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This book is printed on acid-free paper.

Steve Rabin. *Introduction to Game Development.*
ISBN-13: 978-1-58450-377-4
ISBN-10: 1-58450-377-7

Library of Congress Cataloging-in-Publication Data
Introduction to game development / edited by Steve Rabin.
p. cm.
Includes bibliographical references and index.
ISBN-13: 978-1-58450-377-4
ISBN-10: 1-58450-377-7
1. Computer games—Design. 2. Computer games—Programming. 3. Video games—Design. I. Rabin, Steve.
QA76.76.C672158 2005
794.8'1536—dc22 2005007512

Printed in the United States of America
07 7 6 5 4 3

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Introduction to Game Development

Edited by Steve Rabin

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1.3 Ludology for Game Developers—An Academic Perspective

In This Chapter

Overview

There has been a recent rise in academic studies of games, and the term *ludology* has been coined to characterize this new discipline. In truth, *ludology* is a term for a host of different methods with which to study, teach, and even design games. This chapter introduces various aspects of ludology, and suggests means to apply ludology for practical game-development purposes. Numerous references and pointers to ludological resources encourage the reader to become familiar with ludology and make his or her own interpretation of the field.

The authors have experience from both industry and academic contexts, and have employed ludological methods in their own game design and concept evaluation tasks. The chapter concludes with a dialogue where various aspects and applications of ludology are discussed through concrete examples.

Introducing Ludology

Game scholar and editor-in-chief of the online journal *Game Studies*, Espen Aarseth has named 2001 as the inaugural year of academic game studies [Aarseth01]. This academic approach has been referred to as *ludology*. The word is a neologism resulting from the combination of the Latin word *ludus*, meaning game, and Greek term *logos* referring to reason and science. In similar fashion as "narratology" refers to a set of theories on narratives and narration, ludology is a general term for studies and theories focusing on games [Frasca99].

For a game developer interested in broadening his or her understanding of games across different media and technology, the general rise in interest toward games presents fresh opportunities to get familiar with both early and contemporary contributions to ludology and feed off their findings. Thus, the neologism that constitutes our topic is not just a buzzword to promote academic activities in the present, but also a tool to give new worth and usefulness to earlier theoretical discussions on games.

Defining Ludology, Defining Game Studies

The heart of the matter is in first asking, what kind of research is possible to do on games? Second, if games are the object of study, we must understand what distinguishes games from nongames.

Descriptions of Games, Play, and Gameplay

We all have an instinct that tells us if something is a game or not, but, as most probably have noticed, we do not seem to agree with everyone else about specific cases. Providing a definition to solve these differences is difficult for two reasons. First, games are a very diverse category of artifacts and activities where the challenge is to pinpoint characteristics that appear in all games. Second, people have different opinions of what a game is, so any possible definition would either have to be based on popular opinion or based on a narrower definition of some form of an expert group.

The meaning of the word *game* also has many, sometimes radically different meanings ranging from animals that are hunted to concepts of social manipulation ("game of love"), making it even more difficult to define. Some people, such as analytical philosopher Ludwig Wittgenstein, have even proposed that it is futile to try to define what a game is [Wittgenstein58].

The word *play*, which is closely linked to the word *game*—for example, in the concepts of "to play a game" and "gameplay"—is likewise difficult to define (see Brian Sutton-Smith's *Ambiguity of Play* for further discussion on the meaning of *play* [Sutton-Smith97]).

What does it mean to play a game? How is playing a game different from other activities such as watching television, participating in politics, or taking a stroll in the park? Games and play have been studied, and defined, in many different fields from economics to anthropology. The descriptions presented here range from definitions to

models and have been selected from a myriad of other descriptions because they represent views from different fields of study and together show the complexity of games and the activity of gameplay. The fields of practice of these descriptions range from rigorous scientific fields to practical game design, which, of course, have an effect on their level of rigor. Some are based on ethnographical and anthropological studies, some on analytical examinations, some on personal design experiences, and some on a combination of different fields of expertise. The studies and methods presented here have different intended readers and therefore provide different views on the subject.

Historical and Contemporary Studies of Games

Early landmarks of academic game studies have been documented by Elliot M. Avedon and Brian Sutton-Smith [Avedon71 pp. 19–26]. This work consists largely of anthropological and historical perspectives to games in a particular culture or period of time. These studies testify for the lasting presence of games as an everyday part of the various people and their cultures.

Probably the most well-known "early" study of games is Johan Huizinga's cultural critique *Homo Ludens: A Study of the Play-Element in Culture* originating from 1938. Huizinga sketches out a concept called "magic circle," which refers to the particular enchantment of games as something detached from everyday activities, and governed with make-believe rules. Magic circle is a powerful metaphor for games, and it has sustained its explanatory power to this day: it has been promoted in contemporary game studies and writings on game design, especially by Katie Salen and Eric Zimmerman in their influential book *Rules of Play* [Salen04].

However, Huizinga's book was preceded by a number of anthropological and/or historical approaches, such as Stewart Culin's studies on the games of Native Americans, Chinese, and so forth [Culin93a, Culin93b; see also Avedon71]. H.J.R. Murray was another prominent figure of game studies in the early twentieth century. He was a historian of board games, studying both chess and other forms [Murray51]. These studies can be recommended to those who want to learn about the origins of classic game genres.

A notable modern entry into ludology is Roger Caillois' *Les Jeux et les Hommes* from 1958 (translated into English as *Man, Play and Games* in 1961). Caillois looks into various sorts of games from a socio-anthropological viewpoint, and introduces the four categories of *agon*, *alea*, *mimicry*, and *ilinx*, which account for different game and play activities. Caillois also introduced an axis that describes the players' attitude to the game. According to him, it ranges from free-form *paidia* to rule-bound *ludus* [Caillois01]. If we adapt Caillois' thinking to contemporary games, then *The Sims*, with its loose goals and winning conditions fosters a paidia type of attitude, whereas an *Unreal Tournament* death match clearly demands a ludus type of attitude. The *Grand Theft Auto* series, with its seemingly open mission structure, would reside somewhere in between these two extremes.

Game theory is another discipline that warrants attention when discussing the roots of ludology as we know it today. John von Neumann and Oskar Morgenstern

wrote their *Theory of Games and Economic Behavior* (1944), which gained prominent status and was applied to various applications. Game theory mainly discusses so-called zero-sum games where the players are making rational and informed decisions. As such, a number of game design problems (e.g., balancing a game's resources evenly, etc.) are indebted to game theory and theories on mathematical probability.

It also needs to be noted that there is a rich field of play theory, of which especially the work of Brian Sutton-Smith and his colleagues is recommended reading for game developers [Avedon71]. Studies on simulations present another field of relevance: there is a rich literature that discusses simulations in the form of games. The work of theorists and designers such as Cathy Stein Greenblat are of interest for contemporary ludology as well [Greenblat88].

Ludology as an Attitude

To be precise, we understand ludology as an *academic attitude to games*; in other words, a specific interest for knowledge concerning games. This is an inclusive definition, rather than an exclusive one.

There is evidence that the academic world tends to opt for exclusive definitions. A debate on a particular subject has shadowed the early steps of contemporary ludology: the so-called narrativist-ludologist debate has been going on in the field even though Gonzalo Frasca has argued that the "debate never took place" [Frasca03]. The supposed conflict was between scholars investigating games with an emphasis on their narrative aspects (i.e., the "narrativists") and ones dedicated to studying "games as games" (i.e., the "ludologists"). Essentially, this meant that the former were interested in games with strong narrative aspirations (e.g., *Myst* and many similar adventure games), whereas the latter liked to throw the "*Tetris* card" onto the table, promoting games with no narrative or characters.

The stance of *radical ludology* came to be known and articulated via Finnish game scholar and writer Markku Eskelinen who argued that stories are unimportant features of games and putting effort into studying these would not be worthwhile [Eskelinen01].

This debate between stories and "pure" game mechanics is something that we've found to exist among discussions between game developers as well, whether or not with the same terms and concepts (see [Scholder03]). Regardless of the terms and contexts, the interest for knowledge is similar, we believe: to better understand what games are, how they work, why people play them, and how to design better, or at least more diverse, games.

This equals the inclusiveness that we argued for a couple of paragraphs earlier. Seeing ludology as an attitude with which to conduct detailed inquiries into games and their players allows us to regard many development-oriented activities as ludological. For instance, it is quite clear that the Game Tuning Workshops held at the Game Developer Conferences for a number of years have displayed a very evident ludological attitude, and yes, the "L" word has even been voiced aloud in this context.

Some counter-examples include market research, for instance. Seldom do you see market researchers, or the ones taking advantage of the figures produced, conducting their business with a ludological attitude; their interest for knowledge regarding games is quite different and very case specific. We do not see background research focusing on a specific technological solution or, for example, finding out facts for a game concept that has a historical setting as particularly ludological activities. In conclusion, ludology as an attitude requires a more generic approach to games.

Design Research: Ludology for Game Developers

Is there a form of "applied" ludology, especially geared toward practical applications for game design and development? Could or should there be? One answer to these questions would be to put ludology in context with another discipline of research introduced and articulated recently: design research.

What is design research? In general, it is research that is particularly interested in methods and results of the different stages of the design process. Thus, we see design research as the means to apply ludology as an attitude to practical game development tasks.

In the preface to the anthology *Design Research* [Laurel03], Peter Lunenfeld discusses the various attempts to define design research from Bauhaus to date. He cites Sir Christopher Frayling's threefold identification of key areas of design research:

1. Research *into* design
2. Research *through* design
3. Research *for* design

Research into design covers aesthetics and history of art and design. Research through design is done for particular projects and includes, for example, research of materials. Finally, the goal of research for design, even though the most difficult to formulate, is to come up with systems and models that showcase and validate the results of the research [Laurel03].

The three approaches are useful also for situating ludological activities into the contexts of design research. The most traditional aspect is "research into design," which consists of ludological analyses of existing games (i.e., their designs) and how players engage with those designs (i.e., play the games). Research into creating methods for these kinds of endeavors is something that the ludological attitude is able to contribute as well. The representatives of "research into game design" mostly equal the academic papers found in the online journal *Game Studies* and conferences of Digital Games Research Association [DiGRA].

"Research through design" is characteristically research that builds prototypes of games or game-related products as its results. These kinds of tasks may be built on specific ludological findings or theories that thus constitute research for design, possibly even for highly specific design purposes. Moreover, the documentation of the prototyping process and reflecting its solutions and outcomes becomes part of ludological study.

Research for Design

For the purpose of this chapter, we feel that the ludological attitude as research for design is the most fruitful area to cover in more detail, even though generally research for design has to borrow heavily from assumed history of design processes for games.

Games can be said to have been around as long as tales, mythologies, and rituals have been, while play predates these since it does not require a language and can be found in many animal species [Sutton-Smith97]. It can be assumed that these early games were designed in a similar way as folk tales are authored: the game elements and rules evolve over time by the effort of countless, and nameless, "designers." Physical games, including sports, contests, and children games have been around even longer than games based on the use of symbols.

The difference between the gameplay in these activities can be divided into four main groups:

- Somewhat codified gamelike interaction spontaneously arising from normal play behavior.
- Physical contests and tests with codified rules to determine the conduct and the outcome.
- Evolved symbolic games such as dice games and early board games.
- Games that have been designed on purpose.

The focus of analyzing gameplay in games (i.e., research into their designs) covers all these four categories, while the discussion of the problem of designing games focuses on the last category. All these categories are somewhat overlapping and share the common ground of gameplay activity, but all games in all categories can also be seen as artifacts that are the result of conscious design choices. For the last categories, this can be obvious as there may be records of the intentions the game designers had before starting the design process. Activities in the first three categories do not have initial design goals, but have been changed by the participants themselves while performing the activity, so that the activity suits their current intentions. As the activity has been repeated, the rules for the activity have developed in an evolutionary way where every change has been the adjustment to a local context.

The similar distinction can be made in general between craft and design [Jones92]: the characteristics of a craft product can be understood as a combination of the methods and materials available as well as the situations in which the product has been used over a longer period of time; and the characteristics of a designed product can be understood as the result of trying to reach a design goal, which is often at least partly implicitly defined, by using methods and materials available. A product can, however, be the result of movement between the categories. For example, an initial design can be the starting point for how a product develops through craft practice, and an already crafted product can be the inspiration for a designer to create new designs.

This view of craft and design can be found in Herbert A. Simon's *Sciences of the Artificial* [Simon96], where he states that any activity with an intention to devise a course of action to change the existing situations to preferred ones can be classified as design. In other phrasing, things created by people can be treated as if they were designed when analyzing them, even if the people who created the things did not perform the actions, specifically setting design goals, normally associated with design.

Some argue that designing games is an art, knack, or a mystical craft that cannot by analyzed, and that the attempt to create methods and models of game design is futile. We believe that there is some truth to this claim, at least that it is impossible to come up with a cookbook or a set of instructions that can automatically create beautiful designs without any other insight, talent, or skill. However, we also feel that it is possible, even desirable, to find and describe the basic features, elements, and patterns that can assist, guide, and inspire design work. Visual artists have to know the methods and techniques of visual composition, novel writers benefit greatly from understanding the principles of drama such as foreshadowing and climax points, and architects have to know the basic elements of how to construct buildings. Making the principles of how to design explicit gives designers a conscious layer of self-evaluation, and makes it easier to consciously break the principles and to seek new forms of expression. These are all practical aspects of a ludological attitude that game developers can embrace.

Tools, Methods, and Models

As seen previously, many of these definitions and models with ludological attitude come from professional designers as well as researchers who do experimental designs as part of their method to explore the design space of games. It is no wonder that many of these researchers and practitioners also have developed methods and models to design games.

The following methods and models are all recently proposed with an intention of supporting design of games and, obviously, the ludological attitude is evident in each of them.

Chris Crawford

Chris Crawford's *The Art of Computer Game Design* [Crawford84] may well be the first contemporary treatise with a strong ludological attitude. In the book, Crawford identifies representation, interaction, conflict, and safety as the four common factors in all games. Although he does not give a definition based on these factors, he elaborates the meaning of game through exploring the factors. According to Crawford, all games are constructed representations, since games are closed formal systems that represent parts of reality [Crawford84, p. 9]. The terms *closed* and *formal* are used to signify that there is a clear distinction between what constitutes the game state, and what does not, and that the system is mechanically deterministic respectively. Based on this perception of a game as representation of a selection of reality, Crawford then claims that the most fascinating thing about reality is the relationships of cause and effect, and that these are best explored through interaction as he states that interactive representations are the

most complete kinds of representations and that interactivity is the most important aspect of games as such [Crawford84, p. 10]. Crawford has also written numerous articles on this area and his newest book on game design [Crawford03] is also worth noting because of his distinctive attitude toward games.

Greg Costikyan

Greg Costikyan in his "I Have No Words & I Must Design" article [Costikyan94] identifies design choices that have to be made when games are designed. He lists decision making, goals, opposition, managing resources, game tokens, and information as the main features that are necessary for games and that should be taken into account by game designers when making games. After identifying these categories, he continues to describe them and explain why each is necessary, but does not provide specific details on how the features can be created.

Decision making is, according to Costikyan, the most integral feature of games. The players have a choice between different courses of action in the game and have to weigh the pros and cons of these alternatives. Regarding goals, Costikyan argues that they are what make players stay interested in playing the game. If there are no goals, no objectives in the game, the players eventually lose interest, as there is no purpose for their actions. Opposition is something that the players have to overcome to reach their goals. Opposition provides struggle, and Costikyan claims that a game without a struggle will fail as a game. Having the players manage resources in the game avoids the pitfall that the decisions are eventually trivial. If the player has to make trade-offs between using different resources, the choices are both more complex and interesting. The players have to have some methods to change the game state, and this is done through game tokens. The last feature, information, governs that the players should have enough, but not too much, information available about the factors that have an effect on decision making. The information itself can also be used as a resource, especially in games based on exploration. In the article, Costikyan also mentions some other features that strengthen games, from diplomacy between the players to narrative tension.

MDA: Mechanics, Dynamics, and Aesthetics

Robin Hunicke, Marc LeBlanc, and Robert Zubek have developed a formal approach to understanding games, which they call the Mechanics, Dynamics, and Aesthetics (MDA) framework. It has been employed in the Game Tuning Workshops held in Game Developers Conferences since 2001 [LeBlanc]. The MDA framework consists of three main components: mechanics that describe particular components of the game (e.g., how data is represented and what kind of algorithms are used); dynamics that describe how player inputs affect the game system's behavior over time; and aesthetics that describe players' emotional responses while interacting with the game system. The goal of MDA is to provide a framework for bridging the gap between game studies, game design, and game development [Hunicke04].

These three components can be thought as three separate, but causally linked aspects of the game. The design of mechanics gives rise to the dynamic behavior of the system, which finally creates the aesthetic responses for the player. The aesthetics can be broken up into more distinct components; what the authors call *Eight Forms of Fun*:

- Sensation, game as sensory pleasure
- Fantasy, game as make-believe
- Narrative, game as drama
- Challenge, game as obstacle course
- Fellowship, game as social framework
- Discovery, game as uncharted territory
- Expression, game as self-discovery
- Submission, game as pastime

The framework supports designers by showing how the one design goal regarding one part of the framework can be achieved by making specific design choices in other parts of the framework. They do not provide a detailed model for the possible ways the different parts can affect each other, but do offer some examples. For example, the authors argue that *fellowship* can be encouraged in a game's design by goals that require cooperation or information that becomes more valuable when shared among players.

That is, different dynamics create different aesthetic experiences, and it is the designer's task to determine the aesthetic forms he wants and develop dynamics that create these forms. Finally, the actions, behaviors, and control mechanisms available to the players create and support these dynamics.

Formal Abstract Design Tools

Doug Church in his "Formal Abstract Design Tools" article [Church99] argues that in current computer game development, the lack of common design vocabulary has slowed the evolution of game design in a considerable way. He then proposes a framework to overcome this problem, the Formal Abstract Design Tools (FADT), stressing abilities to communicate design ideas and shifting the focus on underlying ideas rather than specific implementations. This would lead the way for a common vocabulary.

One of his ways to approach the problem is to look at current good games and first identify and collect some key elements and aspects that make those games work. These concrete elements are then abstracted and formalized into a FADT. For example, his analysis of *Super Mario 64* led to two FADTs: *Intention* (forming a plan in response to one's understanding of the gameplay options and the current situation), and *Perceivable Consequence* (a clear reaction from the game as a result of the player's action).

FADTs give designers concepts to use when describing ideas and choices, and different collections of FADTs can be identified and created independent of each other, allowing them to be tailored for specific use. However, they do not have relationships to other FADTs as part of their definition, so designers are not helped in understanding the effect of using a FADT to change a game design where other FADTs have already been used.

The 400 Project

The 400 Project is an attempt to formalize what Falstein perceived as the basic rules of game design in an accessible way [Falstein02]. The rules consist of five parts:

- An imperative statement of the rule.
- A description of the domain of the rule.
- Rules that take precedence over the rule.
- Rules over which the rule takes precedence.
- A description of examples and counter-examples.

The rules are meant to be tools, which can be used in different phases of the design process, from problem solving during the design to fine-tuning an existing design. The target of the project is to come up with, as the name implies, 400 such rules.

The rules in the 400 Project differ from FADTs in that they are more structured and contain relationships to each other. However, they are not concepts that designers can use in their designs, but rather instructions on how the design process should be done. That is, they are *imperative*, and can be seen as a way of codifying best practice.

Ernest Adams and Andrew Rollings

In their book, *Ernest Adams and Andrew Rollings on Game Design*, the authors divide game design into three different areas: core mechanics, interactivity, and storytelling and narrative [Adams03]. Adams and Rollings continue to separate other elements of games, such as setting, interaction model, perspective, the player's role, and define gameplay as a series of challenges that are causally linked and take place in a simulated environment [Adams03, p. 201].

Adams and Rollings support design by showing how gameplay can be constructed from what they call "pure challenges," or combinations of these pure challenges, which they call "applied challenges." Their pure challenges are based on physical, mental, or social challenges with the following categories: logic and inference, lateral thinking, memory, intelligence based, knowledge based, pattern recognition, moral, spatial awareness, coordination, reflex/reaction time, and physical. Examples of the applied challenges that are based on the pure challenges include races, puzzles, exploration, conflict, economies, and conceptual challenges. The authors further provide descriptions of game design elements specific to different genres that can be used when creating the pure or applied challenges.

Game Design Workshop

Tracy Fullerton, Christopher Swain, and Steven Hoffman in *Game Design Workshop: Designing, Prototyping, and Playtesting Games* [Fullerton04] discuss the structure of games and identify eight basic formal elements: players, objective, procedures, rules, resources, conflicts, boundaries, and outcomes. These formal elements are the basis for their further elaboration and refinement of the method and structure to design games. The main theme in their design methods is to use the formal elements, and

specific instances of them, to describe the current design and make sure that all aspects of a game design are taken into consideration. By doing this, an initial game idea can be described in a format that maintains the key elements as the idea is transformed into a concept, paper prototype, alpha release, and so on.

Steffen P. Walz

Steffen P. Walz has proposed and elaborated an approach to game design based on applying the classic rhetoric models and rhetorical figures of, for example, Aristotle, Quintilianus, and Burke [Walz03]. The main thrust of Walz's approach is to explore how rhetoric, defined as the science of persuasion, can be applied to the design and analysis of games. Walz takes the triadic relationship between game designer, game, and players as the starting point for his further analysis of digital game rhetoric. This relationship is similar to the classic rhetoric relationship between the communicator (or orator); the performance and the message to be conveyed; and the receiving audience. Further, Walz argues that identification, a concept adopted from Kenneth Burke's work on rhetoric, is the key for the use of rhetoric in game design. The three dimensions of identification—systemic, symbolic, and structural coupling—define the processes and strategies of how the game designer persuades the players to play the game. The most interesting dimension for this discussion is the structural coupling, where the game designer can modulate the player's expectations, motives, needs, and actions in the game by structuring the levels of offers and demands the game provides to the player. For example, *Tetris* contains several levels of these offer-demand pairs. The basic level is that of the demand of the block moving down and the offer of rotating and moving it left and right. The highest level is the demand of keeping the screen as clear as possible and the offer of removing several rows at one time. The interplay of these offer-demand pairs then creates the flow of the gameplay experience.

Game Design Patterns

The first article about game design patterns was Bernd Kreimeier's "Case for Game Design Patterns" [Kreimeier02], in which he formulates the four basic aims of game design methods: they should relate to game design, have utility as a tool, be abstract, and be formalized. Inspired by Christopher Alexander's pattern approach to architecture, Kreimeier [Kreimeier03] developed an approach to game design based on the concept of game design patterns. Parallel and inspired by Kreimeier's work, Björk and Holopainen started their ambitious Game Design Patterns Project [GDPP]. Björk and Holopainen have a slightly different approach than Kreimeier. They follow the basic principles of Alexander to describe invariant and recurrent characteristics of game design. These are expressed as interdependent semiformal pattern descriptions. Their collection of almost 300 patterns can be found in the book *Patterns in Game Design* [Björk04].

Katie Salen and Eric Zimmerman

Salen and Zimmerman's book *Rules of Play* [Salen04] introduces a formidable set of theories and schemas for game design and studies: theoretical groundings run from

psychology to game theory, information theory, systems theory, semiotics, mathematics, and so forth. The book testifies to the wide number of different backgrounds on which game design and game studies can potentially draw. The authors' goal is to see the actual conceptual tools that are relevant regarding games, and thus better understand the uniqueness of game design as design practice.

Salen and Zimmerman promote "meaningful play," which refers to actions and outcomes within a "magic circle" (see Johan Huizinga previously) that add to the emotional and psychological experience of playing the game. Creating meaningful play is a complex process, and Salen and Zimmerman address different aspects of analyzing and designing systems that facilitate the emergence of meaningful play. They articulate a number of game design schemas that are intended to provide frameworks for understanding formal, experiential, and cultural aspects of games.

Discussion

The use of what we call ludological methods and models is also dependent on the different intuitive approaches the designers already have. Some designers prefer the structured, sometimes even rigorous approach to game design, while some are more comfortable with the feeling of playful freedom of the design process. The methods and models, however, are developed to assist the design process, not to straightjacket it into following step-by-step cookbook instructions. According to both anecdotal evidence from designers and personal experiences of the authors, the use of a method is not always conscious. During the design process, there are phases when the design falls into place intuitively, without conscious reflection on the choices. The methods and models are then used consciously and with rigor to evaluate and sometimes validate these intuitive design choices. The explicit and structured models of games are also good for understanding the role of games in larger cultural context and analyzing games in general.

Two Ludologists: A Dialogue

To close the discussion, the authors engage in a dialogue to highlight some aspect of ludology and its uses in their own design and research tasks.

AJ: By naming our chapter "Ludology for Game Developers," we offer a particular interpretation of what ludology is and, more or less, what it should be, right?

JH: That is correct, although I am a bit hesitant to offer interpretations, as they tend to be regarded as definitions and this can lead to much confusion later. So, I stress here that what we offer is just our interpretation of what ludology means in this particular context; i.e., "Ludology of Game Developers." The focus is on shedding light on the ludological issues that are, in our opinion, the most important ones for those who are in the trenches of game development. Ludology itself is still a slightly vague and sometimes far too encompassing discipline. For example, one definition presented previously, "the study of games, particularly computer games" [Frasca99], is not really useful in this context, as it could also include specific technical topics such as rendering techniques, which, again in my opinion, are not part of ludology as I understand it. Following the discussion in the first part of the chapter and also my own research interests, I would like to make the area of ludology focusing on the structures of gameplay as the most important one for game developers.

AJ: In your experience, how do people working in the industry find ludology? Do they embrace or resist it? To put the question in context, I've had a couple of opportunities to witness how people react to your and Staffan Björk's ideas and methods about using game design patterns, and there seems to always be someone from the "not invented here, or by me" camp. Any thoughts on this?

JH: This depends quite a lot on what kinds of developers there are in the audience. Some of them are obviously interested in all kinds of things related to games, and they usually carefully listen to our argumentation and take bits and pieces which fit in their work and choose to ignore or criticize the rest. The resistance, however, is widespread, and we have heard many, many times that the models we have presented are useless because 1) they are too complex, 2) they do not reflect the actual work done by the designers, and last but not least, 3) we are not working in the games industry (as it is).

AJ: I believe this has to do with a more general perception of theory. For theorists, theory is a means to produce order from chaos and thus reduce complexity, but theorists (myself included) often fail in communicating this intent with their complex figures, concepts, etc. Do you agree?

JH: Yes, pretty much. The first issue, the models being too complex, is something we are trying to address in our future work by somehow making it easier to access the complex models. This issue, however, has two sides: on the one hand, we do not believe that it is possible to have a simple model of game design without sacrificing way too much, and on the other, there might be flaws in the model if it is impossible to use it in a practical way. This issue is, I feel, ubiquitous in every theoretical approach to creative work. Just looking at, for example, the models of narrative and drama by French semioticians: the models are complex and beautiful, but it is almost impossible to use them in a fruitful way without revising the presentation heavily. The second issue, that the models do not reflect how real designers do real designs, is a slightly more subtle problem to tackle. However, after discussing this in more detail with those people, it usually turns out to be that the model does not fit their intuitive view on their work process, and by making the mappings between their implicit conceptual models and our model more explicit there are surprising similarities. The last issue with us being outsiders to the games industry often turns out to be a case of "Not Invented Here" syndrome, which in one sense is understandable. The last two complaints are also based on mutual misunderstanding about the reason for presenting the model. Developers sometimes take these theoretical

models as outright and blunt criticism of their own work, and I have to admit that sometimes our style of presentation fits this view quite well ("here we are presenting a model which describes the design process in a structured and clear way..."). These models, however, should not be taken as facts or normative guidelines, but rather as tools which can be modified and added to the developers' toolboxes based on their needs.

AJ: So what about this idea of ludology as an attitude rather than some clearly distinguishable design or research method?

JH: I feel that this is a beneficial approach for both the people working in game development and the ludologists themselves, especially for helping them understand each other better. The ludologist (well, I might be a good example) storming into a development studio to present these fancy new research results as *the* design method is going to be ignored or, in the worst case, smeared in tar and rolled in feathers. The key issue is first to create a mutual understanding of the approach, in this case ludology as an attitude, and then start to investigate what is useful and what is not. Somehow, I have this feeling that we as academics have a tendency to "preach," and I fully understand the developers who resist these kinds of approaches. What about your experiences? You are working in the Finnish National Lottery company as a games researcher. What kinds of experiences have you had with ludology as an attitude there?

AJ: Well, I have tried to pursue it within the company, with varying results. There is definitely the challenge of incorporating formal methods with the "silent knowledge" and routinized practices of experienced designers. But I've had some successful steps in introducing board game workshops, systematic analysis methods, etc., into the design process. Overall, my own work divides into two branches: one, I am working on my academic thesis on game analysis and design methods, and two, I am trying to adapt those methods to the practical design and evaluation tasks that I am responsible for. The thing is that I am working within an industry that has long traditions (gambling in all its forms) and this presents quite specific and rather ruthless requirements for new games, such as luck being a near-absolute deciding factor regarding outcomes, and so on. I believe the formalistic approach has helped enormously to better see the formal structures and their configurations—rules, draws, game mechanics—that one has to have in a game in order for it to be operated as a lottery or a betting game. After distinguishing those, it is easier to focus your attention to how the game appears and how you "thematize" the game, to use a theoretical term from my own theory. Also, it has enabled us to experiment with completely new forms of lottery and gambling games and focus on the player's experience. To emphasize this point, I've found game design patterns very useful and tried to adapt them for games of chance in particular. In the context of my academic pursuits, I've taken the MDA approach as a starting point and tried to reformulate it by giving its ad hoc nature a more detailed groundings in psychological theories on emotions, moods, and cognition.

JH: That is quite similar to my work at Nokia Research Center. I also feel that the ludological view we are pursuing is quite different from research done on games, for example, in media culture and philosophy just because we both have to apply the research to our daily work.

AJ: Exactly. It doesn't mean that research that remains on a descriptive level is useless, but rather that it has to be filtered or remodeled into tools that one needs in everyday work. In practice, though, there has to be someone who has the means and the time to do it. For this, having one foot—or at least a couple of toes—in the academia helps a lot, as one can use general knowledge of research methods in seeing what kind of research and theory is applicable for design and product development. This is definitely a benefit of general interest in ludological matters, I believe!

Let's move on to discuss more examples of ludological attitude or ludological method. I find many kinds of self-reflective approaches to design processes or fundamentals of game design (Game Tuning Workshops, *Rules of Play*, etc.) quite lucid examples of ludological attitude. But how about less formalistic approaches, such as studies of player behavior, do you see them representing ludology? How do you see "culturalist" ludology and the questions it would be interested at?

JH: As I previously mentioned, for this particular context I feel that the formalist ludology focusing on structures of gameplay and design processes is more appropriate than cultural issues. Even though this is the case, I really, really do not want to say that the cultural issues are irrelevant for game developers, far from it. I just feel that the issues of "culturalist" ludology might be more difficult to use in the day-to-day work in game development. Of course, it would be beneficial if at least the producers, designers, and marketing people would be familiar with issues such as the cultural history of representation in games and game advertisements.

AJ: We both were involved in a study where psycho-physiological player responses (heart rate, skin conductance, etc.) were measured in relation to specific events in games such as *Tetris* and *Super Monkey Ball* [Ravaja04]. I believe ludology played a part in that study in the sense that we tried to analyze and distinguish those particular events as general patterns that exist in a wide array of games...you agree?

JH: Sure. I guess that this study was an excellent example of ludology as an attitude approach within the research itself. Both parties (we as ludologists and the other researchers as media psychologists) had the "ludological attitude" and the first results were cautiously optimistic about the relevance of this research to playtesting methods in general, even though the conclusions were not done with proper ludological rigor. However, in the later phases of the study we are starting to look at how this attitude can be expanded to making the method available and accessible also to the developers by automating the now cumbersome testing

methods. I strongly believe that the results of this kind of research can, in the end, validate and guide otherwise intuitive design choices by making explicit the patterns of player responses to different gameplay structures. In conclusion, the study confirmed, to certain extent, our initial hypothesis that a ludological approach can produce results that are useful to game developers, and I think that is, or at least should be, one of the drivers for ludology: to provide research results to be able to make better games!

AJ: True! In general, I believe ludology as an attitude tries to question the tug-of-war between theory and practice by trying to show that the ends of the rope, so to speak, are not necessarily clearly demarcated in the first place. Also, why won't we ask, "How does practice inform theory" for a change? This is where ludology and design research are able to provide examples and answers, and compete on both ends of the rope!

Summary

Ludology is an attitude toward game design and development that is driven by a need to understand games in general terms. Ludology finds practical applications both in academic studies of games, and in developing formal methods for game design. The generic nature of ludological attitude means that it is interested in learning and developing interdisciplinary methods for making better games: ludologists want to learn from psychology, architecture, play theory, design theory, information theory, semiotics, rhetoric, and so forth, and adapt them for the purposes of game analysis and development. Ludological attitude can also point the way for finding common vocabularies and practices for game scholars and developers, even though there doesn't need to be a division between "thinkers" and "doers." Rather, it is the ludological attitude that builds bridges between the two, with methods such as Formal Abstract Design Tools, Game Design Patterns, and Meaningful Play presenting concrete ways of how to build them.

Exercises

1. What is ludological attitude? Describe at least four different dimensions of ludology as an attitude.
2. Select one of the approaches listed in the *Tools, Methods, and Models* section and describe how it could be used in a real-life game development project. It is recommended that you go through the source material in more detail than is done in the chapter itself.
3. What are the perceived benefits of ludology for game development? What issues would hinder using ludological approaches in game development? Make a short pros and cons analysis of ludology for game developers.
4. Give concrete examples of the three key areas of design research as applied to game development.

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