# UNCERTAINTY IN GAMES
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**Playful Thinking**

Jesper Juul, Geoffrey Long, and William Uricchio, editors

*The Art of Failure: An Essay on the Pain of Playing Video Games*, Jesper Juul, 2013

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# Series Foreword

Many people (we series editors included) find videogames exhilarating, but it can be just as interesting to ponder *why* that is so. What do videogames do? What can they be used for? How do they work? How do they relate to the rest of the world? Why is play both so important and so powerful?

Playful Thinking is a series of short, readable, and argumentative books that share some playfulness and excitement with the games that they are about. Each book in the series is small enough to fit in a backpack or coat pocket, and combines depth with readability for any reader interested in playing more thoughtfully or thinking more playfully. This includes, but is by no means limited to, academics, game makers, and curious players.

So, we are casting our net wide. Each book in our series provides a blend of new insights and interesting arguments with overviews of knowledge from game studies and other areas. You will see this reflected not just in the range of titles in our series, but in the range of authors creating them. Our basic assumption is simple: videogames are such a flourishing medium that any new perspective on them is likely to show us something unseen or forgotten, including those from such "unconventional"

voices as artists, philosophers, or specialists in other industries or fields of study. These books will be bridge-builders, cross-pollinating both areas with new knowledge and new ways of thinking.

At its heart, this is what Playful Thinking is all about: new ways of thinking about games, and new ways of using games to think about the rest of the world.

# Contents

# 1 Introduction

Uncertainty is not, in most circumstances, a good thing. We do not wish to be uncertain about whether we can pay our bills, uncertain of the affections of the people who matter to us, uncertain about our health, or uncertain about our job prospects. Businesses are always concerned about the management of risk; they seek ways to reduce uncertainty. At least in the developed world, people pay taxes mainly as a means of reducing uncertainty—the risk of invasion and conquest, the uncertainty of terrorism, the risks created by possible unemployment, by loss of income in old age, and by health crises. They top this off by devoting a portion of their income to insurance, pension plans, and savings, all attempts to reduce uncertainty in their lives.

Yet if the goal is a reduction in uncertainty, the reality is that we live in an uncertain and conditional universe. Even in apparently civilized countries, madmen may come to power and slaughter millions of their own citizens. Apparently sane leaders maintain arsenals capable of destroying whole cities at a blow. Despite the miracles of modern medicine, terrifying diseases can spring out of nowhere and devastate whole populations. Seemingly harmless practices—smoking, applying pesticides, drilling for undersea oil—can turn out to have devastating and

unexpected consequences. We may wind up cooking ourselves in our own industrial waste, or turning the oceans into sewers. For that matter, terrorists could get hold of a nuke, an asteroid impact could erase tetrapodal life from the planet, a nearby star could go supernova and subject us all to killing radiation, nanotechnology could turn us all into gray goo, and Jesus could return, smiting all sinners—and I can assure you that, by the standards of the people who think this last remotely possible, I certainly qualify as a sinner.

The world is in fact filled with terrifying uncertainty, and it is a tribute to the dauntless and objectively insane optimism of the human species that we, most of the time, are fairly cheerful about it.

But the reality is that we are faced with uncertainty throughout our lives—and that much of our effort is devoted to managing and ameliorating that uncertainty. Is it any wonder, then, that we have taken this aspect of our lives, and transformed it culturally, made a series of elaborate constructs that subject us to uncertainty—but in a fictive and nonthreatening way?

I'm talking about games, of course.

In the course of this book, I shall endeavor to persuade you that games require uncertainty to hold our interest, and that the struggle to master uncertainty is central to the appeal of games. I will explore the many sources of uncertainty in games of diverse sorts and come to some conclusions about how to categorize these different sources of uncertainty. Finally, I will suggest ways in which game designers who wish to design with intentionality, that is, to purposefully craft novel game experiences rather than implement a new skin for a well-understood game genre, can use an understanding of game uncertainty in its many forms to improve their designs.

## 2   Games and Culture

What humans *do* is create culture. Culture is what differentiates humans from other animals.

The most primitive life-forms—amoebas, for example—adapt to their environment almost exclusively through evolution. Only over generations of slow change can new behaviors be added to their repertoire of the possible. In other words, they store information only in the genes.

Somewhat more advanced species—like, say, reptiles—are capable of learning new behaviors; they can store information also in the memory, but have no means of transmitting that information to others.

Most mammals, and some birds, can indeed impart things they've learned to others; birdsong varies by region within a species, kittens need to learn the kill stroke from their mother (or as adults, they won't know what to do with a mouse). Memories can be shared, at least to a degree.

When animals that live in social groups have the ability to learn, you get the beginnings of culture, that is, the transmission of knowledge within a group. Von Schaik[1] describes how one group of orangutans knew to use a stick to get into the flesh of a spiny fruit, while another group living nearby did not have this

knowledge. In general, the great apes and elephants are known to have cultural practices that vary by group, and to transmit information within the group. In an anthropological sense, they have culture—not, obviously, in as elaborate a form as among humans, but culture nonetheless. They have the ability to store information not merely in the genes, or in the memories of individuals, but in the collective knowledge of the society.

While some great apes have been taught rudimentary sign language, humans are largely unique in their ability to speak and, more generally, to use symbols and manipulate abstract concepts (both abilities that are implied by language). Thus, while apes and elephants have culture, humans have culture on steroids, because language allows us to transmit knowledge far more effectively. The invention of writing allows knowledge to be fixed in tangible form and transmitted through generations; the printing press made writing far more available throughout society; and the Internet makes all knowledge quickly and readily available to everyone (with a net connection, at least).

Our ability to create, manipulate, transmit, and understand culture is ultimately what makes us unique on the planet; and it is no surprise that we take *everything* we do and build elaborate cultural constructs about it.

Let us take cuisine as an example. All animals eat. Humans, however, create culture out of eating. Not simply content to ingest fuel to survive, we create rituals, techniques, and places for eating, and imbue the act of eating with cultural significance. We eat to cement family ties, to make business relationships, to explore friendships; we eat in chic Soho restaurants and fast food outlets and greasy spoons and around the family dining table; we braise, roast, stir-fry, and bake; we write and read books that explain how to create particularly tasty food. Only humans

take the simple act of ingesting nutrition and elaborate it in this complicated way. And it isn't just Western civilization that does so—every human culture assigns cultural meaning to food.

Or let us look at story. Language is natural to humans—indeed, language is what sets us apart from the animals. Given the existence of language, it is inevitable that we will want to describe past events to each other. Past events must be described in a way that gives a sense of context and the actors involved—the fundamental building blocks of story. Once we have learned to relate past events, it is inevitable that we will learn to lie about them—relating false past events—because humans are social animals, always striving for the acceptance and approval of others, and true events don't always give us that. Once we have learned to lie, it is a short jump from "lying for personal benefit" to "lying for entertainment value," and once that concept is understood, it's a short step to storytelling. But over the years, storytelling gets elaborated, until we have movies, noir novels, Noh drama, and limericks.

Animals eat; we eat arugula and goat cheese with lardons, toasted walnuts, and Dijon vinaigrette. All animals drink; we have Coca-Cola and the Schramsberg blanc de blanc. Mammals have sex; we have all-day weddings with elaborate ceremonies—and BDSM clubs. Apes will tap out a rhythm; we have the *Eroica* symphony, and *Rock Band*. Animals can see; we have the *Mona Lisa*. Beavers build dams and wasps build nests; we build Paris.

In other words, everything we do by nature, we complexify and reify and elaborate to an extreme degree through our culture—because culture, and the complex civilization it has enabled, is fundamental to our nature.

One of the things we do, of course, is play. Play is fundamental to all mammals; kittens tussle, dogs romp, dolphins swim

about each other in balletic displays. Play, it is said, is one of the ways that young animals learn survival skills—those kittens are hiding and pouncing, key skills for catching prey. But they're learning those skills in a nonthreatening environment; their siblings will not turn and bite viciously, the way an actual rat will. Play is earnest, yet not in earnest; it takes place in a protected space (as do games). Play is something that exists in every species that can learn, and for whom the skills they must learn are important to survival—but not among species whose behavior is dominated by genetics alone. Bugs do not play.

Play in the style of animals exists among young humans, too, of course—climbing and jumping, tussling and running. Even that we elaborate culturally by building playgrounds, by making toys. It isn't long before children *themselves* begin to elaborate their play—to imagine settings, to pretend that toys are characters, to negotiate rules and roles with other children.

The classic example, of course, is *Cops and Robbers*, a form of imaginative play in which two opposing teams have some sort of play fight. "Bang bang, you're dead." "No I'm not!"

Immediately, the need for a rule arises—and immediately, the children will negotiate one, whether implicit or explicit. A typical rule is that if the "shooter" has line of sight to his target, the target is dead, unless the target player can provide a narrative explanation of sufficient appeal for why he didn't die ("I dove for the ground, rolling and rolling and pulling out my gun!") That's an implicit rule, and a fuzzy one, but it's a rule nonetheless (and no fuzzier than the rules for, say, *Charades*, or any number of narrativist RPGs [role-playing games]).

Because they are social beasts, and language users, even very young humans do something that animals do not: they create culture out of play, elaborating an instinctive behavior

in an expressive and meaningful way. They create, in a word, games.

Humanity has created games deep into its prehistory; from physical contests we created sports, from observations of random behavior we created luck games and the casting of lots; from these we created the earliest boardgames. We took the desire to create safe, temporary spaces for playful contests, and constructed elaborate rules for new games, which we imbued with social meaning. From carefree exploration of each other and the environment—the essence of animal play—we ultimately built elaborate cerebral artifacts; there's a direct line, as strange as it may be, between a litter of kittens tussling with each other and two people pondering a *Chess* board. They're both forms of play; but the former is unbounded, unscripted, and *simple* play, while the latter is the product of thousands of years of cultural refinement and elaboration. And playing *Chess* has social meaning, too; to say "I play *Chess*" is to make a claim to be regarded as a thinker, an intellectual of a sort, and perhaps one who prizes the pleasures of the mind over the pleasures of the body.

In a sense, "game" is merely the term we apply to a particular kind of play: play that has gone beyond the simple, and has been complexified and refined by human culture. Just as novels and movies are artistic forms that derive from the human impulse to tell stories, and music is the artistic form that derives from our pleasure in sound, so "the game" is the artistic form that derives from our impulse to play.