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Game Design as Gameplay

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To *Papi*, my beloved grandfather[1]

for the everlasting memories of driving around on his tractor while working together in the forest, watching “Der Alte” or “Derrick” every friday night and playing a few rounds of chess every weekend, as well as sledging uphill winched up behind his jeep during the winter months.

1 Dipl.-Ing. Peter Mautner Markhof (* 2.10.1923 – † 14.2.1997).
The image shows the Mautner Markhof family crest conferred 14.5.1872

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Kurzfassung

Der Erfolg von Videospielen, die dem Spieler erlauben neue Welten, Regeln oder Lösungen zu erschaffen, anstatt nur einfach das Ziel zu erreichen zeigen, dass der jetzige Stand der Spielwissenschaft nicht ausreicht die dahinterstehenden Mechaniken und Dynamiken zu beschreiben. In dieser Diplomarbeit identifizieren und untersuchen wir daher die Features, Mechaniken und Dynamiken die dafür sorgen, dass Aufgaben die bisher von Spieldesignern ausgeführt wurden, als Spielelement verwendet werden können. Um das zu erreichen vergleichen wir die bisherige Spielliteratur, den Einfluss und die Auswirkungen von sozialen Interaktionsmöglichkeiten, und die Analyse von bisher erschienenen Spielen mit Game Design as Gameplay Elementen. Währenddessen entwicklen wir einen eigenen explorativen Spielprototypen. Aufbauend darauf präsentieren wir Ansätze, Regeln und Zusammenhänge wie Game Design as Gameplay funktioniert und genutzt werden kann.

Schlagwörter

Game design, gameplay, game mechanics, game dynamics, game features, social interaction, game types, meta games, games, prototype

Abstract

The recent success of video games that focus on creating content, rules and new solutions instead of just playing-through them reveal that the current research on game design and theory needs to be adapted. The mechanics behind these games are yet unknown territory. In our thesis we identify and analyse game features, mechanics and dynamics that transform the process of creating the content and rules of a game into a series of player's challenges. We provide an overview and insight how game design elements can be used as gameplay by comparing traditional game literature, discussing the influence and impact of social interaction features, and reviewing game design as gameplay games while developing an explorative game prototype. Finally we propose some first theorems and rules about games and mechanics that focus on creating rather than consuming.

Keywords

Game design, gameplay, game mechanics, game dynamics, game features, social interaction, game types, meta games, games, prototype

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Chapter 1

Introduction

No matter how much video games have evolved and changed from the first popular arcade games like *Pong*[2] or a few years later *Pac-Man*[3], to the latest AAA-titles[4] running on your console or PC, two things always remained the same: successful video games rely on good game design and great gameplay.

Graphics went from two dimensions to three dimensions, game worlds got more complex and detailed, new genres were added, invented and mixed, complex physic engines and online features opened up new possibilities but it is, and was, the game design that meshes all these things together to a fun and remarkable player's gameplay experience.

This also shows the recent success of another kind of games. Games that diminish the border between game design and gameplay. That unite these both. Games that focus on creating content, rules and new solutions rather than just playing-through them. Although their kind is not new in any way, they became more popular nowadays and with the recent spotlight onto them it is obvious that some already well discussed game mechanics and dynamics need to be re-reviewed while some new are awaiting to be explored.

But before we can expand on the problem and challenge of this master thesis we need to set a valid thesis definitions for game design and gameplay.

2 Pong: an arcade game released 1972 by Atari, http://en.wikipedia.org/wiki/Pong
3 Pac-Man: an arcade game released 1980 by Namco, http://en.wikipedia.org/wiki/Pac-Man
4 AAA-title: describes a game with high value assets comparable to a blockbuster movie

1.1 Game Design

There are many different definitions of game design. One reason for that is that game design includes many fields and aspects like world design, system design and level design to name only a few. For this work we have picked up a definition by Brenda Brathwaite and Ian Schreiber from their excellent book *Challenges for Game Designers*:

> *"Game design is the process of creating the content and rules of a game."(2008, p. 2)*

This definition includes all kinds of designs that are important to create a game. It doesn't put any emphasis on for example level design over story design.

1.2 Gameplay

As with game design there are multiple definitions of gameplay. Generally gameplay can be described as everything a player experiences during gaming and evokes any kind of emotional reaction. So controls influence the gameplay as well as good graphics and artwork or a fantastic story. In addition we use a second definition for this thesis:

> *"Gameplay is a one or more casually linked series of challenges in a simulated environment."(Rollings & Adams, 2003, p. 200)*

So any playable tasks and challenges in a game world are considered gameplay, even if they are not required to finish the game.

1.3 Game Design as Gameplay

So game design as gameplay is about turning tasks that are usually accomplished by a game designer, prior to the game release, to the player's side. In other words it describes the transformation from typical game design tasks into some playable challenges.

> Transforming the process of creating content and rules of a game into a series of player‘s challenges

If game design is about creating, gameplay is traditionally about consuming. Consuming the content and rules a game designer creates. However game design as gameplay changes this tradition and puts the player into a more proactive role as part time game designer. The player becomes a game designer in a virtual sandbox, the game. With the definitions of the two terms above game design as gameplay can now be defined as transforming the process of creating the content and rules of a game into a series of player's challenges. The player doesn't replace the game designer, but some typical design work are put into the player's hand as part of the game. This work comes without the frustration and anger of programming while the fun of creating and creativity is preserved.

1.4 Purpose and Outline

Many papers have been written about game design in all facets. The same can be said about gameplay. However there is still room that hasn't been touched and needs to be explored and discussed. Although it could be argued that the current research is also valid for games with game design as gameplay elements there is something new in them. Something that makes them special, something that exceeds the boundaries of the current definitions and state of the art.

So the focus and purpose of our thesis is as follows:

- An overview and analysis of game features, mechanics and dynamics that support the transformation from game design to gameplay challenges. Surprisingly this hasn't been done before.
- New insight how game design elements can be used as gameplay
- A review about the influence of social features on such game mechanics and dynamics
- A list of guidelines and rules to create games that focus on creating rather than consuming.

- The development of an explorative game prototype to not only gather new inputs for our research but also to demonstrate some of the presented propositions.

To sum up we want to shed some new light on how we can adapt game design elements for new gameplay directions.

After this short introduction we are starting with a more indepth briefing about our thesis goals(*Chapter 2*), including a list of all the questions we would like to answer. We present our testing and research setup, as well as possible problems we may face.

We continue with the first development steps of our prototype(*Chapter 3*), which progess will be covered throughout the entire thesis.

To profound our undertaking we review some existing game design theory and literature(*Chapter 4*), with a special focus on different game mechanics and dynamics. If you are new to the topic, or feel yet uncomfortable with it, you might want to read this chapter before our detailed study design description.

After summarizing related game design theory we do a design analysis of our prototype and report about our second play session(*Chapter 5*).

Most modern games feature some kind of online connectivity. It will be interesting to see how this wide range of possible social interactions influence and enhance some of the presented game design elements(*Chapter 6*). But we are also looking at some traditional social features like local cooperative play.

Once the theory is covered we examine old and new games that we think feature some remarkable game design as gameplay elements(*Chapter 7*). After their features, storyline, and gameplay elements are briefly separated, we further break the games apart into their mechanics and dynamics for analysis. For completion we are also reading through their reviews if some of the elements we are looking for have been mentioned noteworthy.

Now that the theory, online features and games are analysed, it's time present you our final version of our game prototype(*Chapter 8*) and share our results and discussion with you(*Chapter 9*).

If you are busy you might want to jump directly to our conclusions. The very essence of our thesis, which may opens up some new perspectives how you can use game design as gameplay for your next project(*Chapter 10*).

Last but not least we share some personal experiences we made during our research and add some follow up ideas to this thesis(*Chapter 11*).

1.5 The Prototype

To illustrate and do some hands on work we develop an explorative game prototype to complete and demonstrate the claims we made during our work. The game will be developed concurrently to the theory. Although we are mainly interested in reusable general ideas and theorems we also documentate a few parts of the development process throughout the thesis, including discussions with test players, game rules, done errors and dead ends, that contribute and are important to the end result.

Chapter 2

The Challenge

Now that you have a brief overview about our thesis(*Chapter 1*) its time to talk about the details, including the questions we would like to answer(*2.1*), our solution(*2.2*), possible problems(*2.3*), followed up by the first game development steps of our game prototype(*Chapter 3*).

2.1 The Quest

As our first task we had to understand what is game design as gameplay and created a definition in the paper's introduction:

> Transforming the process of creating content and rules of a game into a series of player‘s challenges

To elaborate what game design as gameplay does, and how can we create game design as gameplay we need to focus on four major areas:

1. What is the state of the art?

- What is a game mechanic and dynamic?

- What kind of mechanics and dynamics exist?
- What are meta games?

2. What social features can enhance game design as gameplay?

- What social features exist?
- What influence does social features have on game mechanics and dynamics?
- What social feedback mechanics exist?

3. What games already feature game design as gameplay elements?

- Which features, mechanics and dynamics make these games special?
- What can the player change, adjust and influence?
- Which skills are required to do so?
- What game design parts are shifted to the player's side?
- How important are these parts for the gameplay?
- What features, mechanics and dynamics are required to beat the game?
- Which meta games are played?

4. How can you create game design as gameplay?

- What kind of game mechanics and dynamics support the transformation from game design to gameplay challenges?
- How does these mechanics and dynamics achieve this?
- What differences exist between these mechanics and dynamics and their traditional counterparts?

- How can these mechanics and dynamics be mixed and used together?

2.2 Our Solution

To understand what game design as gameplay does we first have to understand what is game design, what social features exist and how we can use them. To actually analyse game design as gameplay we have to look at some real world examples, in other words, games. With the knowledge about game design and social features we can break them apart to see what makes them so special, what are the differences compared to other games, and how can we reproduce similar results. Further we hope to find different implementations and degrees of game design as gameplay so we can order and categorize these games, and consequently are able to define guidelines and rules to create such games. So our solution contains the following steps:

- Summarize and analyse related game design literature
- List and describe the most popular on- and offline social features.
- Break down and analyse features, mechanics and dynamics from a list of representive video games
- Examine and compare the previous findings with related professional video game reviews
- Compare the game qualities with the reviewed literature
- Review how actual players received the different features by studying user game reviews and interviews
- Group the reviewed video games by usage and implementation of different game design as gameplay elements
- Create an explorative prototype to demonstrate, understand and gather new ideas how game design as gameplay works and can be used

2.3 Problems

One of the problems we may face is that not a single paper[5] has been dedicated to game design as gameplay yet. As a consequence we have to keep focused what we want to achieve with this thesis and not loose ourselves in side quests. So we may have to leave some questions unanswered. We may also have troubles to find suitable names and definitions for undiscovered game mechanics and dynamics. Another maybe is the question if we are really going to discover new game elements or if the reviewed elements are only some old ones in new coatings.

In regard to our development of a game prototype we have to be careful not to interfere with the results of our research and vice versa. In the best case the prototype should deliver new inputs for our research and demonstrate our propositions. So it is important to develop and write the research timewise closely together.

Technically speaking we have to take care that the prototype doesn't get too complex and eats up our resources. So the prototype should stay simple and just get its job done.

5 We have used the ACM digital library, http://portal.a3cm.org, and IEEE-Explore, http://ieeexplore.ieee.org, as our main resource for information, related papers and theses.

Chapter 3

Game Prototype

To support our research we develop a game prototype. Principally there are three different types of prototypes that can be characterised as explorative, experimental, and evolutionary. The first one helps to explore the requirements together with the user, the experimental prototype tries to determine whether the planned system will be adequate and acceptable when finished, while the last one will be improved and worked upon until the prototype evolves into a finsihed system(*Soegaard, 2010*).

Our prototype should complete the following tasks:

- Explore and demonstrate the discussed game elements
- Evaluate the relation between different game features, mechanics and dynamics
- Evaluate the relation between game features, social features and the user
- Reveil the user's perception of different game elements

We decided that the explorative design of a prototype fits best to our methodology, and allows us to do some quick and informal testing.

> *"An explorative prototype is used to explore system requirements in cooperation with users and can, as such, be seen as a communication medium and facilitator between user and designer in the same way as a mock-up."(Soegaard, 2010, para. 2)*

Now that the purpose of our prototype has been set, we can finally start to work on our game's concept.

3.1 Concepts

After an intense brainstorming we had ten ideas for our game prototype. From puzzle games, to shooters, to race games. Some game ideas were completely new while others were just variations of some well known games with new game design as gameplay elements. To decide which idea should be realized we defined some additional tasks and requirements for our prototype:

- The game should also appeal to a younger audience, starting from 10 years and above
- The game should not only integrate some game design as gameplay elements but also offer multiple possibilities to integrate social features
- The basic idea should be simple and easy to understand, so anyone can jump right into it
- It should appeal to casual gamers. So the length of one mission, level or similar shouldn't last longer than 10 minutes.
- Bonus: the core mechanics support/can be realized with touch controls

Now we could rule out about 50 percent of our ideas. Among those remaining, we decided to pick up the idea that has the simplest core mechanic, is quickly and easy to realize, but also offers many possibilities to extend the concept later. It's name: *The Schatzmeister*[6].

6 Schatzmeister is german and means "treasurer". A german name was chosen to stand out from the competition in the case the prototype might become a full fledged game someday.

3.2 The Schatzmeister

The concept behind *The Schatzmeister* follows *Sony*'s advertised tagline “Play, Create, Share” that was introduced with the successful game *LittleBigPlanet*[7] for the *Playstation 3*(PS3):

> Get as much gold as possible by luring other players into your selfcreated mines, full of dangerous traps, while sneaking through other player's mines to find and steal their hidden treasures.

To get your first ounce of gold you have to explore other player's mines and find their hidden treasure without being hurt to much by their traps. As soon as you have enough gold you can buy your own property, a mine. You place bought traps in strategic locations and hide your treasure, the gold other players can earn if they find it, inbetween. If they fail you get some gold from them. With more gold you can buy larger mines, different kinds of traps, and also increase the value of your hidden treasures, so more people are interested to find your treasure, but of course they are more dangerous too. On the other hand if your treasure has been discovered too often your mine will deplete.

The gameplay is a mix of *Minesweeper*[8], *Battleships*[9] and *Memory*[10]. You move your character or group of treasure hunters carefully around a dark mine. You can't see any traps, but you may get clues if some traps are around you(cf. seeing the amount of bombs around you in *Minesweeper*), you have to guess where the treasure could be hidden(cf. finding the enemy's ships in *Battleships*), while remembering your chosen path(cf. *Memory*), because you only have a limited field of view.

So far this is the basic concept of our prototype without any gameplay details. To see if this concept can work out and be a fun game we develop a paper based prototype in the form of a board game.

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7 LittleBigPlanet is a jump and run game released in 2008, where players can create and share levels with each other. Right now over 3 million user levels have been generated. http://www.littlebigplanet.com

8 Minesweeper is a logic game invented in the sixties, where you have to disarm a minefield without detonating any mine. http://en.wikipedia.org/wiki/Minesweeper_(computer_game)

9 Battleships is a logic puzzle game where you have find and sink the enemy fleet. http://en.wikipedia.org/wiki/Battleship_(puzzle)

10 Memory is a game where you have to find pairs of matching cards. Also known as concentration. http://en.wikipedia.org/wiki/Concentration_(game)

3.3 Paper Prototype

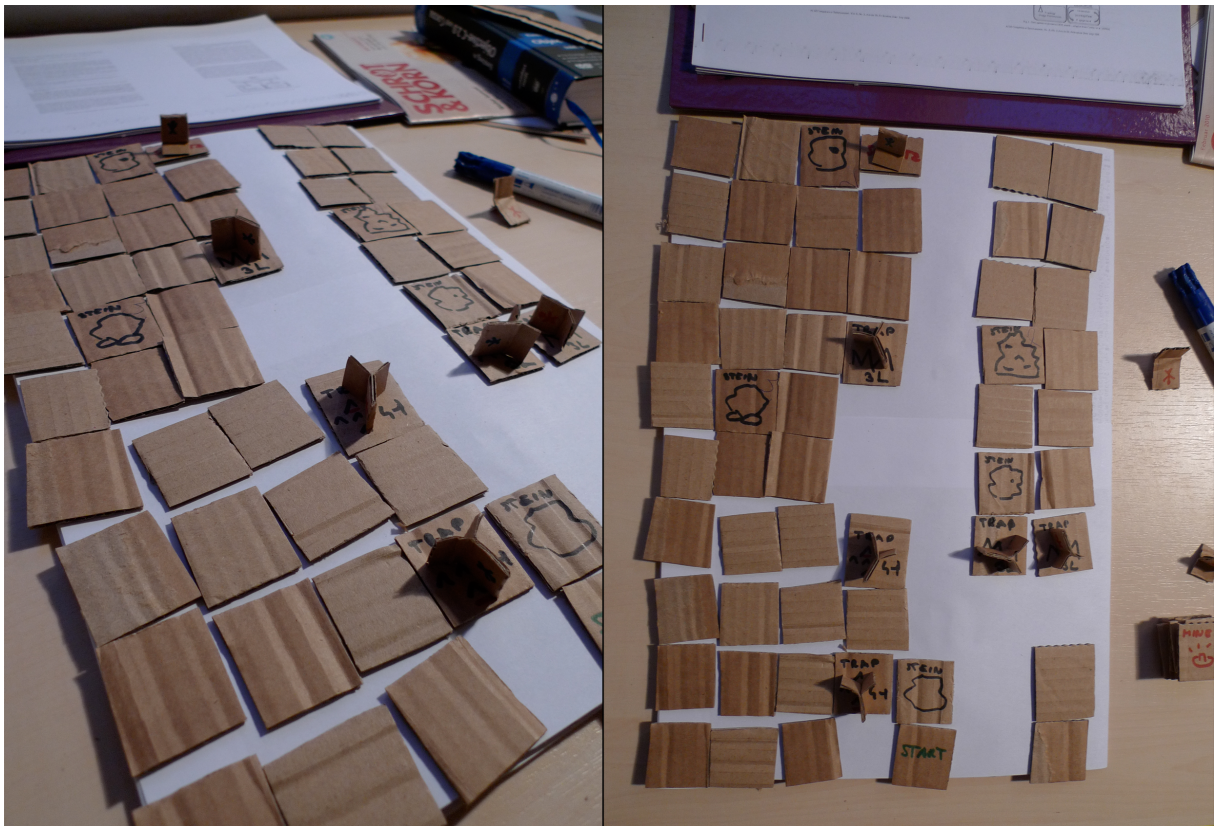

Figure 3.1: The first version of our paper prototype. Some tiles have already been discovered while the majority of the map is still unknown. The different player characters, the discovered path, and some triggered traps can be easily identified.

A paper prototype is a quick, inexpensive and easy method to test our concept at a very early stage of our thesis. It helps us to see what basic game mechanics we can use, play some first games with users to gain feedback, and improve the concept.

Our first paper prototype should mimic a mine set up with a few different kinds of traps. The playing field is build like a tile map[11]. It is subdivided into squares of the same size. These squares are blank on one side and have painted their item function on the other side. For our first play session(*3.4*) we added one start item, one hidden treasure, five different kinds of traps, subdivided into persisting and one-time traps, blank items, that represent the

11 Tile Map: http://en.wikipedia.org/wiki/Tile_Map

walkable tiles, and items that block the path. To represent the players we have added three game pawns per user.

The prototype can be played alone, emulating a computer generated level, or together with up to five players, one building the mine, while four players are trying to find the hidden treasure. As optional items we add a dice and a deck of cards to play around with the game rules and setup.

3.4 First Play Session

For the first hands-on session of our paper prototype we did a playtest with four players. The complete session took approximately three hours. One week later we did another testing with five players(same team with one new player) for a few hours, where we refined and improved upon the final setup and rules of our first session. In the end we agreed on this version:

1. Setup

- In the first round each player gets 13 units of gold, in all subsequent rounds players continue with the previously earned gold.
- The first treasurer will be chosen by throwing the highest number. In all following rounds the finder of the hidden treasure, or if all treasure hunters fail, the treasurer, will build the next mine.
- The treasurer has to hide the gold somewhere in the last third of the playing field. He can choose three traps and buy additional traps with one gold unit each.
- All traps can be freely placed, but there must be at least one possible path to the treasure. So only one-time traps are allowed to be placed on that path.
- If all tiles are placed they are turned around so the blank side is on top, except the starting tile and may some block tiles.

- Once the mine has been created the treasure hunters can start to play and place their characters on the starting field.

2. Rules

- Before a treasure hunter can move he has to throw the dice. Whenever someone throws a “6” he can move twice.
- All own characters can be moved one connected tile north, east, south, or west. You can also continue to move to tiles connected to other hunter's characters. The explored tile will be removed from the playing field as long as it isn't a persisting trap or block tile. In that case the tiles stays visible for all.
- Only one hunter can stay on a tile at once.
- If a hunter moves on a block tile he has to pause for one round.
- If a hunter triggers a trap he loses the moved character and also has to pause for one round.
- If a hunter has lost all his characters he can buy another character for two gold units. One unit goes directly to the treasurer and the other one will be added to the hidden treasure.
- A player is game over as soon as he has lost all his characters and gold units.

3. Goals

- The winner of a single round is the treasure hunter who finds the treasure first. The treasurer wins if no one finds the treasure or if he earned more money than he invested in building the mine.
- The overall winner is the player with the highest amount of gold after an agreed number of rounds.

Figure 3.2: The final version of our paper prototype. A grid has been added for exact tile positioning. On the left you can see the start of a round with two hunters. On the right you can see an almost finished game. Only a few tiles are left where the treasure could be hidden.

The use of the paper prototype was a full success. All users enjoyed the sessions. The game made everybody laugh while we gained a lot of valuable information about the end user's experience as well as behaviour. The most important things we learned:

- The treasurer's experienced satisfaction while observing how one treasure hunter after the other triggers a well placed trap played a key role in the fun process. His comments and reactions spured everybody on to find his treasure.
- The treasurer's spitefulness was even more increased if he knew the just trapped hunter well.
- As soon as the location of the treasure could be nearly localized by the hunters all users moved more strategically.
- Due the rule that a hunter can place his character to a connected tile from another hunter often the treasure was stolen in the very last

second of a round. This dynamic also added a lot to the overall experience.

- We couldn't find the right balancing between the cost of a character and traps and the gold units in the hidden treasure. The possibilities with the deck of cards, representing the gold units, were too limited.
- The creation of a mine took around 3 – 5 minutes, while the actual hunters took approximately 7 – 10 minutes to find the treasure, depending on the number of hunters. The game duration was just right from the beginning.
- The rule to move twice when someone throws a “6” added the right amount of luck to the game.

To sum up during our play sessions the players suggested many ideas, helped us to improve the concept, and also proposed a few features for the computer version of the game. In the end we had enough feedback and impressions to start working on the real thing.

Chapter 4

Everything Game Design

Game Design is a vast field of different categories. Even books with hundreds of pages have difficulties to sum up the whole picture. As a consequence we want to focus on some selected topics: the types of design(*4.1*), low level game design(*4.2*), game mechanics(*4.3*) and dynamics(*4.4*). We also want to roughly cover meta games(*4.5*) and game features(*4.6*).

4.1 Types of Game Design

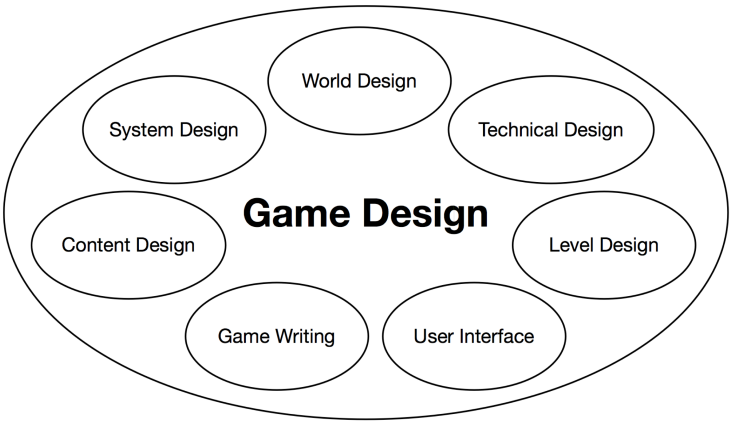

Figure 4.1: Types of game design

Game design is not just game design. If you are looking for game design job offers[12] there are a few different kinds of game designers for example lead, system, level, and content designers. All jobs represent one or more parts of game design. The following list, based on the article *Types of Designers*(*Brathwaite, 2007*), gives you a rough overview. The descriptions are far from being complete but are more than enough for our work.

- **World Design** sets the backstory, setting and theme. It describes what a game is about and may influence all other design parts.
- **System Design** is about creating the rules of a game. For example it is about character creation and leveling or weapon behaviours.
- **Technical Design** is responsible to realize the gameplay elements and work out the game balance.
- **Content Design** is about creating all the items and creatures used within a game. It may takes care about the ingame narratives as well, like *NPC*[13] dialogs(cf. to *Game Writing*).
- **Level Design** is about creating and crafting the levels of a game. That includes the overall map layout, item placements, hidden spots, and hot spots. Level Design should by itself also guide the player from start to finish.
- **User Interface(UI) Design** should give the user feedback about all status updates. It gives the player information about for example the characters health, amount of ammunition, mission goals and the map position.
- **Game Writing** does the dialogs, mission briefings and all other required text phrases of a game.

12 Game Jobs: e.g. http://www.gamasutra.com/jobs/

13 NPC stands for *non-player character* and describes a person, creature within a game that is controlled by the computer

To improve our analysis of what design types a players can typically change or influence in game design as gameplay games we further want to adapt Ben Cousinss theory about *Low Level Game Design*.

4.2 Low Level Game Design

Ben Cousins(*2005*) suggests an atom model, that can be used for measurements and building a hierarchy for an alternative analytical method. The loop between the player's input and the game's output can be used to describe the level of game design. The faster the loop is completed the lower the level is. The fastest possible loop can be seen as game atom.

For game analysis you can now use these atoms to measure different variables like time, distance, density or area to keep track of things that are easy to miss or to get wrong.

Finally you can create hierarchies to organise features or to aid sheduling.

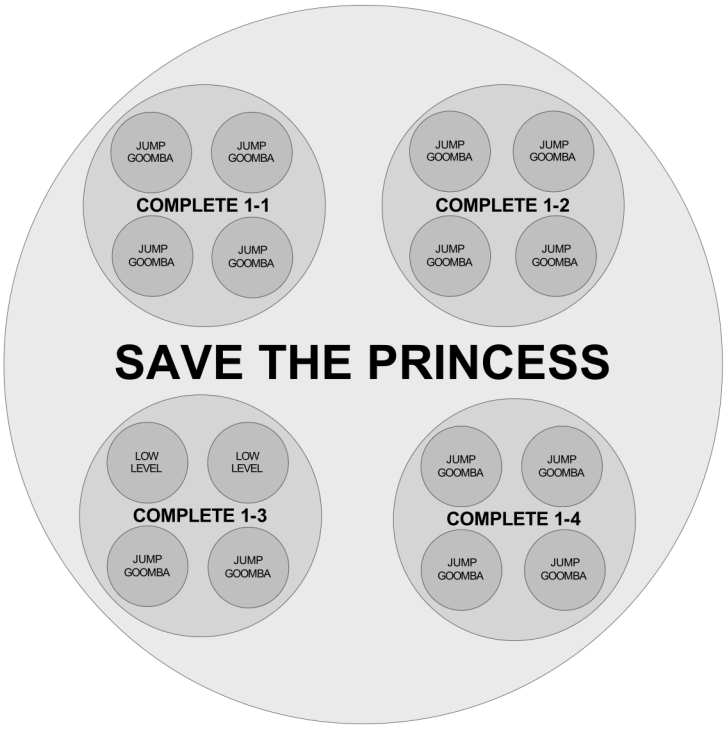

Figure 4.2: Showing three levels of game design for a typical jump and run game: the highest level is the mission goal to save the princess. This can be accomplished by finishing the four missions(medium level). To reach the end of each mission the player has to perform a lot of jumping. The lowest level of game design. (*Cousins, 2005, p. 17*)

4.3 Game Mechanics

Game Mechanics are the underlying rules of a game. They tell you **what** you can do, **when** you can do it, and **how** you can do it. Without a mechanic a game can't exist. A simple game mechanic for example is “jumping” in a video game.

Some more game mechanic definitions:

> *“Mechanics are the various actions, behaviors and control mechanisms afforded to the player within a game context.” (Hunicke et al., 2004)*

> *“Game mechanics are rule based systems / simulations that facilitate and encourage a user to explore and learn the properties of their possibility space through the use of feedback mechanisms.” (Danc, 2006, para. 3)*

Danc says that whenever you perform an action it causes an effect within the game world. You receive these changes as feedback and can adjust your next action accordingly.

To give you an overview what mechanics exist, in terms of being thoroughly examined, we follow Brathwaite and Schreiber(*2008*) and classify them by usage(*4.3.1*) and behaviour(*Mechanics of Chance, Mechanics of Skill, Twitch Mechanics*) instead of listing all possible mechanics in one huge list. Especially because literature that does the latter[14] sometimes has difficulties to seperate mechanics from dynamics and treats both as the same, which is not the case as we explain in *4.4*.

4.3.1 Game Mechanic Usage

Generally game mechanics can be usually divided into five classes. These classes describe common situations where mechanics are used(*Brathwaite & Schreiber, 2008*).

- **Setup**: There must be at least one rule to begin the game. Compare to *Setup* in 3.4.

14 Game mechanic lists: e.g. http://techcrunch.com/2010/08/25/scvngr-game-mechanics or http://gamification.org/wiki/Game_Mechanics

- **Victory Conditions** are rules that describe how you win a game, mission, level or achievement. There can be none or any victory conditions. Sometimes the victory condition is defined personally by the mastery of certain gameplay situations not an explicit rule set in game. For example unfinite games like the original *Tetris*[15] *GameBoy* version have no victory condition in one game mode. An unlimited amount of blocks will fall down until you are game over. This is only a fail condition but your personal victory condition is to stay alive as long as possible, earn more points and reach a higher level than ever before. Compare to *Goals* in 3.4.
- **Progression of Play** defines who starts to move and who is the next player. Basically it states if the game is turn-based or realtime and how you proceed.
- **Player actions** are some of the most important rules. They tell you what actions you can do and what consequences have those actions on the game state.
- **Definition of game view(s)**: Mechanics control what information each player knows at any given time. For example seeing your avatars health bar or partially reveiling the fog of war in an real-time strategy game(RTS).

4.3.2 Mechanics of Chance

Mechanics of chance are mechanisms that add randomness to games. Randomness is an important factor to keep games fun, because the outcome of a game depends not only on pure skills. Mechanics of chance limit your influence on gameplay. For board games typical mechanics are to roll a dice. Each number has the same probability. So to reach the home in a

15 Tetris: http://en.wikipedia.org/wiki/Tetris

game of *Mensch-ärgere-dich-nicht*[16] often depends on luck not skills. Some examples for mechanics of chance:

- **Disasters**: In simulation games like *Sim City*[17] randomly occuring disasters may set your progress back by destroying whole parts of your city. To rebuild these parts you might have to rethink your previous strategy.
- **Hidden Information**: Secret non-random information is still random from the player's perspective. For example *Prince of Persia*'s[18] health and poision items look exactly the same. You have to take the item to know if it gives you some health back or takes some away. However because the items are always on the same positions you can at least remember them if you have to take a second try.
- **Pseudo-Random Number Generators**: In many games non-mission-critical items are randomly placed on the map, like diamonds hidden under grass in *The Legend of Zelda: Twilight Princess*[19]. In *Sid Meier's Civilization*[20] even complete game worlds/maps are randomly generated.

4.3.3 Mechanics of Skill

Contrary to mechanics of chance you are in full control of mechanics of skill. You decide what happens next. Mechanics of skill are also mechanics of experience. You learn the game patterns and take advantage from your wealth of experience. You create your own strategy and tactics to beat the game. Game designers can take advantage of a few mechanisms to push this behaviour, for example:

16 Mensch-ärgere-dich-nicht: http://en.wikipedia.org/wiki/Mensch_ärgere_dich_nicht
17 Sim City is a city-building simulation game designed by Will Wright 1989. http://en.wikipedia.org/wiki/Sim_City
18 Prince of Persia: http://en.wikipedia.org/wiki/Prince_of_Persia_(1989_video_game)
19 The Legend of Zelda: Twilight Princess: http://en.wikipedia.org/wiki/Twilight_Princess
20 Sid Meier's Civilization: http://www.mobygames.com/game/sid-meiers-civilization

- **Purchases**: You have limited resources, so do you want to buy item A or item B?
- **Decisions**: Do you want to develop tech tree A or B? Is it better to build industry or social buildings first?
- **Special Abilities**: Do you save the *Mario Kart*[21] power up for later use to defend your rank, or is it better to use it now to gain some ranks?
- **Trading and Negotiations**: Which clan offers you more power and responsibility? What can you offer them in return?

4.3.4 Twitch Mechanics

Twitch mechanics present challenges within a game and therefore also benefit a lot from your experience and skills. However contrary to mechanics of skill they rely on fast thinking, dexterity and reaction speed. Arcade games are typical twitch games, where you become better and better everytime you play it, until you achieve mastery. There are five common categories you can use(*Brathwaite & Schreiber, 2008*):

- **Pure Speed**: Are mechanics that require you to perform an action in a minimum of time. Sometimes also known as button mashing like in *Track & Field*[22]. Where in most categories your power or run speed depends on how fast you press repeatedly and alternately the action buttons.
- **Timing**: Is a mechanism where you have to perform an action at a set moment. *Guitar Hero*[23] is a typcial game that requires timing. Also *Mario*'s[24] powerful triple jump can only be done with the right timing.
- **Precision**: One category where precision matters are for example first-person shooters.

21 Mario Kart: http://en.wikipedia.org/wiki/Mario_Kart
22 Track & Field: http://en.wikipedia.org/wiki/Track_%26_Field_(arcade_game)
23 Guitar Hero: http://en.wikipedia.org/wiki/Guitar_Hero
24 Mario Series: http://en.wikipedia.org/wiki/Mario_(series)

- **Avoidance** describes all mechanisms where you have to dodge enemies, obstacles, traps, and many other harmful items. Almost any jump and run game has some kind of avoidance mechanic.
- **Time Pressure** forces you to reach the goal or perform a series of actions within a set time. It limits your time to find the hidden stars in *Mario* games or forces you to run as fast as possible through that open door in *Tomb Raider*[25] before it closes again.

4.4 Game Dynamics

> *"A "game dynamic" is the pattern of play that comes from the mechanics once they're set in motion by players"(Brathwaite & Schreiber, 2008, p. 30)*

So game dynamics evolve from game mechanics put in action by you and other players. As soon as you start to play by the rules, alias the game mechanics, you will behave according to them. This behaviour however hasn't been set in stone and can't always be planned. Sometimes you may use the game mechanic in a, from the designer's view, unintended way causing a new dynamic. This is due the fact that mechanics are hardcoded into the game while dynamics come into being each time you start a new game. Last but not least it is important to note that different game mechanics can cause the same dynamics.

For our analysis we focus on game dynamics that often appear in games(*Brathwaite & Schreiber, 2008*):

- **Territoral Acquisition**: Your goal is to capture or buy territorial to win the game. Often strategy games feature this dynamic but also some first-person shooters when you have to conquer key points. These modes are often known as "Domination", "Conquest", or "King of the Hill".

25 Tomb Raider: http://en.wikipedia.org/wiki/Tomb_Raider#Video_games

- **Discovery**: Games often hide secret items in their game worlds to encourage players to explore them. For example *Mario* jump and runs hide non mission critical items in secret spots.
- **Prediction**: is a dynamic that allows you to guess the outcome of an action and rewards if you are right. A typical child play is *Rock-Paper-Scissor* that has this dynamic. Some strategy games allow you to predict what territory will the opponent attack next round so you can fortify your defenses. Another example are again first-person shooters. Usually there are two or three choke points in a map where you confront the other team. Once you know these points you can already fire your guns or grenades towards their direction. Although you don't see an enemy yet your chances are good to get some hits. This technique is also known as *prefire*.
- **Spatial Reasoning**: is a dynamic often used by puzzle games. In Tetris for example you do not only think about where to put the currently falling piece, but also what pieces you need, and what pieces might come next.
- **Survival**: Whenever your highest goal is to survive you are encountering a survival dynamic. Especially tower defense[26] games, where you have to defend waves after waves of enemies make use of this. Many games have survival as a secondary dynamic, but the primary dynamic is to make the most points, find the exit, or complete an objective.
- **Destruction**: Just destroy everything in sight. Our first experience with such a dynamic was playing *Rampage*[27] on a *Lynx*[28] handheld as a child, where you play one of four monsters and have to destroy whole

26 Tower Defense: http://en.wikipedia.org/wiki/Tower_defense
27 Rampage: http://en.wikipedia.org/wiki/Rampage_(arcade_game)
28 Lynx: a handheld game console released by Atari 1989 featuring some innovate features like a backlit colour display. http://en.wikipedia.org/wiki/Atari_Lynx

cities. Also some vehicle games are only about destroying opponents like *Destruction Derby*[29] or *Twisted Metal*[30]

- **Building**: is the total opposite of the dynamic before. You have to create and build worlds or cities, increase your character's level, or sometimes even help to grow your character as in the game *Katamari Damacy*[31]. Some well known games are *Sim City*, almost all role-playing games(RPG) but also games like *The Sims*[32] and *Tamagotchis*[33].
- **Collection**: is often used in games where you win if you are getting the most of a resource or in platformers where you have to collect stars, rings, or coins.
- **Chasing or Evading**: catch or escape. It describes the same dynamic kids experience by playing *Cops and Robbers*[34]. *Pac-Man* is a typical video game example.
- **Trading**: is a non-competitive dynamic where you trade your goods, cards, or items with other players. Some examples are *Animal Crossing*[35] or *Pokémon*[36]
- **Race to the End**: is a dynamic about for example being the first to cross the finish line or the first to achieve a certain level. Just be quicker than the rest. Almost all race games fall into this category.

29 Destruction Dery: a stock car like racing game where you received points for dashing other cars. http://en.wikipedia.org/wiki/Destruction_Derby
30 Twisted Metal: is a vehicular combat game originally released for the Playstation in 1995. http://en.wikipedia.org/wiki/Twisted_Metal
31 Katamari Damacy: http://en.wikipedia.org/wiki/Katamari_Damacy
32 The Sims: a life simulating game designed by Will Wright. http://en.wikipedia.org/wiki/The_Sims
33 Tamagotchi: is a pocket game about raising a Tamagotchi. http://en.wikipedia.org/wiki/Tamagotchi
34 Cops and Robbers: http://en.wikipedia.org/wiki/Tag_(game)
35 Animal Crossing: is an open-ended game where you are encouraged to participate in the daily life of a village. http://en.wikipedia.org/wiki/Animal_Crossing
36 Pokémon: is a role-playing game about capturing and training creatures called Pokémon. http://en.wikipedia.org/wiki/Pokémon_(video_game_series)

4.5 Meta Games

For our thesis we are using two different definitions what is metagaming.

> A meta game is a game that evolves from using a program.

To better understand what we mean we start with an example: it was and still is a game to have more followers on *Twitter*[37] than your friends. It's not only a show-off but also a game about prestige. It was probably never meant to be a game, but even some celebrities matched each other publically in a race who reaches one million followers first[38].

So meta games are games that are created around a program. Of course this application can also be a game. Often communities create their own leaderboards and stats websites for their favourite games to show who is the best player or clan. The participating players actually don't play this game only for the game's sake but also to progress on those websites.

This leads us straight to our second definition:

> *"Using out-of-game info or resources to affect in-game decisions."(Jo Kim, 2010, p. 3)*

As soon as you participate in such an out-of-game activity you might play the game differently, because you don't want to lose your rank in the leaderboard or want to waste your 100 percent accuracy stats.

Metagaming may also influence your style of play. For example if you know your opponent you already assume some decisions he gonna make and adjust your decisions accordingly. If you play a total stranger you can only use your in-game experience.

Sometimes also meta games evolve from unintended game dynamics like the *Warthog Jump*[39] in *Halo: Combat Evolved*[40]. Due a misuse of the in-game physics engine, players matched and recorded each other using explosives near their *Warthog* buggie to create the most spectacular movies of flying buggies instead of fighting aliens.

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37 Twitter: http://www.twitter.com

38 Race to one million followers: http://abcnews.go.com/Technology/CelebrityCafe/story?id=7351990&page=1

39 Warthog Jump: many movies can still be found at http://www.youtube.com/results?search_query=Warthog+jump&aq=f

40 Halo: Combat Evolved: is a first-person shooter released 2001. http://en.wikipedia.org/wiki/Halo:_Combat_Evolved

Meta games are bound to their mother game and so we can add:

Meta games can only exist if the program, they derived from, is still in use.

Different games can have the same types of meta games. These types can also be built right in a game. As a consequence we want to list some typical types of meta games.

4.5.1 Types of Meta Games

The following list is just an overview of some common meta games. Some of them can already be found in some games built-in as game feature. However if a game lacks these features they are often

- **Leaderboards and Rankings**: Keep track of your progress and compare your skills.
- **Stats**: Show how well you can handle different items.
- **Bugs**: Find and record game errors.
- **Secret Locations**: Discover an in-game location you normally can't go to or find some secret spots.
- **Video Montage**: Record your best or most fun performances.
- **Records and Achievements**: Show off your best kill streak, fastest racing lap, or whatever you have reached so far.

4.6 Game Features

Game features are the selling points of a game. A new game mechanic, or a new mix of game dynamics, and it will probably be mentioned on the game's feature list as some cool buzz words. Game features describe what makes a game stand out from the crowd. For our analysis it is interesting to see if the game design as gameplay elements are featured or not.

This gives us insight how the developers value and rate them. Is it a nice extra or is it the real thing?

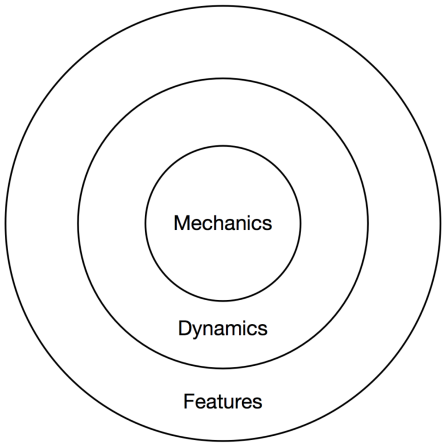

Figure 4.3: A game sliced into a plane. Game features represent the outer shell and are directly communicated to the player. The inner core are the mechanics which cause the surrounding game dynamics.

Chapter 5

Web Game Prototype

After our intense paper prototype sessions we started to develop a first web prototype, playable on any modern browser. After an analysis of the prototype's game design(*5.1*), we present you the currently implemented features and changes from our paper prototype(*5.2*), and close this progress report with the results of another play session(*5.3*).

5.1 Design Analysis

Now that we know a bit more about game design we can identify what presented mechanics and dynamics are already in use, and what types of design the player can change or influence.

Mechanics

- **Hidden Information (Chance)**: most tiles are hidden from the player at the beginning.
- **Random Tiles (Chance)**: in single player all tiles are currently randomly placed.
- **Decisions (Skill)**: you have to decide how many and what kind of traps you place on the map.

- **Purchases (Skill)**: decide between how many traps you buy and how much gold you gonna hide.
- **Avoidance (Twitch)**: avoid all tiles that damage you.

Mechanics from all three behaviour classes have been added. The mechanic of "purchases" is removed from our web game prototype because we haven't implemented a currency system yet. We concentrate full on the core gameplay of hiding and finding a treasure.

The above mechanics cause a few in-game dynamics:

- **Race to the End**: The first who reaches the treasure wins.
- **Building**: In multiplayer games you, as the treasurer, have to build a dangerous mine so nobody can find your treasure.
- **Prediction**: If you have played a few games against the same opponent you might know already his tactics and can predict where he gonna place his traps.
- **Discovery**: You are encouraged to explore the mine and find the treasure.

So far the game features a lot of interesting game dynamics, but to learn more about game design as gameplay elements we also have to take a look what types of game design(*4.1*) a player can currently affect:

- **Level Design**: You create your own mines. You define where to place the traps and treasure.
- **Technical Design**: You decide how many traps are challenging and how many are just impossible to master. It's up to you to find the right game balance.
- **System Design**: Especially in the current state of the prototype you, as treasurer, can define the rules what happens if you trigger a trap. You decide where players can move and where they have to stop.

At the moment you can also tune the technical and system design. These possibilities will be more limited once the prototype reaches a more mature state. Especially setup mechanics will be more controlled by the game so the player doesn't have to remember different rules for every mine. Also the currency system, once implemented, will help the game to keep the use of more dangerous traps balanced with a higher price tag compared to less effective traps. But let's focus on the current state of our prototype.

5.2 Status Quo

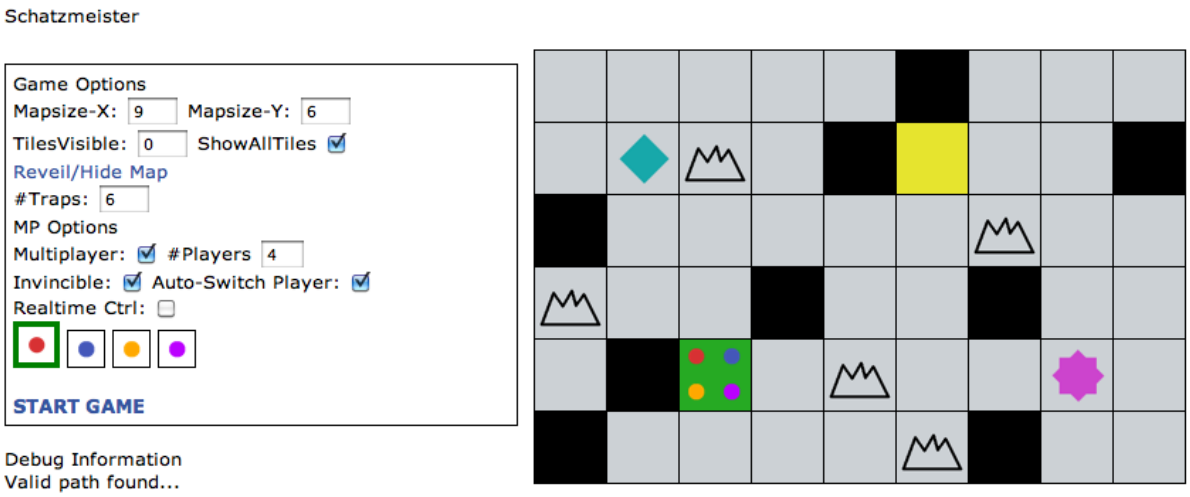

Figure 5.1: The final iteration of our web prototype II. You can see the start of a four player game on an unveiled computer generated map. The yellow tile is the hidden treasure.

The very first computer prototype is more or less a 1:1 conversion of our paper prototype. The current setup and features are:

- Single Player mode against random generated maps
- Multiplayer mode for up to 5 players, if one player is the treasurer
- Map Editor to create custom maps
- Simple graphic placeholder and user interface

Nevertheless we add some changes to the paper prototype to keep the first computer version flexible:

- There is no in-game currency yet.
- The map size is freely sizeable for single player matches.
- Only seven different map tiles: start, end, path, block, trap, and 2 special items that are walkable but don't have a set purpose
- In multiplayer games all players are invincible. Rules about lives are agreed at the beginning of each round and handled by the players.

The gameplay is the same as our paper prototype. The only change is that we don't use any currency system yet. So the whole game is primarly a race to the end dynamic. Also the traps are all single tiles. We removed all form shaped traps that span across multiple tiles like in the paper version. So the player has no clues if other traps are nearby. With this version we started our second play session.

5.3 Second Play Session

Once the web prototype was ready we did another four player test session. One player was new, while the rest already participated in the first session.

The first played round had only the simple purpose to get everybody familiar with the new setup and controls. After that we tried to play the game like the paper version but it was shockingly boring. Contrary to the loud laughter we remembered while playing the board version the room was filled with silence.

After another round with some rule tweaking we found the reason. The randomly generated maps were just not fun to play. One reason was that the traps were placed randomly and so they also were located on spots where no one would ever move on. The treasure was always hidden in the last third of the map as in the board game. So the risk to step on any trap was dramatically reduced and the players that took the direct path to the last third of the gamefield won most of the times. A fault in the random map generator. As a consequencee we skipped to play anymore random maps and switched to a "one creates a map and all other try to find and capture the treasure first" mode.

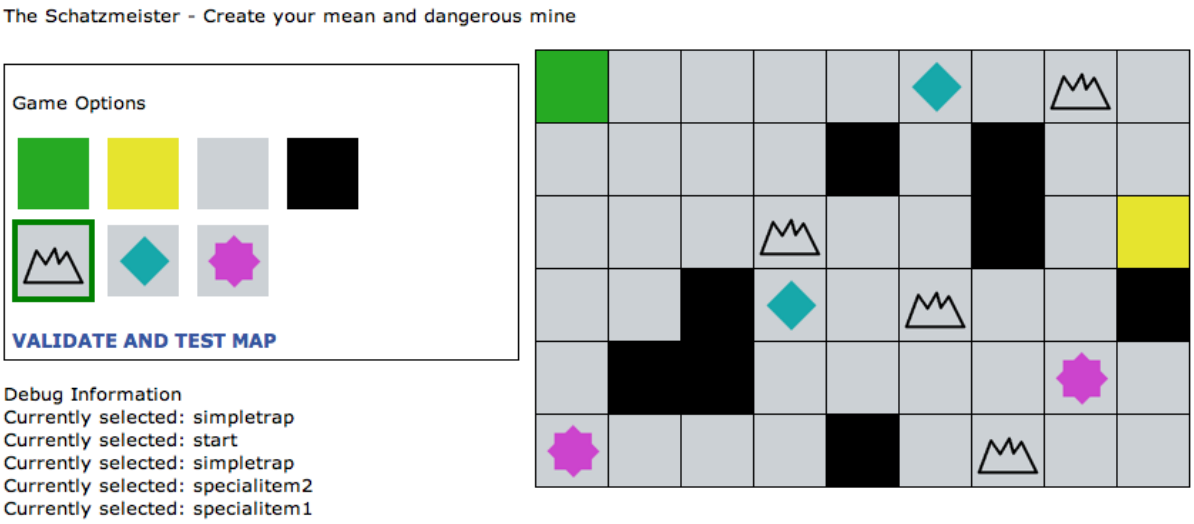

Figure 5.2: Our map editor. You can see all selectable tiles on the left and an almost finished map on the right. The validate and test map link on the left starts the map for a multiplayer game.

Finally we started to have fun again and we came up with many new ideas how to tweak the gameplay. The following rules were added to the final iteration of the web game prototype:

- The start and end location can be set anywhere on the map. This totally changed the way we played. Instead of going all into the same direction everyone went into another one.
- The two special items where split in bonus and malus items and often played an important part who won the round. If we moved onto a special item we either could move twice, had to pause a round, or were captured until another player moved onto the same tile type located somewhere else.
- The treasurer decided the use and functionality of the special items. Depending on the amount of traps and functionality of the special items we played with either three or four lives.
- Only the last two tiles of each player are visible. So some of us being worse in playing *Memory* often ran into the same trap twice, which caused a lot of malicious joy.

We played for approximately two hours, and a round typically lasted between 5 and 10 minutes as in our first play sessions. While we played a lot of ideas popped up for the final version and how to improve the single player version. Two players raised some doubts that without seeing other players moving into traps it won't much fun. Other ideas and concerns mentioned:

- We agreed that the start tile must consist of a few tiles or there must be a safe zone so the dungeon master doesn't set out traps around the start zone except for one free path.
- It is planned that for the final game a player has a kind of health/motivation meter which decreases when being trapped. Further one player suggested that every move you do also cost a little bit of motivation. Only the minimum steps required to reach the goal are free.
- If only a number of tiles are visible, some kind of fog of war, at least the block tiles should stay visible so you have some orientation points.
- Fog of war should be a purchaseable item for treasurers, while players can buy special abilities to keep X tiles visible.
- An achievement and reward system would greatly support the game setup and players progress to solve more difficult dungeons.

For the next version we gonna try to add some of these ideas. One thing we couldn't test in the second play session were the realtime controls as you can see in one of the screenshots above(*Figure 5.1*). We added this option, that changes the movement from turn-based to realtime, in the final iteration.

Chapter 6

Social Interaction

Social interaction describes all interactions between players of one game. It's a form of communication. Synchronic and asychronic. It describes the possibilities to share or compare an in-game experience or achievement with others. However with social interaction we are not refering to any social interaction solely between you and the game, like for example building a strong relationship between you and your avatar, which may causes you to change your in-game behaviour, like being more careful to protect the avatar.

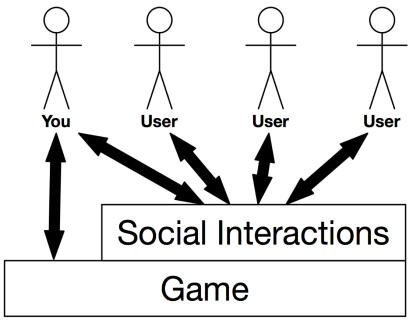

Figure 6.1: Social interactions. You can normally play a game without any social contacts. You send an input and get an output. You and other user can access your experiences via the social interaction layer. If you want to play with others you access the game via the social interaction layer that is on top of the game. Beside that any use is optional.

Although some literature might disagree we strongly believe that social interaction mechanisms are not game mechanics per se. We think social interaction is a mechanic of its

own. It's a layer interwoven with the game. Social interactions are often part of a game's feature list and may directly support and enhance game dynamics. They can also be found in meta games and gameplay but in almost any cases social interactions can be substracted from a game. The remaining core is still a playable game. Therefore we seperate social interactions from the game design chapter(*4*).

> Social interaction is sharing, comparing and discussing any in-game experience with other users.

On the following pages we want to present a wide range of social interaction possibilities as they are used in games nowadays, because we presume that they contribute to the recent success of games with game design as gameplay elements.

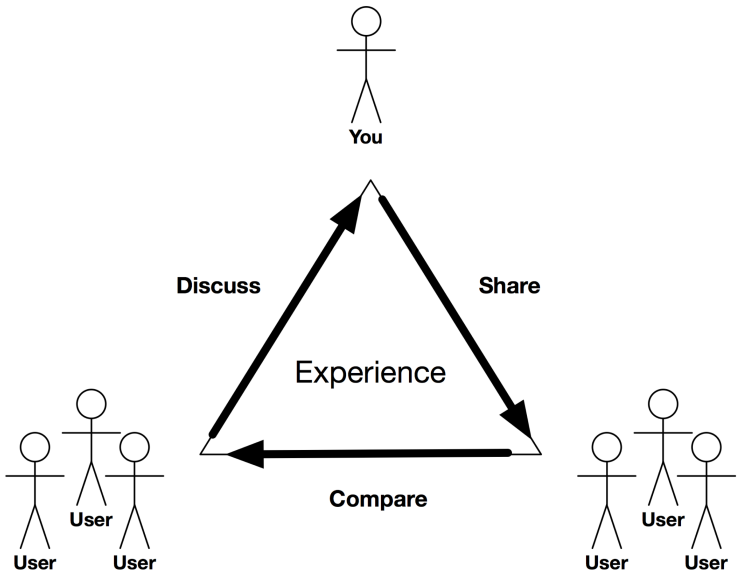

Figure 6.2: Social interaction cycle. You share your experience with other users. They compare your experiences with other users experiences and then discuss it with you. Depending on the feedback you share a new experience and the cycle starts from new.

6.1 Sharing

Sharing is an important part of any social activity. In a game you can almost share anything. Content, records, items, avatars, replays and so on. However it depends on the game how

shareable and accessable your experience is. We take a look what options are commonly used from developers and users. Generally, sharing is a two stage process: first you have to capture your experience and then you can distribute it.

6.1.1 Capturing

There are two ways to capture your experiences: developer or user initiated. Any sharing features built-in from the beginning by the developer are of course the most accessable and can be used by all customers. However often this features are limited and don't comply with the user's demand. So the player needs to capture any experience with his own methods.

- **Developer Initiated**: describes all sharing features the developers integrate into a game like for example stats tracking, recording tools, replay features, or in-game screenshots.
- **User Initiated**: If a game doesn't feature any sharing possibilities the user is often limited only to record the screen while playing and then extract any information from his stills or movies required. This possibility is cumbersome and doesn't appeal to many users. Nevertheless it is often used for meta games.

6.1.2 Distribution

Once you have captured your experience you need a way to distribute it. You can either store your data at locations where other players can grab it at any time or you can share it in real time with others from your device.

- **Central**: is a single place where all data is saved. A central distribution method is often used by developers. All game experiences are uploaded and distributed from a central server. Especially user-stats and critical data is often directly managed by the developer owned servers to avoid cheating. For uncritical data also some popular

websites are used. For example *Spore*[41] allowed you to create and upload videos from your selfcreated creatures directly to an own *YouTube* channel[42]. The disadvantage is that if the developer drops the support the data is usually forever lost.

- **Decentral**: The shared experience can be uploaded to multiple places. In most cases the user can even decide where he wants to upload his data. The advantage is that the user has more freedom to decide how and where to use his experience. The disadvantage is that the data from several users can be cluttered and new users have problems to find the content they want.
- **Real time**: You share your experience as long as you are online. This form makes the user independent from any middle man and is often the cheapest solution. It is commonly used to distribute server-side only[43] content like new missions or to broadcast a game match via screencasting[44]. This method is often used along the distribution options above. Especially downloadable content is usually stored on a server, but if a user joins your game he can directly download all required data live from you.

6.2 Records

Now that you have captured and distributed your stats, levels, or creatures you can compare them with others. For many players comparing records of any kind, like scores or mastered levels, give the related task a special purpose, a meaning on its own, and keeps the player playing. We want to give you an overview of a few methods that appeal to this human behaviour and encourage competition.

41 Spore: is a multi-genre single player god game. http://en.wikipedia.org/wiki/Spore_(2008_video_game)
42 YouTube Spore Channel: http://www.youtube.com/spore
43 Server-side only: describes all data that is only required by the server and not its clients.
44 Screencast: is digital recording of your computer screen output. http://en.wikipedia.org/wiki/Screencasting

Last but not least be aware that multiplayer games are another type of competition and are covered in a seperated chapter(*6.4*).

6.2.1 Highscores

Highscores[45] are one of the oldest forms of measuring competition in the video game history. Originally they were introduced with pinball machines. The first video game that used highscores was the arcade game *Sea Wolf*[46].

Highscores motivate you to play the game as long as you reach the top of the list and afterwards defeat them against other competitors . We played ourselves *Sega Rally*[47] to death until we became the number one on the list. The game was challenging and it gave us the feeling we can make it after only a few rounds. Remembering how many coins we lost to the infinite darkness of the coin slot it wasn't that easy though.

Highscores are still popular. They can be easily integrated in almost any kind of game and give the top players some bragging rights[48] while the followers keep trying to beat them.

6.2.2 Leagues & Tournaments

Leagues and tournaments take the concept of highscores another step forward. Leagues, also known as ladder systems, are usually leaderboards outside of a game with their own rules and ranking systems. Leagues are typically divided into seasons where you or your team compete for the first place in multiplayer matches. After a season is over the rankings will be usually resetted and another season starts soon afterwards. Usually you can compete throughout the entire season no matter how you perform.

Tournaments are special events held within a league environment and are normally played in knock out rounds until one player or clan is the winner. The duration of a tournament is also much shorter than a season.

Leagues are a typical meta game. Usually they are community related. Only a minor group of games have league like environments and clan management directly integrated into

45 Highscores: for some background informations please go to http://en.wikipedia.org/wiki/Score_(game)#High_score
46 Sea Wolf: http://en.wikipedia.org/wiki/Sea_Wolf_(arcade_game)
47 Sega Rally: an arcade game where you pilot a rallye car. http://en.wikipedia.org/wiki/Sega_Rally
48 Bragging rights: refer to an informal claim to be the first or best at something. http://en.wikipedia.org/wiki/Bragging_rights

their games. Some examples of leagues are the *Electronic Sports League(ESL)*[49], *TeamWarfare League(TWL)*[50] and our very own league, the **DAMN Battle League(*DBL)*[51], founded in July 2000.

The dynamics of leagues are huge and we even wrote our bachelor thesis[52] about them. The main difference compared to a highscore list, where you only know the names of your opponents, is that you know and meet your opponents on a more personal level. The game keeps you busy even if you aren't playing it. For example you have to organize team meetings, agree with others about the start time for a clanbattle, or are discussing rule changes for the upcoming season with the league organizers. Leagues require your continous commitment over a period of time contrary to highscores.

6.2.3 Achievements

Since a few years almost any new game features achievements. Achievements are awards for optional challenges within a game. Usually they can be easily added to any game. It's like a collection of bonus records.

> *"Achievement systems are secondary reward systems that have been developed for digital games. Players can complete optional sub-goals to earn achievement rewards that are visible to other players. As many sub-goals require thorough exploration, new play styles, and virtuosity, achievements are a relatively cost- efficient way of extending the lifetime of a game."(Montola et al., 2009)*

Achievements can be added to the game itself but also to meta games. For example a league achievement could be play 10 times against player X in a season to get a badge reward. From the developer integrated achievements can be usually also accessed from outside the game so they can be shown to other players and non playing friends. Sometimes also game distribution

49 ESL: http://www.esl.eu
50 TWL: http://www.teamwarfare.com
51 *DBL: once the worldwide largest Mac clanladder of tactical shooters. Inactive since June 2006. http://bl.damnr6.com
52 Our bachelor thesis, written in german, was about *Analysis and Improvements of Ladder Systems based on the *DAMN Battle League*. You can view and download here: http://www.mautnermarkhof.com/publications/bscthesis_laddersystems_cmm_v1.pdf

services like *Steam*[53] ask to add additional achievements that can be shown to the *Steam* community.

Since 2007 achievements are also mandatory for any *Xbox 360* games(*Montola et al. 2009*) and can be shared with other players via the *Xbox Live*[54] service.

6.3 User Feedback

Now that you have shared and compared your experiences you also want to discuss your score, created map, or complete list of achievements. Feedback is an essential part of any interaction. When you are playing and your avatar gets hit you want to be noticed about it. In the best case the sound, the in-game reaction of your avatar and your health bar reflect what just happened. It's the same with anything you share. You want to know how many players accessed your experiences, how did they like them and what comments and suggestions do they have.

Feedback is also an important motivator to keep you sharing and comparing. There are a few common feedback mechanisms. Some are quantified while others are qualified.

- **Ratings**: are a simple form of feedback. You get for example a star rating between one and five stars. Five stars are the best. Nowadays an even more primitive rating is en vogue: *I like* and *I dislike* buttons. No matter how large the scale is, the more people rate the better, and the more valuable the rating is for you.
- **Reviews**: are a qualified method that should give you constructive feedback. They are especially useful when you get a bad star rating. As a consequence reviews are often used along ratings. It is also in most cases the only form of feedback where you can get directly in touch with the reviewer. The possibility to give reviews should be considered when you share items that required a lot of time and work like creating a complete map. Reviews also help to improve your shares.

53 Steam: is a game distribution service and online community. http://www.steampowered.com
54 XBox Live: http://www.xbox.com

- **Rewards**: While ratings and reviews can be positive or negative, rewards are always positive. Rewards are a system where other users give you something in-game or on the feedback location in return for your shares. It requires a good game balance so the rewards don't inflate and become less important. For example the micropayment site *Flattr*[55], a non gaming service where you monthly spend money to websites you like, uses the concept of rewards. If many user “flattr” you, you are doing something good.

All feedback mechanics above can be used together or alone. Another feedback channel we haven't mentioned yet are counters that measure how often your shares have been accessed. This is often a measurment for popularity and consequently often used as meta game.

6.4 Multiplayer

Multiplayer is a special form of social interaction. It combines the complete process of sharing, comparing and discussing into one experience. It doesn't make a huge difference if you play with others real time or turn-based games or if you play connected via internet or locally in front of your television. It's an experience between you and all other participating players, instantly shared, compared, and discussed. There are two kinds of multiplayer: You play against each other or together.

- **Competitive**: describes all game modes you play alone or with a team against other human players. We personally often use the slang term “adversial” for this type of play, which stands for adversarial.
- **Cooperative**: You play together with other humans to reach a common goal, usually victory over the game system. Sometimes also the term collaborative is used for this category.

55 Flattr: http://www.flattr.com

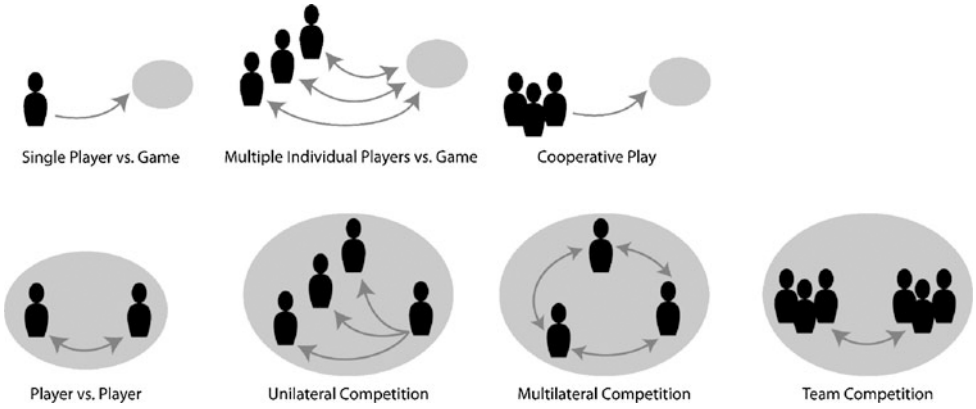

Figure 6.3: Player interaction patterns(*Bekker et al., 2010*). The first case describes the normal single player experience. One further we see a typical situation perfectly fitting for the use of highscores. Followed by a typical cooperative setup. The last four situations represent different kinds of competitive situations.

For our research results it will be interesting if multiplayer is an integral part of game design as gameplay. If it is only a step inbetween to test and compare your shares with others, or whether it is the goal that everyone plays and enjoys your shares.

Chapter 7

The Games

In this chapter we examine games that give the player a certain degree of creative freedom to change, influence and design his game world. In some areas these games are coming close to our definition of game design as gameplay. Throughout our analysis of their features, mechanics and dynamics we hope to extract some useful information for our results.

We chose the games by our experience as players and some because of their recent success. If some games of our preselection were similar we always favoured the games that we have played more independent from its popularity.

The following games are examined:

- ***Sim Farm***[56], 1993, build and manage your own farm.
- ***Lode Runner Online – Mad Monk's Revenge***[57], 1995, collect all piles of gold while avoiding enemies and traps.
- ***Tom Clancy's Ghost Recon***[58], 2001, complete missions as a military team.

56 Sim Farm: http://en.wikipedia.org/wiki/Sim_farm
57 Lode Runner Online – Mad Monk's Revenge:
http://www.daggert.net/Folio/Programming/Presage/LodeRunner/Loderunner1.htm
http://en.wikipedia.org/wiki/Lode_Runner_Online:_Mad_Monks%27_Revenge
58 Tom Clancy's Ghost Recon: game of the year 2001 by IGN and PC Gamer.
http://en.wikipedia.org/wiki/Tom_Clancy%27s_Ghost_Recon_(video_game)

- ***LittleBigPlanet 2***[59], 2011, create, play, and share jump and run levels.
- ***Minecraft***[60], 2011(beta), place blocks, build anything you can imagine, and beware of the monsters at night.
- ***Crayon Physics Deluxe***[61], 2009, solve physic puzzles by drawing your own solution.
- ***Super Scribblenauts***[62], 2010, solve challenges by writing any object that can help you.

As you can see above we also decided to include some older games. These gonna help us to compare how modern social interaction possibilities influence game design and its reception.

- ***Sim Farm* vs. *Minecraft***: Both games are open ended with no real goal. You can create your worlds as you like. However while you can access *Minecraft* worlds with your friends and also post your creations everywhere on the web *Sim Farm* is limited to single player only and sharing your worlds by trading floppy disks.
- ***Lode Runner Online* vs. *LittleBigPlanet 2***: While the original *Lode Runner*[63] was one of the first games to feature a level editor, *Lode Runner Online* expanded the concept even further and was one of the first games that allowed network play. *LittleBigPlanet* and its successor, although a different genre, integrated creation and sharing possibilities in such a new successful way that, according to the official website, already over three million user generated levels are available.

During our research and time as players many more games have been played, but the games above represent a good overview of different mechanisms. If appropriate we may also add

59 LittleBigPlanet 2: http://www.littlebigplanet.com/en, http://en.wikipedia.org/wiki/Little_Big_Planet_2
60 Minecraft: a free classic version is playable at their website. http://www.minecraft.net/, http://en.wikipedia.org/wiki/Minecraft
61 Crayon Physics Deluxe: Independent Game Festival winner 2008. http://www.crayonphysics.com, http://en.wikipedia.org/wiki/Crayon_Physics_Deluxe
62 Super Scribblenauts: http://games.kidswb.com/official-site/scribblenauts, http://en.wikipedia.org/wiki/Super_Scribblenauts
63 Lode Runner: released in 1983. http://en.wikipedia.org/wiki/Lode_Runner

comparisons to related games, that we haven't mentioned above. Last but not least our game reviews focus mainly on the game design as gameplay elements. We don't review the game as a whole. If we can't categorize a mechanic or dynamic we try to describe it as good as we can for the moment and will categorize it later in the results.

The analysis of each game will be done as we access it as a player: features first, then dynamics, and finally mechanics(*c.f. Figure 4.3*). However there is no linear method how we discuss the games. We just mention everything that could be useful for our results.

7.1 Sim Farm

Sim Farm is an open ending, building and managing simulation game where you have to run your own farm[64]. The basic concept is like *Sim City* but everything farming. In the game you can either invest in livestock or plant a wide range of seeds. You can sell your crops or animals at any time you want. However due a market system you can also decide to store your crops until the market price raises as long as you have built some silos before. This makes the whole farming strategic and put you in situations where you have to decide to keep the crop, and may be unable to pay your taxes at the end of the year, or sell it for a lower price right away. The game doesn't have a real goal. You can play as long as you want or until you are broke. So you have to set your own goals like reaching one million in cash, buying up the complete land or try to survive with only managing livestock, which is a really tough one.

We have played this game for months on a DOS operating computer as 10 years old almost two decades ago, and rediscovered this abandonware[65] recently for Mac. It immediately captured our attention again and it is still our favourite *Sim* game today.

The main focus for our analysis is the building part. It includes the following features:

- **Free map/world design**: You can completely change and design your game world using the in-game tools and available money.
- **Map generator**: Before you start a game you can use a map generator to create your terrain. However compared to the original *Sim*

64 Sim Farm trivia: The instruction book was a few hundred pages thick and covered almost every aspect of real farming.

65 Abandonware: describes a discontinued product with no available official support anymore. http://en.wikipedia.org/wiki/Abandonware

City Terrain Editor, where you really design the game world with all available tiles, the adjustment possibilities are limited to rain fall, temperature and wind speed as well as selecting a river or lake on the map(*see Figure 7.1*).

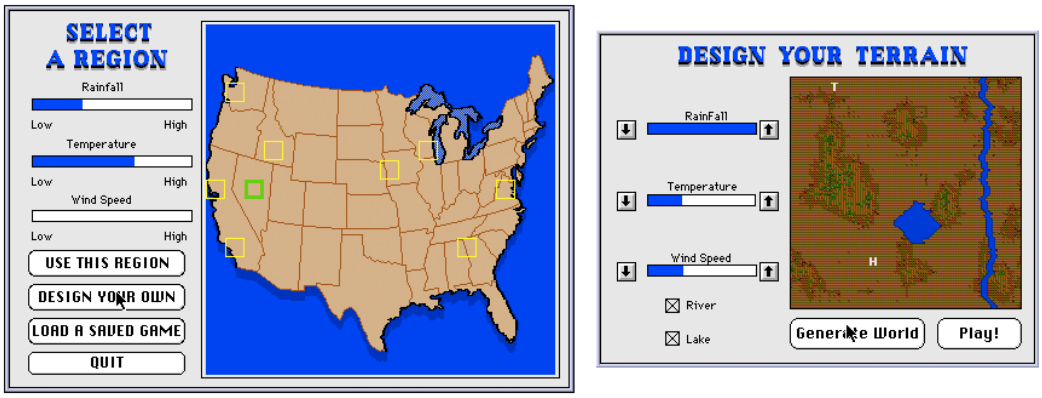

Figure 7.1: Sim Farm map generator features only limited adjustment possibilities

The map generator is only from minor importance for us due its limitations. It just helps you to slightly modify the setup of your new game. So the interesting part is the free world design. The game is like a playable map editor. We can find some typical game dynamics like building, territorial acquisition and even a little bit trading, at least against the AI. The mechanics that cause these dynamics are also straight forward, for example purchases, decisions, pure speed, or disasters.

But there is more to be found. The game world represents the entire level design. *Sim Farm* only gives you an almost empty sandbox with some rules(mechanics). Even the map controls are looking like popular paint and photo editing control panels(*see Figure 7.2*).

Your task is it to fill the level with life, but why does it feel like a game and not like a level editor? To solve this question we did some tests to find the border between game design and gameplay. The results are that whenever we pause the game, it suddenly behaves like any other level editor we have used before, with the only exception that *Sim Farm* only allows you to destroy objects and not place them on the map while being paused. However as soon as we unpause the game it awakes to life. All game mechanics and consequently dynamics are in place again. Your actions as editor of the level have immediate consequences on your game

state. The tools were transformed to gameplay controls. The world is not only a plane you can design, it is also part of the user interface and constantly informs you with status updates about what's happening. So the transformation from game design to gameplay is achieved by giving you immediate feedback about your actions as level designer. The editor tools become also game controllers.

Figure 7.2: Our created Sim farm. On the left you can see the paint editor like controls. On the right parts of our world zoomed out. You can identify a small part of the town and our huge farm with our fields and livestock.

Another interesting element is the open ending concept of *Sim Farm* that lacks any victory condition. However you usually set one for yourself. You have the feedom to define any victory condition you have in mind and is possible with the given mechanics.

The effects of sharing possibilities are neglectable and have no influence on the gameplay.

Sim Farm tightly integrates the process of level design into the regular gameplay by giving you immediate feedback in the game. The free choice of how you play the game allows you to be creative and try out different solutions for your own set goals.

7.2 Lode Runner Online

Despite its age *Lode Runner Online – Mad Monk's Revenge* is still a beautiful trap-em-up game. Your goal in *Lode Runner* is to collect all heaps of gold while avoiding enemies and traps. As soon as you have collected the last pile of gold an exit door appears and you can access the next level.

The reason why we select this game for our research is that the original *Lode Runner*, released in 1983, was one of the first video games featuring a level editor. You can add new levels without any programming skills. This feature was also a reason for its success. Computer magazines like *Computer Gaming World*(*1984*) hold contests where readers could send in their self created levels on floppy disks and win prizes. Social interaction 1984. In the same year also *Championship Lode Runner*[66] appeared, that featured 50 extrem difficult missions that were all created by users.

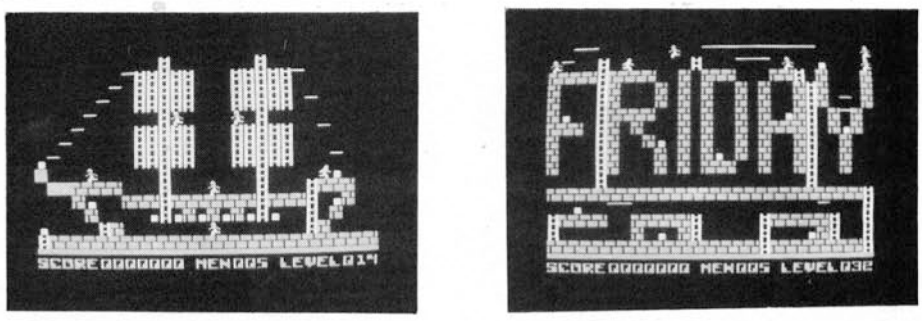

Figure 7.3: Two of four Computer Gaming World's Lode Runner contest winners(1985, p. 9). On the left the most artistic level by John Berry and on the right the best overall design by Steve Voss.

About ten years later *Loder Runner – The Legend Returns*[67], followed up by *Lode Runner Online* one year later, was released. Both games came with improved graphics and an advanced editor, that allowed you also to create groups of levels. The latter game also added

66 Championship Lode Runner: http://www.mobygames.com/game/championship-lode-runner
67 Lode Runner – The Legend Returns: http://en.wikipedia.org/wiki/Lode_Runner:_The_Legend_Returns

new social interaction possibilities like online play. No matter if you play local or online the gameplay was a mixture between competitive and cooperative gameplay. Sometimes you depend on your opponent to reach some gold and sometimes you just want to get all the gold for yourself.

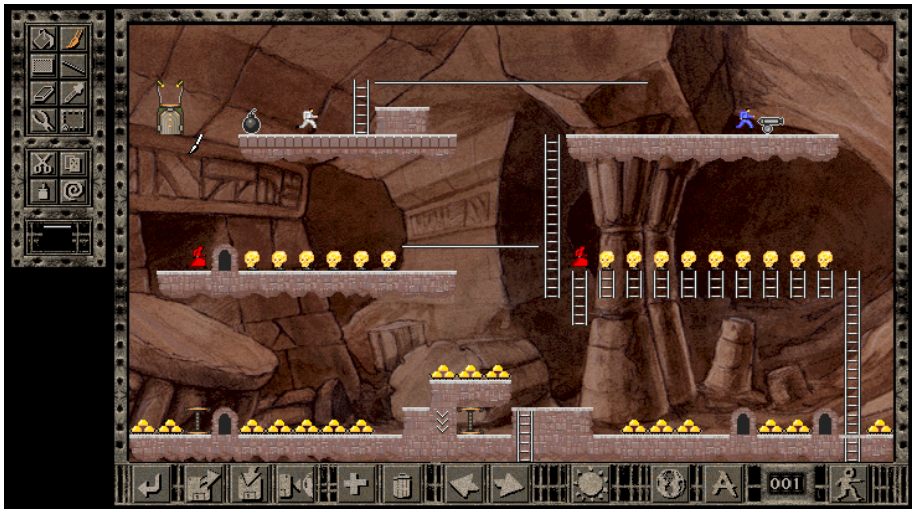

Figure 7.4: Lode Runner Online editor in progress. The tools are similar to any paint application and are self-explanatory for users of those. The editor also allows you to immediatley play a test round within the editor and adjust the tiles accordingly. Beside that you can also set the background image and music.

For our analysis we are mainly interested in the level editor. The level editor allows you to create content from within the game. It's definitely a main feature of the game series and also expands the game life after mastering all 150 included levels.

> *"...if your friends have Lode Runner, challenge them to your creations. Make sure you can win first, though, because they just might want you to prove it can be done." Original Lode Runner review (Besnard, 1983)*

> *"There are levels a-plenty to keep you running, zapping and climbing for months, but if you get tired of them, or want to try your own hand at game design, LODERUNNER, comes complete with an elegant level design program. Using the familiar paint program metaphor, the level builder lets you craft entire games, modify levels, or just play around. The interface is*

> *solid, intuitive, and a "lode" of fun. Soon levels spawned from demented minds will find their way onto BBSs everywhere." Lode Runner – The Legend Returns review (Schuytema, 1994)*

These two quotes perfectly underline how important and fun the level editor for any Loder Runner is. The level editor itself isn't a game. The tool setup misses any game mechanics however, and that's the point, the process and possibility of creating levels leads to some game dynamics like building and survival. Especially due the fact that you can try out the game from within the editor at any stage of your design process keeps you playfully creating. The editor becomes some kind of a god game you create and then see if the level is still beatable.

You take over the level design. You can play around with your creativity and your ultimate goal is to create a challenging map and then let it play by others. Here comes the social action into play. You share, compare and discuss your levels. As the second review quote states it won't need long until you can find some maps on internet fora, and you still can [68]. You can also challenge your friends in a hotseat session and battle for a new highscore at the head to head ranking list.

To sum up the Lode Runner's featured level editor doesn't appeal to any user. Some players may never touch it. If you don't want to become creative it can be a dull task. On the other hand some others can finally bring their ideas to life. What both types of players have in common they love new challenges.

7.3 Tom Clancy's Ghost Recon

Ghost Recon is a tactical first person shooter. In single player you have to accomplish various missions and objectives while in multiplayer you fight against the AI or play against other players in *Free-For-All*(FFA) or team matches.

You won't find any game design as gameplay elements within the game. The game plays like any other first person shooter except the realistic one-hit-one-kill mechanics. What's interesting for us are the hundreds of mods, modifications, that add new content to the game and extend or change the gameplay. We also converted hundreds of Ghost Recon mods[69] from

68 User created Lode Runner levels can still be found for example at http://entropymine.com/jason/lr/pzl/

69 Ghost Recon Mac mods: you can still download all Mac mods at our *DAMN R6 downloads page. http://www.damnr6.com/macmods/index.shtml

PC to Mac, including the official expansion pack *Island Thunder*, which got us a nice cease and desist letter from *Ubi Soft*'s[70] legal department in Montreal 2003[71].

Mods are usually created outside of a game using available developer tools, photo editing and 3D modelling software. The *Ghost Recon* PC disk includes a developer tool called IGOR[72], that allows anyone to create and edit missions, add new objectives, victory conditions, or server scripts. Later *Red Storm Entertainment*[73], the developer, released a plugin for a 3D modelling programm so you could also add new game geometry like maps, weapons or characters.

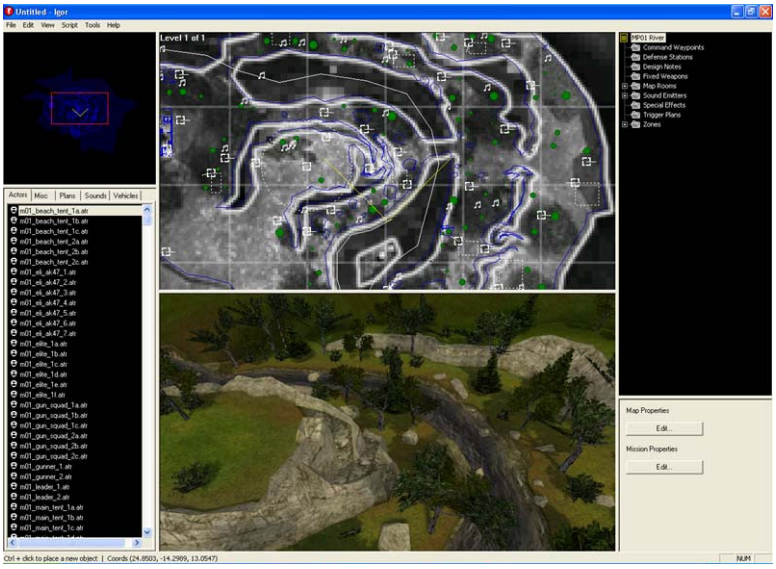

Figure 7.5: A snapshot of Ghost Recon's IGOR tool while editing a mission scene.(*El Oso, 2003a*)

These tools are not meant for everyone. Special skills and knowledge are required to use them. Just take a quick look at one of the online IGOR tutorials[74] to understand that using these tools is not only difficult and cumbersome, but also far away from being a game. Nevertheless it is fun to realize your own ideas. From our own experience of creating mods, also for the unofficial precessors of *Ghost Recon*, *Rainbow Six*[75] and *Rogue Spear*[76], we can say the fun and motivation comes also from social interaction. From sharing a vision to

70 Ubi Soft Entertainment: http://www.ubi.com
71 After a short phone call to Montreal you can still find an automated PC to Mac patch at our *DAMN Mac downloads. http://www.damnr6.com/macmods/grpatch.shtml
72 IGOR: Ghost Recon is an included tool to create missions and more. An overview of its features can be found at http://ghostrecon.3dretreat.com/igor_info.asp
73 Red Storm Entertainment: http://www.redstorm.com
74 IGOR Tutorial: by El Oso http://eloso.3dretreat.com/Eloso/Igor/index.htm
75 Rainbow Six: http://en.wikipedia.org/wiki/Tom_Clancy%27s_Rainbow_Six_(video_game)
76 Rogue Spear: http://en.wikipedia.org/wiki/Rogue_Spear

appreciation if your mod is fun to play. It is also very satisfying to see your download counter constantly increasing.

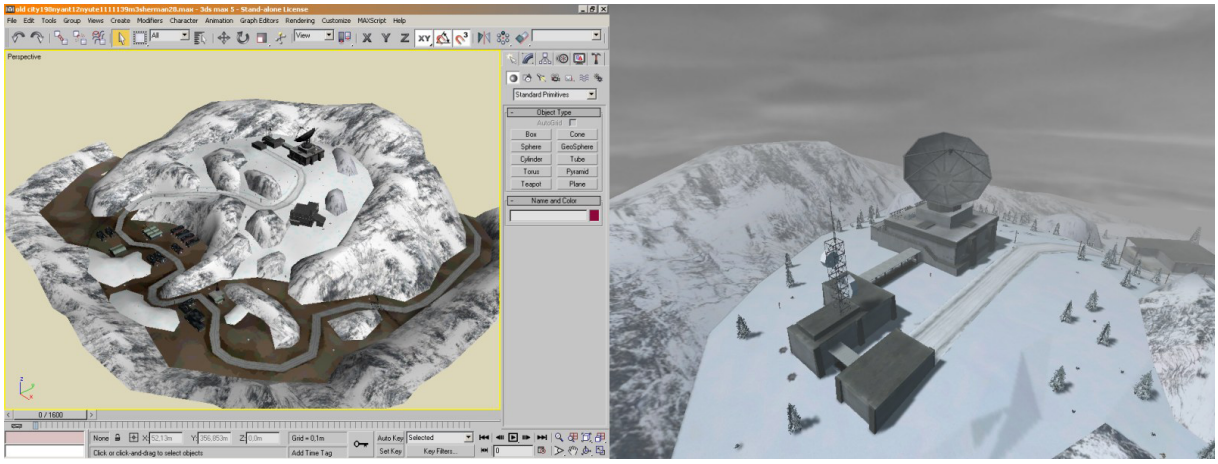

Figure 7.6: Two screenshots from the Ghost Recon Frostbite mod by El Oso(*2003b*). On the left you can see a new map being created in a 3D modelling program. On the right you can see a detail of the same map in-game.

In context of our research modding can change every little piece of the game. You can create a new game on top of the game's engine. For our *DBL we compiled a mandatory mod[77] that not only added new maps and weapons but also some new victory conditions that totally changed the way teams had to play the game. Some mods of other game's even become games on their own due their huge success, like *Counter-Strike*[78], originally a mod for *Half-Life*[79]. So as creator you can change all facets of game design like for example world, technical, story or level design. The fun comes from seeing other people enjoying your work and achieving things no one ever expected to see in the game. While the tools are intended to aid the game design development, some gameplay can be found just from trying out new things and pushing the envelope.

7.4 LittleBigPlanet 2

LittleBigPlanet 2 is a jump and run game where you can not only create your own levels, but you can also share, rate and download your creations from within the game. The game offers you an all-in-one package. While you play the included levels you can collect items for later

77 *DBL final map pack: http://www.damnr6.com/macmods/grmap.shtml
78 Counter-Strike: a mod for Half Life. http://en.wikipedia.org/wiki/CounterStrike
79 Half-Life: http://en.wikipedia.org/wiki/Half-Life_(video_game)

use in the editor. The level editor has nothing in common with older games where you just place items. In LittleBigPlanet you can design your own items, you can create behaviours and actions, you can texture everything and create your own theme and much more. To make it short you can not only create levels you can create little games inside the game, like *Pac-Man*[80] or even *Windows XP*[81].

Figure 7.7: Randomly picked user generated levels and content. Anything can be built from recreations of arcade and movie classics to experimental art.(*LBP.me, 2011*)

Social Interaction is also integrated tightly. You can upload and share a level, including descriptions and pictures, to the LittleBigPlanet community page[82], that is also viewable outside in any webbrowser. You can give and receive rewards, ratings and reviews. The comments help you to improve your creations and also motivate you to continue delivering

80 LittleBigPlanet 2 Pac-Man level: http://www.joystiq.com/2010/09/17/pac-man-micro-machines-air-hockey-created-in-littlebigplanet-2

81 LittleBigPlanet 2 Windows XP world: http://www.joystiq.com/2010/12/30/windows-xp-littlebigplanet-2-edition

82 LittleBigPlanet community page: http://lbp.me

new content. You can even see how many people played your levels, who helds the current highscores in single- and multiplayer, and if you are among the top levels ever created. The game integrates the whole suite. You can even allow other players to edit and improve your levels. From time to time also contests about a special theme like movies or in-game actions are held.

> *"At its heart, LittleBigPlanet 2 is a suite of development tools wrapped up in a user-friendly, child-like aesthetic of yarn and cardboard. " Review (Gameplanet.co.nz, 2011)*

> *"For creators, LBP2 is an easy-to-use tools package that lets you turn your ideas into games that can span multiple levels and genres, and even include cutscenes. For players, LBP2 is a game that lets you play all of these creations in addition to its own charming and impressively varied Story mode. Everyone's a winner." Gamespot review (Calvert, 2011)*

> *"If the Sandbox idea exists in many games, LittleBigPlanet 2 goes far beyond, almost inventing a new genre we could call "toybox". The user can become a true game designer, and draw inspiration from the really nice Story mode and the multiplayer mini-games, all the way up to designing the proverbial cherry on the cake." Review (Gameblog.fr, 2011)*

LittleBigPlanet 2 unites editor tools and social interaction to a powerful combo. The player is not only pushed to play the game and other user created content, but also to participate and win the how-to-become-the-best-level-designer game. The game also underpins our opinion that you can give the player powerful and complex editing tools as long as you put them in a playful context and provide enough feedback and reward mechanisms.

7.5 Minecraft

Minecraft took the press and indie game scene by surprise in 2010 and sold already over 1.3 million copies(*Minecraft.net, 2011*) despite being in beta and just leaving alpha in december 2010. *Minecraft* is a building, exploring and surviving game played in first person view. You

are part of a gigantic world and you can do whatever you want to do. Build cities, dig dungeons to seek diamonds or coal, blow things up with TNT, build a railsystem to speed up your traveling times, or create some new items with the available in-game resources.

There are two different versions of the game a free one, where you have only some basic build and explore options, and the current retail beta with all the possibilities mentioned at the beginning. Both version can be played either in single or multiplayer.

Figure 7.8: A completely user generated Minecraft city(*Zenergyx3, 2010*).

"Minecraft is all about exploration, adventure, and creativity. You can literally go anywhere and do anything, so use your imagination!" Firesquad review (VanDerWerf, 2010)

"While it might not look like much it's one of the most exciting games I've played, it features endless possibilities for exploration, adventuring, crafting, building and shaping the world around you." Metacritics user review (Seiseki, 2010)

"The reasons I love Minecraft change as much as the game does. At first it was the collaborative building: limitless Lego on a multiplayer server with friends. Then it was the wonderful sense of discovery; going for walks and

> *stumbling across natural caves filled with monsters and gold. Then it was the feeling of building a home; carving out blocks to call my own, and making a little garden out front. Now it's looped back around and I'm building those homes and finding those monsters with friends again." One hundred best PC games (PCGamer, 2011)*

> *"Minecraft is freeform. I think it's the egotist in me: I was never fussed when it was singleplayer focused, but as soon as we got a server and I could go "look, look, I made a giant diamond castle with a hot-tub and a pool table and a log flume!", jumping up and down as I squeaked, I was suckered in." One hundred best PC Games (PCGamer, 2011)*

No matter what version you play what matters is the freedom you experience in this game as the quotes above show. The game developers have only created the rules of the world. Some required boundaries. It's like playing with *Lego* only the stones are provided and the stack mechanic, but what you do with them is up to you. *Minecraft* is a huge sandbox where you create the world you want to play in and experience it with others.

The social interaction, although right now mostly user initiated, is a very important part of this game. One reason is that if you spend dozens of hours to create a city or spaceship you don't want to keep it in a tiny dark room on an isolated harddisk. You want appreciation that you have created something awesome. Just take a look at the many *Minecraft* galleries[83] or *YouTube* movies[84] [85] to understand our point. The other reason is that you can craft your world and play there together with your friends.

The beta version removes some of this free play by adding some factors like enemies that hide in the dark or limited resources in favour to add some variations. The reduced freedom is compensated by pushing some other game dynamics like discovery and crafting even more and introducing some new ones like survival. Nevertheless it depends on your level design and created world if you can sleep relieved at a safe home or if you have to run away from hordes of enemies until the sun goes up again.

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83 Minecraft galleries: for example the Minecraft Museum at http://minecraftmuseum.net.
84 Minecraft Youtube movies: http://www.youtube.com/results?search_query=Minecraft&aq=f
85 PCGamer also put together a movie list of 10 incredible Minecraft creations: http://www.pcgamer.com/2011/02/15/10-incredible-minecraft-creations/

Minecraft is a game that gives you a lot of tools and power to design not only your game world but also how you play it, but it would only be half as interesting without the possibility to share and play it together with some others.

Figure 7.9: A medievil Minecraft city(*Smurfsahoy, 2010*). You can see that in this game's version limited resources and a health bar are present contrary to the classic version.

7.6 Crayon Physics Deluxe

Crayon Physics Deluxe is a physic puzzle game where your goal is to touch all placed stars with a ball. You can interact with the ball by drawing objects to the scene. These objects respond to the in-game gravity and can consequently move the ball. Later in the game more special items and drawing options are added. We play the game on an *iPod Touch*. Although the game integrates a level editor we are focusing on the actual game mechanics because at least the iOS version unfortunaly doesn't allow us to share levels with others, which lessesns the editor's purpose and overall value.

Crayon Physics Deluxe belongs to a new breed of games. It's more about how you achieve a solution than rather finish a puzzle.

> *"Crayon Physics Deluxe is a combination puzzle and drawing game, in which players "draw" solutions to various stages." AppCraver review (Beam, 2009)*

"There is no single correct way to scoot that ball around; the fun is in exploring the options. Within seconds of hitting start, you're furiously scribbling blocks and ramps and wedges and seesaws, whatever it takes to reach the goal." Slate article (Baker, 2008)

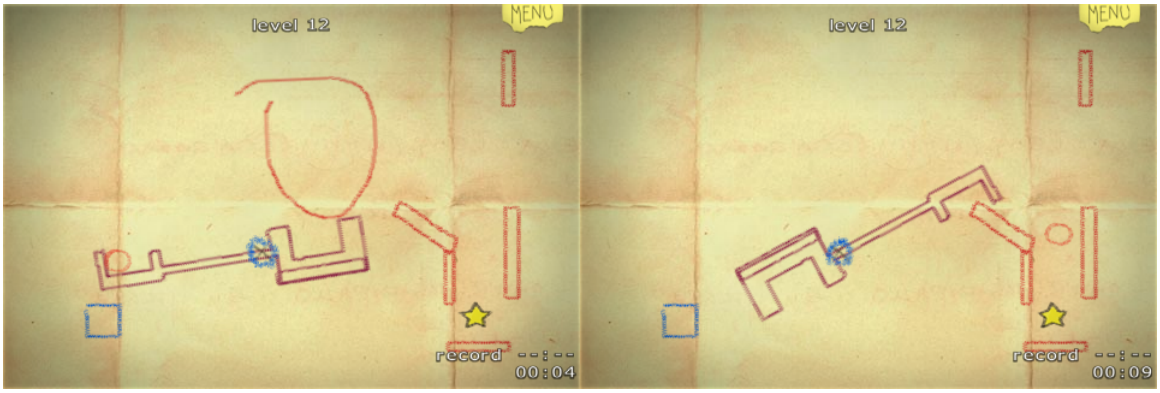

Figure 7.10: One of the easier levels of Crayon Physics Deluxe. We added a heavy block on one side of the crank so the ball is catapulted towards the star.

While you can draw whatever your want the placement of your drawings make use of traditional game mechanics like precision and timing. The in-game physics engine defines the rules what affects your drawings have on the scene.

The game also challenges you to create for example elegant solutions where you clear a stage with only one drawing and without physical contacts to balls or to solve stages under within 15 seconds among many others. As soon as you accomplish one of these challenges you are rewarded with an achievement. Some of these achievements also add traditional twitch mechanics to the mix like pure speed.

While a typical game tries to reduce your solution possibilities and action radius to avoid unusual and misused behaviour of mechanics *Crayon Physics Deluxe* encourages you to explore your environment and use it as you want it.

7.7 Super Scribblenauts

Super Scribblenauts follows a similar concept as *Crayon Physics Deluxe*(*7.6*). You play as Maxwell and have to solve various puzzles. Instead of finding items and use them at defined locations, you can add any object you can imagine to solve the puzzle by writing it in your

magic notebook. Whenever you start a new level you get some basic informations about the little troubles Maxwell await, but then you are on your own and have to try out some appropriate or crazy solutions. They only have to work no matter how.

In *Super Scribblenauts* you can also use adjectives to modify items. Have you ever seen a hungry house or a jumping tree? In Super Scribblenauts you can do. You can also combine written objects and let them interact with each other. You can place the objects wherever you want. Living objects also have their own behaviour: a living ghost might scare your girlfriend to death. Whenever you start the game you find yourself at a selected playground where you can freely play around with objects.

Figure 7.11: Joystiq review (*McElroy, 2010*). Maxwell tries to get a lion to sleep. Once with a moon and once with a tranquilizer gun.

"By allowing you to apply adjectives that really make no sense to objects, Scribblenauts is straddling the line between creativity and problem solving better than ever before." Joystiq review (McElroy, 2010)

"Even if I was slightly frustrated by a puzzle, curiosity always got the best of me and pushed me forward. "Just one more puzzle" is an easy habit to fall into." Gameinformer review (Marie, 2010)

"..., and the ability to tack adjectives onto your objects increases your creative possibilities tenfold. It can be a little on the easy side, but this is more about the joy of experimenting than taxing your brain. Super

Scribblenauts is as fun and imaginative as you are." IGN review (Hatfield, 2010)

So once again the fun comes from trying out new things. From the choice to add whatever you want. Non-linear solutions. The freedom of things you can do also lead to a meta game where you let dangerous and powerful creatures fight against each other, for example god vs. devil[86]. *Super Scribblenauts* rewards you also with achievements, called merits, for using new words, combinations of adjectives and many other things. However these achievements don't really add to your motivation and you also can't share them with others. They are even hidden in an "Extras" menu, which let them appear like an afterthought for us. However the achievements work perfectly as tips what kind of things you can try out like decorating the sky with all planets or adding five different dinosaurs. The game even includes a level editor. Your created puzzles can be shared with other people on your friends list. A global lobby were you can directly download puzzles from all over the globe is missing. Therefore we haven't used it yet.

Super Scribblenauts open mission design encourages you to be creative. You can add new level designs, but the most interesting thing is that you control big parts of the player action mechanics. You write what Maxwell can do and how he can do it.

7.8 The Games – First Indications

The reviewed games are just a glimpse of how game design as gameplay can be realized. There are many more different implementations. Nevertheless the discussed games give you a good overview of different approaches at different times. Some use game design elements only to allow some new player actions while others give the player total freedom. Some are playful while others are more or less unchanged designer tools. Last but not least we can observe that social interaction mechanisms can really make or break any game design as gameplay feature.

86 Some Super Scribblenauts fight setups can be found here: http://www.leagueoflegends.com/board/showthread.php?t=309490

Chapter 8

Social Game Prototype

For our final prototype we not only improved our previous versions but also added some new social features to evaluate their importance(*8.1*). After discussing these changes and additions(*8.2*) we sum up our experiences with the different prototypes(*8.3*). Last but not least you can try out our final prototype online[87].

8.1 Social Gaming Features

We played all our previous prototypes locally together either on our paper board or on one computer. For our final prototype test sessions we moved to a more common real world setup where players might be spatially seperated and use their own devices.

We observed how our presented social interaction mechanics(*Chapter 6*) influenced the gaming behaviour and if they were good enough to keep the players engaged to create new mines and raid others.

As a consequence we added some new features and reimplemented some old ones we have previously dropped during our transition from a paper to a web prototype:

87 The final version of our Schatzmeister prototype(version 3) can be played online at http://www.damnr6.com/schatzmeister/version3/. As long as Facebook doesn't change its API the game should work in any modern browser.

- **Currency System:** readded and improved from our paper prototype you manage your own gold to buy and create new and more dangerous mines. You win gold as soon as an opponent get trapped in your dungeon or if you raid someone else's mine.
- **Highscores:** the game keeps track of everyone's progress and shows the top earners. You can also view how many mines everyone has created and raided. Further a seperate highscore list shows the top 10 raided maps by gold.
- **Analyse your Mines:** view how many players have been trapped, how much gold you have earned and which traps are well placed.
- **Analyse your Target:** select your target mine by player, by fails, and by the size of the treasure.
- **Social Help:** play a map and see where all previous raiders failed. The more players tried the map before you, the easier is it for you to find the treasure.
- **Comment your Progress:** you can post live comments to promote your mines and brag about your recent raids. You can also send private messages directly to your opponents.
- **Improved Editor:** create any map size you want depending on your gold limit and give your map a special name so it stands out from the mass.

All these features were implemented on top of the previous core game mechanics and features. Now you can share and analyse your created mines within the game, raid other mines, and leave comments while you are climbing up the highscore list.

To speed up the development cycle and ease access for our test participants we decided to use Facebook Connect[88]. Although we honestly dislike how Facebook unnecessarily treats the user's privacy it offers us quick access to tools like ajax chats, private messaging, user authentification and share possibilities.

88 Facebook Connect: https://developers.facebook.com/docs/

Another reason pro Facebook Connect was that all players already had an account and so could create a Schatzmeister profile within seconds.

8.2 Final Play Session

Figure 8.1: The home screen of the social game prototype. On top you see the user's stats and send private messages. On the left you can see the currently active mines and top 10 raided mines sorted by captured treasure. In the middle you can see the highscore list and below stats of your created maps. On the right you can leave live comments for your opponents.

Five players participated in our final test session. We played three test sessions each lasting between one and two hours. Each participant played on their own device. We played locally together, online and mixed. After each session we fixed some bugs, adjusted the game balance by changing the gold values you can win and lose, and tweaked the game controls so you can't accidently run into the same trap twice.

To sum up our play test results we can say that the added social features increase the game's value. The highscore and top raided map lists increase the purpose of creating and

raiding mines. The comment and private message features ,together with the insights who robbed your mines, convey a similiar malicious joy as we experienced during our local play. But of course not just as intense, especially in situations where your opponent raids a treasure just a second before you do, and leaves you with an empty pot.

We can probably reduce this lack of intensity by showing other player's positions live while you are raiding a map. A short test play of the web game prototype with real time controls supports this assumption.

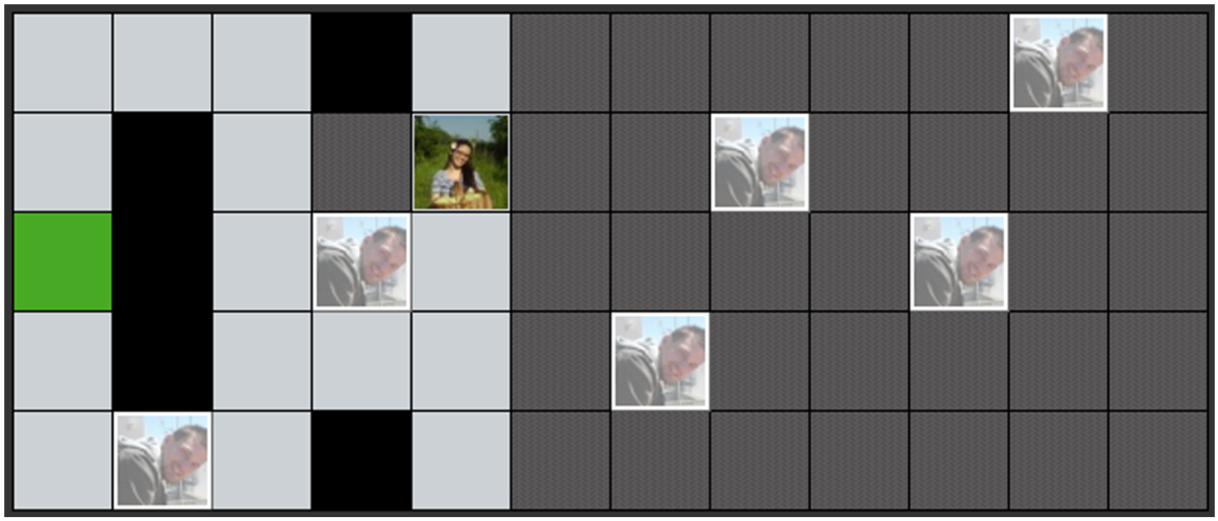

Figure 8.2: You can see the locations where previous raiders failed. This kind of social help not only makes it easier to raid a mine but also boosts the malicious joy if you can take advantage of an competitor's dangerous efforts.

The social help feature boosts the experienced malicious joy. It also makes it easier to raid difficult maps and adds a new tactical twist to the game. Our test players also suggested to add this feature for team competitions so you can play cooperatively. Last but not least we observed that some users also played the game after the test sessions were closed to increase their ranking.

All these social gaming features make the game more personal and increase the immersion. Our test players felt more engaged. Also one participant who was bored by the web prototype was thrilled to see us play and fail on her creations.

8.3 Three Prototypes – One Résumé

Three different prototype test sessions and all left us with the same results: highly motivated, supportive and engaged test players. During and after each gaming session many great ideas were voiced for a full fledged game. We accumulated an almost three A4 pages long feature wish list. The players liked the feeling to actively contribute to game design changes.

The chosen prototype setup helped us to ease concept flaws at a very early stage of the design process. On the other side its quick and dirty deployment process allowed us to just try out many unorthodox mechanics and settings.

In the end we not only gonna keep this setup for our future projects but can also strongly recommend a similiar setup for your next project.

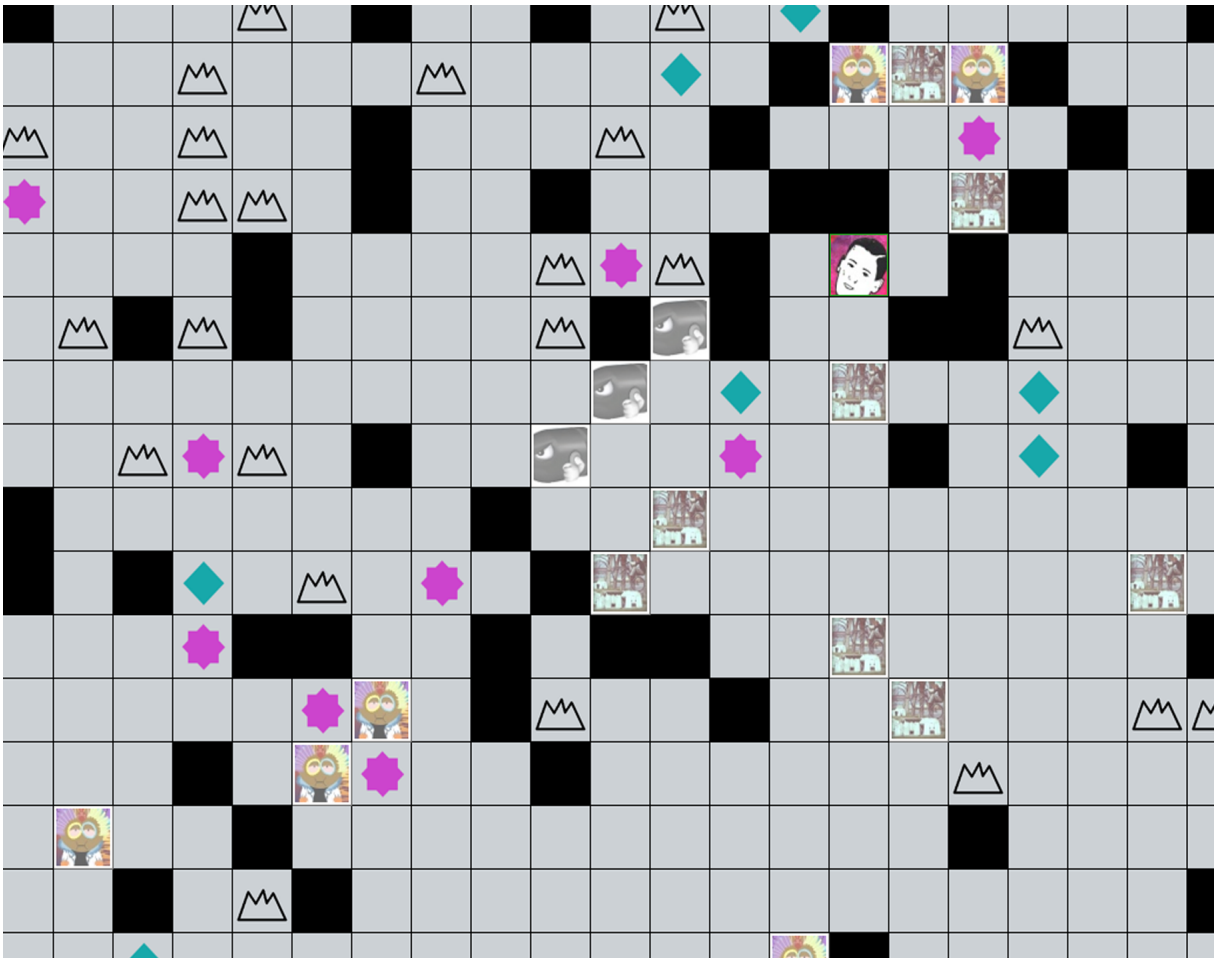

Figure 8.3: Each map owner can view which traps have been triggered to optimize locations for the next mine.

Chapter 9

Game Design as Gameplay

At the beginning of this thesis we had nothing more than a topic and some rough ideas. So to launch our research study we defined game design as gameplay:

> Transforming the process of creating content and rules of a game into a series of player‘s challenges

Now, a few months later, it's time to reveil our results. We have reviewed and summarized game design theory, including mechanics, dynamics, features and meta games(*Chapter 4*). We have discussed what is social interaction and which interaction possibilities exist for the users and developers(*Chapter 6*). Then we have played many games, that we believe contain game design as gameplay elements(*Chapter 7*) . We picked out all interesting game design as gameplay parts and also waded through professional and user reviews to get an impression how these features have been received from the customer's point of view. Finally we have developed a simple but effective game prototype throughout our entire research to not only try out new ideas, concepts and propositions about game design as gameplay, but also to compare and link our own experiences with the excisting game theory(*Chapter 3, Chapter 5, Chapter 8*).

Our final task is it now to put all the collected bits and pieces from these four areas together and present you our findings. As we have stated in our detailed study description(*Chapter 2*) you should not only know what is game design as gameplay but also what it does and how you can create and use it yourself.

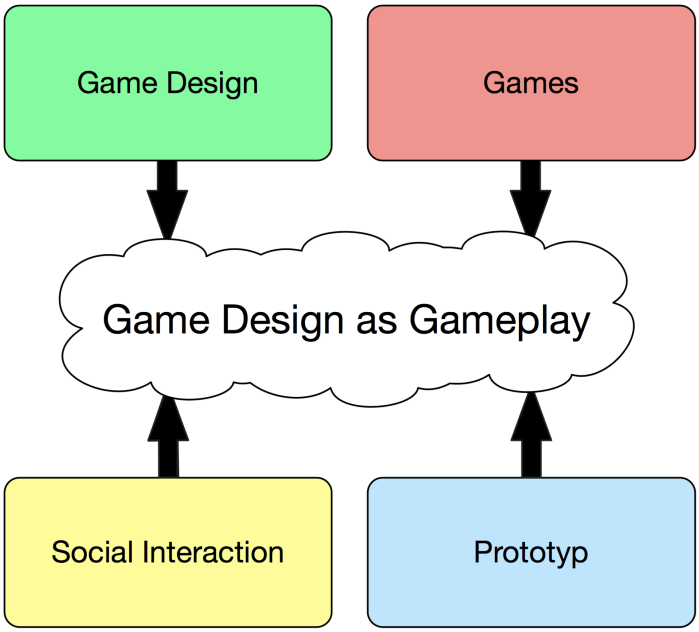

Figure 9.1: Game design as gameplay based on our four pillars: game design theory, social interaction, reviewed games and our developed prototypes.

We present you our game design as gameplay results in reverse order. From reviewed games to dynamics and mechanics. Game design as gameplay can be categorized into three groups(*9.1*), that depend on how deeply such mechanims are integrated into the core gameplay. We also analyse what types of designs you can influence in each group. No matter what category you pick the amount of creativity strongly relates to the integration of social interactions(*9.2*). So you can share all your created experiences. We also summarize a few typical user actions of such games(*9.3*). In a final step we define the responsible core dynamics and mechanics of game design as gameplay(*9.4*), and shortly discuss if such games are still games by definition(*9.5*).

9.1 Game Design as Gameplay Categories

During our play sessions with the the presented games we experienced some notable differences how game design as gameplay has been implemented. These differences lead to different usage models. Sometimes only a small group of players are using game design as

gameplay while other games totally integrate the concept and let any user play around with the game design. We found some major differences in the following areas:

- **Victory Conditions**: states if the elements are required to finish a mission goal, level or even a game or if they are optional.
- **Location**: describes if the player can play around with game design as gameplay mechanisms in-game or may use use other tools.
- **Skills**: can the user make use of all elements with only in-game knowledge or are other qualifications required.
- **System Requirements**: mention if the the game offers all tools the user requires or whether additional tools are needed.

Based on these points we divide and categorize game design as gameplay elements into three groups by integration, extension and modification.

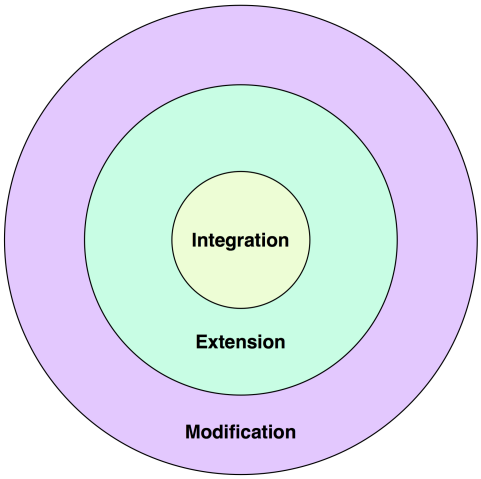

Figure 9.2: Game design as gameplay categories.The more you go outside the less people gonna make use of the provided options. Also the larger the distance to the center the more you are going away from the actual advertised gameplay. However it doesn't say anything about how many user consume the resulting experiences.

- **Integration**: defines games that use game design as gameplay elements as part of their actual play. Consequently most if not all players use them.

- **Extension**: describes games that offer the user the possibility to extend the core gameplay with more of the same in-game. The related game design as gameplay elements aren't required to finish the game or even be used by the player. It's an extra and appeals only to some users. Usually these options are touched after you have gained experience with the main game.
- **Modification**: game design as gameplay parts are applied outside of the regular game and are not part of the actual game. Often you also need third party applications and additional knowledge to use them. There is no in-game guidance. Consequently only a minor part will ever make use of this option.

From our observations we can also add to figure *9.2* that the further you move outside the less actual gameplay is involved. Creating mods doesn't include any from the game designer intended gameplay anymore, only the iterating process of test playing and debugging does. From another point of view we can also say that depending on the game design as gameplay category you are confronted with another challenge. While using integrated methods all your actions serve to master the game. One step outside your challenge is it to extend the game by creating more of the same. Another step outside you are challenged to craft something better or even completely new with all the advanced tools and possibilities you have.

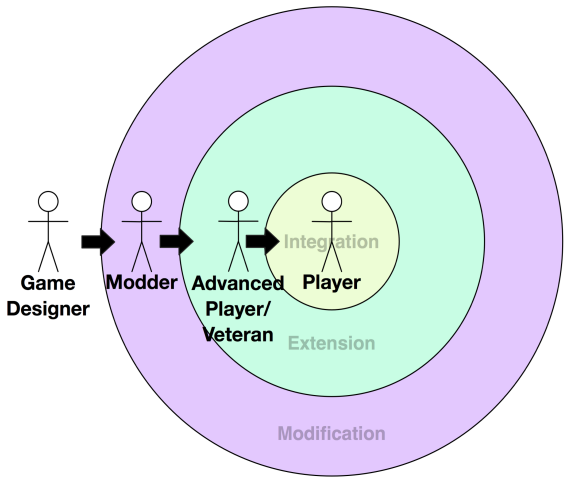

Figure 9.3: Types of player per category. Finally all created experiences go back to the player.

One more and you would sit face to face with the game designer playing around to find the right game mechanics for your next game. In the end no matter where you stand everything you have created goes back into the center and is experienced by yourself and other players(*see Figure 9.3*).

With these game design as gameplay categories we can also group our games now(*see Figure 9.4*). Some games may appear into a few groups because they include more than one related game design as gamplay element.

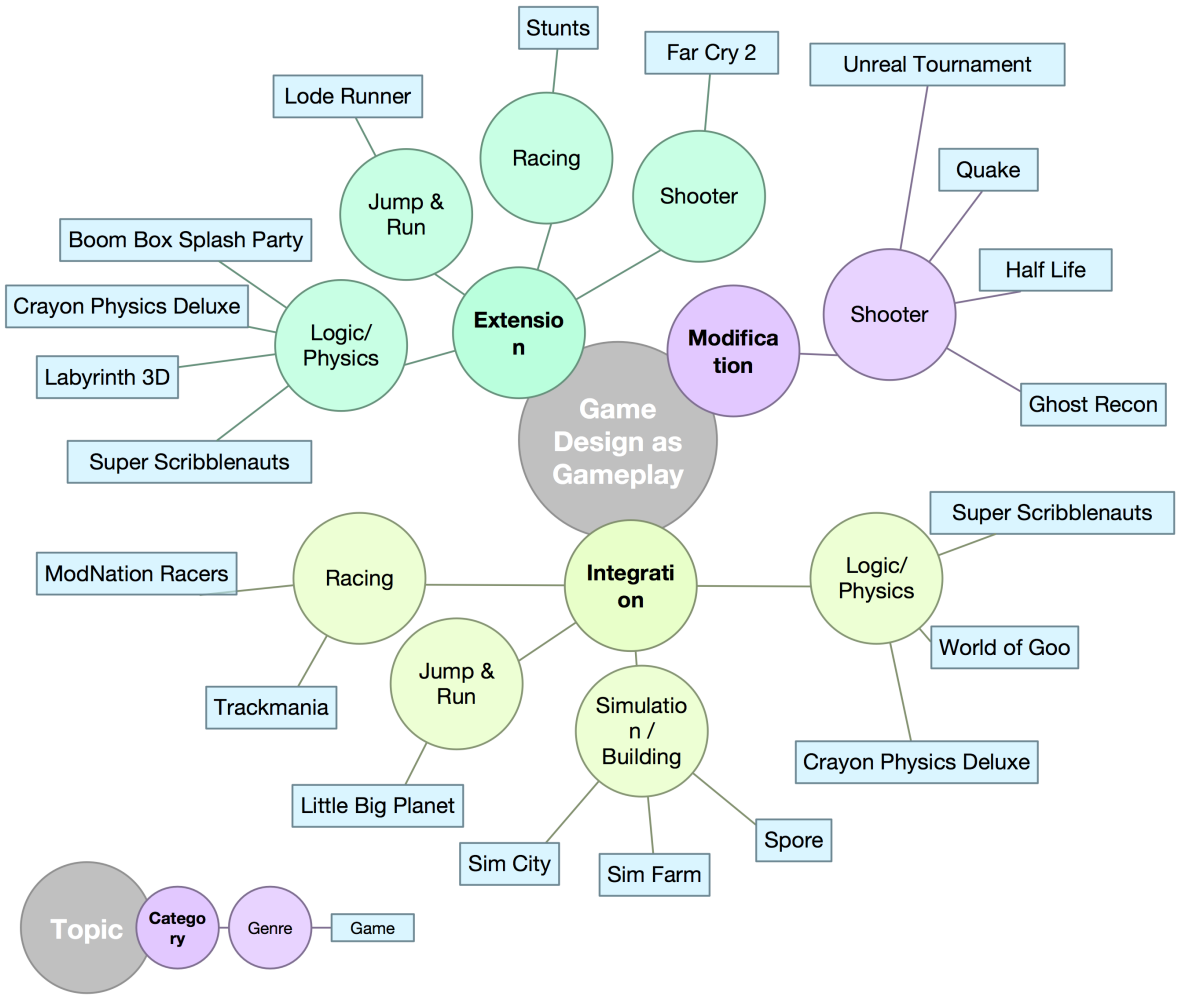

Figure 9.4: Games with game design as gameplay elements categorized.

Beside that there are some common types that are affected by each game design as gameplay category. Any game design type that you can see as part of the in-game world, except user interface, can be used as integrated or extended gameplay element. Other game design types require more advanced tools and possibilities and therefore are provided outside the game. To change these design types the user can play around with certain actions.

Integration	Extension	Modification
Content Design	Content Design	Content Design
Level Design	Level Design	Level Design
World Design	World Design	World Design
		Game Writing
		System Design
		Technical Design
		User Interface Design

Table 1: Game design as gameplay categories and commonly affected game design types.

9.2 Creativity and Social Interaction

No matter how you implement game design as gameplay social interaction plays a big role in the success of your games. Only a minority of integrated implementations can do without. Namely game design as gameplay elements that give you immediate in-game feedback, like *Crayon Physics Deluxe*, *Super Scribblenauts* and also *Sim Farm*. However the game AI can not always give you appropriate feedback, and then social interaction is a game changer. The premise to craft awesome levels, characters, or even stories is that you get some personal relevant feedback.

Once developers release their game they are hoping for positive professional reviews and high sales numbers. Users are looking for high download numbers, ratings, page views and user reviews. We propose that the more time you spend creating an experience the more important are social interactions.

> The more time you spend creating an experience, the more important are social interactions to keep you engaged.

Social interactions are player motivators to become active and creative, instead of guiding only avatars from start to finish and react to in-game happenings. We are not psychologists, but we assume that creating something new, that you are proud of, stimulates the same behaviour a child shows when it discovers or creates something new and begs their parents desperately to pay attention.

The three games that we have excluded above give you this stimulus immediately by winning or failing the level, money or other in-game items. Nevertheless even there social interaction can improve the experience. Computer AI can't compete with the social feedback you earn for your outstanding achievements in games like *Minecraft* or *Little Big Planet*.

To sum up the more open ended your creative possibilities are, the more essential are social interactions.

9.3 User Actions

Game design as gameplay gives you a lot of new or improved possibilities to interact with the game and other users. We have seen a lot of different approaches in the reviewed games and also used an integrated level editor approach for our game prototype. The different user actions can be summed up as create new content, solutions, stories, and games.

- **Create New Content**: you can add for example new levels, new items by combining existing in-game items, or create new missions.
- **Create New Solutions**: you can create new approaches for in-game challenges. You have a huge degree of freedom. The path is the goal.
- **Create New Stories**: modify the mission story or change the game's theme. This user action is often used along modifications.
- **Create New Games**: with the right tools you can create your own games within or outside the game. You can make use of all the possibilities the in-game engine offers you. Sometimes you can even create games of another genre than the base game.

These are typical game design as gameplay user actions. Further we have also observed some common behaviours that depend on some game design decisions.

Game Designer	Player
Set loose boundaries	Explore and break boundaries
Define basic rules/behaviour	Create new combined rules and behaviours
Open end gameplay	Personal victory conditions
Easy to user interface	Higher usage of game design as gameplay tools

Table 2: Comparison between game designer decisions and player behaviours.

These player actions and behaviours are common observations we have made, but we are confident that this is just the beginning of a much longer list. Now that we have listed common user actions we are approaching the question if there are game design as gameplay mechanics and dynamics.

9.4 Mechanics and Dynamics

One of our biggest concerns at the beginning of this thesis was whether game design as gameplay mechanics and dynamics exist at all, or if they are only exisiting mechanisms in new coatings. In some game reviews like *Sim Farm* we pointed out that a lot of traditional game mechanics and dynamics are in place while some other games like *Super Scribblenauts* shows only a lack of these.

The overview of user actions before helps us to propose that there definitely exist game design as gameplay dynamics and mechanics along traditional ones.

9.4.1 Game Design as Gameplay Dynamics

We have seen games using traditional building dynamics but somehow there is more about it. *LittleBigPlanet*'s create mechanisms offer much more depth than a building dynamic. *Minecraft* and *Super Scribblenauts* go far beyond discovery dynamics.

What we experience by playing game design as gameplay games is more than just exploring the world and building new levels. It's about exploring the boundaries of the game, use it in unexpected ways, create incredible complex levels, and thinking about the most impossible drawings and solutions. It's something game designers actually do when they make a game.

> *"1. Think of an idea.*
> *2. Try it out.*
> *3. Keep changing it and testing it until it seems good enough."*
> *(Schell, 2010, p. 27)*

It's about creating and achieving something. You create something with the provided tools and achieve not only mastery and victory, but new solutions, new items, new rules, new stories, and much more.

Game design as gameplay features a "*Create and Achieve"* dynamic.

Nevertheless we want to repeat that a create and achieve dynamic might appear along traditional dynamics(*see 4.4*). Now that we have defined the dynamic for game design as gameplay we present you the mechanics that cause them.

9.4.2 Game Design as Gameplay Mechanics

We have seen many reviewed games use traditional game mechanics beside their game design as gameplay elements. However these game design as gameplay elements, that we have never defined more precisely, are indeed independent game mechanics. After playing so many games it's obvious that additional mechanics are in place. After listing all the game design as gameplay user actions, and defining the related game dynamic, we are finally able to pinpoint

the game mechanics we have been looking for so long. We actually found them in all reviewed game design as gameplay games.

The game mechanics that let you create all the new content, stories, levels, themes can be summed up as mechanics of creation.

Mechanics of Creation

- **Add Content**: draw or write new forms and objects and add them to the level.
- **Open Solutions**: there is not a predefined solution. Player have the tools to create the right solution. Hardcoded solutions are replaced by feature vectors you have to simulate with your creations.
- **Stack Together**: in-game objects can be stacked together to build new creations or reach the mission goal. It's the same mechanic *Lego* made so popular. Also actions and behaviours can be combined to create for example new attack patterns for boss fights.
- **Theme It**: recreate popular movies, games, or stories. Usually this is realized by providing paint and texture tools.

This is just a list of interesting mechanic types we have experienced and is not complete. We handle them as we did with the already reviewed mechanics(*4.3*). The groups of mechanics are more interesting for us than to name every single possible type.

Mechanics of creation offer you more freedom how you can approach a game. However it requires also more creative input from you. Sometimes so much that it might not be a game anymore.

9.5 To Be a Game or Not

The question if games that utilize game design as gameplay mechanics and dynamics are still games seems to be a rhetorical one, because all the titles we have played were true games. They entertained and challenged us. However the open and sometimes unstructured play

conflicts with some popular game definitions by Chris Crawford or Katie Salen and Eric Zimmerman.

Chris Crawford states that a game is defined by being interactive, containing goals and competitors, and allowing attacks(*2003*).

> *"A game is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome." (Salen & Zimmerman, 2003, p. 80)*

> *"A game is a form of play with goals and structure." (Maroney, 2001)*

Games about creating levels, building worlds, or open end games with no victory condition may fail to comply with these definitions. However we observed that players put in their own goals, create rules in-game, compete against other creators for popularity, and attack them indirectly with some new creations or directly via multiplayer options.

> *"A mechanic is all about possibility. For many designers, this process of creation is even a game unto itself." (Brathwaite & Schreiber, 2008, p. 28)*

We can say the same about game design as gameplay. The process of creation, especially in combination with social interactions, is like a game. A new kind of game for the user. To soften the transistion from game design to gameplay also traditional game mechanics and dynamics are maybe used along to support the play, that we have been used to in the last three decades of video game history.

Chapter 10

Conclusions

Game design as gameplay is about transforming the process of creating content and rules of a game into a series of player‘s challenges. It does so by adding its own game mechanics. Mechanics of creation that let you perform tasks usually game designers do.

> *“Game Design is the act of deciding what a game should be.” (Schell, 2010, p. 25)*

We can describe analogously, that game design as gameplay let you, as user, decide how the game should be and how you want to play it. You create the levels, you write the stories and themes of your missions, you create your own solution for a challenge, and you create the victory conditions that gonna decide the next multiplayer match. Mechanics of creation give you just these powers.

The resulting core dynamic of these games can be described as creating and achieving. You create content and rules not only to achieve victory about the game, but also about your imagination and creativity. You are exploring the limits of the game, while you are creating experiences that no one else has done before. You are creator and explorer in one person.

To keep the transistion from game design to gameplay a playful experience for everyone traditional game mechanics may still interact with the mechanics of creation.

No matter how many different game mechanics are in use the more complex and time consuming creations get the more essential are social interactions. Sharing, comparing, and

discussing experiences as well as playing together are important motivators for game design as gameplay. Although social interaction possibilities might be organized and added as meta games by the community afterwards, developer initiated methods ease the access and offer better usability.

As developer, you can implement game design as gameplay mechanics in three ways. You can integrate the mechanics right into the core gameplay, as optional use to extend the game by creating more of the same, or offer additional tools outside the game for creating substantial modifications. In any case a comprehensible user interface is required to teach the player with the yet uncommon game design as gameplay analogies.

Game design as gameplay adds some interesting game mechanics and dynamics that encourage the player to be more active and creative than ever before. Our thesis just covers the first steps into a brave new gaming world that may lead to new expectations how games should be someday. Right now it's an interesting change of play and we hope to see more about game design as gameplay in the near future. In any case game design as gameplay provide designers some new mechanics to play around.

Chapter 11

Epilog

At the beginning of our thesis we had no real idea what would expect us. We received a rough overview what game design as gameplay might be and the hint that we should look at some games and analyse their features. Since then we came a long way. We have read dozens of papers and a few really thick books about game design in general. However we couldn't pinpoint where to start and how to continue with our research. We were torn between starting with an overview of game design theory or start with the games and reverse engineering game design as gameplay. In the end it was a good choice to start with the theory. Once we started to write one step followed the other and the mysterious fog of game design as gameplay began to disappear.

Also the hands-on work on our prototype really pushed us forward. Unfortunately we didn't have the time and resources to transform our prototype into a full-fledged game during our research. We have many ideas that we would like to add, but our bachelor thesis taught us the hard way to focus on the essential tasks. We highly recommend you to do the same, if you are just writing your thesis. Afterwards you can still continue your project.

Eventually game design as gameplay may cause a shift in game designer paradigms and more game designers are challenged to design exciting open end sandbox environments instead of guiding and leading the player through the entire game.

Last but not least we were astonished how user centered and dedicated video games were at the beginning. Much more games included for example a level editor. Nowadays we

are happy if we still have LAN support and can host our own dedicated servers. Gaming where have you gone?

11.1 Further work

Our thesis just represents the very first steps of defining and exploring game design as gameplay. Here are some ideas about possible follow-ups:

- What implications do game design as gameplay mechanics have on traditional mechanics?
- How can you improve the transformation from game design to gameplay?
- How does game design as gameplay change the reception and expectations among players?
- Who is the target audience of game design as gameplay? Are there any differences between game design as gameplay users and other gamers?
- Does game design as gameplay increase customer loyality? Buy users of game design as gameplay games more likely a sequel?

11.2 Famous last words

During our research we stumbled about a fiercely debated issue thirty years ago that hasn't ended till today: Piracy! Dear companies, that still don't understand that DRM protected games only hurt the paying and loyal customers while software pirates are enjoying flawless DRM-free hacked versions that can be even played offline, we are dedicating you these wonderful quotes and predictions back from 1981:

> *“I will not preach about the ethics of piracy, for honest people don't need sermons and dishonest people don't listen.” (Crawford, 1981)*

> *"...software will be less usable and enjoyable because the protection schemes used will probably interfere with the operation and use of the game." (Crawford, 1981)*

We would like to finish our thesis by dedicating the final words to all DRM-free developers:

THANK YOU.

Glossary

AAA-title	Describes a game with high value assets comparable to a blockbuster movie. http://en.wiktionary.org/wiki/AAA
Abandonware	Describes a discontinued product with no available official support. http://en.wikipedia.org/wiki/Abandonware
ACM Digital Library	http://portal.a3cm.org
Animal Crossing	Is an open-ended game where you are encouraged to participate in the daily life of a village. http://en.wikipedia.org/wiki/Animal_Crossing
Atari	http://www.atari.com
Battleships	A logic puzzle game where you have find and sink the enemy fleet. http://en.wikipedia.org/wiki/Battleship_(puzzle)
Bragging rights	Refer to an informal claim to be the first or best at something. http://en.wikipedia.org/wiki/Bragging_rights
Championship Lode Runner	Released 1984. http://www.mobygames.com/game/championship-lode-runner
Cops and Robbers	http://en.wikipedia.org/wiki/Tag_(game)
Counter-Strike	A mod for Half Life.

	http://en.wikipedia.org/wiki/CounterStrike
Crayon Physics Deluxe	*Independent Game Festival* winner 2008. http://www.crayonphysics.com, http://en.wikipedia.org/wiki/Crayon_Physics_Deluxe
***DAMN Battle League(*DBL)**	Once the worldwide largest Mac clanladder of tactical shooters. Inactive since June 2006. http://bl.damnr6.com
***DAMN R6**	Our community website about tactical shooters. Offering clanladders, mods, news and technical support. http://www.damnr6.com/
***DBL final map pack**	A mandatory mod to compete in the *DAMN Battle League. http://www.damnr6.com/macmods/grmap.shtml
Destruction Derby	A stock car like racing game where you received points for dashing other cars. http://en.wikipedia.org/wiki/Destruction_Derby
Electronic Sports League(ESL)	http://www.esl.eu
Facebook Connect	https://developers.facebook.com/docs/
Flattr	http://www.flattr.com
Gamasutra	Website about the art and business of making games. http://www.gamasutra.com
Guitar Hero	http://en.wikipedia.org/wiki/Guitar_Hero
Half-Life	http://en.wikipedia.org/wiki/Half-Life_(video_game)
Halo: Combat Evolved	Is a first-person shooter released 2001. http://en.wikipedia.org/wiki/Halo:_Combat_Evolved
Highscores	http://en.wikipedia.org/wiki/Score_(game)#High_score
IEEE-Explore	http://ieeexplore.ieee.org

IGN	Game and move reviews. http://www.ign.com
IGOR	An game included tool for Ghost Recon to create missions and more. An overview of its features can be found at http://ghostrecon.3dretreat.com/igor_info.asp
IGOR Tutorial	A tutorial by El Oso. http://eloso.3dretreat.com/Eloso/Igor/index.htm
Independent Game Festival	http://www.igf.com
Katamari Damacy	http://en.wikipedia.org/wiki/Katamari_Damacy
LittleBigPlanet	A jump and run game released in 2008. http://www.littlebigplanet.com, http://en.wikipedia.org/wiki/LittleBigPlanet
LittleBigPlanet 2	http://www.littlebigplanet.com/en, http://en.wikipedia.org/wiki/Little_Big_Planet_2
LittleBigPlanet Community	http://lbp.me
Lode Runner	Released in 1983. One of the first computer games with a level editor. http://en.wikipedia.org/wiki/Lode_Runner
Lode Runner Online – Mad Monk's Revenge	Released 1995. http://www.daggert.net/Folio/Programming/Presage/LodeRunner/Loderunner1.htm http://en.wikipedia.org/wiki/Lode_Runner_Online:_Mad_Monks%27_Revenge
Lode Runner – The Legend Returns	Released 1994. http://en.wikipedia.org/wiki/Lode_Runner:_The_Legend_Returns

Lynx	A handheld game console released by Atari 1989 featuring some innovate features like a backlit colour display. http://en.wikipedia.org/wiki/Atari_Lynx
Mario Kart	http://en.wikipedia.org/wiki/Mario_Kart
Mario Series	http://en.wikipedia.org/wiki/Mario_(series)
Memory	Is a game where you have to find pairs of matching cards. Also known as Concentration. http://en.wikipedia.org/wiki/Concentration_(game)
Mensch-ärgere-dich-nicht	http://en.wikipedia.org/wiki/Mensch_ärgere_dich_nicht
Minecraft	http://www.minecraft.net/, http://en.wikipedia.org/wiki/Minecraft
Minesweeper	A logic game invented in the sixties, where you have to disarm a minefield without detonating any mine. http://en.wikipedia.org/wiki/Minesweeper_(computer_game)
Namco	http://www.namcobandaigames.com
NPC	Is a non-player character that is controlled by the computer
Pac-Mac	An arcade game released 1980 by Namco, http://en.wikipedia.org/wiki/Pac-Man
PC Gamer	PC game reviews. http://www.pcgamer.com
Pokémon	Is a role-playing game about capturing and training creatures called Pokémon. http://en.wikipedia.org/wiki/Pokémon_(video_game_series)
Pong	An arcade game released 1972 by Atari, http://en.wikipedia.org/wiki/Pong
Prefire	Is a technique used in first-person shooters where you fire at a certain spot without seeing an enemy yet. However due

	your experience you know that one will appear within the next second giving you an advantage.
Prince of Persia	http://en.wikipedia.org/wiki/Prince_of_Persia_(1989_video_game)
Rainbow Six	http://en.wikipedia.org/wiki/Tom_Clancy%27s_Rainbow_Six_(video_game)
Rampage	http://en.wikipedia.org/wiki/Rampage_(arcade_game)
Red Storm Entertainment	http://www.redstorm.com
Rogue Spear	http://en.wikipedia.org/wiki/Rogue_Spear
RTS	Abbreviation for real-time strategy game
Screencast	Is digital recording of your computer screen output. http://en.wikipedia.org/wiki/Screencasting
Sea Wolf	http://en.wikipedia.org/wiki/Sea_Wolf_(arcade_game)
Sega Rally	An arcade game where you pilot a rallye car. http://en.wikipedia.org/wiki/Sega_Rally
Server-side only	Describes all data that is only required by the server and not its clients.
Sid Meier's Civilization	http://www.mobygames.com/game/sid-meiers-civilization
Sim City	A city-building simulation designed by Will Wright 1989. http://en.wikipedia.org/wiki/Sim_City
Sim Farm	http://en.wikipedia.org/wiki/Sim_farm
Space Invaders	Is an arcade game released 1978. http://en.wikipedia.org/wiki/Space_Invaders
Spore	Is a multi-genre single player god game.

	http://en.wikipedia.org/wiki/Spore_(2008_video_game)
Steam	Is a game distribution service and online community. http://www.steampowered.com
Super Scribblenauts	http://games.kidswb.com/official-site/scribblenauts, http://en.wikipedia.org/wiki/Super_Scribblenauts
Tamagotchi	Is a pocket game about raising a Tamagotchi. http://en.wikipedia.org/wiki/Tamagotchi
TeamWarfare League(TWL)	http://www.teamwarfare.com
Tetris	http://en.wikipedia.org/wiki/Tetris
The Legend of Zelda: Twilight Princess	http://en.wikipedia.org/wiki/Twilight_Princess
The Schatzmeister	The final version of our Schatzmeister prototype(version 3) can be played online at http://www.damnr6.com/schatzmeister/version3/. As long as Facebook doesn't change its API the game should work in any modern browser. The web prototype can be accessed under http://www.damnr6.com/schatzmeister/version2/
The Sims	A life simulating game designed by Will Wright. http://en.wikipedia.org/wiki/The_Sims
Tile Map	http://en.wikipedia.org/wiki/Tile_Map
Tom Clancy's Ghost Recon	Game of the year 2001 by *IGN* and *PC Gamer*. http://en.wikipedia.org/wiki/Tom_Clancy%27s_Ghost_Recon_(video_game)
Tomb Raider	http://en.wikipedia.org/wiki/Tomb_Raider#Video_games

Tower Defense	http://en.wikipedia.org/wiki/Tower_defense
Track & Field	http://en.wikipedia.org/wiki/Track_%26_Field_(arcade_game)
Twisted Metal	Is a vehicular combat game originally released for the Playstation in 1995. http://en.wikipedia.org/wiki/Twisted_Metal
Twitter	http://www.twitter.com
Ubi Soft Entertainment	http://www.ubi.com/
Warthog Jump	Describe fying Halo buggies. Many movies can still be found at http://www.youtube.com/results?search_query=Warthog+jump&aq=f
Xbox Live	http://www.xbox.com

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