University of Gothenburg

Assignment 1

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Abstract

This assignment is about analysing and comparing the two games Hive and 7 Wonders. In doing so the design structures that are used in the two games are being looked at.

1 Introduction

For this assignment two games are analysed and compared. The two games chosen for this analysis are Hive and 7 Wonders. The goal of the analysis is to find out what design structures are used in the games and how they are used similarly or differently in the two games. This analysis is executed by looking at four questions:

- RQ1: What design structures are used to keep players engaged with the game, both regarding interest and regarding actively doing actions?
- RQ2: What design structures are used to make the games typically end near the stated time (given players that know the rules)?
- RQ3: What design structures are used to make players interact with each other, or at least have a feeling that they have been playing a game together?
- RQ4: What design structures exist to make players feel that they are achieving something while they are playing?

2 Definitions

When discussing the games, Game Design Patterns will be used as defined by Staffan Björk, Sus Lundgren & Jussi Holopainen[1] and marked like this **Pattern**. When the terms Mechanics, Dynamics and Aesthetics are named they will be used as defined in the MDA framework by Robin Hunicke, Marc LeBlanc and Robert Zubek[2].

3 Game Descriptions

3.1 Hive

Hive is a perfect information **Turn-Based**[3] strategy game for two players, which does not make use of a board and can be played on any flat surface. The game consists of twenty-two hexagonal **Tiles**[4], which can be viewed as the systems entities, depicting five different creatures, with the creature depicted defining the entities properties. The twenty-two **Tiles**[4] are divided into eleven black, which are played by one player, and eleven white **Tiles**[4], which are played by the other player. Of these **Tiles**[4] there is exactly one black **Tile**[4] and one white **Tile**[4], that are depicting bees. These two **Tiles**[4] are referred to as queens. A player's turn consists of either placing a **Tile**[4] (**Tile-Laying**[5]) or moving one of the already placed **Tiles**[4]. The game starts as the first **Tile**[4] is placed. All the following **Tiles**[4] have to be placed adjacent to **Tiles**[4] of the same colour. The exception to this rule is the first **Tile**[4] of the second player, which has to be placed adjacent to the first **Tile**[4] of the first player. Here the **Construction**[6] pattern is used, because the players build the board as they play. Once placed the **Tiles**[4] have **Orthogonal Differentiation**[7] as they have different **Abilities**[8] and movement options depending on the creature they are depicting. The game utelizes **Connection**[9], which means the **Tiles**[4] may not be moved in such a way that the grid is separated. The goal state is reached by **Enclosure**[10] when a player manages to completely surround the other player's queen. The game also makes use of **Area Control**[11]. As the two players playing the game are playing against each other the main aesthetic of the game is Competition.

3.2 7 Wonders

7 Wonders is a **Turn-Based**[3] strategy **Card**[12] game for two to up to seven players. Every player is playing one city, which has different properties and serves as an **Abstract Player Construct**[13]. During the game the players play through three ages. Every age has a specific **Deck**[14] of **Cards**[12]. These **Cards**[12] may or may not have certain requirements that have to be met for the **Card**[12] to be played. Once played a **Card**[12] can either have an immediate effect or help developing the city, e.g. by providing **Renewable Resources**[15] or increasing military power, to gain advantages later in the game. In every age each player gets seven **Cards**[12]. Every player has to chose one of their seven **Cards**[12] and pass on the remaining six to the neighboring player, which is a form of **Drafting**[16]. The chosen **Card**[12] can be used to be played and

use the **Card's**[12] **Abilities**[8], to build up the city's wonder or to be exchanged for coins. The coins can e.g. be used in a mechanic here referred to as trading, which enables a player to give a neighboring player a certain amount of coins to gain access to that neighbor's resources in that turn. The **Cards**[12] chosen by the players are revealed at the same time. After that every player is repeating this process with the six **Cards**[12] he was given. The age ends when there are no **Cards**[12] left. At the end of every age neighboring cities are compared in military power. Throughout the game the players have different ways to gain so called victory points. These victory points can be gathered by e.g. having higher military power than the neighboring cities, reaching certain stages of building the cities wonder, playing **Cards**[12] that grant victory points immediately or collecting **Sets**[17] of specific **Cards**[12] to name a few. After the third age the victory points every player has gained during the game are summed up and the player with the most victory points is the winner. The aesthetics of 7 Wonders are Competition, as every players goal is to collect more victory points than the other players, and Expression, as every player has a way of expressing themselves by developing their city e.g. building a strong military, developing sciences or gathering lots of **Renewable Resources**[15]. Looking at 7 Wonders as a system, the entities are the cities, with their properties being the resources they access and the different stages of the city's wonder, the **Cards**[12], with some of the properties being the requierements, the type of **Card**[12] and their effect, and the tokens, which have a value and a type (victory points or coins) as their properties.

4 Analysis

4.1 RQ1: Player Engagement

What design structures are used to keep players engaged with the game, both regarding interest and regarding actively doing actions?

4.1.1 Hive

Orthogonal Differentiation[7] in the **Tiles**[4] create a complex and emergent sysem, so the player usually has a lot of valid actions to chose from, keeping him engaged during his turn. Also the game provides **Stimulated Planning**[18] so the player can try to predict the opponents actions, because there is no **Randomness**[19] involved, which can give the player a lot to think about, keeping him engaged. This may also keep the player engaged during the opponents turn as he can keep trying to analyse the board and try to read his opponent. Else there is no activity for the player during the opponents turn as he cannot take any actions to influence the game state.

4.1.2 7 Wonders

The game can keep the players engaged by having the players decide how they want to develop their city, which hands the players a way to express themselves. Since there is no

Player Elimination[20] in 7 Wonders and the players take their turn simultaneously there usually are no long periods of being inactive for the players, which also assist in keeping the players engaged. Also the **Card's**[12] effects get more powerful with every era, which prevents a game session from having a runaway leader early on in the game. This way the it is usually unclear who the winner is until the end of the last era, which also helps keeping the players engaged.

4.1.3 Comparison

Although both games are **Turn-Based Games**[3] Hive is more likely to have longer periods of players being inactive, because in Hive the turns are taken each player at a time while in 7 Wonders the **Turn Taking**[21] is simultaneous. Both games offer the player many decisions to make, but while Hive can create more engagement with giving the player a possibility for **Stimulated Planning**[18], players in 7 Wonders are more affected by **Luck**[22] and are kept engaged by being in action most of the time.

4.2 RQ2: Reaching End State in Time

What design structures are used to make the games typically end near the stated time (given players that know the rules)?

4.2.1 Hive

One design structure to make the game end near the stated time is that the players have to play their queen within their first four turns. This way the queens can not be held back until late in the game and the queen can not be placed far away from the opponents **Tiles**[4]. A player can also use specific **Tile**[4] placement or some of the **Tiles'**[4] **Abilities**[8] for **Movement Limitation**[23] and prevent the opponents queen from constant **Evasion**[24]. The limited amount of **Tiles**[4] and the need of **Connection**[9] between the **Tiles**[4] also limits the possible distance between a player's queen and the opponents **Tiles**[4]. In theory a game can still be longer than the stated time, as there is no rule which forces a player to decide on his action in a given time, and players can prolong a game session if they are more focused on preventing their opponent from reaching their goal than on trying to reach their own goal.

4.2.2 7 Wonders

7 Wonders has a limited amount of turns (twenty-one turns, seven turns each era), which leads to the game usually ending within the stated time. In the early turns of an era, when players have more **Cards**[12] to chose from, the players may in some cases suffer from **Analysis Paralysis**[25], which may lead to an prolongation of the game session as there are no rules, that force a player the make a decision in a limited time.

4.2.3 Comparison

Regarding reaching the games end state in the stated time the two games have different structures. Altough both games can be prolonged by **Analysis Paralysis**[25], 7 Wonders ends after a set amount of turns, while the players in Hive can theoretically take infinite turns and how fast the end state is reached is depandent on players' skills and strategies.

4.3 RQ3: Player Interaction

What design structures are used to make players interact with each other, or at least have a feeling that they have been playing a game together?

4.3.1 Hive

Most of the player interaction in Hive is done through **Tile-Laying**[5] and **Movement**[26] as a player is forced into **Context Dependant Reactions**[27] depening on his opponents actions, so a player has to adapt and react to his opponents strategy.

4.3.2 7 Wonders

Most of the player interaction in 7 Wonders comes down to the **Drafting**[16] of **Cards**[12], where players can choose a **Card**[12] for themselves and pass the remaining **Cards**[12] to their neighbor. This pattern can also lead to dynamics like players denying their neighbors access to specific **Cards**[12] by choosing these **Cards**[12]. The effects of some **Cards**[12] and the trading mechanic also make use of the **Cards**[12] of the player's neighboring players. This can lead to minor player interaction, but neighbors have can not deny trades or **Card**[12] effects. Another source of player interaction can be the military system which can lead to a dynamic where neighboring players try to trump each other regarding military power.

4.3.3 Comparison

While in Hive a player's player interaction is limited to interactions with the one opposing player by mainly reacting to the opponents actions in **Context Dependant Reactions**[27], a player in 7 Wonders usually has two neighbors to interact with. The interaction in 7 Wonders can also occure in more different ways.

4.4 RQ4: Feeling of Achievement

What design structures exist to make players feel that they are achieving something while they are playing?

4.4.1 Hive

Game Element Insertion[28] and **Construction**[6] can provide a feeling of achievemet, as players build the board while they play and manage to increase their influence

on the board. A player managing to pressure the opponent via **Enclosure**[10] or **Movement Limitation**[23] may also have a feeling of achievement. Dynamics can also be a source of those feelings, e.g. when players manage to deceive their opponents or predict their opponent's next move correctly.

4.4.2 7 Wonders

The **Player-Planned Development**[29] and **Construction**[6] by playing **Cards**[12] of the players choosing can lead to a feeling of accomplishment. This is especially the case when a player is able to play **Cards**[12] that grant victory points immidiately or that build on top or make use of previously played **Cards**[12]. Another source for a feeling of achievement can be when players have higher military power than their neighbors, which also increases the players' victory points.

4.4.3 Comparison

Both games make the player feel that they are achieving something by **Construction**[6], but while Hive also creates this feeling when a player is able to pressure his opponent, 7 Wonders mostly creates this feeling by giving the players the ability to chose how they want to develop their cities and when they are able to do so efficiently.

5 Conclusion

Although Hive and 7 Wonders are both **Turn-Based**[3] strategy games with a focus on competition as their main aesthetic, they vary greatly on how they achieve player engagement and how the end state is reached. The structures that cause this difference are mainly the different approaches in the **Turn Taking**[21], which is alternating in Hive and simultaneous in 7 Wonders, the possibility of theoretically having infinit amount of turns in Hive, while 7 Wonders always has the same amount of turns, and the information given to the player, as Hive is a perfect information game while 7 Wonders uses **Cards**[12] to create **Randomness**[19]. Both games can be viewed as emergent systems with complex patterns, that create **Context-Dependencies**[27] and can sometimes lead to **Analysis Paralysis**[25].

6 References

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