


# Reality Is Broken

 Why Games Make Us Better  
and How They Can Change the World

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*It is games that give us something to do when there is nothing to do. We thus call games “pastimes” and regard them as trifling fillers of the interstices of our lives. But they are much more important than that. They are clues to the future. And their serious cultivation now is perhaps our only salvation.*

—BERNARD SUITS, philosopher<sup>1</sup>

## INTRODUCTION

# Reality Is Broken

*Anyone who sees a hurricane coming should warn others.  
I see a hurricane coming.*

*Over the next generation or two, ever larger numbers of people, hundreds of millions, will become immersed in virtual worlds and online games. While we are playing, things we used to do on the outside, in “reality,” won’t be happening anymore, or won’t be happening in the same way. You can’t pull millions of person-hours out of a society without creating an atmospheric-level event.*

*If it happens in a generation, I think the twenty-first century will see a social cataclysm larger than that caused by cars, radios, and TV, combined. . . . The exodus of these people from the real world, from our normal daily life, will create a change in social climate that makes global warming look like a tempest in a teacup.*

— EDWARD CASTRONOVA,  
*Exodus to the Virtual World*<sup>1</sup>

Gamers have had enough of reality.

They are abandoning it in droves—a few hours here, an entire weekend there, sometimes every spare minute of every day for stretches at a time—in favor of simulated environments and online games. Maybe you are one of these gamers. If not, then you definitely know some of them.

Who are they? They are the nine-to-fivers who come home and apply all of the smarts and talents that are underutilized at work to plan and coordinate complex raids and quests in massively multiplayer online games like *Final Fantasy XI* and the *Lineage* worlds. They're the music lovers who have invested hundreds of dollars on plastic *Rock Band* and *Guitar Hero* instruments and spent night after night rehearsing, in order to become virtuosos of video game performance.

They're the *World of Warcraft* fans who are so intent on mastering the challenges of their favorite game that, collectively, they've written a quarter of a million wiki articles on the WoWWiki—creating the single largest wiki after Wikipedia. They're the *Brain Age* and *Mario Kart* players who take handheld game consoles everywhere they go, sneaking in short puzzles, races, and minigames as often as possible, and as a result nearly eliminating mental downtime from their lives.

They're the United States troops stationed overseas who dedicate so many hours a week to burnishing their *Halo 3* in-game service record that earning virtual combat medals is widely known as the most popular activity for off-duty soldiers. They're the young adults in China who have spent so much play money, or “QQ coins,” on magical swords and other powerful game objects that the People's Bank of China intervened to prevent the devaluation of the yuan, China's real-world currency.<sup>2</sup>

Most of all, they're the kids and teenagers worldwide who would rather spend hours in front of just about any computer game or video game than do anything else.

These gamers aren't rejecting reality entirely. They have jobs, goals, school-

work, families, commitments, and real lives that they care about. But as they devote more and more of their free time to game worlds, the *real* world increasingly feels like it's missing something.

Gamers want to know: Where, in the real world, is that gamer sense of being fully alive, focused, and engaged in every moment? Where is the gamer feeling of power, heroic purpose, and community? Where are the bursts of exhilarating and creative game accomplishment? Where is the heart-expanding thrill of success and team victory? While gamers may experience these pleasures occasionally in their real lives, they experience them almost constantly when they're playing their favorite games.

The real world just doesn't offer up as easily the carefully designed pleasures, the thrilling challenges, and the powerful social bonding afforded by virtual environments. Reality doesn't motivate us as effectively. Reality isn't engineered to maximize our potential. Reality wasn't designed from the bottom up to make us happy.

And so, there is a growing perception in the gaming community:

Reality, compared to games, is broken.

In fact, it is more than a perception. It's a phenomenon. Economist Edward Castronova calls it a "mass exodus" to game spaces, and you can see it already happening in the numbers. Hundreds of millions of people worldwide are opting out of reality for larger and larger chunks of time. In the United States alone, there are 183 million *active gamers* (individuals who, in surveys, report that they play computer or video games "regularly"—on average, thirteen hours a week).<sup>3</sup> Globally, the online gamer community—including console, PC, and mobile phone gaming—counts more than 4 million gamers in the Middle East, 10 million in Russia, 105 million in India, 10 million in Vietnam, 10 million in Mexico, 13 million in Central and South America, 15 million in Australia, 17 million in South Korea, 100 million in Europe, and 200 million in China.<sup>4</sup>

Although a typical gamer plays for just an hour or two a day, there are now more than 6 million people in China who spend at least twenty-two hours a week gaming, the equivalent of a part-time job.<sup>5</sup> More than 10 million "hard-core" gamers in the United Kingdom, France, and Germany spend at least

twenty hours a week playing.<sup>6</sup> And at the leading edge of this growth curve, more than 5 million “extreme” gamers in the United States play on average forty-five hours a week.<sup>7</sup>

With all of this play, we have turned digital games—for our computers, for our mobile phones, and for our home entertainment systems—into what is expected to be a \$68 billion industry annually by the year 2012.<sup>8</sup> And we are creating a massive virtual silo of cognitive effort, emotional energy, and collective attention lavished on game worlds instead of on the real world.

The ever-skyrocketing amounts of time and money spent on games are being observed with alarm by some—concerned parents, teachers, and politicians—and eagerness by others—the many technology industries that expect to profit greatly from the game boom. Meanwhile, they are met with bewilderment and disdain by more than a few nongamers, who still make up nearly half of the U.S. population, although their numbers are rapidly decreasing. Many of them deem gaming a clear waste of time.

As we make these value judgments, hold moral debates over the addictive quality of games, and simultaneously rush to achieve massive industry expansion, a vital point is being missed. The fact that so many people of all ages, all over the world, are choosing to spend so much time in game worlds is a sign of something important, a truth that we urgently need to recognize.

The truth is this: in today’s society, computer and video games are fulfilling *genuine human needs* that the real world is currently unable to satisfy. Games are providing rewards that reality is not. They are teaching and inspiring and engaging us in ways that reality is not. They are bringing us together in ways that reality is not.

And unless something dramatic happens to reverse the resulting exodus, we’re fast on our way to becoming a society in which a substantial portion of our population devotes its greatest efforts to playing games, creates its best memories in game environments, and experiences its biggest successes in game worlds.

Maybe this sounds hard to believe. To a nongamer, this forecast might seem surreal, or like science fiction. Are huge swaths of civilization really

disappearing into game worlds? Are we really rushing headlong into a future where the majority of us use games to satisfy many of our most important needs?

If so, it will not be the first time that such a mass exodus from reality to games has occurred. Indeed, the very first written history of human gameplay, Herodotus' *Histories*, the ancient Greek account of the Persian Wars—dating back more than three thousand years—describes a nearly identical scenario. While the oldest known game is the ancient counting game Mancala—evidence shows it was played during Egypt's age of empires, or the fifteenth to the eleventh centuries BC—it was not until Herodotus that anyone thought to record the origins or cultural functions of these games. And from his ancient text, we can learn a great deal about what's happening today—and what's almost certainly coming next.

It's a bit counterintuitive to think about the future in terms of the past. But as a research director at the Institute for the Future—a nonprofit think tank in Palo Alto, California, and the world's oldest future-forecasting organization—I've learned an important trick: to develop foresight, you need to practice hindsight. Technologies, cultures, and climates may change, but our basic human needs and desires—to survive, to care for our families, and to lead happy, purposeful lives—remain the same. So at IFTF we like to say, “To understand the future, you have to look back at least twice as far as you're looking ahead.” Fortunately, when it comes to games, we can look even farther back than that. Games have been a fundamental part of human civilization for thousands of years.

In the opening book of *The Histories*, Herodotus writes:

When Atys was king of Lydia in Asia Minor some three thousand years ago, a great scarcity threatened his realm. For a while people accepted their lot without complaining, in the hope that times of plenty would return. But when things failed to get better, the Lydians devised a strange remedy for their problem. The plan adopted against the famine was to engage in games one day so entirely as

not to feel any craving for food . . . and the next day to eat and abstain from games. In this way they passed eighteen years, and along the way they invented the dice, knuckle-bones, the ball, and all the games which are common.<sup>9</sup>

What do ancient dice made from sheep's knuckles have to do with the future of computer and video games? More than you might expect.

Herodotus invented history as we know it, and he has described the goal of history as uncovering moral problems and moral truths in the concrete data of experience. Whether Herodotus' story of an eighteen-year famine survived through gameplay is true or, as some modern historians believe, apocryphal, its moral truths reveal something important about the essence of games.

We often think of immersive gameplay as “escapist,” a kind of passive retreat from reality. But through the lens of Herodotus' history, we can see how games could be a *purposeful* escape, a thoughtful and active escape, and most importantly an extremely helpful escape. For the Lydians, playing together as a nearly full-time activity would have been a behavior highly adaptive to difficult conditions. Games made life bearable. Games gave a starving population a feeling of power in a powerless situation, a sense of structure in a chaotic environment. Games gave them a better way to live when their circumstances were otherwise completely unsupportive and uninhabitable.

Make no mistake: we are no different from the ancient Lydians. Today, many of us are suffering from a vast and primal hunger. But it is not a hunger for food—it is a hunger for more and better engagement from the world around us.

Like the ancient Lydians, many gamers have already figured out how to use the immersive power of play to distract themselves from their hunger: a hunger for more satisfying work, for a stronger sense of community, and for a more engaging and meaningful life.

Collectively, the planet is now spending more than 3 billion hours a week gaming.

We are starving, and our games are feeding us.



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**AND SO**, in 2011, we find ourselves at a major tipping point.

We can stay on the same course. We can keep feeding our appetites with games. And we can watch the game industry continue to create bigger, better, and more immersive virtual worlds that provide increasingly compelling alternatives to reality.

If we stay this course, we will almost certainly see the exodus from reality continue. Indeed, we are already well on our way to a world in which many of us, like the ancient Lydians, spend half our time gaming. Given all the problems in the world, would it really be so bad to pass the coming decades as the Lydians did?

Or we could try to reverse course. We could try to block gamers' exit from reality—perhaps by culturally shaming them into spending more time in reality, or by trying to keep video games out of the hands of kids, or, as some U.S. politicians have already proposed, by heavily taxing them so that gaming becomes an unaffordable lifestyle.<sup>10</sup>

To be honest, none of those options sounds like a future I'd want to live in.

Why would we want to waste the power of games on escapist entertainment?

Why would we want to waste the power of games by trying to squelch the phenomenon altogether?

Perhaps we should consider a third idea. Instead of teetering on the tipping point between games and reality, what if we threw ourselves off the scale and tried something else entirely?

What if we decided to use everything we know about game design to fix what's wrong with reality? What if we started to live our real lives like gamers, lead our real businesses and communities like game designers, and think about solving real-world problems like computer and video game theorists?

Imagine a near future in which most of the real world works more like a game. But is it even possible to create this future? Would it be a reality we would be happier to live in? Would it make the world a better place?

When I consider this potential future, it's not just a hypothetical idea. I've

already posed it as a very real challenge to the one community who can truly help launch this transformation: the people who make games for a living. I'm one of them—I've been designing games professionally for the past decade. And I've come to believe that people who know how to make games need to start focusing on the task of making real life better for as many people as possible.

I haven't always been so sure of this mission. It has taken a good ten years of research and a series of increasingly ambitious game projects to get to this point.

Back in 2001, I started my career by working on the fringes of the game-design industry, at tiny start-up companies and experimental design labs. More often than not, I was working for free, designing puzzles and missions for low-budget computer and mobile phone games. I was happy when they were played by a few hundred people, or—when I was really lucky—a few thousand. I studied those players as closely as possible. I watched them while they played, and I interviewed them afterward. I was just starting to learn what gives games their power.

During those early years, I was also a “starving” graduate student—earning a PhD in performance studies from the University of California at Berkeley. I was the first in my department to study computer and video games, and I had to make it up as I went along, bringing together different findings from psychology, cognitive science, sociology, economics, political science, and performance theory in order to try to figure out exactly what makes a good game work. I was particularly interested in how games could change the way we think and act in everyday life—a question that, back then, few, if any, researchers were looking at.

Eventually, as a result of my research, I published several academic papers (and eventually a five-hundred-page dissertation) proposing how we could leverage the power of games to reinvent everything from government, health care, and education to traditional media, marketing, and entrepreneurship—even world peace. And increasingly, I found myself called on to help large companies and organizations adopt game design as an innovation strategy—from the World Bank, the American Heart Association, the National Academy

of Sciences, and the U.S. Department of Defense to McDonald's, Intel, the Corporation for Public Broadcasting, and the International Olympic Committee. You'll read about many of the games I created with these organizations in this book—and for the first time, I'll be sharing my design motivations and strategies.

The inspiration for this book came in the spring of 2008, when I was invited to deliver the annual “rant” at the Game Developers Conference, the most important industry gathering of the year. The rant is supposed to be a wake-up call, a demand to shake up the industry. It's always one of the most popular sessions at the conference. That year, the room was packed to standing-room capacity with more than a thousand of the world's leading game designers and developers. And in my rant, they heard the same argument you're reading here: that reality is broken, and we need to start making games to fix it.

When I finished, the applause and cheers took what seemed like forever to die down. I had been nervous that my rant would be rejected by my peers. Instead, it seemed to strike a chord with the industry. I started to get e-mails every single day from people who had heard about the rant or read the transcript online and wanted to help. Some were just starting out in the industry and had no idea how to go about doing it. Others were industry leaders who genuinely wanted to change the direction of games for good. Seemingly overnight, start-up companies were founded, capital was raised, and today there are hundreds of games in development that aspire to change reality for the better. I wouldn't dream of taking credit for this turn of events, of course. I was just lucky enough to be one of the first people to see it happening, and one of the strongest voices cheering it on.

In 2009, I was invited back to the Game Developers Conference to give a keynote address about what game developers needed to do over the next decade to reinvent reality as we know it. This time, I wasn't surprised to discover that some of the most popular sessions at the conference were about “games for personal and social change,” “positive impact games,” “social reality games,” “serious games,” and “leveraging the play of the planet.” Everywhere I turned, I saw evidence that this movement to harness the power of games for good had already started to happen. Suddenly, my personal mission

to see a game developer win a Nobel Peace Prize in the next twenty-five years didn't seem so far-fetched.

When I look at the remarkable world-changing work game developers are starting to do, I see an opportunity to reinvent the ancient history of games for the twenty-first century.

Some twenty-five hundred years ago, Herodotus looked back and saw the early games played by the Greeks as an explicit attempt to alleviate suffering. Today, I look forward and I see a future in which games once again are explicitly designed to improve quality of life, to prevent suffering, and to create real, widespread happiness.

When Herodotus looked back, he saw games that were large-scale systems, designed to organize masses of people and make an entire civilization more resilient. I look forward to a future in which massively multiplayer games are once again designed in order to reorganize society in better ways, and to get seemingly miraculous things done.

Herodotus saw games as a surprising, inventive, and effective way to intervene in a social crisis. I, too, see games as potential solutions to our most pressing shared problems. He saw that games could tap into our strongest survival instincts. I see games that once again will confer evolutionary advantage on those who play them.

Herodotus tells us that in the past games were created as a virtual solution to unbearable hunger. And, yes, I see a future in which games continue to satisfy our hunger to be challenged and rewarded, to be creative and successful, to be social and part of something larger than ourselves. But I also see a future in which the games we play *stoke* our appetite for engagement, pushing and enabling us to make stronger connections—and bigger contributions—to the world around us.

The modern history of computer and video games is the story of game designers ascending to very powerful positions in society, effectively enthralling the hearts and minds—and directing the energies and attention—of increasingly large masses of people. Game designers today are extremely adept wielders of that power, no doubt more adept than any game designers in all of human history. They have been honing their craft and refining their tactics

for thirty years now. And so it is that more and more people are being drawn to the power of computer and video games—and finding themselves engaged by them for longer and longer periods of time, for greater and greater stretches of their lives.

Amazingly, some people have no interest in understanding why this is happening or figuring out what we could do with it. They will never pick up a book about games, because they're already certain they know exactly what games are good for—wasting time, tuning out, and losing out on real life.

The people who continue to write off games will be at a major disadvantage in the coming years. Those who deem them unworthy of their time and attention won't know how to leverage the power of games in their communities, in their businesses, in their own lives. They will be less prepared to shape the future. And therefore they will miss some of the most promising opportunities we have to solve problems, create new experiences, and fix what's wrong with reality.

Fortunately, the gap between gamers and nongamers is growing smaller all the time. In the United States, the biggest gaming market in the world, the majority of us are already gamers. Some recent relevant statistics from the Entertainment Software Association's annual study of game players—the largest and most widely respected market research report of its kind:

- 69 percent of all heads of household play computer and video games.
- 97 percent of youth play computer and video games.
- 40 percent of all gamers are women.
- One out of four gamers is over the age of fifty.
- The average game player is thirty-five years old and has been playing for twelve years.
- Most gamers expect to continue playing games for the rest of their lives.<sup>11</sup>

Meanwhile, the scientific journal *Cyberpsychology, Behavior, and Social Networking* reported in 2009 that 61 percent of surveyed CEOs, CFOs, and other senior executives say they take daily game breaks at work.<sup>12</sup>

These numbers demonstrate how quickly a gaming culture can take hold. And trends from every continent—from Austria, Brazil, and the United Arab Emirates to Malaysia, Mexico, New Zealand, and South Africa—show that gamer markets are emerging rapidly with similarly diverse demographics. Over the next decade, these new markets will increasingly resemble, if not completely catch up to, those in leading gamer countries like South Korea, the United States, Japan, and the United Kingdom today.

As games journalist Rob Fahey famously pronounced in 2008: “It’s inevitable: soon we will all be gamers.”<sup>13</sup>

We have to start taking this growing gamer majority seriously. We are living in a world full of games and gamers. And so we need to decide now what kinds of games we should make together and how we will play them together. We need a plan for determining how games will impact our real societies and our real lives. We need a framework for making these decisions and for shaping these plans. This book, I hope, could serve as that framework. It’s written for gamers and for everyone who will one day become a gamer—in other words, for virtually every person on this planet. It’s an opportunity to understand now how games work, why humans are so drawn to them, and what they can do for us in our real lives.

If you are a gamer, it’s time to get over any regret you might feel about spending so much time playing games. You have *not* been wasting your time. You have been building up a wealth of virtual experience that, as the first half of this book will show you, can teach you about your true self: what your core strengths are, what really motivates you, and what make you happiest. As you’ll see, you have also developed world-changing ways of thinking, organizing, and acting. And, as this book reveals, there are already plenty of opportunities for you to start using them for real-world good.

If you don’t have a lot of personal experience with games yet, then this book will help you jump-start your engagement with the most important medium of the twenty-first century. By the time you’re finished reading it, you’ll be deeply familiar with the most important games you can play today—and be able to imagine the kinds of important games we will make and play in the years to come.

If you're not already a gamer, it's entirely possible that you still might not become the kind of person to spend hours in front of a video game. But by reading this book, you will better understand the people who do. And even if you would *never* play computer or video games, let alone make one, you can benefit enormously from learning exactly how good games work—and how they can be used to fix real-world problems.

Game developers know better than anyone else how to inspire extreme effort and reward hard work. They know how to facilitate cooperation and collaboration at previously unimaginable scales. And they are continuously innovating new ways to motivate players to stick with harder challenges, for longer, and in much bigger groups. These crucial twenty-first-century skills can help all of us find new ways to make a deep and lasting impact on the world around us.

Game design isn't just a technological craft. It's a twenty-first-century way of thinking and leading. And gameplay isn't just a pastime. It's a twenty-first-century way of working together to accomplish real change.

Antoine de Saint Exupéry once wrote:

As for the future, your task is not to see it, but to enable it.

Games, in the twenty-first century, will be a primary platform for enabling the future.

**SO LET ME** describe the particular future that I want to create.

Instead of providing gamers with better and more immersive alternatives to reality, I want all of us to be responsible for providing the world at large with a better and more immersive reality. I want gaming to be something that everybody does, because they understand that games can be a real solution to problems and a real source of happiness. I want games to be something everybody learns how to design and develop, because they understand that games are a real platform for change and getting things done. And I want families, schools, companies, industries, cities, countries, and the whole world to come

together to play them, because we're finally making games that tackle real dilemmas and improve real lives.

If we take everything game developers have learned about optimizing human experience and organizing collaborative communities and apply it to real life, I foresee games that make us wake up in the morning and feel thrilled to start our day. I foresee games that reduce our stress at work and dramatically increase our career satisfaction. I foresee games that fix our educational systems. I foresee games that treat depression, obesity, anxiety, and attention deficit disorder. I foresee games that help the elderly feel engaged and socially connected. I foresee games that raise rates of democratic participation. I foresee games that tackle global-scale problems like climate change and poverty. In short, I foresee games that augment our most essential human capabilities—to be happy, resilient, creative—and empower us to change the world in meaningful ways. Indeed, as you'll see in the pages ahead, such games are already coming into existence.

The future I've described here seems both desirable and plausible to me. But in order to create this future, several things need to happen.

We will have to overcome the lingering cultural bias against games, so that nearly half the world is not cut off from the power of games.

We need to build hybrid industries and unconventional partnerships, so that game researchers and game designers and game developers can work with engineers and architects and policy makers and executives of all kinds to harness the power of games.

Finally, but perhaps most importantly, we all need to develop our core game competencies so we can take an active role in changing our lives and enabling the future.

This book is designed to do just that. It will build up your ability to enjoy life more, to solve tougher problems, and to lead others in world-changing efforts.

In **Part I: Why Games Make Us Happy**, you'll go inside the minds of top game designers and game researchers. You'll find out exactly which emotions the most successful games are carefully engineered to provoke—and how these feelings can spill over, in positive and surprising ways, into our real lives and relationships.



In **Part II: Reinventing Reality**, you'll discover the world of alternate reality games. It's the rapidly growing field of new software, services, and experiences meant to make us as happy and successful in our real lives as we are when we're playing our favorite video games. If you've never heard of ARGs before, you may be shocked to discover how many people are already making and playing them. Hundreds of start-up companies and independent designers have devoted themselves to applying leading-edge game design and technologies to improving our everyday lives. And millions of gamers have already discovered the benefits of ARGs firsthand. In this section, you'll find out how ARGs are already starting to raise our quality of life at home and at school, in our neighborhoods and our workplaces.

Finally, in **Part III: How Very Big Games Can Change the World**, you'll get a glimpse of the future. You'll discover ten games designed to help ordinary people achieve the world's most urgent goals: curing cancer, stopping climate change, spreading peace, ending poverty. You'll find out how new participation platforms and collaboration environments are making it possible for anyone to help invent a better future, just by playing a game.

Ultimately, the people who understand the power and potential of games to both make us happy and change reality will be the people who invent our future. By the time you finish reading this book, *you* will be an expert on how good games work. With that knowledge, you'll make better choices about which games to play and when. More importantly, you'll be ready to start inventing your own new games. You'll be prepared to create powerful, alternate realities for yourself and for your family; for your school, your business, your neighborhood, or any other community you care about; for your favorite cause, for an entire industry, or for an entirely new movement.

We can play any games we want. We can create any future we can imagine.  
Let the games begin.