what other game developers are creating and how it may impact the game you are designing. It is important to understand how the culture at large perceives and regards games and how new audiences might be brought to your games. There are no simple answers to the question of whether or not a player will decide to begin playing your game. This is one more challenge game designers face.

On the other hand, once players start playing your game, they have stepped out of the world at large and entered into the magic circle of the game’s design. As we will see, keeping players in a game, understanding and sculpting their experience of pleasure, offers at least as great a challenge as getting them to play in the first place.
Typologies of Pleasure

It is difficult to generally speak about pleasure. It is especially hard to find the words that describe the pleasures we experience in games.

Games evoke emotions of struggle, of competition. The kinds of things you feel aren’t often given common names in our usual everyday parlance but they are important emotions that we feel and go through and enjoy and find in some mysterious ways enlarge our spirit. How about the anxiety that you feel when your chest suddenly swells as you realize you are going to be a master? How about the sense of self that develops as you concentrate all your being and the various parts of your body upon the task of overcoming obstacles? How about the dejection you feel, the despair when you fail utterly? And how about the exultation and the sense of triumph you feel when you actually succeed? And sometimes a little bit of awe as you maybe find that path out there. And there’s another name for these emotions and game developers call them fun.

Game designer Hal Barwood organizes all the varied emotions a game can produce under the heading of “fun.” This term does make some sense. Good games are fun. Fun games are what players want. A fun game makes for a pleasurable experience, which is why people play. But not everyone sees the value of this word. Game designer Marc LeBlanc simply hates the term “fun.” In several of his talks at the Game Developers Conference, he has called for a moratorium on the word. "Fun," according to LeBlanc, is merely a stand-in term for a more complex phenomenon that no one really understands.

Perhaps LeBlanc is right. Perhaps we are falling into a similar trap by our use of the word "pleasure." Is it possible to unpack the more general notion of fun and create a structure for categorizing pleasure? LeBlanc has done some thinking along these lines and has created his own typology, proposed as an antidote to the singular concept of "fun." In his typology LeBlanc lists eight categories that describe the kinds of experiential pleasure players derive from playing games.

1. Sensation: Game as sense-pleasure
2. Fantasy: Game as make-believe
3. Narrative: Game as drama
4. Challenge: Game as obstacle course
5. Fellowship: Game as social framework
6. Discovery: Game as uncharted territory
7. Expression: Game as self-discovery
8. Submission: Game as masochism

Most of these categories are self-explanatory. Note, however, that "masochism" doesn't refer to sexual pleasure, but instead to the more general pleasure of submission to a system. Part of the hypnotic pleasure of Bejeweled or Solitaire, for example, comes from the ritualized act of behaving in a rule-based, stylized manner. That is what LeBlanc means by his category of Submission.

LeBlanc's model is intended not only to assist game designers in understanding the range of forms that "fun" can take, but also to provide a common language for marketing digital games. He has proposed, for example, that by rating each of these categories on a zero-to-ten scale and putting that information on the back of a product package, a consumer could quickly get a sense of the kinds of pleasures the game provides. A first-per-son shooter, for example, might have a high rating in Sensation, Fantasy, and Challenge, but a low rating in Expression, Narrative, and Fellowship. The challenge, of course, is that many of the categories seem to overlap. There is a very fuzzy line, for example, between Fantasy and Narrative. Other ambiguities persist as well. Categories such as Discovery and Expression might easily be applied to other categories: can't a social framework be uncharted territory? Doesn't self-discovery occur in a challenge? Moreover, even if these theoretical problems could be resolved, "officially" rating a game's pleasure in this way would be a highly
subjective endeavor. Despite all of these criticisms, however, LeBlanc's eight categories do identify many of the components of game-induced pleasure and are useful as a way of understanding the range of pleasures games provide.

A different approach comes from psychologist Michael J. Apter, in his essay "A Structural-Phenomenology of Play." In focusing on the cognitive arousal play provides, Apter compiles the following list, amended with our brief paraphrasing in italics:

1. Exposure to Arousing Stimulation: intense and overwhelming sensation
2. Fiction and Narrative: emotional arousal from character identification
3. Challenge: difficulties and frustrations arising from competition
4. Exploration: moving off the beaten track into new territory
5. Negativism: deliberate and provocative rule-breaking
6. Cognitive Synergy: imaginative play
7. Facing Danger: risk within the "protective frame" of play

Apter admits in his essay that these categories offer only a partial list of cognitive arousals, and that there is considerable overlap between categories. Despite these delimitations, Apter's model gives us another framework within which to consider pleasure in games, one that emphasizes cognition. Some of his categories, such as Challenge and Exploration, appear similar to LeBlanc's. Others, such as Negativism and Facing Danger, clearly identify alternate approaches.

A third typology of pleasure comes from the classification of games by anthropologist Roger Caillois. In Defining Play, we introduced his four "fundamental categories," which purport to describe the phenomena of play:

1. Agôn: competition and competitive struggle
2. Alea: submission to the fortunes of chance
3. Mimicry: role-playing and make-believe play
4. Ilinx: vertigo and physical sensation

In some ways, Caillois' compact categories offer a succinct distillation of the models LeBlanc and Apter propose. In agôn, alea, mimicry, and ilinx, there is a fusion of experiential and cognitive components that creates a useful critical framework.

There are many other typologies we could consider as well. Last chapter, we looked at Brian Sutton-Smith's five categories describing the psychological processes of video game players: concentration, visual scanning, auditory discriminations, motor responses, and perceptual patterns of learning. These too might be considered a list of the means by which games generate and support pleasure. There is no need to choose a single typology to represent pleasure in games. You should feel free to mix and match different models of experience and pleasure, depending on the needs of your design. These typologies are less useful for theorizing about pleasure or for classifying games, but they can be very handy as a way of organizing observations about the kinds of pleasures that a particular game provides. One model is not necessarily better than the others; each offers a different way of thinking about pleasure and its many motivations.

For example, let us employ one of these typologies-Caillois' four categories-in looking at an Unreal deathmatch. Do they apply to the pleasures of playing Unreal? Certainly the game contains a great deal of competitive, agonistic struggle. Mimicry plays a strong role as well, in the fact that each player is represented to the others through a customizable avatar in a fictional, virtual space. Unreal and games of its ilk are well known for representing physical movement through three-dimensional space in real-time, often creating vertigo in the form of motion sickness. There are arguably even elements of chance in Unreal as well, such as the particular players that happen to join an online deathmatch, or the layout and distribution of items on a level.
We can similarly apply the categories of LeBlanc and Apter. A game of Unreal provides all of the pleasures they list too, from the Fellowship that emerges out of hard-fought competition, to the creative Negativism of cheats, hacks, and mods. Pleasure is always already exceedingly complex: where we find one form of pleasure in a game, we will almost always find others. In general, most games provide many or all of the pleasures listed in any typology of game play experience. But at the same time, there is always a balance of factors, a particular ratio of ingredients that adds up to the unique flavor of an individual game experience. What meaningful pleasures is your game providing, or failing to provide? This is the utility of a typology of "fun:" offering a vocabulary for charting out the complex play of pleasure.


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**Game Flow**

Listing categories is one approach to describing pleasure in a game. Are there other approaches? Is it possible to look at game pleasure in a more abstract way to synthesize the diverse pleasures of gaming into a single concept? Think again about the experience of playing a game. One aspect of game pleasure lies in the intensity with which it is experienced, the almost overwhelming sensation of play. Whether the pleasure rests in a cognitive response, an emotional effect, or a physical reaction, the experience of play, and especially play in games, can be strikingly deep. As writer J. C. Herz writes of classic arcade gaming, "Just the emotion, the survival nature of the videogame- you're tapping into the most powerful human instinct. Survival. Fight or flight. That is so hugely intense that in some ways it becomes too intense. People really lived the games. They dreamed the games."

All game players have experienced this feeling at one time or another, even if for only a short time. This level of engagement with a game suggests that the player has transcended an ordinary psychological state to arrive at a more profound relationship with the game. The psychologist and theorist Mihaly Csikszentmihalyi is best known for his research on what he calls the flow state—a particular state of mind in which a participant achieves a high degree of focus and enjoyment. His book Flow: The Psychology of Optimal Experience offers a great general introduction to his ideas. Flow is filled with anecdotal accounts of individuals achieving a flow state, documented over the years of Csikszentmihalyi's research.

The phenomenon of flow comes in many forms. Some people reported to Csikszentmihalyi that they reached flow through the rigors of perfecting an assembly line work task, or through the immersive problem-solving of law library research. Others say they achieved flow during the solitary exertion of rock climbing or through the exacting vocation of surgery. What exactly is flow? Csikszentmihalyi suggests that flow is something we have all experienced. It is a feeling of being in control of our actions, masters of our own fate. Although rare, when we achieve a state of flow we are deeply exhilarated. Csikszentmihalyi refers to this phenomenon as an optimal experience. [10]

It is what the sailor holding a tight course feels when the wind whips through her hair, when the boat lunges through the waves like a colt-sails, hull, wind, and sea humming a harmony.
that vibrates in the sailor's veins. It is what a painter feels when the colors on the canvas begin to set up a magnetic tension with each other, and a new thing, a living form, takes shape in front of the astonished creator.\[11\]

Flow is, more than anything else, an emotional and psychological state of focused and engaged happiness, when a person feels a sense of achievement and accomplishment, and a greater sense of self. What might be the relevance of flow for game design? In many ways, the heightened enjoyment and engagement of the flow state is exactly what game designers seek to establish for their players. In fact, many of Csikszentmihalyi's examples come from games, such as professional Chess players, which were an early focus of his research. The connection between game design and the flow experience clearly appears in Csikszentmihalyi's description of the components of flow, the conditions that make flow possible. He lists eight components:

First, the experience 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 like minutes, and minutes can stretch out to seem like hours.\[12\]

It should be immediately striking how every one of these eight components corresponds to an aspect of games. We can look at each in more detail, making use of Csikszentmihalyi's own language.\[13\]

**A Challenging Activity that Requires Skills**: Csikszentmihalyi emphasizes the fact that the flow activity is not passively experienced; it requires active and directed engagement. "The overwhelming proportion of optimal experiences are reported to occur within sequences of activities that are goal-directed and bounded by rules." This sounds remarkably like a description of a game.

**The Merging of Action and Awareness**: One distinctive feature of the flow state is that a person is so absorbed in the activity that it becomes "spontaneous, almost automatic; they stop being aware of themselves as separate from the actions they are performing." This component of the flow experience is something that can occur in games as well. David Sudnow's account of his engagement with Breakout clearly describes this state of mind.

**Clear Goals and Feedback**: These two components evoke the goal-oriented nature of games and the discernable action-outcome sequence necessary for making meaningful choices. Meaningful play seems to be intimately related to flow.

**Concentration on the Task at Hand**: A common effect of flow is "a complete focusing of attention on the task at hand, thus leaving no room in the mind for irrelevant information." Like a game that removes itself from "ordinary life," flow activities carve out their own experiential spaces for participants.

**The Paradox of Control**: In an optimal experience, the participant is able to exercise control without completely being in control of the situation. If there is no chance of failure, the activity is not difficult enough. "Only when a doubtful outcome is at stake, and one is able to influence that outcome, can a person really know whether she is in control." As game players struggle against the system of artificial conflict, they attempt to assert control by taking actions. Yet the outcome of a game is always uncertain.

**The Loss of Self-Consciousness**: In flow, the participant's sense of self becomes subservient
to the greater whole of the experience. "When a person invests all her psychic energy into an interaction... she in effect becomes part of a system of action greater than what the individual self had been before. This system takes its form from the rules of the activity; its energy comes from the person's attention." The fact that Csikszentmihalyi emphasizes the systemic quality of a participant's connection with the flow activity is reminiscent of the system-based nature of games.

When we consider a game as an experiential system, the player is a component of that system—a formulation echoed by Csikszentmihalyi.

**The Transformation of Time:** The participant's sense of time can stretch or shrink. Sometimes this feeling comes directly from the activity itself: "Most flow activities do not depend on clock time; like baseball, they have their own pace, their own sequences of events marking transitions from one state to another without regard to equal intervals of duration."

Games not only change our perception of time but also offer freedom from its tyranny; losing track of time adds to the exhilaration we feel during a state of complete involvement.

In each of the eight components of the flow activity Csikszentmihalyi mentions, there are clear parallels with games. This doesn't mean that flow applies only to games, or that every game produces a flow state for its players. What it does mean is that games are one of the best kinds of activities to produce flow. The rules, goals, feedback, uncertain outcome, and other qualities of games make them fertile terrain for the flowering of a flow experience. We believe there is an intrinsic connection between game play and flow. Although the maximum flow "optimal experience" that Csikszentmihalyi describes is rarely achieved, all forms of play in some way partake of the flow experience. The conditions for flow are established as players find the interstices of a rigid structure, engaging with rules in order to play with them and transform them. Flow is one way of understanding that pleasure which draws players to a game and keeps them there.

Although he does not organize them this way, Csikszentmi-halyi's eight categories can be divided into two groups. Four of the eight components of flow describe the effects of the flow state:

- the merging of action and awareness
- concentration
- the loss of self-consciousness
- the transformation of time

All of these effects occur in the player's experience once flow commences. These four facets of flow can diagnose whether a player has reached the flow state. If you are not sure if your game is truly producing flow, go down the list. If some or all of the four experiences listed are missing, you may need to adjust your design. But what kinds of adjustments are necessary? That's where the other four components come into play. Rather than being effects of flow, they represent flow's prerequisites:

- a challenging activity
- clear goals
- clear feedback
- the paradox of having control in an uncertain situation

These four prerequisite elements of flow are characteristics of the flow activity itself. Within them is the key to designing flow in games. Does your game contain the prerequisites of flow? Is there enough challenge to create real uncertainty? Do the players clearly understand the goals? As they move through the system, do their actions provide clear feedback and a sense of control? If your game supplies all of these mechanisms, you are well on your way to creating the necessary conditions for flow.

If your aim is to create a flow state for your players, we can summarize our advice quite simply: design meaningful play. The four prerequisites of flow bear a striking resemblance to the key components of
meaningful play. "Clear feedback" is another way of stating the need for discernable choices and outcomes in an interactive experience. The goals, challenge, and uncertainty of a game provide the larger context within which choices are integrated and become meaningful. This is not to say that meaningful play is the same thing as flow. Flow is a state of mind and meaningful play is an approach to game design. But when it comes to games, the two are closely intertwined. If you want to create flow in a game, meaningful play must be present. If you want to design meaningful play, flow can be a useful diagnostic tool in the process of making your game.

Why would game designers want to create a flow state for their players? Being in flow represents a rich and meaningful engagement with the activity at hand. Generally, as a game designer, you are creating game systems meant for deep exploration. We should all be so lucky that players of our games invest enough effort and attention to achieve a state of flow. Remember that flow doesn't refer to just one kind of experience. The flow that surgeons feel is by all accounts radically different in sensation and emotion than the flow of a LARP combat. What unites all forms of flow, however, is the optimal happiness that participants experience. As an experiential goal for creating games, spreading happiness, focus, and a sense of well-being is certainly a worthy pursuit.

[12] Ibid. p. 49.

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Sculpting Desire

If one problem with the concept of flow is that it is not as game-specific as we would like, what would it mean to take a more game-centric look at pleasure? Thinking of games as systems of pleasure implies that the game designer is an artisan of desire, shaping the pleasure of the players of a game. The designed system of the game, set in motion by the participation of players, becomes not just an experience of play, but also an experience of sensual, emotional, and psychological pleasure.

Achieving such an experience requires that a game designer not only pay attention to the immediate feelings of pleasure a game may produce, but also the way that a player's pleasure evolves and changes over the course of a single game, or across many games.

Anyone can sit down at Quake and start shooting things. As he gains more experience, he realizes that if he stands in one place, he'll get killed, so he learns to start moving while shooting. Then he learns to circle-strafe. Then, to shoot while running backwards. Then, to figure out which weapons are better up close or far away.

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Disclaimer: The Limits of Flow
As useful as it is, the concept of flow is not a skeleton key to unlock every mystery surrounding play and pleasure in games. Consider a few of the challenges in applying flow to game design:

*Flow is not unique to games.* As Csikszentmihalyi's many examples from art, work, and non-game leisure demonstrate, flow can occur in many kinds of activities. Why is this a problem? If one of our goals as game designers is to understand and isolate the unique kinds of pleasures that only games can provide, then the flow state is not of much help.

*Flow is more about the player than the game.* According to Csikszentmihalyi, flow depends at least as much on the attitude of the individual participant as the activity itself. Chess masters may achieve flow, but most Chess players do not. There is no guarantee that the game you design will be put to use by players that are ready or able to experience flow. A player's individual psyche is out of a game designer's control.

*Flow is not a universal phenomenon.* It is easy to get carried away and assume that the flow state is the ultimate experience that every game design should try and induce. That is simply not the case. As Sutton-Smith points out in a critique of Csikszentmihalyi's work, "To say flow is universal might be like saying that all peak sex is everywhere the same, and that 'flow' is to play what orgasm is to sex. But who would be innocent enough of all the different contexts and acts that make sex meaningful to say something like that?"

Although flow is a useful conceptual tool for creating pleasure in games, it is but one of many possible tools. Flow offers a rigorous investigation into one kind of meaningful engagement, even if it doesn't represent a universal state of mind and even if it isn't completely unique to games.

Then he learns to rocket jump. As he progresses, he learns the characteristics of each weapon. He learns to "lead" his opponent. Anyone can pick up Quake and start having a good time within minutes, yet the longer he spends mastering the game, the more enjoyable it becomes.

Quake is easy to learn but difficult to master. As game designer Bob Bates points out, it offers players a gaming experience that is pleasurable in both the short and long term. Because the core mechanic is relatively simple-move and shoot-players gain immediate access to the pleasures the game affords. Because playing the game well requires subtle skills that can only develop through repetitive play, long-term engagement with the game brings its own kind of pleasurable reward.

How does pleasure emerge and evolve over time in a game? All of the possible states and experiences of a game are contained within the theoretical construct called the space of possibility. A game player begins his or her journey through the space of possibility at the same place every time: the start of the game. But the experiential path that a player takes through the space will vary each time the game is played. Every play of the game will be unique, even though the rules of the game, its formal structure, remain fixed. This quality of games, that a game provides the same consistent structure each time but a different experience and outcome every time it is played, is a powerful engine that sustains and encourages play. We refer to this concept by the shorthand term *same-but-different.*

The same-but-different experience of play occurs both within an individual game, as well as across more than one game. Inside a game of Breakout, the player engages with the core mechanic over and over, exploring its permutations many times within the changing context of the game. Hit the ball again and again. Can you get that bank shot a second time from the side? Or slow things down by hitting the square in the middle of the paddle? Can you control the flow of the volley? Within a game, given the same repetitive action of play, part of the pleasure that sustains the game is the player's ability to engage repeatedly with the same kind of interactivity—but with different results.

The core mechanic of a game provides its own inherent pleasure, whether it takes the form of the sensual click of a Tiddley-Winks flip or the simple, randomized drama of each round of the card game War. If a game's core mechanic is well-designed, players may not even care about winning. Players can enjoy Tennis just for
the sake of a good volley, or Charades for the challenge of skillful pantomime and clever guessing. But to sustain pleasure over time, the repeated action of the core mechanic needs to embody the concept of same-but-different. It needs to continue to offer up new variations and experiences, even if they are as subtle as the gradual build-up of Tiddley-Winks skill or the deterministic playing-out of fate in War.

On a larger level, the same phenomenon occurs as a player plays a game more than one time. In this case, it is not the core mechanic that is repeated, but the entire formal structure of the game. The rules remain the same, but the play is different. It doesn't always happen, but if the play is meaningful enough, if the pleasure is rich and flowing, then a player will want to play a game again. With repeated play, the structure is increasingly familiar, and the player continues to play out the possible experiential permutations of the game. Within and between games, players discover the comforting familiarity of a fixed structure and the challenge and danger of an uncertain outcome. This same-but-different mechanism makes for an extremely powerful engine of desire. It is the itch of the same-but-different that brings you back, time and time again, for just one more round of play.

Furthermore, transformative play assists this process. In Defining Play, we established transformative play as the special case of play, when the free movement of play alters the more rigid structure in which it takes shape. When the structure of the game is altered, the possibilities for replayability increase. Even in a simple betting game, transformative play can ensure that new experiences continue to arise, as a player finds new patterns of betting, new places in which to bet, new patterns of life into which the betting activity fits, new circles of friends to support the activity. Still, the game remains familiar, even as it changes. Philosopher James S. Hans expresses this notion of the same-but-different experience of play quite well:

In this regard, all play shares one thing with games: a familiar structure that allows one to play with the unfamiliar. This familiar structure is not universal; it is contingent upon the particular context of play. Nor is this familiar structure always the same. Indeed, it changes every time it is played with, for the occasion for new play introduces different elements into the activity that become part of the structure of any future play…. The structure of the familiar then permits the introduction of the different; play in one sense is no more than the infection of the familiar by difference. [16]

Although Hans is talking about all kinds of play, every game by our definition shares this quality. He makes explicit the idea that play is transformative, that through repetition, play itself changes. Hans calls this play of desire "the infection of the familiar by difference"-perhaps the heart of what makes games pleasurable. Within the magic circle, rules endow actions with meanings. But the free movement that is play transforms these meanings, even as they are experienced, putting pleasure "at play" at each moment of a game.


Patterns of Pleasure

The patterns of pleasure that emerge within and between games offer special kinds of enjoyments. Game designer Brian Moriarty uses the word entrainment to refer to this kind of rhythmic pleasure. Entrainment comes from the French word "entrainer" and has two meanings: to carry along, and to trap. The word has commonly been applied to a range of physical and natural phenomena, from circadian sleep rhythms to the
sonic play of a thunderstorm. According to holistic thinker Dr. Stephan Rechtschaffen, "Rhythmic entrainment is one of the great organizing principles of the world, as inescapable as gravity. It explains how one rhythm works with another, and how separate entities, from molecules to stars, will fall into rhythm as automatically as a pulse beats or a butterfly flaps its wings."[17]

As used by Moriarty, entrainment is the process of falling into a patterned activity, such as when baseball fans spontaneously create a stadium-wide "wave" in a co-authored, massively multi-player spectacle. One can also apply the concept to the play rhythms evoked when playing a game. In 1998, Moriarty gave a talk at the Game Developers conference about entrainment and game design:

Rhythms and patterns exist in all games, if you watch. Watch someone playing a game sometime. Not the game itself, lest you be sucked in, but the player, and the space around him or her. Watch the rhythms emerge, and how the player and the game interact. It will become clear that a game is really an entrainment engine. The job of the gamewright, therefore, is to reinforce patterns, and dampen dissonance."[18]

The notion of entrainment combines pattern, interactivity, and the same-but-different quality of games into a rich and powerful design concept. If entrainment is a form of pleasure, it is a pleasure at once structural and experiential, both mathematically regular and playfully flexible. Entrainment is not a phenomenon completely unique to games, but it does come very close to identifying the curious structural pleasure that all game experiences seem to contain: the meditative patterns of Tetris; the turn-taking, clacking cadence of Billiards; the rhythmic shooting pattern of Space Invaders; the pulsing flow of cards, hits, and chips of Blackjack. Each of these game experiences—every game experience—can be framed as an instance of entrainment.

Entrainment is the experience of the same-but-different. As players explore the space of possible game pleasures, progress through the space occurs through patterned repetition, the drumbeat driving the heart of a game experience. Entrainment sometimes literally takes on form: the recurrent bleep of a laser blast, or the relentless throb of a marathon runner's steps. But ultimately, entrainment manifests in a more pervasive fashion, occupying not just perceptual sensations, but modes of thinking and feeling as well. The double-sided definition of the word entrainment, to carry along and to trap, is entirely accurate. The patterns of a game initially draw us in, moving us forward, encouraging us to play. But somehow, at some point, something changes. We find ourselves not just playing a game, but being played by the game as well. Pleasure is a mighty force, and it can carry along those trapped in its wake.


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The Role of the Goal

How does this transition come about? How is it that a game can draw us in and take us hostage? Some of the most powerful mechanisms of pleasure that a game contains are derived from their constituent parts. The difference between games and other forms of play is most often the fact that a game has a goal and a quantifiable outcome. When it comes to understanding the pleasure of a game, the goal plays an absolutely crucial role.

A game’s goal is often the largest single element that drives the pleasure of a player. The goal is the ostensible reason for playing, but the goal is never easily attained; rather, it is the obscure object of desire, the carrot held
just out of reach, pulling players forward through the varied pleasures of game play. The goal helps move players through the space of possibility, a space stretched between the starting state of the game and its outcome like a billowing cloth staked to the ground. The goal acts to guide the players along the axis defined by the beginning and the end, letting them know if they are advancing or falling behind. In Chutes and Ladders, the player's position on the board clearly communicates proximity to achieving victory. In Chinese Checkers, the accumulation of pieces within a player's goal serves as a competitive marker toward winning. In an online deathmatch, ranking players by frag count shows which players are closest to victory.

A core component of pleasure in games lies in the creation and maintenance of a player's relationship to the goal. The game designer, by creating the game rules, indirectly engineers this relationship. Do you want to create a close game with a dramatic finish? Then engineer a negative feedback loop that punishes the lead player and closes the gap with players at the rear. Or perhaps you want to make use of hidden information, so that the outcome is in doubt until the very end. In the puzzle game Mastermind, each turn brings the player closer to the end of the track, where failure awaits after a set number of turns. Each turn also offers the player feedback and a glimpse of hope, signified by the black and white pegs, as he tries to puzzle out the correct solution. Between the inevitable, uncontrollable turn-by-turn movement, and the sometimes-backpedaling advancement toward the solution, the game unfolds as a journey of the player's desire. The result is the genuinely compelling play of Mastermind, in which the physical structure charts the player's progress through the game.

The classic arcade game Missile Command offers yet another example of the way games engineer dramatic experiences for players. As J. C. Herz writes in *Joystick Nation: How Videogames Won Our Hearts and Ate Our Quarters*:

> The most intense thing about Missile Command, though, was this weird crazy moment near the end, when the ICBMs were raining down and you knew you were just about to lose it, that was totally euphoric. Because you knew that you were going to die, that you were within seconds of everything going black. You're gonna die in three seconds. You're gonna die at this instant. You're dying. You're dead. And then you get to watch all the pretty explosions. And after the fireworks display, you get to press the restart button, and you're alive again, until the next collision with your own mortality.\[14\]

Within the game the goal takes on enormous importance, but the goal itself as a formal construct is not the point: the goal is important only insofar as it serves to shape a player's experience. The goal is an artificial, invented condition that the players accept as their ultimate objective. In establishing the nature of that goal and the way that players overcome adversity to work toward it, the game designer has tremendous influence on crafting the character of the play experience.

\[14\] Herz, *Joystick Nation*, p. 64.

### Goals Within Goals

The goal is not the only source of pleasure in a game. In addition to the thrill that the pursuit of victory (or the agony of defeat!) can provide, games offer many pleasures that are parallel, or even tangential, to winning. Just as important as the final win condition, the macro-level goal, are the tiny moments of directed play, the micro-interactions that move a player through a game. These smaller moments of play emerge as the player engages repeatedly with the core mechanic, the same-but-different experience sustaining the interest and desire of the player.
If the macro-level of a game's pleasure is the player's pursuit of the goal, and the micro-level is the player's engagement with the core mechanic, then what is it that links these two levels of play? The answer is short-term goals. A game never simply provides a single long-term goal. Along the way, a player struggles toward short-term goals, each one providing a kind of pleasure that is less immediate than the instant gratification of the core mechanic, but more rapidly obtained than the long-delayed ultimate outcome of the game. Even in a simple game like Tic-Tac-Toe, there are short-term goals that help players gauge their progress through the system. Placing an "O" in the same row as another "O" to form two-in-a-row is a short-term goal that must be reached before one can achieve three-in-a-row (and victory). This short-term goal may sound uninterestingly simple, and for adult players it usually is. But for young children struggling to comprehend the strategic complexities of the game, understanding short-term goals and the way these goals link the core mechanic of mark-making with the long-term goal of three-in-a-row is crucial to their enjoyment of the game.

The kinds of short-term goals that a player can achieve depend on the nature of the game and the way the goals are suspended between the core mechanic and winning. In a wargame such as Tanktics, the short-term goal might be outflanking the enemy's ranks in order to weaken their defensive position on the battlefield. In SiSSYFiGHT 2000, it might be making a social alliance with another girl to shift the wrath of the player mob onto a particular player. In the digital trading game Dope Wars, a short-term goal might be saving up enough cash to move up from selling pot to selling heroin.

A game can explicitly provide short-term goals, such as the medals a Pokémon player periodically earns by beating the best trainers in particular gyms. However, it is also very common for players to generate short-term goals themselves, in response to their current situation. A Pokémon player might be concerned with earning every medal in the game, but perhaps he invents a different short-term goal, such as capturing every species of Pokémon, or moving his Pidgeotto up to level 50.

Encouraging players to conceive and achieve goals gives them a sense of control in the game, as Doug Church points out in his essay "Formal Abstract Design Tools:"

> There are many ways in which players are encouraged to form their own goals and act on them. The key is that players know what to expect from the world and thus are made to feel in control of the situation. Goals and control can be provided and created at multiple scales, from quick, low-level goals such as "get over the bridge in front of you" to long-term, higher-level goals such as "get all the red coins in the world." Often players work on several goals, at different levels, and on different time scales. This process of accumulating goals, understanding the world, making a plan and then acting in it, is a powerful means to get the player invested and involved.[15]

The way that players engage with goals as they play is a complex process. As Church mentions, at any moment during a game a player might be working on several nested, interrelated goals. As players construct and work toward short-term and long-term goals, they are actively charting a course through the space of possibility of a game.

In the landscape of a game defined by the space of possibility, short-term goals are navigational beacons that help orient players through two related experiential functions. First, players use short-term goals to make plans. Short-term goals allow players to plan ahead, scouting out future actions, generating hypotheses about how they should play the game. (I'm playing Risk. What happens if I focus on conquering South America next turn?) Second, short-term goals are sources of satisfaction for players. It is one thing to take on a short-term goal, but it is another thing to actually attain it. (I did it! Now I'll get bonus reinforcements for controlling a whole continent.) Short-term goals generate pleasure through both of these functions: making plans as well as achieving them.

Short-term goals are necessary because without them, a player can get lost in the landscape of a game. Are your players confused about what to do next? Perhaps you need to adjust the design to encourage the creation
of short-term goals. An open-ended, massively multiplayer online role-playing game such as Ultima Online has an intimidatingly vast space of possibility, but it also provides innumerable opportunities for short-term goals. Are players trying to work their way into a guild? Trade up for an impressive suit of armor? Or just explore a particular section of the world? The game structure encourages each of these short-term goals, and the fact that players can author their own experiences in this way is part of the reason why UO provides such intense pleasure to its dedicated players.

The pleasure a player experiences in a game arises from many simultaneous factors: from the moment-to-moment core mechanic to the short-term accomplishments of play to the final outcome of the game. Each of these interrelated factors generates pleasure in its own way. The core mechanic might provide sensual entrainment, the short-term goals the satisfaction of gradual skill mastery, and the pleasure of winning the spoils of bragging rights. But what links these levels of pleasure is meaningful play. Without meaningful play, a player will never be able to take actions that have predictable outcomes, to choose this over that with a sense of how the choice plays out. Without the ability of players to progress, to have a sense of achievement and accomplishment, to know when they are moving toward or away from victory, your game's play experience will be dead in the water. The play of pleasure may seem free and spontaneous, the farthest thing from a careful, conscious design process, but creating a game that can nourish deep pleasure—that can truly entrain and enrapture players, that can lead to new forms of pleasure and meaning—is always a matter of sensitive and detailed game design.


Conditioned Pleasure

Meaningful play is key to designing pleasure in games, but it is only by making choices that meaningful play emerges. If you recall from Interactivity, a choice is made up of two primary components: the action that the player takes and the outcome of that action. Our exploration of the core mechanic focused on the action half of the equation: the actual activity that the player performs. So what about the other half—the outcome? One way of framing this facet of the moment of choice is that whenever a player takes an action, she ends up being rewarded or punished by the game as a result.

Psychologists have studied the connection between choice, action, reward, and punishment in a variety of contexts. One useful approach, known as behavior theory, emphasizes observable behavior, specifically the way that interaction with an environment shapes behavior. Ivan Pavlov and John B. Watson were early proponents of behavior theory and developed a series of experiments designed to study learned behavior. In one famous experiment, a bell would ring as dogs were fed a meal. Eventually, the dogs came to associate the bell-ringing with food, and would salivate at the sound of the bell. The dogs had been "conditioned" to provide their natural response to food (which was to salivate) even when the food was not present. Pavlov and Watson believed that the same principles could be applied to human behavior. This kind of conditioning, in which innate reflex responses are tied to a new stimulus, became known as classical conditioning. [16]

Psychologist B. F. Skinner refined the ideas of Watson and Pavlov by rejecting their exclusive emphasis on reflexes and natural conditioning. Instead, Skinner attributed a more active role to the learning subject. According to Skinner's theory of operant behavior, people learn to behave the way that they do because a certain kind of behavior has been rewarded in the past. If a lab rat learns that pressing a lever results in a food pellet appearing, it is going to develop a strong tendency to press that lever over time.
Behavior theory distinguishes between positive reinforcements (a positive reward, such as a rat getting a food pellet), negative reinforcements (the removal of something unpleasant, like silencing a loud, high-pitched noise), and punishments (the addition of something unpleasant, such as a sudden electric shock). Each kind of reinforcement can be effective in a particular context, usually when the reinforcement or punishment event immediately follows the behavior it is meant to condition. Reinforcements often function because their effects of pain and pleasure are linked to innate biological responses. However, punishments and reinforcements that operate on social and cultural levels can also have strong effects for people. For example, a nod and smile from a teacher can serve as powerful positive reinforcement. In games, these kind of non-bio-logical reinforcements as the outcome of a game choice are common. For example, positive reinforcement in a game might involve giving a player bonus points or an extra life; a negative reinforcement might be eliminating a debilitating disease from a game character; a punishment might be a damaging attack on a player's character.

Games are systems of meaning. It is within their artificial boundaries that rewards and punishments are interpreted as positive or negative and gain force to shape player behavior. Operant conditioning reminds game designers to pay attention to the way a game encourages or discourages certain behaviors. In creating rewards and punishments, game designers shape the actions players are likely to take in the future. This is an important game design concept, especially in digital games, where the program automates so much of the play activity.


Rewards and Schedules

Operant conditioning not only affects the kinds of choices players make during the course of a game, but also their general motivation to continue playing. More than just shaping good and bad behaviors, rewards and punishments shape a player's sense of pleasure and overall play experience. Game designers Neal and Jana Hallford point out this design challenge:

It's surprising how many developers forget that it's the victories and the treasures—not the obstacles—that make people interested in playing in the first place. If you stop giving out the carrots that will keep players excited, or even worse, if you start punishing them for their curiosity, you're only going to drive away the very people who want to enjoy your game.[17]

Keeping players engrossed in your game as they play is the second of the two seductions of game design. Hallford and Hallford are absolutely correct that players need to be rewarded, that they need to accomplish tasks and feel satisfaction as they play. Although punishments are important, on balance a play experience needs to be pleasurable. Otherwise, nobody is having any fun.

What kinds of rewards can games offer players? There are as many kinds of rewards as there are forms of play. Hallford and Hallford list four general types. Although these categories were written about computer role-playing games, they suggest the kinds of rewards other kinds of games might contain.

• Rewards of Glory. Glory rewards are all the things you're going to give to the player that have absolutely no impact on the game play itself but will be things they end up taking away from the experience. This includes winning the game by getting all the way to the end, completing a particularly difficult side quest, or defeating the plots of evil monsters.

• Rewards of Sustenance. Rewards of this nature are given so the player can maintain their avatar's status quo and keep all the things they've gained in the game so far. This might include health packs.
that heal injuries, mana potions that increase a player's magical abilities, high-tech armor that shields a player from e-mag radiation, robots that remove curses or diseases, or even storage boxes or beasts of burden that allow a player's avatar to carry more resources along with them.

- **Rewards of Access.** Rewards of access have three critical features: they allow a player access to new locations or resources that were previously inaccessible, they are generally used only once, and they have no other value to the player once they've been used. Keys, picklocks, and passwords are typical examples of this kind of reward.

- **Rewards of Facility.** Rewards of facility enable a player's avatar to do things they couldn't do before or enhance abilities they already possess. When well handled, they should increase the number of strategies and options that player will have for playing the game. A good example of a facility reward might be a magic orb that lets an avatar walk through a stone wall or a cybernetic software upgrade that lets them shut down enemy gun turrets from a distance.

Punishments, negative reinforcement, and positive reinforcement are important game design tools. They not only teach players what actions to take and not to take in a game, but also craft larger structures of pleasure. These structures assure that players are properly rewarded for spending the time to take part in the experience designed for them. But using reinforcement successfully in a game means more than just knowing what kinds of pleasures to provide. It is equally important to know how to integrate rewards and punishments into the experiential structures of a game. How often does reinforcement occur? How powerful is the reward or punishment? Do reinforcement factors change over time or remain the same?

Behavior theory has devoted much study to reinforcement schedules. A reinforcement schedule refers to the rate a subject is given reinforcement over time. These reinforcement patterns, along with a network of integrated rewards and punishments, help shape the fabric of any game experience. There are two basic kinds of reinforcement: fixed and variable.

**Fixed reinforcement** means that rewards or punishments are occurring at a steady, continuous rate. A **fixed ratio** means that the outcome occurs a set number of times that the behavior is performed, such as a player getting a chevron for every five waves of aliens defeated. A **fixed interval** refers to a regular amount of time between reinforcements, as when a power-up appears in a game every 30 seconds as long as a player can stay alive.

With **variable reinforcement**, the rewards and punishments are coming at irregular intervals. **Variable ratio** means that the outcome happens after an irregular number of intervals, like slot machine payoffs that occur at a random rate. With a **variable interval**, the reward or punishment occurs at random time intervals, as in mechanical children's games like Don't Wake Daddy, in which daddy will wake up (with negative consequences) after a random amount of time.

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**A Hypothetical Case Study A: Game Called Unlocker**

Let's invent a fictional game called Unlocker to illustrate several points about classical conditioning. Unlocker is a straightforward 2D computer game where the player controls an avatar seen from a top-down point of view. Moving through a series of rooms, the player must avoid traps, collect weapons, fight pursuing enemies, and collect keys that unlock doors to additional rooms and levels. Although combat can occur, it is not the intended focus of the game. The goal of Unlocker is to unlock as many doors as possible and earn the most points before dying.

Even this relatively simple game contains many kinds of objects and events: open and locked doors, hidden keys, mobile enemies, movement, combat, manipulation of an inventory, and so on. Because many players will not read the instructions (and just as many will forget them soon after reading), how do you teach players what they are supposed to do in the game? Rewards and punishments are one means of shaping their behavior.
The overall trajectory of the game is to open doors and move on to new rooms and new game levels. So you want your players to open those doors. Imagine the first time a player finds a key and uses it on a locked door. A sprite animation plays and the player sees the door swing open in the game space. The problem is that there is nothing in the game to let a player know that unlocking the door is a valuable action that brings the player closer to a positive outcome. The solution? Reward the player! Give the player bonus points for unlocking a door and make sure to add a *Ka-ching!* sound to emphasize the event. Make a gold star appear in the interface when a player unlocks a door—maybe five gold stars earn an extra life. Or flash a message on the screen that congratulates the player and shows a map to the next locked door. Each of these possible solutions represents a different way to reward the player for the action of unlocking. All of them combine internal, system-based rewards (points, extra lives, information about the next door location) with external, audiovisual rewards (sound effects, gold stars, congratulatory text). If you can craft the proper reward for your player, you will create a desire to achieve that satisfying reward event again, and the player's actions will follow suit.

The same is true of negative reinforcements and punishments. By providing unpleasant feedback, you can teach your player what *not* to do in your game. Let's say your intention

Fixed schedules are best at shaping behavior if the subject is being punished: sending a child to his room every time he performs an undesired behavior is much more effective than sending him to his room only some of the time. On the other hand, for many kinds of reinforcements, especially positive ones, variable schedules are more effective. In gambling, players are usually rewarded at variable ratios. The repeat play of gamblers is strong evidence of the power of variable reinforcement.

One game designer known for integrating ideas of operant conditioning and reinforcement schedules into his work is Gabe Newell, lead designer on the computer game Half-Life. During a panel discussion at an MIT conference on gaming, Newell discussed the way that Half-Life's design integrates these concepts:

> The rewards in Half-Life are getting to see new monsters, the plot is moving forward, getting to have a new fun weapon, getting to see something really cool…. You want to make sure that throughout the course of the game that they're getting rewards…. You want to look at it from the point of view of a reinforcement schedule and say OK, that makes sense. I mean there were points in the game before we shipped where there were long lulls where basically all you were doing was stuff that you'd already done before, which in our view didn't represent a reward. So we said we've got to put more fun stuff in here or eliminate that section from the game.¹⁹

Newell makes a number of important points. He begins by listing some of the chief rewards that Half-Life provides for players, which include what Halford and Halford call rewards of *facility* (new fun weapons), *access* (meet new monsters and experience plot twists), and *glory* ("getting to see something really cool"). He also emphasizes the fact that it is rewards that sustain players through the course of a game. When his design team felt like players were not consistently receiving substantive rewards, they either increased rewards in that section or removed it entirely from the game.

Half-Life utilizes principles of operant conditioning in other ways as well. Much of the success of Half-Life has been attributed to the way that it shapes player experience, creating a thriller-like tension while drawing the player slowly into its dangerous and mysterious spaces. For example, the intensely combative moments in the game are interspersed with uneventful stretches. As opposed to a typical "enemy lurking behind every door" structure, Half-Life creates uncertainty about when and where the terrifying mutant monsters of the game will appear. In some game levels, most doors *do not* open up to an opponent but instead to empty space. In these levels, Half-Life uses variable ratio punishments. Sometimes the player will be attacked when he opens a door or rounds a corner, but usually he is not. The experiential result of this design strategy is that in Half-Life, deadly threats seem to lurk in every dark shadow and beyond every closed doorway. Deploying enemies with restraint, creating a sparse pattern of unexpected, horrifying encounters, results in a more powerful experience through the use of fewer game elements.
The question arises: if rewards and pleasure are the keys to keeping players involved in a game, why don't tension-inducing punishments such as variable monster attacks drive players away? How can seemingly negative emotions create seductively positive play? We could answer by referring to similar pleasures in other media: the frightening ghost story or the gripping sci-fi cinema thriller. But there is a deeper principle at work. To play a game is to experience its pleasure. At the same time, we know from the lusory attitude that part of playing a game is to take on artificial challenges, inefficiencies adopted for no logical reason except that they make play possible. It is surely challenging to get a golf ball into a tiny little hole so many yards away on the green, but that hardly stops golfers from playing, just as the anxiety of Half-Life doesn't cause players to exit the program. On the contrary: challenge and frustration are essential to game pleasure. Without them, there would be no game conflict to struggle against and no pleasure would emerge from the process of overcoming adversity.

Unlocker

is that the game play of Unlocker is more about finding keys and unlocking doors than about combating enemies. In this case, you may need to find ways to punish players that go against the grain of the game. If combat is too rewarding, either in terms of structure (such as earning points) or experience (such as cool combat effects), your players will keep on fighting because the game intrinsically encourages them to do so.

What are some solutions to this dilemma? You could make the enemies tougher, but that might simply encourage players to rise to the challenge. There are better “punishments” that can steer your players away from fighting. For example, maybe players earn no points from killing enemies, only from finding objects and unlocking doors. Or perhaps when they die as a result of combat, they are sent back to an earlier level. Or when they die, they lose points and game resources. Obviously, you do not want to punish the player too harshly for fighting or dying, but you do want to nudge them in the direction that you designed for them. Of course, if you continue to observe your Unlocker playtesters engaging in too much combat and not enough door unlocking, it might be telling you something else. Maybe something about the game’s core mechanic makes combat more compelling than the hunt-and-lock activities you intended as the game’s focus. Perhaps you should turn Unlocker into a combat game. On the other hand, you could always remove the combat component entirely. It's your design. You decide.

Reward and punishment are two sides of a coin, both of them necessary to craft the structure of meaningful experience for players. Finding that elusive balance between positive and negative experience-between anxiety and pleasure—is one of the deepest challenges of game design. In the following section, we engage directly with these important questions.


[18] Ibid. p. 157-160

Boredom and Anxiety: Flow Redux

The concepts that come from behavioral psychology-operant conditioning, reinforcement schedules, positive and negative reinforcement-describe how individual rewards and punishments can affect a player's present and future behavior. The challenge of putting these concepts to use is that the actual context of a game is always more complex than any individual instance of behavioral conditioning.

At any moment in a game, a player is pushed and pulled in many directions at once, experiencing a complex mix of pleasures. Think about the layered pleasures of Half-Life: the terror of the lurking unknown, the vertiginous pleasure of moving in a 3D space, the satisfaction of gradual skill mastery, the strategic exploration of combat possibilities, the glory of finishing the game victorious. Some of these pleasures frustrate the player; others provide banquets of sensual delight. Yet others find their main significance in contexts outside the game. In order to bring the diversity of pleasure into a single understanding of the play experience, we turn once more to the work of psychologist Mihaly Csikszentmihalyi. In his book *Flow*, Csikszentmihalyi provides a general heuristic for understanding how a participant is pulled into and out of the flow state. Although we know that flow is not identical to meaningful play (or even play in general), the model is extremely useful for conceptualizing the play of pleasure in games.

Csikszentmihalyi looks specifically at the degree of *challenge* that a potential flow activity provides. Does the activity provide tasks that meet the abilities of the participant? What happens when an activity is too difficult, or not difficult enough? What are the conditions under which someone can engage with the (High) activity and enter a flow state? In answering these questions, Csikszentmihalyi charts a person's experience along two axes.

**Terminological Aside: Behavior Theory and Cybernetics**

If all of this talk about positive and negative reinforcement sounds familiar, it should. Cybernetics uses similar language when talking about feedback loops, which we first encountered in *Games as Cybernetic Systems*. Although there is a connection between behavior theory and cybernetics, there is also the possibility for linguistic confusion.

Behavior theory and cybernetics both address the way that repeated actions and outcomes affect the state of a system. If a thermostat keeps telling a heater to blow hot air into a room, that cybernetic system of positive feedback will continue to progress toward higher and higher temperatures. If a dog is continually rewarded with food for performing tricks, it will keep trying to perform tricks in order to get more food.

However, there are also differences in the kind of phenomena studied by each. Cybernetics is concerned with deviation from a stable state: negative feedback returns a system to stability and positive feedback moves the system away from stability. Behavior theory is concerned with intelligent learning behavior, which makes associations between specific actions and outcomes. Although they share some structural affinity, these two ways of thinking are not at all identical.

There are also differences in the way that each uses the terms "positive" and "negative." The term "positive" has happy connotations in behavior theory, as when a teacher rewards students with praise. Similarly, "negative" has unpleasant connotations, even implying punishment. But in cybernetics, the terms positive and negative are mathematical, and either one might result in an emotionally positive or negative experience for a player. If, in a car racing console game, the car in last place is given an automatic boost, that is an example of a negative feedback system (tendency toward a stable state where all cars are in equal place). The boost will most likely have a positive emotional impact on the losing player. "Positive reinforcement" and "negative reinforcement" are not universal terms, and mean very different things depending on whether you're referring to cybernetics or psychology. Be careful how you use them!
One axis represents the degree of challenge an activity offers. The other axis represents the skills a participant possesses.

Both factors can range from a low to a high value, and as a player moves to different positions on the chart, he or she is navigating through different experiences of the activity. The narrow diagonal strip represents a potential flow state, those moments when a player’s skills equally meet the challenges of the activity. On one side of this strip is the state of anxiety, where the activity’s tests exceed the participant's skills. On the other side is boredom, the state in which the player's abilities outstrip what challenge the activity can provide.

Csikszentmihalyi uses the example of someone learning to play Tennis. When a Tennis player begins her study, she is at position 1 on the chart, possessing low skills, but also facing challenges appropriate to her abilities, meaning that she may have some initial experiences of flow. As she proceeds, however, she is likely to fall out of flow. If her Tennis skills exceed the challenge of her lessons, the result is an experience that does not fully engage her, and she finds herself in position 2 (boredom). On the other hand, if the sense of challenge she feels from Tennis is overwhelming, the result is a negative and intimidating experience, position 3 (anxiety). Only by finding a new balance between skill and challenge can the Tennis player arrive at position 4 and regain the flow state.

Csikszentmihalyi's model has a great deal of relevance to game design. How many times have you played a game and had a negative experience, either because it was too difficult to learn or play, or because it was not challenging enough for your skill level? Remember that for games, the concepts of skill and challenge should be interpreted broadly. Skill does not only mean hand-eye coordination or athletic ability. Increasing skill might take the form of greater knowledge of a game system's rules, more detailed mapping of the game's narrative world, or increasing confidence to bet larger and larger sums of money at a gambling table.

One of the useful insights gleaned from Csikszentmihalyi’s approach is that his model doesn't simply address an isolated moment in a game, but tracks a player’s experience over time, over the course of many games. The best games manage to scale their challenge to the player. Ideally, games are simple to learn but difficult to master, providing an appropriate degree of challenge for beginners and advanced players alike. The two "traps" into which poorly designed games can fall-boredom and anxiety—are extremely useful ways of thinking about your players' game experience. Can you provide proper challenge at every stage of the game, for all levels of players? During play-testing, keep a sharp eye out for players encountering boredom and anxiety and note when these moments occur. What was the context? What kinds of decisions and outcomes were happening during these moments? What kinds of player strategies led to boredom or anxiety?

We can also frame boredom and anxiety in terms of meaningful play. Both states represent poorly designed moments of choice. If a player is feeling boredom, for example, she is not meaningfully exploring the space of possibility of a game.

Perhaps the outcome of a decision is not tied closely enough to the action, and so events in the game feel arbitrary. Boredom is “dead space” in a game, moments when the taut space of possibility falls limp, when the player is not being confronted with a rich set of choices in an entraining pattern of experience. Playing a game is a dance between a player and the system of the game. When a game is boring, the player's dance partner feels like a lifeless mass that has to be dragged about the dance floor. That doesn't sound like much fun.
Boredom can come from many different sources in a game. In the passage from Gabe Newell, he recalled the disappointing discovery of "long lulls where basically all you were doing was doing stuff that you'd already done before." Even though the player was actually quite busy, the lack of new kinds of rewards wasn't creating sufficient motivation for the player. But too many rewards can create boredom as well. Players often crave power, what Halford and Hallford would call rewards of facility and sustenance. But too much power leaves players feeling tediously omnipotent and enormously bored, despite their fantastic abilities.

Anxiety operates in a parallel manner. Dramatic tension, as noted in Half-Life, can be a wonderful experiential tool for design. But there is a very thin line between meaningful challenge and truly unpleasant anxiety. Imagine if the tension in Half-Life never let up, if the player never received rewards to balance variable punishments, if the player was never able to feel an actual sense of accomplishment. The game experience would feel like a series of gratuitous attacks, with no justification or end in sight.

When the play of a game becomes synonymous with anxiety, the experience is surprisingly similar to boredom. No matter what choice a player makes, it feels like negative outcomes will always result, and choices in the game therefore feel arbitrary. The space of possibility becomes stifling and inert. To use the dancing metaphor once again, when game experience becomes synonymous with anxiety, the system of the game takes over the dance completely, like an overpowering robot, and the player is trapped in a series of actions over which she has no control. Once again, meaningful play fails to occur.

Anxiety sometimes results because in seeking to design a challenging game, game designers create games that are too challenging, especially for novice players. Remember the level playing field of conflict from Games as Systems of Conflict? It is important that players feel a sense of fairness as they play, that they win or lose because of the application of their own abilities within an equitable game system. This is why many games have handicapping rules or player classes, so that players of equal skill can be matched up against each other. With single-player digital games, it can be more challenging to anticipate and balance challenge and anxiety. In Games as Cybernetic Systems, we looked at an important approach to challenge management called Dynamic Difficulty Adjustment, used in games like Crash Bandicoot and Jak and Daxter.

Csikszentmihalyi's model of boredom and anxiety applies to games in many ways. It can help us understand how a player navigates the terrain of skill and challenge within a single game, for example, or to understand the way game skills are slowly built up over time. Csikszentmihalyi's model can also serve as a tool within the game design process. An iterative design process allows game designers to locate moments of boredom and anxiety in their game and re-shape the game experience to minimize moments of less meaningful play.

Anxiety and Boredom on the High Seas

In a wonderful essay published on Gamasutra.com, Jesse Schell and Joe Shochet of Disney Imagineering write about the process of designing Pirates of the Caribbean-Battle for the Buccaneer Gold, a game "ride" where a group of players stands on a motion-platform pirate ship surrounded by video projections. During the game, one player steers the ship while the other players operate a number of cannons, firing at monsters, forts, and enemy vessels. Pirates of the Caribbean is designed as a condensed five-minute experience, and it was essential that players feel properly challenged at every moment of the game.

In their design analysis, Schell and Shochet detail a number of design problems that had to be overcome in order to maximize player enjoyment. For example, during playtesting they identified as a problem the fact that the player steering the ship could take the ship to what they call "dull places," leading to a less engaging experience for all of the players. In the selected quotes below, Schell and Shochet outline some solutions to
this problem:

*Architectural Weenies:* "Weenie" is a phrase coined by Walt Disney himself. It refers to the technique used on movie sets of guiding stage dogs by holding up part of a sausage… In the case of Pirates, [there are] three main "weenies," one for each island: a volcano, an enormous fort, and a plume of smoke coming from a burning town. No matter which way the boat is facing, at least one of these "weenies" is in view. Since the coolest action takes place at the islands, [we wanted] to guide the captains to go there.

*Guide Ships:* Since the short-term goal of the game is to fire on other pirate ships, captains strive to get near these ships so that their gunners can get a clear shot. Many of the ships in the Pirates world are "on their way" to the islands mentioned above. Many captains, in just trying to stay near these ships find that just as they have destroyed the ship, they have arrived at one of the islands, without even trying to get there.

*Sneak attacks:* What if the captain ignores the guide ships? Even if he heads toward one of the "weenies" it might mean as long as a minute during which the gunners have little to shoot at. For this reason, [we] created special "sneak attack" ships that "magically" appear behind the players' ship, and quickly pull up alongside, when no other boats are in range.

*The Waterspout:* This was [a] nickname for [a] "last ditch" forcefield that surrounds the game play area. If a captain tries to sail out of the main game play area and out to open sea, they hit the forcefield, and the ship is "magically" pointed back to where the action is. The few guests who see this don't even realize that anything unusual has happened. They are just pleased to have their boat going somewhere cool.[20]

Schell and Shochet are thinking in very experiential terms, using clever techniques to subtly guide player action in meaningful directions. At the time of its release, Pirates was a very high-tech production, featuring real-time 3D graphics, physically engaging cannon-firing interfaces, and a large motion platform to simulate a pirate ship rocking on the waves. Often in these instances, a desire to "properly" simulate a coherent 3D space or "correctly" output logical behavior for computer-controlled characters overshadows the design of the actual play experience. But Schell and Shochet had no hesitation in making pirate ships "magically" appear to guide the player, or abandoning "realistic" physics to have the player's ship turn on a dime to facilitate navigation. As they put it, "By choosing to be less concerned with reality and more concerned with what was fun, we created an experience that…is easier to adapt to, quicker to learn, and is a better show." In game design, player experience should always trump so-called "realism."

Boredom and anxiety, as game design watchwords, are wonderful because they speak directly to player experience. As you shape and sculpt your players' pleasure, you are guiding them between the Scylla and Charybdis of anxiety and boredom. This task is made all the more difficult because, as we know, the experience of play can only be indirectly designed. How do you create a set of rules that maximizes the play of pleasure for your audience?

Meaningful Pleasure

We can identify elements of the play of pleasure through concepts such as repetition and entrainment, short-term and long-term goals, rewards and punishments, and anxiety and boredom. Ultimately, however, a player experiences a more pervasive sense of pleasure and enjoyment; a total feeling of engagement that arises directly from play, the experiential whole that is more than the sum of the parts. Pleasure is emergent. Constructing the rules of a game, the formal system that produces this pleasure, is the challenge of game design. As usual, the key to understanding is meaningful play.

The core of meaningful play lies in the relationship between action and outcome. As a player uses core mechanics to take action, outcomes accumulate. These outcomes take many forms: sensory feedback, strategic achievement, emotional gratification, social relationships, and so on. As a player advances through a game, it is crucial that the game provide meaningful play at every moment. For example, as a player achieves a short-term goal, the movement toward, through, and beyond that goal should be clear. The game must communicate where the goal is, how it might be achieved, whether the player is making progress toward it, exactly when it was reached and completed, and its impact on future play. There is room in this experience for uncertainty and ambiguity, but a certain kind of clarity must underlie every action in a game. Even in the inexact, messy realms of pleasure and desire, every game choice must be discernable and integrated.

When game actions are discernable, the events of a game and the outcomes of choices are always evident. Discriminable outcomes drive the experience of meaningful play and facilitate pleasure. In DOOM, for example, the monster opponents that players battle hardly exist on their own. Until the player enters a room full of monsters, they will "idle," walking in place, waiting for the player to enter so that they can spring to life and attack. Although some players regard this aspect of DOOM as comically impoverished, in fact it is key to the successful play of the game. Because monsters have little or no life "off camera," all of their important activity happens "in the face" of the player as he encounters them in battle. The game events that result in rewards and punishments for the player are always clearly communicated because they almost always occur in the presence of a player.

The need for events to be integrated into the larger fabric of the game experience is perhaps even more important than discernability in sustaining player pleasure. As long as a player understands the implications of the game's system of rewards and punishments, he or she can use that knowledge to set new short-term goals. This allows the player to maintain an overall sense of progress toward a long-term goal, such as winning. In the popular online game NeoPets, a player is continually rewarded for taking game actions, exploring the game world, caring for her pets, playing simple games, and interacting with other players. Each of these simple activities rewards the player with a small amount of points. These points are then used to facilitate new purchases, which in turn make new activities possible. The steady stream of incremental rewards forms a tight loop of desire, a compelling system of pleasure where short-term and long-term goals are constantly forming on the horizon of player action.

When game events are not discernable or integrated, boredom and anxiety, the enemies of pleasurable flow, can result. Does the game program know that a player just took an action? Why did all of those important events happen off-screen? Does it matter which piece a player just moved? Why is the game so hard? Designing for meaningful play comes down to treating players with great care and concern at every moment of the game. Too often, for example, a digital game just doesn't feel right. The interface is clunky, the player is not sure what to do when the game begins, or the first level is too hard. Retail digital games are usually designed for 30 to 40 hours of play. That kind of commitment demands a tremendous amount of trust. If the first five minutes are unpleasant, why would a player want to continue?

There is a reason why Myst was superior to all of the CD-ROM multimedia game clones that followed it, or why Super Mario 64 is still better than the scores of 3D over-the-shoulder, char-acter-based console games that are released every year. Myst and Super Mario 64, although very different in the experiences they provide, have one thing in common: they both treat the player with a tremendous amount of care. From the moment the game begins, the player has clear direction and purpose. As players explore their expansive
worlds, both games provide a satisfying increase in challenge, while never leaving the player feeling lost or confused. There is clarity to the way that these games construct player pleasure.
Crafting this degree of pleasure is extremely challenging. Pleasure is difficult to design because it is an open-ended, multifaceted, and exceedingly complex concept. But that is also why it is such a fertile avenue for exploration by game designers. There are multitudes of game pleasures for you to create: pleasures that go deep into the hearts of your players; pleasures that transform your players and the ways that they understand the world; pleasures that expand the very medium of games. The process of discovering and inventing these pleasures is itself a unique form of bliss: the boundless joy of game design.
Against "Addiction"

The great damnation of the game [of Chess] has come from those who have been plagued by it. None has expressed so convincingly his sad and resigned self-denial as a minister who in 1680 wrote a letter, giving ten reasons why he refused to play the game. Among them is one of the most beautiful lines in English literature: "It hath not done with me when I have done with it." Truly this one sentence could be the motto for all addictions.-Norman Reider, "Chess Oedipus, and the Mater Dolorosa"

The play of pleasure in games is immensely complex, but we have done our best to trace some of its contours. Before ending this chapter, there is an additional issue we must address: addiction. Addiction and addictive play can mean many things. But by and large, among game designers, addiction is considered a positive trait, the mark of compelling play. In business terms, lots of addicted players mean that a game has a greater chance of being a commercial success.

Meaningful play can become addictive. If a player enjoyed the play of a game, he or she will probably want to play it again. If you create a space of possibility that rewards players for exploration, then you are likely to have players that want to see more permutations of how the rules play out. The same-but-different quality intrinsic to all games is at the core of a game's ability to engross players and bring them back into the magic circle again and again. "Addiction" in this sense is merely shorthand for a game experience that can support this depth of meaningful play.

As a game designer, it is flattering to find that players are addicted to your game. It might be that they use your game regularly to relax or unwind. Maybe they find your game a great way to interact with friends. Or perhaps they write fiction around your game's storyline and participate in the fan culture your game has spawned. All of these forms of so-called "addiction" are the mark of dedicated players, of meaningfully engaged people experiencing the play of pleasure provided by a game.

At the same time, there are negative connotations to the word "addiction" as well. Medically speaking, addiction is a genuine disorder, whether the addiction is to substances like alcohol or drugs, to negative behaviors like bullying or shoplifting, or to behaviors that are generally considered positive, like exercise or reading. Suffice it to say that the use of term "addiction," when used by professionals in the game industry, does not describe medically pathological behavior. Instead, it refers to engaged and repeated play, to players that enjoy a game and therefore play it more than one time.

Because of the negative connotations of the term, the repeatable play of games is sometimes naively compared to a genuine medical disorder. But the word "addiction" is a misnomer, as play scholar Brian Sutton-Smith points out:

The persistent concentration we are talking about is sometimes mistaken for addiction. But its compulsive quality is the same experience by those who have fallen in love, or are taken by some hobby or sport.... It is not an addiction where what occurs is a surrender to outside forces over which one has no control. We must distinguish such compulsive avocations from addiction. Video games are of this first kind. Our proposal, then, is that video games, like all other forms of exciting play, lead to a compulsive and persistent attendance on the games themselves. In this, they are like all games and all play which has long been noted for holding chil-dren's attention when they should be coming inside for their supper, or leaving the playground to go into school.[21]

Play is intrinsically engaging. But that doesn't mean that it is negatively addictive. It is true that some forms of play can become pathological. People can become compulsive gamblers, or they can spend so many hours in
an online MUD that they neglect aspects of their life outside the game. These rare cases, often highly publicized, are the exceptions that prove the rule. The overwhelming majority of play phenomena are not destructively addictive. This is true even for forms of play most commonly associated with pathological addiction, such as gambling. In *The Ambiguity of Play*, Sutton-Smith presents extensive research on gambling with the conclusion that "the majority of players gamble moderately and with positive results for family life and pleasure."[22] The existence of addictive play disorders doesn't mean that all play is bad for you. Eating disorders and addictions abound. But that doesn't mean that you should avoid the pleasure of dining.

To play is to find free movement within a more rigid structure. When a game activity becomes pathologically addictive, this movement is censured: free movement is shut down, the sense of free choice evaporates, and meaningful play abates. In this experiential sense, when a player becomes medically addicted to some form of play, play as we have defined it no longer exists. In other words, addictive play, in the negative sense used by the medical community, is not really play at all.

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**Case Study: The L Game: An Exception to Every Rule**

One game that flies in the face of some of our ideas about meaningful play and pleasure is the L Game, designed by Edward de Bono, a writer and researcher who focuses on lateral thinking and creative problem-solving. The rules are summarized below.[23]

How to play the L Game

- **Pieces.** The Board is made up of 16 squares. Each player (only 2 can play) has an L piece that he must move when it is his turn. There are also two neutral pieces that either player can move.

- **Object.** The object of the game is to maneuver the other player into a position on the board where he cannot move his L piece.

- **Starting Position.** Proceeding from the starting position, the first player (and each player on each move thereafter) must move the L piece first. When moving, a player may slide, turn or pick up and flip the L piece into any open position other than the one it occupied prior to the move. When the L piece has been moved, a player may move either one (but only one) of the neutral square pieces to any open square on the board. It is not required that the neutral piece be moved, this is up to the player! A player wins the game when his opponent cannot move his L piece.

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Further Reading

"Designing Interactive Theme Park Rides: Lessons From Disney’s Battle for the Buccaneer Gold," by Jesse Schell and Joe Shochet (see page 68)

Flow: The Psychology of Optimal Experience, by Mihaly Csikszentmihalyi

One of the great pleasures of games is the feeling of being in flow—a state of deep and all-encompassing absorption with the activity at hand. Csikszentmihalyi studies the qualities and conditions that allow for flow, which have many connections to the qualities and conditions of game play.

Recommended:

Chapter 3: Enjoyment and the Quality of Life

Chapter 4: The Conditions of Flow

Chapter 7: Work as Flow

The L Game

It is difficult to get a sense of the L game without actually playing it, but the game essentially consists of players trying to place their pieces in such a way so as to keep their opponents from making a legal move. The two players end up shuffling pieces on the small but crowded board, taking turn after turn, until one of them hits upon a winning move.

The challenge of the L Game is that it does not provide clear feedback for players as they progress towards the goal. In Checkers, even a beginner can get a sense of the game’s progress: if white has lost most of its pieces and black’s pieces are all still on the board, then black is clearly progressing toward victory. But in the L Game, because the pieces are never removed and do not progress step by step toward a victory condition, it is very difficult to tell which player is gaining or losing ground. Playing the L Game can feel more like taking on an arbitrary, frustrating puzzle than playing a game.

Jeff Fedderson, a student in a class taught by Eric Zimmerman and Frank Lantz, analyzed the game. He found the game strategy so opaque that he wrote a program to play the L Game against itself. He experimented with strategies for his computer players and identified several patterns: for example, programs that attempted to occupy the center four squares of the board and avoided putting the long edge of an L shape on the edge of the board were much better at playing the game.

But even armed with these very short-term strategic goals, the L Game remains stubbornly resistant to providing meaningful feedback about progress toward the end goal. However, this strange feature of the L Game is actually what makes it so distinctive and compelling as a play experience. Despite the fact that the L Game seems to violate some of our most basic ideas about meaningful play, it still provides pleasure. Sometimes, when design rules are broken in a very original way, whole new modes of play can be invented.
Summary

- **Pleasure** is intrinsic to games in many ways. The act of playing a game, submitting to a set of rules, is itself a form of pleasure. The restraint that limiting game behavior affords heightens the player's sense of pleasure.

- Games provide **autotelic** pleasures, experiences that are pursued for their own sake. Although it is true that games provide **extrinsic** pleasures that affect a player's life outside the game, all games also provide **intrinsic**, autotelic pleasures that are significant only within the artificial meanings that the game creates.

- Games must provide a **double seduction** for players. First, players must be seduced into entering the magic circle. Second, players must be continually seduced into remaining inside the circle of play.

- There are many established typologies that address the forms of pleasure provided by games. Typologies of game pleasure are generally less useful for theorizing pleasure and more useful for organizing observations about game experience.

- Psychologist Mihaly Csikszentmihalyi describes optimal experience as **flow**. Flow is the exhilarating pleasure that occurs when someone is engaged with an activity and feels in control of his or her actions. Although flow is not unique to games, it is a useful way of thinking about the creation of game pleasure.

- Csikszentmihalyi names eight characteristics of flow, each of which has a strong connection to games. Four of the eight characteristics describe the **effects** of flow:
  - the merging of action and awareness
  - concentration
  - the loss of self-consciousness
  - the transformation of time

- The other four characteristics describe the **prerequisites** of the kind of activity that will result in flow:
  - a challenging activity
  - clear goals
  - clear feedback
  - the paradox of having control in an uncertain situation

- Games possess a quality we call **same-but-different**. Every time one plays a game, the formal structure remains the same, but the way the rules play out are different. This quality of games makes it pleasurable for players to explore the space of possibility. Because play is often transformative, the continued exploration of a game can change the game structure itself, leading to a potentially endless sequence of same-but-different pleasures.

- **Entrainment** means both to carry along and to trap. Entrainment is the process of falling into the rhythmic patterns of pleasure that games can provide.

- The **goal** of a game is a key component in shaping the experience of pleasure. The goal is the object of desire held out to entice players to continue playing.

- Suspended between moment-to-moment core mechanics and the ultimate end goal are short-term goals. **Short-term goals** help players make plans in a game as well as provide moments of satisfaction when they reach them.

- **Behavior theory** is a branch of psychology that studies observable behavior. **Conditioning** is the acquisition of learned behaviors through rewards and punishments. Rewards and punishments can be used to teach players how to behave in a game from moment-to-moment, as well as create an experience that rewards players for their participation over time.