

Theory as Game: Designing the *Gamegame*

Aki Järvinen

Veikkaus the Finnish National Lottery
Karhunkierros 4
01009 Veikkaus
+358-40-5041367
aki.jarvinen@veikkaus.fi

ABSTRACT

Is there a way to analyze games by the means of a game? Is there a way to brainstorm game ideas and design solutions through theory? Finnish scholar and game designer Aki Järvinen presents an approach where a card game meets design meets game studies. The approach presented in the paper is similar to Scott McCloud's *Understanding Comics: a theory of comics* in the form of a comic book. Respectively, the 'Gamegame' is a card game where the players design games by collecting elements that make up a design for a game. This paper introduces the theoretical premises of the case study and situates it into the contexts of game studies and design. In addition, the paper summarises some aspects of the design process and the dilemmas it has presented, and analyses their subsequent solutions. Experiences from play-testing and using the game in industry contexts are also discussed briefly.

Keywords

game studies, game design, concept design, design research, edugaming, brainstorming

THEORY OF GAME ELEMENTS

A general theory on various elements that make up games presents the basis for the author's Ph.D. thesis (see [2] for an early version of the theory). Rules, goals, and game environments are among such elements. The theory of game elements, as it is called, is inducted from a large sample of both classic and contemporary games. The theory is formulated from a standpoint where card, board, sports, parlour, role-playing as well as computer games are seen as equals; as aesthetic objects bound by rules that people engage with in order to enjoy a particular kind of experience, be it based on competition, fellowship, challenge, narrative, etc. In the thesis the author promotes a view of games as systems, i.e. dynamic wholes with interacting parts. These parts are discussed and defined as specific game element types.

The theory introduces nine types of game elements, in three classes:

- The *systemic* game elements include four elements that are: goals, components, procedures, environments.
- The *behavioural* game elements include two elements: players and contexts.
- In addition, there are the *compound* game elements: rules, game mechanics, and theme,

Proceedings of DiGRA 2005 Conference: Changing Views – Worlds in Play.

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and interface.

For instance, the classic board game Go is made out of the following systemic elements:

- goal: capture your opponent's stones and enclose areas of the game environment
- components: the stones, black or white, that the two player possess
- procedures: setting up the board, calculating the score
- environment: the 19 x 19 grid

Go, as all games, incorporates the behavioural elements: Two players, with their personal contexts, such as their general knowledge of Go and skills in playing it, and the general context of where and when the game is being played. These behavioural elements are bound to systemic elements via compound elements: rules and game mechanics. Game mechanics are means given to the players to produce input to game and thus affect its systemic elements. In the case of Go, this means being able to place stones onto the game board, i.e. the game system known as Go affords a 'placing' mechanic for its players.

According to the theory, it is the particular configurations of game elements and/or their implementation that differentiates one genre of games from another. For instance, games of chance rely strongly on procedures that produce randomness into the game (draws, throws of dice, etc.). Strategy games often privilege game components and managing their relations. So-called 'character-action' computer games lay emphasis on the characterization of the player-component, i.e. Solid Snake in the *Metal Gear Solid* series, Lara Croft in *Tomb Raider*, and the thematized world that the character lives in.

If we take another example from the domain of digital games, e.g. a recent best-selling console game such as *Grand Theft Auto: San Andreas* (Rockstar Games, 2004), we can find some same elements as in Go, but also other elements, and implemented with different technological means:

- goal: various goals and subgoals in the different missions, such as gaining respect of your peers; chasing and killing a member of enemy gang; impressing your character's girlfriend with dance skills, and so on.
- components: a number of different components ranging from the main character Carl Johnson to weapons, vehicles, clothes, etc.
- procedures: the artificial intelligence of non-player characters; procedures that govern the simulative aspects of the game, such as the progression of time; also procedures relating to the theme of the game, i.e. narrative cut-scenes and dialogue
- environment: the virtual city of San Andreas and its surroundings simulated in three dimensions
- theme: hip-hop culture of the 1990s with respective music, fashion, parlance, and other signifiers

- interface: the Playstation 2 game pad with the control schema it affords
- players: San Andreas is mostly a single-player game, with some mini-games (billiards etc.) and missions where a fellow player can participate
- contexts: various, relating to the players' relation to the theme, their experience of preceding Grand Theft Auto games, their ethnic origin, their taste in music, etc.
- game mechanics: various mechanics having to do with moving on foot, swimming, driving vehicles, aiming and shooting, combat, dialogue, dancing, etc.
- rules: numerous rules governing the individual missions and the player's actions in relation to the game elements employed in general; these rules gel together the elements into an aesthetic object we know as *Grand Theft Auto: San Andreas*

So we see that particular games, like Go and *San Andreas*, are specific combinations and configurations of different game elements defined in the theory. Thus, the purpose of the card game is to transform this task of combining and configuring – what is known as game design – into game form.

THEORY AS DESIGN

By its nature, the Gamegame case study constitutes a design task strongly based on theoretical interest. Thus, it finds its academic context in methods and practices grouped under 'design research'.

Design research is a set of research methods that are especially geared towards informing design and product development tasks and their methods. Peter Lunenfeld has discussed the various attempts to define design research from Bauhaus to date. He cites Sir Christopher Frayling's three-fold identification of key areas in design research: 1) research *into* design, 2) research *through* design, and 3) research *for* design. [3] The first approach presents the traditional methods of studying art and design, the second includes research into materials and their development, and the third – *for* design – aims at producing objects (prototypes etc.) that function as results of the research in themselves.

It is the Gamegame in particular that transforms the key concepts and the overall theory of my thesis into a practical application. The documentation of its' design process aims at providing new knowledge from the perspective of research through design. In addition, it presents a tangible result of the thesis' theory.

In designing the Gamegame I have employed an iterative design process, as promoted by game design theorists (e.g. [1], [4]). Therefore, the documentation process of the design of Gamegame has been crucial, and I've tried to recapture the design challenges and solutions into the case study.

THEORY AS GAME

In the following, I will shortly introduce the Gamegame itself. The objective of the game is to

collect cards which make up a design for a game. There are mandatory cards that each design should have, and extra cards that the player may use to make his/her design more effective and sophisticated. Different cards and their combinations give different amounts of points, and the after three rounds – ‘milestones’ – the player with most points is the winner. The game ends once the third milestone is completed. In practice, this happens when the third and final deck of cards is depleted.

A dynamic whole with interacting parts

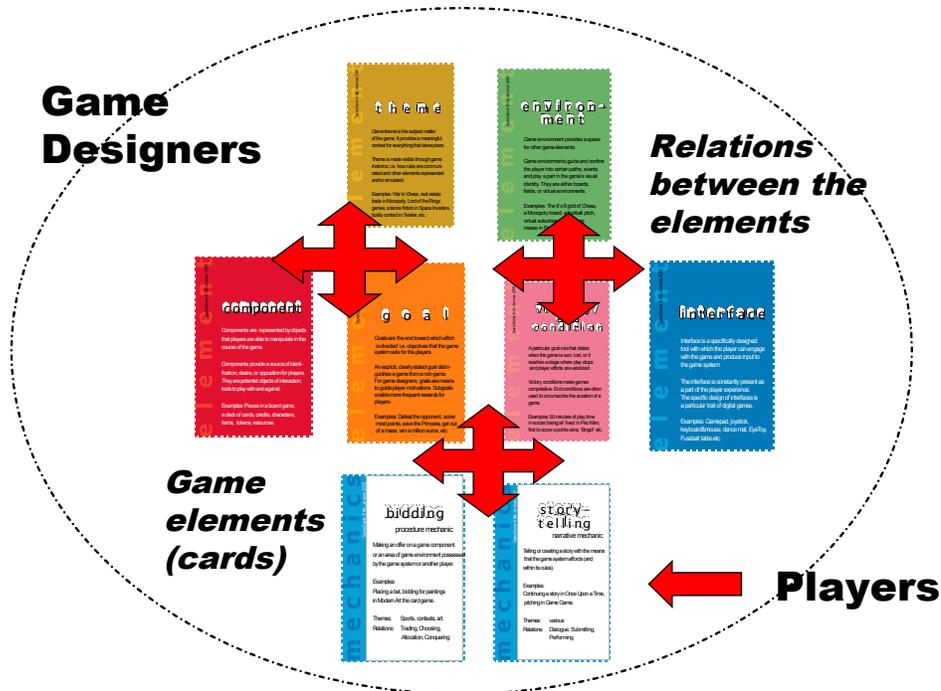


Figure 1: Gamegame cards as elements of a game system that interact.

The cards represent the game elements, i.e. there are goal, component and theme cards, etc. In addition there are also cards representing the compound elements: specific rule cards, such as

victory/end condition cards, and a number of cards representing game mechanics which can be combined into whatever combinations the player desires. Behavioural elements are represented by ‘emotion cards’ which incorporate another theoretical topic of the thesis to the game: a so-called mood typology which aims at producing a framework of the emotional spectrum that games in different genres afford for their players.

There are also deliberately scarce resources in the form of budget and asset cards. Managing these resources helps the players to progress from one milestone to another. The milestones encourage the players into role-playing as they have to ‘pitch’, i.e. verbalise, their design idea for the player that possesses the ‘producer card’ at that time. The pitching functions as a selling mechanic, and it is implemented for pedagogic purposes so that the players would also learn something general about game structures, and so forth the theory, in the process of playing the game.

GAMEGAME PLAY EXAMPLES

Let us take a look at an example of how a design might evolve during a game:



Example: your cards after round 1



goal:

get rid of apples

component:

apples & oranges

environment:

jungle

mechanic:

trading

trading the fruit

Your design lacks: victory/end condition

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Figure 2: Game play example – player cards after first milestone.

Figure 2 is taken from the rule book of the game and it illustrates a situation where the player

enters the milestone phase with four cards: one each of goal, component, and environment cards and a trading game mechanic card. Now he has to verbalise a possible design out of this combination of elements, i.e. configure them into a form of a game idea. Also, he has to identify which elements are still lacking from the design.

Example: your cards after round 2



goal:
get rid of apples

component:
apples & oranges

mechanic:
trading
trading the fruit

mechanic:
contract
teams of two are able to instantly discard their apples

asset:
corporate takeover
steal publisher card

Your design lacks: victory/end condition, (environment)

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Figure 3: Game play example – player cards after second milestone.

In the example, or hypothetical player starts with an idea of apples and oranges as game components, and proceeds to set getting rid of the apples as the goal of the game. The game has an environment element in the shape of a jungle. The player is able to trade the apples into oranges in the hope of getting rid of the apples. This presents one possibility of how to verbalise an idea in the first milestone according to the set of cards. In any case, the design lacks a victory/end condition card and a procedure card. Regardless of whether the publisher buys the concept, the game proceeds to round 2.

EXPERIENCES FROM PLAY-TESTING

The need to iterate the game's design became very evident already before the first actual play-testing session. A number of simulations of the game led to the decision that the initial point-scoring system was too complex, and that there should be a rudimentary 'basic edition' of the game, with only the most important cards and elements, and an 'advanced version' with the emotion cards included.

Thus, ad-hoc revisions for the first play-testing session were made: Only the basic cards were used and each card in possession equalled one point. In relation to the modified point-scoring system I also made an ad-hoc decision to substitute the victory condition. Instead of complex calculations that would determine the winner as the concept with most points I came up with a voting mechanic: to end the game, the players would allocate their points as votes for the other concepts. The point was to give more value to the verbal description and increase the social 'fun factor' of the game.

I recruited four players for the first play-testing session. I did not employ any systematic form or interview method to get feedback but opted for a collective, free-form debrief discussion after the game. Nevertheless, it provided results to complement the general observations during the session. The game was greeted quite well and it was generally considered fun. It inspired 'crazy' ideas, such as a game concept best described as 'beer bottle recycling and hunting game'. Two of the concepts developed during the session were ideas for computer games and the other two could be described as 'pervasive parlour games'.

Some missing rules and loopholes were spotted, but this was one of the purposes of the session. For example, the players traded very few cards between each other. My observation was that they were too engaged in trying to understand the basic goal and rules of the game. Therefore the social interaction I was seeking with a trading mechanic did not emerge. On the other hand, the voting turned out to be a successful decision, even though its rules were modified on the fly during the session: it was decided that players should allocate *all* their points/votes between other players.

I also made some other conclusions based on the test, such as a decision to provide summary cards of the mandatory elements and player options during a turn, so that players can always check what is missing from their design and what options are available on their turn. (During the test they had to check with me frequently.)



Figure 3: Gamegame cards: First & second generation versions



Figure 4: First playtesting session, November 2004.



Figure 5: Playtesting session at Sulake Corporation, April 2005.

The iterations were implemented for the following test sessions. Consequently, the game has been play-tested and iterated several time during the first quarter of 2005 and it has also been play-tested in industry contexts, such as Finnish mobile game developers, Nokia Research Center, and Sulake Corporation. From these collaborations, Gamegame Solitaire has emerged, i.e. a version where individuals or teams play the game with pre-set design constraints and try to flesh out the design with the help of the Gamegame deck.

CONSEQUENCES FOR GAME DESIGN AND RESEARCH

The benefits of the Gamegame for designing games are at least two-fold: The theory behind the game dissects games into distinguishable elements that enables detailed analysis of games. This *research into game designs* leads to *research for game design*: The Gamegame enables brainstorming new ideas and making design principles and premises explicit – and also unlocking design dilemmas. The selection of cards is meant to foster innovative and unusual combinations between game mechanics, for instance. In summary, the Gamegame hopes to function as a tool both for detailed game analysis and early phases of game design. It also demonstrates a concrete way to bring together both academic and industry needs.

The thesis and the game are due to be completed before the summer of 2005. At the time of writing, six play-testing sessions and design iterations have been completed. The process can be

followed in the form of a design diary at:

<http://www.gameswithoutfrontiers.net/gamegame.html>

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