

Reality Is Broken

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

JANE MCGONIGAL ↩

THE PENGUIN PRESS

New York

2011

THE PENGUIN PRESS

Published by the Penguin Group

Penguin Group (USA) Inc., 375 Hudson Street, New York, New York 10014, U.S.A. • Penguin Group (Canada), 90 Eglinton Avenue East, Suite 700, Toronto, Ontario, Canada M4P 2Y3 (a division of Pearson Penguin Canada Inc.) • Penguin Books Ltd, 80 Strand, London WC2R 0RL, England • Penguin Ireland, 25 St. Stephen's Green, Dublin 2, Ireland (a division of Penguin Books Ltd) • Penguin Books Australia Ltd, 250 Camberwell Road, Camberwell, Victoria 3124, Australia (a division of Pearson Australia Group Pty Ltd) • Penguin Books India Pvt Ltd, 11 Community Centre, Panchsheel Park, New Delhi - 110 017, India • Penguin Group (NZ), 67 Apollo Drive, Rosedale, North Shore 0632, New Zealand (a division of Pearson New Zealand Ltd) • Penguin Books (South Africa) (Pty) Ltd, 24 Sturdee Avenue, Rosebank, Johannesburg 2196, South Africa

Penguin Books Ltd, Registered Offices: 80 Strand, London WC2R 0RL, England

First published in 2011 by The Penguin Press, a member of Penguin Group (USA) Inc.

Copyright © Jane McGonigal, 2011
All rights reserved

Excerpt from *The Grasshopper: Games, Life and Utopia* by Bernard Suits.
Reprinted by permission of Broadview Press.

LIBRARY OF CONGRESS CATALOGING IN PUBLICATION DATA

McGonigal, Jane.

Reality is broken : why games make us better and how they can change the world / Jane McGonigal.
p. cm.

Includes bibliographical references and index.
ISBN 978-1-59420-285-8

I. Games--Social aspects. I. Title.
GV1201.38.M34 2011
306.4'87--dc22

2010029619

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

DESIGNED BY NICOLE LAROCHE

Without limiting the rights under copyright reserved above, no part of this publication may be reproduced, stored in or introduced into a retrieval system, or transmitted, in any form or by any means (electronic, mechanical, photocopying, recording or otherwise), without the prior written permission of both the copyright owner and the above publisher of this book.

The scanning, uploading, and distribution of this book via the Internet or via any other means without the permission of the publisher is illegal and punishable by law. Please purchase only authorized electronic editions and do not participate in or encourage electronic piracy of copyrightable materials. Your support of the author's rights is appreciated.

for my husband, Kiyash,

who is better at every game than I am,

except for Werewolf

PART TWO

Reinventing Reality

7. The Benefits of Alternate Realities	119
8. Leveling Up in Life	146
9. Fun with Strangers	168
10. Happiness Hacking	183

PART THREE

How Very Big Games Can Change the World

11. The Engagement Economy	219
12. Missions Impossible	247
13. Collaboration Superpowers	266
14. Saving the Real World Together	296
Conclusion: Reality Is Better	345
<i>Acknowledgments</i>	355
<i>Appendix: How to Play</i>	358
<i>Notes</i>	364
<i>Index</i>	379

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!

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.²

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).³ 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.⁴

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.⁵ More than 10 million “hard-core” gamers in the United Kingdom, France, and Germany spend at least

twenty hours a week playing.⁶ 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.⁷

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 2012.⁸ 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.⁹

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 unresponsive 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.

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.¹⁰

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 enthraling 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.¹¹

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.¹²

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.”¹³

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.

Notes

1. Suits, Bernard. *The Grasshopper: Games, Life and Utopia* (Ontario, Canada: Broadview Press, 2005), 159.

INTRODUCTION

1. Castronova, Edward. *Exodus to the Virtual World* (New York: Palgrave Macmillan, 2007), xiv–xvii. This condensed passage from the preface appears with the permission of the author.
2. "China Bars Use of Virtual Money for Trading in Real Goods." Press release from the Ministry of Commerce, People's Republic of China, June 29, 2009. http://english.mofcom.gov.cn/aarticle/news_release/commonnews/200906/20090606364208.html.
3. "Newzoo Games Market Report: Consumer Spending in US, UK, GER, FR, NL, & BE." Newzoo, Amsterdam, May 2010. http://corporate.newzoo.com/press/GamesMarketReport_FREE_030510.pdf; "Games Segmentation 2008 Market Research Report." The NPD Group, May 2010. http://www.npd.com/press/releases/press_100527b.html.
4. These regional statistics are drawn from a variety of industry reports and market research studies conducted over the past three years, as follows: "An Analysis of Europe's 100 Million Active Gamers." Strategy Analytics, September 2008. <http://www.strategyanalytics.com/reports/ix7hx8in7j/single.htm>; "IA9 Interactive Australia 2009." National research prepared by Bond University for Interactive Games & Entertainment Association, August 2009. www.igea.net/wp.../2009/08/IA9-Interactive-Australia-2009-Full-Report.pdf; "Online Games Market in Korea." Pearl Research, July 2009. http://www.researchandmarkets.com/reportinfo.asp?report_id=1208384; "Games Market Summary: Russia." Prepared by Piers Harding-Rolls for Games Intelligence/Screen Digest, June 2010. http://www.screendigest.com/intelligence/games/russia/games_intel_russia_100/view.html?start_ser=gi&start_toc=1; "Emerging Markets for Video Games." Chris Stanton-Jones for Games Intelligence/Screen Digest, March 2010. http://www.screendigest.com/reports/10_03_18_emerging_markets_video_games/10_03_18_emerging_markets_video_games/view.html; "Online Games Market in Vietnam." Pearl Research, November 2008. <http://www.mindbranch.com/Online-Games-Vietnam-R740-14/>; "Study: Vietnam, India Gaming Population To Hit 25 Million By 2014." Pearl Research, March 2010. http://www.gamasutra.com/view/news/27525/Study_Vietnam_India_Gaming_Population_To_Hit_25Million_By_2014.php; "Gaming Business in the Middle East." Game Power 7 Research Group, February 2010. http://images.bbsite.com/news/download/gaming_business_in_the_middle_cast_KOCAl_2009.pdf; Menon, Naveen. "Insights on Mobile Gaming in India." Vital

Analytics. March 2009. <http://www.telecomindiaonline.com/telecom-india-daily-telecom-insights-on-mobile-gaming-in-urban-india.html>. "The Global Entertainment & Media Outlook: 2010-2014." PricewaterhouseCoopers, June 2010. <http://www.pwc.com/gx/en/global-entertainment-media-outlook>. The gamer market statistics are constantly changing; the global trends are upward in every country, so higher numbers are likely to be accurate for each region with each passing year since the studies were published.

5. "Major Findings of the 2008 Annual Review & Five-Year Forecast Report on China's Video Game Industry." Niko Partners Research, San Jose, May 2, 2008. www.nikopartners.com/pdf/npr_050208.pdf.
6. "Games Segmentation 2008 Market Research Report." The NPD Group.
7. Dromgoole, Sean. "A View from the Marketplace: Games Now and Going Forward." GameVision Europe Ltd., March 2009. <http://www.scribd.com/doc/13714815/Sean-Dromgoole-CEO-Some-Research-Gamevision>.
8. In 2009, the annual spending on games in the United States was \$25.3 billion; in the United Kingdom, it was £3.8 billion; in Germany, 3.7 billion euros; and in France, 3.6 billion euros. "Newzoo Games Market Report."
9. Rawlinson, George, trans., with Henry Rawlinson and J. G. Wilkinson. *The History of Herodotus: A New English Version* (New York: D. Appleton, 1861), 182. <http://www.archive.org/stream/historyofherodot01herouoft#page/n5/mode/2up>.
10. The first such taxes have already been proposed; for example, in Texas in 2006 and by lawmakers in New Mexico in 2008. Reported in "Texas Politician Proposes 100 Percent Game Tax." GameSpot, January 25, 2006. <http://www.gamespot.com/news/6143114.html>; and "New Mexico's Videogame Nanny Tax." CNET News, February 11, 2008. http://news.cnet.com/New-Mexicos-video-game-nanny-tax/2010-1043_3-6229759.html.
11. "Essential Facts About the Game Industry: 2010 Sales, Demographic and Usage Data." Entertainment Software Association, June 16, 2010. http://www.thesa.com/facts/pdfs/ESA_Essential_Facts_2010.PDF.
12. Reinecke, Leonard. "Games at Work: The Recreational Use of Computer Games During Work Hours." *Cyberpsychology, Behavior, and Social Networking* [formerly *CyberPsychology & Behavior*], August 2009, 12(4): 461–65. DOI: 10.1089/cpb.2009.0010.
13. Fahey, Rob. "It's Inevitable: Soon We Will All Be Gamers." *The Times* (UK), July 7, 2008. http://www.timesonline.co.uk/tol/comment/columnists/guest_contributors/article4281768.ece.

PART I

1. Csikszentmihályi, Mihály. *Beyond Boredom and Anxiety: The Experience of Play in Work and Games* (San Francisco: Jossey-Bass, 1975), 206.

CHAPTER 1

1. Suits, *The Grasshopper*, 38. Katie Salen and Eric Zimmerman were among the first game researchers to outline these three characteristics as essential to a game, drawing on the work of Bernard Suits. I am indebted to them, as are many other game designers and researchers, for drawing attention to Suits' definition. Salen, Katie, and Eric Zimmerman. *Rules of Play: Game Design Fundamentals* (Cambridge: MIT Press, 2004).
2. *Tetris* has been named "The Greatest Game of All Time" by *Electronic Gaming Monthly*, Issue 100, among others. "The Best Videogames in the History of Humanity," an extraordinary compilation of greatest-games lists compiled by J. J. McCullough, can be found at <http://www.filibustercartoons.com/games.htm>.
3. A master's thesis written proving that *Tetris* is literally unwinnable: Brzustowski, John. "Can You Win at *Tetris*?" University of British Columbia, Master of Science, Mathematics, 1992. <http://www.iam.ubc.ca/theses/Brzustowski/brzustowski.html>.

PART TWO



Reinventing Reality

↳ *All life is an experiment. The more experiments you make,
the better.*

— RALPH WALDO EMERSON

CHAPTER SEVEN

The Benefits of Alternate Realities

Whenever I walk through the front door of my apartment, I enter an alternate reality. It looks and works just like regular reality, with one major exception: when I want to clean the bathroom, I have to be *really* sneaky about it.

If my husband, Kiyash, thinks I'm going to scrub the tub on Saturday morning, he'll wake up early, tiptoe out of the bedroom and silently beat me to it. But I've lived in this alternate reality long enough to have developed a highly effective counterstrategy: I clean the bathroom at odd hours in the middle of the week, when he's least expecting it. The more random the hour, the more likely I am to complete the chore before he does. And if this strategy ever starts to fail? Well, let's just say that I am not above hiding the toilet brush.

Why exactly are we competing with each other to do the dirty work? We're playing a free online game called Chore Wars. And it just so happens that ridding our real-world kingdom of toilet stains is worth more experience points, or XP, than any other chore in the Land of the 41st-Floor Ninjas, which is what we've dubbed our apartment in the game. (We live on the forty-first floor, and my husband has a thing for *ninjutsu*.)

Chore Wars

Chore Wars is an alternate reality game (ARG), a game you play in your real life (and not a virtual environment) in order to enjoy it more. Chore Wars is essentially a simplified version of *World of Warcraft*, with one notable exception: all of the online quests correspond with real-world cleaning tasks, and instead of playing with strangers or faraway friends online, you play the game with your roommates, family, or officemates. Kevan Davis, a British experimental game developer who created Chore Wars in 2007, describes it as a “chore management system.”¹ It’s meant to help you track how much housework people are doing—and to inspire everyone to do more housework, more cheerfully, than they would otherwise.

To play Chore Wars, you first have to recruit a “party of adventurers” from your real-life household or office. That means getting your roommates, family members, or coworkers to sign up online, where together you’ll name your kingdom and create avatars to represent everyone in the game.

Anyone who creates an avatar is eligible to undertake any of the custom “adventures” that you create in the game’s database—in my household, these include emptying the dishwasher and brewing the first pot of coffee. And because it’s a role-playing game, you’re encouraged to write up the chores with a fantastical spin. In the Land of the 41st-Floor Ninjas, for example, brushing out our Shetland sheepdog is “Saving the dog-damsel in distress from clumps and shedding,” and doing the laundry is “Conjuring clean clothes.”

Whenever you complete one of these chores, you log in to the game to report your success. Every chore grants you a customized amount of experience points, virtual gold, treasure, avatar power-ups, or points that increase your virtual skills and abilities: plus ten dexterity points for dusting without knocking anything off the shelves, for example, or plus five stamina points for taking out all three kinds of recycling. And because you get to craft the adventures from scratch yourself, you can customize the in-game rewards to make the least popular chores more attractive—hence, the battle in my apartment to clean the bathroom first. It’s worth a whopping one hundred XP.

The more chores you finish, the more experience points and virtual gold you earn, and the faster you level up your online avatar’s powers. But Chore Wars isn’t just about tracking your avatar development; it’s also about earning real rewards. The game’s instructions encourage households to invent creative ways to redeem the virtual gold in real life. You could exchange the gold for allowances if you’re playing with your kids, or for rounds of drinks for roommates, or coffee runs for workmates, for example. My husband and I share a single car, so we use our gold pieces to bid on what music to play in the car whenever we’re driving somewhere together.

But even more satisfying than all of my avatar powers, accumulated gold, and music privileges is the fact that after nine months of playing Chore Wars together, my husband’s avatar has earned more overall experience points than I have. And avatar stats don’t lie: for nearly a year now, Kiyash has definitely put in more effort cleaning the apartment than I have.

Clearly, this is a game that you win even if you lose. Kiyash has the satisfaction of being the best ninja on the forty-first floor, and I have the pleasure of doing fewer chores than my husband—at least until my competitive spirit kicks back in. Not to mention, it’s more enjoyable to be partners in crime when it comes to housework, instead of nagging each other about chores. And, of course, as an added bonus, our place is cleaner than it ever has been before. Chore Wars has transformed something we both normally hate doing into something that feels creative and fun. The game has changed our reality of having to do housework, and for the better.

We’re not alone. Chore Wars is one of the best reviewed and most beloved, if little known, secrets on the Internet.

A mom in Texas describes a typical Chore Wars experience: “We have three children, ages nine, eight, and seven. I sat down with the kids, showed them their characters and the adventures, and they literally jumped up and ran off to complete their chosen tasks. I’ve never seen my eight-year-old son make his bed! And I almost fainted when my husband cleaned out the toaster oven.”

The experience apparently works as well for twentysomethings as it does for kids. As another player reports: “I live in a house in London with one other girl and six guys. A lot of the time I’m the only one tidying up, which was

driving me slowly insane. I set up an account for us last night, and set some ‘adventures,’ and when I got up this morning *everyone in the house was cleaning*. I honestly could not believe what I was seeing. All we had to do is make it a competition! Now the guys are obsessed with beating each other!”²

How, exactly, does Chore Wars do it?

We typically think of chores as things we have to do. Either someone is nagging us to do them or we do them out of absolute necessity. That’s why they’re called chores: by definition, unpleasant tasks. The brilliant masterstroke of Chore Wars is that it convinces us that we *want* to do these tasks.

More important, however, is the introduction of *meaningful choice* into the housework equation. When you set up your party, your first task is to create a large pool of adventures to choose from. No player is assigned a particular adventure. Instead, everyone gets to pick their own. There are no *necessary* chores. You are volunteering for every adventure you take. And this sense of voluntary participation in housework is strengthened by the fact that you’re encouraged to apply strategy as you choose your own housework adventures. Should you go for lots of chores that are fast and easy to complete, and try to rack up as many XP as possible that way? Or should you go for the harder, bigger chores, blocking other players from getting all that gold?

Of course, there are no good unnecessary obstacles without arbitrary restrictions. And for advanced Chore Wars players, that’s where the real fun comes in. You can make it harder to earn XP and gold by adding new rules to any adventure. For example, you can set target time limits: double XP if you can put away your laundry in under five minutes. Or you can add a stealth requirement: you must empty the trash without anyone seeing you. Or you can simply tack on absurd restrictions: this chore must be done while singing, loudly, for example, or while walking backward.

It sounds ridiculous—why would making a chore harder make it more fun? But like any good game, the more interesting the restrictions, the more we enjoy playing. The Chore Wars management system makes it easy for players to dream up and try out new ways of doing the most ordinary things. Chores are, again by definition, routine—but they don’t have to be. Doing them in a game format makes it possible to experience *fiero* doing something as mun-

dane as cleaning up a mess, simply by making it more challenging, or by requiring us to be more creative about how we do it.

In real life, if you do your chores, there are visible results—a sparkling kitchen, or an organized garage. That’s one kind of feedback, and it can certainly be satisfying. But Chore Wars smartly augments this small, everyday satisfaction with a more intense kind of feedback: avatar improvements. As online role-playing gamers everywhere know, leveling up is one of the most satisfying kinds of feedback ever designed. Watching your avatar profile get more powerful and skillful with each chore makes the work feel personally satisfying in a way that a cleaner room just doesn’t. You are not just doing all this work for someone else. You are developing your own strengths as you play.

Best of all, you are getting better and better all the time. Even as the laundry gets dirty again or the dust starts to sneak back in, your avatar is still getting stronger, smarter, swifter. In this way, Chore Wars brilliantly reverses the most demoralizing aspects of regular housework. The results of a chore well done may start to fade almost immediately, but no one can take away the XP you have earned.

Individual success is always more rewarding when it happens in a multi-player context, and this is part of Chore Wars’ successful design as well. The game connects all of my individual activities to a larger social experience: I’m never just doing “my” chores; I’m playing with and competing against others. I can see how I measure up to others and compare avatar strengths to learn more about what makes me unique. Meanwhile, as I’m working, I’m thinking about the positive social feedback I’ll get in the comments on my adventure, whether it’s friendly taunts from a rival or OMGs of amazement for getting such a herculean task done.

Chore Wars isn’t the kind of game you’d want to play forever; like all good games, their destiny is to become boring eventually, the better you get at them. But even if household interest in the game dies down after a few weeks or months, a major feat has been accomplished: players have had a rather memorable, positive experience of doing chores together. And that should change the way they think about and approach chores for some time.

So that’s how Chore Wars achieves the seemingly impossible. It turns

routine housework into a collective adventure, by adding unnecessary obstacles and implementing more motivating feedback systems. And it's the perfect example of our next reality fix:

FIX #7: WHOLEHEARTED PARTICIPATION

Compared with games, reality is hard to get into. Games motivate us to participate more fully in whatever we're doing.

To participate wholeheartedly in something means to be *self-motivated* and *self-directed*, *intensely interested* and *genuinely enthusiastic*.

If we're forced to do something, or if we do it halfheartedly, we're not really participating.

If we don't care how it all turns out, we're not really participating.

If we're passively waiting it out, we're not really participating.

And the less we fully participate in our everyday lives, the fewer opportunities we have to be happy. It's that plain and simple. The emotional and social rewards we really crave require active, enthusiastic, self-motivated participation. And helping players participate more fully in the moment, instead of trying to escape it or just get through it, is *the* signature hallmark of alternate reality projects—the focus of this and the following three chapters of this book.

If “alternate reality” is an unfamiliar term for you, then you're not alone. Alternate reality development is still a highly experimental field. The term “alternate reality game” has been in use as a technical industry term since 2002, but there are still plenty of gamers and game designers who know little about it, let alone people outside of the gaming world.

As game developers are increasingly starting to push the limits of how

much a game can affect our real lives, the concept of alternate reality is becoming more and more central to discussions about the future of games. It's helping to promote the idea that game technologies can be used to organize real-world activity. Most importantly, it's provoking innovative ideas about how to blend together what we love most about games and what we want most from our real lives.

On a recent Saturday morning, I found myself on Twitter, trading possible definitions for “alternate reality game” back and forth with about fifty other alternate reality gamers and developers. We were trying to work out a short definition that would really capture the spirit of ARG design, if not necessarily describe all the possible technological and formal components.

Collectively, we cobbled together a description of ARGs that seems to capture their spirit more effectively than any other definition I've seen: alternate realities are the *antiescapist* game.

ARGs are designed to make it easier to generate the four intrinsic rewards we crave—more satisfying work, better hope of success, stronger social connectivity, and more meaning—whenever we can't or don't want to be in a virtual environment. They're not meant to diminish the real rewards we get from playing traditional computer and video games. But they do make a strong argument that these rewards should be easier to get in real life.

In other words, ARGs are games you play to get more out of your real life, as opposed to games you play to escape it. ARG developers want us to participate as fully in our everyday lives as we do in our game lives.

Apart from this common mission, great alternate reality games can differ tremendously from one to another, in terms of style, scale, scope, and budget. Some ARGs, like *Chore Wars*, have relatively humble ambitions. They pick one very specific area of our personal lives and try to improve it. Others have quite audacious goals, involving entire communities or society at large: for example, to reinvent public education as we know it, to help players discover their true purpose in life, or even to improve our experience of death and dying.

Of course, not all ARGs are designed explicitly to improve our lives. Historically, in fact, most ARGs, like most computer and videogames, have been

designed simply to be fun and emotionally satisfying. But my research shows that because ARGs are played in real-world contexts, instead of in virtual spaces, they almost always have at least the *side effect* of improving our real lives.³ And so while others might distinguish between “serious” ARGs and “entertainment” ARGs, I prefer to look at *all* ARGs as having the potential to improve our quality of life. Indeed, a significantly higher percent of newer ARGs (created since 2007, compared with early ARGs created 2001–2006) are designed with explicit quality of life or world-changing goals. You’ll read about these “positive impact” ARGs in the chapters ahead.

Some ARGs are invented and playtested on a shoestring budget, whether by artists, researchers, indie game developers, or nonprofit organizations. They’re often developed for relatively small groups: a few hundred or a few thousand players. Others are backed by multimillion-dollar investments, receive funding from major foundations, or are sponsored by Fortune 500 companies. These bigger games can attract tens of thousands, hundreds of thousands, or even, in a few extremely successful cases, millions of players.⁴

Still, for the most part, alternate reality games today are small-scale probes of the future. They’re a showcase for new possibilities. No single ARG is changing the world yet. But taken together, they’re proving one at a time the myriad and important ways we could make our real lives better by playing more games.

So let’s look at a few groundbreaking alternate reality projects. As we do, you’ll notice that there are two key qualities that every good ARG shares.

First and foremost, like any good game, an ARG must always be *optional*. You can bet that if you *required* someone to play *Chore Wars*, it would lose a large part of its appeal and effectiveness. An alternate reality game has to remain a true “alternate” for it to work.

It’s not enough, however, just to make something optional. Once the activity is under way, a good ARG, like any good game, also needs compelling goals, interesting obstacles, and well-designed feedback systems. These three elements encourage fuller participation by tapping into our natural desires to master challenges, to be creative, to push the limits of our abilities. And that’s where **optimal experience design** comes in. Without a doubt, some alternate

realities are more fun and engaging than others, just as some traditional games are better than others. The best ARGs are the ones that, like the best traditional computer and video games, help us create more satisfying work for ourselves, cultivate better hopes of success, strengthen our social bonds and activate our social networks, and give us the chance to contribute to something bigger than ourselves.

One ARG that achieves all of these goals is *Quest to Learn*—a bold new design for public schools that shows us how education can be transformed to engage students as wholeheartedly as their favorite video games.

Quest to Learn—And Why Our Schools Should Work More Like a Game

Today’s “born-digital” kids—the first generation to grow up with the Internet, born 1990 and later—crave gameplay in a way that older generations don’t.

Most of them have had easy access to sophisticated games and virtual worlds their entire lives, and so they take high-intensity engagement and active participation for granted. They know what extreme, positive activation feels like, and when they’re not feeling it, they’re bored and frustrated.⁵ They have good reason to feel that way: it’s a lot harder to function in low-motivation, low-feedback, and low-challenge environments when you’ve grown up playing sophisticated games. And that’s why today’s born-digital kids are suffering more in traditional classrooms than any previous generation. School today for the most part is just one long series of *necessary* obstacles that produce negative stress. The work is mandatory and standardized, and failure goes on your permanent record. As a result, there’s a growing disconnect between virtual environments and the classroom.

Marc Prensky, author of *Teaching Digital Natives*, describes the current educational crisis:

“Engage me or enrage me,” today’s students demand. And believe me, they’re enraged. All the students we teach have something in

their lives that's really engaging—something that they do and that they are good at, something that has an engaging, creative component to it. . . . Video games are the epitome of this kind of total creative engagement. By comparison, school is so boring that kids, used to this other life, can't stand it. And unlike previous generations of students, who grew up without games, they know what real engagement feels like. They know exactly what they're missing.⁶

To try to close this gap, educators have spent the past decade bringing more and more games into our schools. Educational games are a huge and growing industry, and they're being developed to help teach pretty much any topic or skill you could imagine, from history to math to science to foreign languages. When these games work—when they marry good game design with strong educational content—they provide a welcome relief to students who otherwise feel underengaged in their daily school lives. But even then, these educational games are at best a temporary solution. The engagement gap is getting too wide for a handful of educational games to make a significant and lasting difference over the course of a student's thirteen-year public education.

What *would* make the difference? Increasingly, some education innovators, including Prensky, are calling for a more dramatic kind of game-based reform. Their ideal school doesn't *use* games to teach students. Their ideal school *is* a game, from start to finish: every course, every activity, every assignment, every moment of instruction and assessment would be designed by borrowing key mechanics and participation strategies from the most engaging multiplayer games. And it's not just an idea—the game-reform movement is well under way. And there's already one new public school entirely dedicated to offering an alternate reality to students who want to game their way through to graduation.

Quest to Learn is a public charter school in New York City for students in grades six through twelve. It's the first game-based school in the world—but its founders hope it will serve as a model for schools worldwide.

Quest opened its doors in the fall of 2009 after two years of curriculum design and strategic planning, directed by a joint team of educators and profes-

sional game developers, and made possible by funding from the MacArthur Foundation and the Bill and Melinda Gates Foundation. It's run by principal Aaron B. Schwartz, a graduate of Yale University and a ten-year veteran teacher and administrator in the New York City Department of Education. Meanwhile, the development of the school's curriculum and schedule has been led by Katie Salen, a ten-year veteran of the game industry and a leading researcher of how kids learn by playing games.

In many ways, the college-preparatory curriculum is like any other school's—the students learn math, science, geography, English, history, foreign languages, computers, and arts in different blocks throughout the day. But it's how they learn that's different: students are engaged in gameful activities from the moment they wake up in the morning to the moment they finish up their final homework assignment at night. The schedule of a sixth-grader named Rai can help us better understand a day in the life of a Quest student.

7:15 a.m. Rai is “questing” before she even gets to school. She's working on a secret mission, a math assignment that yesterday she discovered hidden in one of the books in the school library. She exchanges text messages with her friends Joe and Celia as soon as she gets up in order to make plans to meet at school early. Their goal: break the mathematical code before any of the other students discover it.

This isn't a mandatory assignment—it's a secret assignment, an opt-in learning quest. Not only do they not have to complete it, they actually have to *earn the right* to complete it, by discovering its secret location.

Having a secret mission means you're not learning and practicing fractions because you have to do it. You're working toward a self-chosen goal, and an exciting one at that: decoding a secret message before anyone else. Obviously not all schoolwork can be special, secret missions. But when every book could contain a secret code, every room a clue, every handout a puzzle, who wouldn't show up to school more likely to fully participate, in the hopes of being the first to find the secret challenges?

9:00 a.m. In English class, Rai isn't trying to earn a good grade today. Instead, she's trying to level up. She's working her way through a storytelling unit, and she already has five points. That makes her just seven points shy of

a “master” storyteller status. She’s hoping to add another point to her total today by completing a creative writing mission. She might not be the first student in her class to become a storytelling master, but she doesn’t have to worry about missing her opportunity. As long as she’s willing to tackle more quests, she can work her way up to the top level and earn her equivalent of an A grade.

Leveling up is a much more egalitarian model of success than a traditional letter grading system based on the bell curve. Everyone can level up, as long as they keep working hard. Leveling up can replace or complement traditional letter grades that students have just one shot at earning. And if you fail a quest, there’s no permanent damage done to your report card. You just have to try more quests to earn enough points to get the score you want. This system of “grading” replaces negative stress with positive stress, helping students focus more on learning and less on performing.

11:45 a.m. Rai logs on to a school computer to update her profile in the “expertise exchange,” where all the students advertise their learning superpowers. She’s going to declare herself a master at mapmaking. She didn’t even realize mapmaking could count as an area of expertise. She does it for fun, outside of school, making maps of her favorite 3D virtual worlds to help other players navigate them better. Her geography teacher, Mr. Smiley, saw one of her maps and told her that eighth-graders were just about to start a group quest to locate “hidden histories” of Africa: they would look for clues about the past in everyday objects like trade beads, tapestries, and pots. They would need a good digital mapmaker to help them plot the stories about the objects according to where they were found, and to design a map that would be fun for other students to explore.

The expertise exchange works just like video game social network profiles that advertise what games you’re good at and like to play, as well as the online matchmaking systems that help players find new teammates. These systems are designed to encourage and facilitate collaboration. By identifying your strengths and interests publicly, you increase the chances that you’ll be called on to do work that you’re good at. In the classroom, this means students are

more likely to find ways to contribute successfully to team projects. And the chance to do something you’re good at as part of a larger project helps students build real esteem among their peers—not empty self-esteem based on nothing other than wanting to feel good about yourself, but actual respect and high regard based on contributions you’ve made.

2:15 p.m. On Fridays, the school always has a guest speaker, or “secret ally.” Today, the secret ally is a musician named Jason, who uses computer programs to make music. After giving a live demonstration with his laptop, he announces that he’ll be back in a few weeks to help the students as a coach on their upcoming “boss level.” For the boss level, students will form teams and compose their own music. Every team will have a different part to play—and rumor has it that several mathematical specialists will be needed to work on the computer code. Rai really wants to qualify for one of those spots, so she plans to spend extra time over the next two weeks working harder on her math assignments.

As the *Quest* website explains, boss levels are “two-week ‘intensive’ [units] where students apply knowledge and skills to date to propose solutions to complex problems.” “Boss level” is a term taken directly from video games. In a boss level, you face a boss monster (or some equivalent thereof)—a monster so intimidating it requires you to draw on everything you’ve learned and mastered in the game so far. It’s the equivalent of a midterm or final exam. Boss levels are notoriously hard but immensely satisfying to beat. *Quest* schedules boss levels at various points in the school year, in order to fire students up about putting their lessons into action. Students get to tackle an epic challenge—and there’s no shame in failing. It’s a boss level, and so, just like any good game, it’s meant to whet your appetite to try harder and practice more.

Like collaborative quests, the boss levels are tackled in teams, and each student must qualify to play a particular role—“mathematical specialist,” for example. Just as in a big *World of Warcraft* raid, each participant is expected to play to his or her strengths. This is one of *Quest*’s key strategies for giving students better hopes of success. Beyond the basic core curriculum, students spend most of their time getting better at subjects and activities—ones they

have a natural talent for or already know how to do well. This strategy means every student is set up to truly excel at something, and to focus attention on the areas in which he or she is most likely to one day become extraordinary.

6:00 p.m. Rai is at home, interacting with a virtual character named Betty. Rai's goal is to teach Betty how to divide mixed numbers. Betty is what Quest calls a "teachable agent": "an assessment tool where kids teach a digital character how to solve a particular problem." In other words, Betty is a software program designed to know *less* than Rai. And it's Rai's job to "teach" the program, by demonstrating solutions and working patiently with Betty until she gets it.

At Quest, these teachable agents replace quizzes, easing the anxiety associated with having to perform under pressure. With a teachable agent, you're not being tested to see if you've really learned something. Instead, you're mentoring someone because you really have learned something, and this is your chance to show it. There's a powerful element of *naches*—vicarious pride—involved here: the more a student learns, the more he or she can pass it on. This is a core dynamic of how learning works in good video games, and at Quest it's perfectly translated into a scalable assessment system.

Secret missions, boss levels, expertise exchanges, special agents, points, and levels instead of letter grades—there's no doubt that Quest to Learn is a different kind of learning environment, about as radically different a mission as any charter school has set out in recent memory. It's an unprecedented infusion of gamefulness into the public school system. And the result is a learning environment where students get to share secret knowledge, turn their intellectual strengths into superpowers, tackle epic challenges, and fail without fear.

Quest to Learn started with a sixth-grade class in the fall of 2009, and it plans to add a new sixth-grade class each year as the previous year graduates upward. The first senior class will graduate from Quest to Learn in 2016, and potentially from college by 2020. I'm willing to bet that that graduating class will be full of creative problem solvers, strong collaborators, and innovative thinkers ready to wholeheartedly tackle formidable challenges in the real world.

SuperBetter—Or How to Turn Recovery into a Multiplayer Experience

Either I'm going to kill myself or I'm going to turn this into a game. After the four most miserable weeks of my life, those seemed like the only two options I had left.

It was the summer of 2009, and I was about halfway through writing this book when I got a concussion. It was a stupid, fluke accident. I had been standing up, and I slammed my head straight into a cabinet door I didn't realize was still open. I was dizzy, saw stars, and felt sick to my stomach. When my husband asked me who the president was, I drew a blank.

Some concussions get better in a few hours, or a few days. Others turn into a much longer postconcussion syndrome. That's what happened to me. I got a headache and a case of vertigo that didn't go away. Any time I turned my head, it felt like I was doing somersaults. And I was in a constant mental fog. I kept forgetting things—people's names, or where I'd put things. If I tried to read or write, after a few minutes my vision blurred out completely. I couldn't think clearly enough to keep up my end of interesting conversations. Even just being around other people, or out in public spaces, seemed to make it worse. At the time, I scribbled these notes: "Everything is hard. The iron fist pushes against my thoughts. My whole brain feels vacuum pressurized. If I can't think, who am I?"

After five days of these symptoms and after a round of neurological tests that all proved normal, my doctor told me I would be fine—but it would probably take an entire month before I really felt like myself again. In the meantime, no reading, no writing, no working, and no running, unless I was completely symptom-free. I had to avoid anything that made my head hurt or made the fog worse. (Sadly, I quickly discovered that computer and video games were out of the question; it was way too much mental stimulation.)

This was difficult news to hear. A month seemed like an impossibly long time not to work and to feel this bad. But at least it gave me a target to shoot

for. I set the date on my calendar: August 15, I would be better. I believed it. I *had* to believe it.

That month came and went, and I'd barely improved at all.

That's when I found out that if you don't recover in a month, the next likely window of recovery is three months.

And if you miss *that* target, the next target is a year.

Two more months living with a vacuum-pressurized brain? Possibly an *entire year*? I felt more hopeless than I could have ever imagined. Rationally, I knew things could be worse—I wasn't dying, after all. But I felt like a shadow of my real self, and I wanted so desperately to resume my normal life.

My doctor had told me that it was normal to feel anxious or depressed after a concussion. But she also said that anxiety and depression exacerbate concussion symptoms and make it much harder for the brain to heal itself. The more depressed or anxious you get, the more concussed you feel and the longer recovery takes. Of course, the worse the symptoms are and the longer they last, the more likely you are to be anxious or depressed. In other words, it's a vicious cycle. And the only way to get better faster is to break the cycle.

I knew I was trapped in that cycle. The only thing I could think of that could possibly make me optimistic enough to break it was a game.

It was a strange idea, but I literally had nothing else to do (except watch television and go on very slow walks). I'd never made a health care game before. But it seemed like the perfect opportunity to try out my alternate reality theories in a new context. I might not be able to read or write very much, but hopefully I could still be creative.

I knew right away it needed to be a multiplayer game. I'd been having a lot of trouble explaining to my closest friends and family how truly anxious I was and how depressed I felt, how hard the recovery process was. I also felt awkward, and embarrassed, asking for help. I needed a way to help myself tell my closest friends and family, "I am having the hardest time of my life, and I really need you to help me." But I also didn't want to be a burden. I wanted to *invite* people to help me.

As with any alternate reality project, I needed to research the reality of the

situation before I could reinvent it. So, for a few days, I spent the limited amount of time I was able to focus—about an hour a day at that point—learning about postconcussion syndrome online. From various medical journals and reports, I pieced together what experts agree are the three most important strategies for getting better and coping more effectively—not only from concussions, but any injury or chronic illness.

First: stay optimistic, set goals, and focus on any positive progress you make. Second: get support from friends and family. And third: learn to read your symptoms like a temperature gauge. How you feel tells you when to do more, do less, or take breaks, so you can gradually work your way up to more demanding activity.⁷

Of course, it immediately occurred to me that these three strategies sound exactly like what you do when you're playing a good multiplayer game. You have clear goals; you track your progress; you tackle increasingly difficult challenges, but only when you're ready for them; and you connect with people you like. The only thing missing from these recovery strategies, really, was the meaning—the exciting story, the heroic purpose, the sense of being part of something bigger.

So that's where SuperBetter comes in.

SuperBetter is a superhero-themed game that turns getting better into multiplayer adventure. It's designed to help anyone recovering from an injury or coping with a chronic condition get better sooner—with more fun, and with less pain and misery, along the way.

The game starts with five missions. You're encouraged to do at least one mission a day, so that you've successfully completed them all in less than a week. Of course, you can move through them even faster if you feel up to it. Here are excerpts from the instructions for each mission, along with an explanation of how I designed it and how I played it.

Mission #1: Create your SuperBetter secret identity. You're the hero of this adventure. And you can be anyone you want, from any story you love. So pick your favorite story—anything from James

Bond to *Gossip Girl*, *Twilight* to *Harry Potter*, *Batman* to *Buffy the Vampire Slayer*. You're about to borrow their superpowers and play the leading role yourself.

I chose *Buffy the Vampire Slayer* as my story line. That made me Jane the Concussion Slayer, and that made my symptoms the vampires, demons, and other forces of darkness I was destined by fate to battle against. The point of this mission is to start seeing yourself as powerful, not powerless. And it underscores the fact that you *are* heroic for choosing to persevere in the face of your injury or illness.

Mission #2: Recruit your allies. Every superhero has an inner circle of friends who help save the day. Pick the people you want to count on most, and invite them to play this game with you. Ask each one to play a specific part: Batman needs a Robin and an Alfred, while James Bond needs an M, a Q, and a Moneypenny. If you're Bella, you'll want at least an Edward, a Jacob, and an Alice. Give each ally a specific mission, related to his or her character. Use your imagination—and feel free to ask for anything you need! When you're saving the world, you can't be shy about asking for help. Be sure to ask at least one ally to give you daily or weekly achievements—these are surprise accomplishments they bestow upon you based on your latest superheroic activities.

As Jane the Concussion Slayer, I recruited my twin sister as my “Watcher” (Buffy's mentor in the TV series). Her mission was to call me every single day and ask for a report on my concussion-slaying activities. She should also give me advice and suggest challenges for me to try. Before playing SuperBetter, I hadn't known how to explain to her that I really needed daily contact, and not just to hear from her on the weekends.

I recruited my husband as my “Willow” (Buffy's smarty-pants best friend who's also a computer geek). His mission was to do all of the score- and record-keeping for me, read me interesting articles, and in general help me with

anything I wanted to do on the computer without getting a headache. Finally, I recruited my friends Natalie and Rommel, and their miniature dachshund, Maurice, as my “Xander” (he's the comic-relief character). Their mission was to come over once a week and just generally cheer me up.

Why recruit allies? Social psychologists have long observed that one of the hardest things about a chronic injury or illness is asking our friends and family for support. But reaching out and really asking for what we need makes a huge difference. It prevents social isolation, and it gives people who want to help, but don't know how, something specific and actionable to do.

And why have achievements? Every fiero moment helps increase optimism and a sense of mastery, which has been proven to speed recovery from everything from knee injuries to cancer. But achievements feel more meaningful when someone else gives them to you—that's why it's important to have a friend or family member bestow them upon you. Kiyash gave me my achievements based on the titles of episodes of *Buffy the Vampire Slayer*. (For example, I unlocked the “Out of Mind, Out of Sight” achievement for ignoring my e-mail for an entire day, and “The Harvest” achievement for eating vegetables for dinner instead of cookies and ice cream, which was one of my favorite postconcussion ways to drown my sorrows. At the time, both of those felt like epic struggles.)

Mission #3: Find the bad guys. To win this battle, you need to know what you're up against. Pay attention all day to anything that makes you feel worse, and put it on your bad-guys list. Some days, you'll be able to battle the bad guys longer—some days not so long. But every time you do battle, you'll want to make a great escape. That means getting away from the bad guy before he knocks you flat. You can always add more bad guys to your list as you discover them—and if you vanquish one forever, you can take it off and claim the permanent victory.

My list of bad guys at the start of the game focused on activities I kept trying to sneak in even though I knew they made me feel worse: reading and re-

sponding to e-mail, running or doing any kind of vigorous exercise, playing *Peggle*, drinking coffee.

The better you can identify triggers of your symptoms, the more pain and suffering you'll avoid. And making a great escape turns a potential moment of failure—*This is harder than it should be, or I can't do what I want to do*—into a moment of triumph: *I succeeded in recognizing a trigger and vanquished it before it did too much damage*. One of the highlights in my recovery was when I enlisted the entire crew at the Peet's Coffee down the block to help me modulate the amount of caffeine in my morning iced coffee, which I was really reluctant to give up. It was their idea to start me off with 90 percent decaf with just a splash of caffeine so that I could work my way up to half and half, and eventually full caffeine when my brain was finally ready to be stimulated again.

Mission #4: Identify your power-ups. Good thing you've got superpowers. Maybe they're not your typical superpowers—but you definitely have fun things you can do for yourself at a moment's notice to feel better. Make a list, and be ready to call on them whenever the bad guys are getting the better of you. In fact, try to collect as many power-ups as you can every day!

For my concussion recovery, I focused on things I could do with my senses that weren't affected by my head injury. Touch was fine, so I could sit and cuddle with my Shetland sheepdog. Hearing was fine, so I could sit by the window and listen to a podcast. And the biggest superpower I discovered had to do with my sense of smell: I really started to enjoy smelling different perfumes. I would go to a perfume counter, spray samples of a dozen perfumes on cards, then take them home and smell them throughout the rest of the evening, to see how they changed and to learn the different notes. It was one of the most engaging activities I could do without hurting my brain at all. And eventually, once my vertigo was improved, I was able to add to my power-up list long walks up San Francisco hills with my husband.

The power-ups are meant to help you feel capable of having a good day,

no matter what. Having specific positive actions to take increases the odds of doing something that will break the cycle of feeling negative stress or depression.

Mission #5: Create your superhero to-do list. Not every mission is possible, but it doesn't hurt to dream big. Make a list of goals for yourself, ranging from things you're 100 percent positive you can do right now to things you might not have been able to do even in your wildest dreams before you got sick or hurt. Everything on your list should be something that would make you feel awesome and show off your strengths. Every day, try to make progress toward crossing one of these superhero to-dos off your list. Be sure to get your allies' help and advice.

This final idea was inspired by a question I'd found on the website of a New Zealand occupational therapist. "If I can't take your pain away, what else would you like to improve in your life?"⁸ It's one of the abiding features of a good game: the outcome is uncertain. You play in order to discover how well you can do—not because you're guaranteed to win. SuperBetter has to acknowledge the possibility of failure to achieve complete recovery. But it can also make it less scary to fail—because there is an abundance of other goals to pursue and other rewarding activities to undertake along the way. That's why it seemed essential to make part of the game a project to discover as many positive activities that it was still possible to do. It increased my real hopes of enjoying life more, no matter what else happened with the recovery or treatment.

One of my easiest superhero to-dos was baking cookies for people who live in my neighborhood. I liked it so much, I did it three times. A more challenging to-do was finding an opportunity to wear my favorite pair of purple leather stiletto boots, which meant getting up the energy to go out and see people. (I crossed this one off my list by going to see a movie with a big group of friends. I was a bit overdressed, but I felt great anyway.) The biggest superhero to-do on my list was, of course, to finish this book.

Once you have completed the five big missions, your challenge is to stay in constant contact with your allies, collect power-ups by battling the bad guys and making great escapes, and tackle items on your superhero to-do list. You might want to “lock in” your gameplay by keeping a game journal, posting daily videos on YouTube, or using Twitter to announce your achievements.

Near the end of every day, hold a secret meeting with one of your allies. Add up your great escapes, your power-ups, and your superhero points.

Talk to your other allies as often as possible, and tell them what you’ve been doing to get superbetter. Ask them for ideas about new things to add to your to-do list.

Be sure you have at least one ally who is giving you daily achievements. Share these achievements with your friends online, using Twitter or Facebook status updates, to keep them posted on your progress.

So that’s how you play SuperBetter. But does it actually improve the reality of getting better?

The first few days I was playing, I was in a better mood than I had been at any time since I hit my head. I felt like I was finally *doing* something to get better, not just lying around and waiting for my brain to hurry up and heal itself.

My symptoms didn’t improve instantly—but I was so much more motivated to get something positive out of my day, no matter what. Every day, no matter how bad I felt otherwise, I would score at least one great escape, grab at least one power-up, rack up some points, and unlock an achievement. Doing these things didn’t require being cured; it just required making an effort to participate more fully in my own recovery process.

There’s not a whole lot you can prove with a scientific sample of one. I can say only that, for me, the fog of misery lifted first, and then, soon after, the fog of symptoms started to lift as well. Within two weeks of playing Jane the Concussion Slayer, my symptoms were improved by roughly 80 percent, according to the log Kiyash helped me keep of my pain and concentration problems on a ten-point scale, and I was up to working as many as four hours a day. Within a month, I felt almost completely recovered.

I can’t say for sure if I got better any faster than I would have without playing the game—although I suspect it helped a great deal. What I can say for sure is that I suffered a great deal less during the recovery as a direct result of the game. I was miserable one day, and the next day I wasn’t; and I was never that miserable again as long as I was playing the game. When my allies joined the game, I finally felt like they really understood what I was going through, and I never felt quite so lost in the fog again.

After declaring my victory over the concussion in a Twitter post, I received dozens of requests to post all the rules and missions, so that other people could game their own injuries and illnesses—for everything from chronic back pain and social anxiety to lung disorders, migraines, the side effects of quitting smoking, newly diagnosed diabetes, chemotherapy, and even mononucleosis.

I published the rule set on my blog, and I gave it the more general name SuperBetter (after all, most people probably don’t dream of being like Buffy the Vampire Slayer).⁹ I suggested that people use the hashtag “#SuperBetter” for their own videos, blog posts, and Twitter updates, in case they wanted to find each other online. (A *hashtag* is a way to easily add context to your online content, and to find other people talking about the same topic.) And that was it. I didn’t build a Web application, or develop an automated scoring system, or even set up a social network for playing the game. A game doesn’t have to be a computer program. It can simply be like chess or hide-and-seek: a set of rules that one player can pass on to another.

An alternate reality game can be as simple as a good idea, a fresh way of looking at a problem. SuperBetter, of course, isn’t meant to replace conventional medical advice or treatment. It’s meant to augment good advice, and to help patients take a more active role in their own recovery.

When you’re sick or in pain, getting better is all you want. But the longer it takes, the harder it gets. And when the tough reality we have to face is that getting better won’t be easy, a good game can better prepare us to deal with that reality. In an alternate reality linked to our favorite superhero mythology, we’re more likely to stay optimistic, because we’ll set more reasonable goals

and keep better track of our progress. We'll feel successful even when we're struggling, because our friends and family will define *fiero* moments for us every day. We'll build a stronger social support system, because it's easier to ask someone to play a game than it is to ask for help. And we'll hopefully find real meaning and develop real character in our epic efforts to overcome what may be the toughest challenge we've ever had to face. And *that's* how we get superbetter, thanks to a good game.

THE THREE GAMES discussed in this chapter represent three of the main approaches to developing an alternate reality and solving a quality-of-life problem.

Chore Wars is an example of a **life-management ARG**—a software program or service that helps you manage your real life like a game.

Quest to Learn is an example of an **organizational ARG**. It uses game design as a guiding philosophy for creating new institutions and inventing new organizational practices.

And SuperBetter is a **concept ARG**. It uses social media and networking tools to virally spread new game ideas, missions, and rule sets, which players can repurpose and adapt for their own lives as they see fit.

These three methods aren't the only ways to create an alternate reality. In later chapters in this book, you'll also read about **live event ARGs**, which gather players at physical locations for a game that takes only an hour or a day to play, and **narrative ARGs**, which use multimedia storytelling—video, text, photographs, audio, and even graphic novels—to weave real-world game missions into a compelling fiction that plays out over weeks, months, or even years.

Of course, by the time you read this book, dozens—probably hundreds—of new alternate reality games will no doubt be widely playable. This movement

is just getting started. When we imagine how the ARG movement might unfold, we can—as always—look for guidance from the past.

In the early 1970s, just before the computer and video game revolution, another game revolution took place, with significantly less fanfare but a rather important and lasting legacy. It was called the New Games movement, and its goal was to reinvent sports to be more cooperative, more social, and more inclusive.

The New Games philosophy was simple, composed of two parts. First, no one should ever have to warm the bench because they're not good enough to play. And second, competitive gameplay shouldn't be about winning. It should be about playing harder and longer than the other team, in order to have more fun.

The founders of the movement, a group of San Francisco-based counterculturists, invented dozens of new sports, all sillier and more spectacular than traditional athletic activities. The most well known were the "earth ball" games (played with a ball six feet in diameter, so that it takes multiple people to move the ball together) and parachute games (in which twenty to fifty people stand around the rim of a piece of parachute material and flap and billow it together, working to create various shapes and ripples). They held large New Games festivals in the Bay Area and eventually trained tens of thousands of schools and parks and recreation departments across the country, so that they could include New Games in their physical education and public recreation programs.

Many of today's leading game developers grew up playing New Games at school and local parks—and it's not hard to see the influence of New Games on multiplayer and massively multiplayer game designers today. From the cooperative missions in MMOs to the 256-player combat environments on consoles, video gameplay today often looks a lot like a New Game, set in a virtual world. In fact, New Games theory has come up at every single Game Developers Conference I've attended over the last decade—which is how I know that many game designers have managed to acquire for themselves a copy of the long out-of-print and little-known *New Games Book*, published in 1976.

The New Games Book includes instructions for how to play the new sports and, more importantly, essays explaining the philosophy of the movement. Many of my friends in the industry have acknowledged they've flipped through its pages for game-design inspiration.

I've nearly worn the print off the page of my favorite essay in the book. It's called "Creating the Play Community," by Bernie DeKoven, then the codirector of the New Games Foundation and today a leading play theorist. In the essay, DeKoven calls for a community of players to volunteer to be of service to the movement. He asks: Who will be willing to try these new games and help assess whether they are, in fact, better than the old games? If they are better, the community should teach others how to play. If they're not better, the players should suggest ways to improve them, or start inventing their own new games to test. He explains:

Because the games are new, we get a sense that we're experimenting. No one guarantees anything. If a game doesn't work, we try to fix it, to see if we can make it work. After all, it's a new game. It's not official yet. In fact, we're the officials, all of us, every one of us who has come to play. We make the judgments. We each take the responsibility for discovering what we can enjoy together.¹⁰

This is the kind of community that is currently coming together around alternate reality games. As we develop alternate realities, we need to be both open-minded and critical about what actually raises our quality of life, what helps us participate more fully in our real lives, and what simply serves as yet another distraction. There will be many, many different alternate realities proposed in the coming years, and it's not up to just the game developers to shape this movement. The players, more than anyone else, will get to decide if a new alternate reality is indeed a good game.

The "how" of alternate reality game design boils down to the game-design principles that best generate the four rewards we crave most. Traditional computer and video game developers are leading the way, constantly innovating new ways to reap these rewards; ARG developers are already borrowing and

refining these design strategies and development tools as their go-to solutions for how to make the world work more like a game.

But as we playtest different possibilities to decide what makes a good alternate reality, three additional sets of criteria are certain to emerge.

First: *When* and *where* do we need an alternate reality? Which situations and spaces call for it—and when are we better off leaving reality alone?

Second: *Who* should we include in our alternate reality games? Besides our close friends and family, who else would we benefit from inviting to play with us?

And third: *What* activities should we be adopting as the core mechanics of our alternate reality games? Game design is a structure—goals, restrictions, feedback—but within that structure, we can ask players to do almost anything. What habits should we be encouraging? What actions should we be multiplying?

These three different sets of criteria are the subjects of the next three chapters, which in turn cover three key kinds of alternate reality projects: alternate realities designed to make difficult activities more rewarding, alternate realities designed to build up new real-world communities, and alternate realities designed to help us adopt the daily habits of the world's happiest people in our real, everyday lives.

34. "Some Video Games Can Make Children Kinder and More Likely to Help." *Science Daily*, June 18, 2009. <http://www.sciencedaily.com/releases/2009/06/090617171819.htm>.
35. Maslow, Abraham. *Motivation and Personality* (New York: Harper Collins, 1987), 113.

CHAPTER 7

1. Personal website of Kevan Davis, accessed May 1, 2010. <http://kevan.org/cv>.
2. "Chore Wars Player Testimonials." *Chore Wars*. <http://www.chorewars.com/testimonials.php>.
3. McGonigal, Jane. *This Might Be Game: Ubiquitous Play and Performance at the Turn of the Twenty-First Century*. Dissertation for the PhD in Performance Studies at the University of California, Berkeley. 2006. http://avantgame.com/McGonigal_THIS_MIGHT_BE_A_GAME_sm.pdf
4. For example, the alternate reality game *Why So Serious?* by 42 Entertainment for *The Dark Knight* achieved an audience of more than 10 million people, according to the viral *Dark Knight* "Why So Serious?" case study. (viewable at <http://www.youtube.com/watch?v=cD-HRl-N3Lg>). The huge success of this ARG can be attributed not only to excellent game design, but also to the global popularity of the *Batman* movie franchise with which the game was linked.
5. Ito, Mizuko, Heather A. Horst, Matteo Bittanti, Danah Boyd, Becky Herr-Stephenson, Patricia G. Lange, C. J. Pascoe, and Laura Robinson, et al. "Living and Learning with New Media: Summary of Findings from the Digital Youth Project." White paper, The John D. and Catherine T. MacArthur Foundation Reports on Digital Media and Learning, November 2008. <http://digitallyouth.ischool.berkeley.edu/report>.
6. Prensky, Marc. "Engage Me or Enrage Me: What Today's Learners Demand." *Educause Review*, September/October 2005. 40(5): 60. <http://net.educause.edu/ir/library/pdf/erm0553.pdf>.
7. King, Nigel S. "Post-Concussion Syndrome: Clarity Amid the Controversy?" *British Journal of Psychiatry*, 2003, 183: 276-78.
8. Thompson, Bronwyn. "Goals and Goal Setting in Pain Management." *HealthSkills*, December 1, 2008. <http://healthskills.wordpress.com/2008/12/01/goals-and-goal-setting-in-pain-management/>.
9. McGonigal, Jane. "SuperBetter: Or How to Turn Recovery into a Multiplayer Experience." *Avant Game*, September 25, 2009. <http://blog.avantgame.com/2009/09/super-better-or-how-to-turn-recov-cry.html>.
10. DeKoven, Bernie. "Creating the Play Community." In *The New Games Book* (Garden City, NY: Doubleday, 1976), 41-42.

CHAPTER 8

1. "Key Findings from a Survey of Air Travelers." Peter D. Hart Research Associates/The Winston Group, May 30, 2008. http://www.poweroftravel.org/statistics/pdf/ki_dom_atp_summary.pdf.
2. Seligman, *Learned Optimism*, 17-30.
3. "Jetset: A Serious Game for iPhones." *VuBlog*, February 16, 2009. <http://blog.vu.dat.msu.edu/?p=232>.
4. Day in the Cloud Challenge. Official website, accessed June 24, 2009. <http://www.dayinthecloud.com>.
5. The correct answer is *The Graduate*, for the phrase "Mrs. Robinson, are you trying to seduce me?"
6. Creative submissions work differently from the puzzles; they don't automatically unlock points while you're on the plane, because they have to be judged for creative merit by game masters on the ground. It's a bit of delayed gratification in its current design, but you could easily imagine an updated version that allows travelers waiting at boarding gates or buying tickets online, for example, to browse and rate submissions so that creative submissions would be rated before the players land.
7. "Day in the Cloud—Virgin Flight 921." *Onigame*, June 24, 2009. <http://onigame.livejournal.com/41979.html>.
8. *Ibid.*
9. "Nike Plus Is a Statwhore Online Game That You Play by Running." *Ixor.com*, July 13, 2009. <http://www.ixor.com/ILX/ThreadSelectedControllerServlet?boardid=67&threadid=73699>.

10. Fox, Jesse, and Jeremy N. Bailenson. "Virtual Self-Modeling: The Effects of Vicarious Reinforcement and Identification on Exercise Behaviors." *Media Psychology*, 2009, 12: 1-25. DOI: 10.1080/15213260802669474.
11. Donath, Judith. "Artificial Pets: Simple Behaviors Elicit Complex Attachments." In Marc Bekoff, ed., *The Encyclopedia of Animal Behavior* (Santa Barbara, CA: Greenwood Press, 2004).
12. "How Often Do Foursquare Users Actually Check In?" *Business Insider*, May 7, 2010. <http://www.businessinsider.com/how-often-do-foursquare-user-actually-check-in-2010-5>.
13. "Left the House." Product page on Split Reason. <http://www.splitreason.com/product/622>.

CHAPTER 9

1. Evans, Simon, and Simon Johnson. "The Comfort of Strangers." *Swarm Toolkit*. http://swarmtoolkit.net/index.php?option=com_content&task=view&id=18&Itemid=49.
2. E-mail interview with Simon Johnson, May 3, 2009.
3. Turner, Victor. *Dramas, Fields, and Metaphors: Symbolic Action in Human Society* (Ithaca: Cornell University Press, 1975), 45.
4. "Necklace of the Subaltern Betrayer." *Ghosts of a Chance*, September 15, 2008. http://ghostsofachance.com/main_site/index.php?p=object&id=1.
5. Bath, Georgina. "Ghosts of a Chance Alternate Reality Game Report." *Smithsonian American Art Museum*, Washington, D.C., November 6, 2008. http://ghostsofachance.com/GhostsofChance_Report2.pdf.
6. Simon, Nina K. "An ARG at the Smithsonian: Games, Collections, and Ghosts." *Museum 2.0*, September 8, 2008. <http://museumtwo.blogspot.com/2008/09/arg-at-smithsonian-games-collections.html>.
7. Increased age is associated with negative qualities, such as decreases in stature, power, and cognitive ability, according to Mahzarin Banaji, who led the ageism studies at Harvard University. Published findings include Cunningham, W. A., M. K. Johnson, J. C. Gatenby, J. C. Core, and M. R. Banaji. "Neural Components of Social Evaluation." *Journal of Personality and Social Psychology*, 2003, 85: 639-49.

CHAPTER 10

1. Saba, Moussavi, Somnath Chatterji, et al. "Depression, Chronic Diseases, and Decrements in Health: Results from the World Health Surveys." *The Lancet*, September 8, 2007, 370(9590): 851-58. DOI: 10.1016/S0140-6736(07)61415-9.
2. Lyubomirsky, *The How of Happiness*, 14.
3. *Ibid.*, 7.
4. *Ibid.*, 72.
5. *Ibid.*
6. Seligman, *Authentic Happiness*, xii.
7. Weiner, *The Geography of Bliss*, 310.
8. Ben-Shahar, *Happier*, 165-66.
9. Williams, Sam. "Hack, Hackers and Hacking." In *Free as in Freedom: Richard Stallman's Crusade for Free Software* (Sebastopol, CA: O'Reilly, 2002). Also available online at <http://oreilly.com/openbook/freedom/appb.html>.
10. Caplan, Jeremy. "Hacking Toward Happiness." *Time*, June 21, 2007. <http://www.time.com/time/magazine/article/0,9171,1635844,00.html>.
11. I coined the term in 2007, but I'd already been doing it for years by then. I just needed a way to describe it to other technologists so they could start doing it, too. I introduced the term in a keynote at the Emerging Technology Conference (ETech) in San Diego, March 26-29, 2007, and again in a keynote at the Web 2.0 Expo in San Francisco, April 18, 2007.
12. Morrill, et al., *Together Alone*, 231.