Gameplay Design
Assignment 2
Analysis of *7 Wonders* and *Ricocheting Robots*

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1 Gameplay description 7 Wonders

7 Wonders was released in 2010 and the goal is to build a civilisation in an ancient setting. The game consist of several card types and a player unique game board showing the status of a player's civilisation. The different cards represent different buildings which each contribute to the civilisation in some way. There are resource spawning, such as iron, chemicals or wood. *Military cards* which are used to battle with one's neighbours, these battles give points to the victors and deduct points from the losers. *Science cards*, which generate points at the end of the game. There are three different types of *Science cards*, each with a unique scientific tool. The amount of points given by *Science cards* is based on the amount of complete science tool sets that has been collected, as well as the number of cards you have of each unique science tool type. Another card type is *Utility cards*, they have an immediate effect on the game state. These cards are either played to collect currency instantaneously or used to establish trading posts that give discounts while trading with one's neighbours. The last card type is *Point cards*. They either consist of buildings that give a fixed amount of points or buildings that give a dynamic amount of points based on one's own and neighbouring civilisation statuses. The game is divided into three ages, each age is divided into six turns. Each turn every player picks a card which is either played, discarded or used as a resource to build a wonder. Wonders have different impact on the game, they can either generate resources, points, science, currency or military power. The effect of wonders are unique for each civilisation. The rest of the cards are passed to the next player in a drafting fashion. To play a card some resources must be paid, they can either be resources generated by one's own civilisation or they can be bought from neighbouring civilisations, provided they possess them. After the three ages have passed points are counted for each player's success in each card type area, such as military, science and point cards. The amount of currency currently in each player's possession is also counted and rewarded with points. The player that has the most points wins the game.

1.1 Gameplay of 7 Wonders using the component framework

In this section we are breaking down the gameplay elements of 7 wonders by using the component framework (?, ?). Not all concepts will be listed, only *game instance*, *game session*, *player session* and *goals and subgoals*. This is to give a compact overview of which gameplay elements that affect the player. Other parts of the component framework has been used to form the Game Design Pattern analysis found in section 3.

1.1.1 A Game Instance

- Which cards that a game should use is decided by the number of players
- Players choose a civilisation by picking a player unique game board
- Game session begins simultaneously for all player
- Outcome is determined by counting points based on card types and currency
- Clearing the game state

1.1.2 A Game Session

- Pick civilisation
- Draft of the first age
- Pick a card, choose one of the following actions: play it, discard it or use it to build a wonder. Pass the rest of the cards to a opponent.
- Drafting session of the second age
- Pick a card, choose one of the following actions: play it, discard it or use it to build a wonder. Pass the rest of the cards to a opponent.
- Drafting session of the third age
- Pick a card, choose one of the following actions: play it, discard it or use it to build a wonder. Pass the rest of the cards to a opponent.

1.1.3 A Player Session

In this game the player session is the same as the game session. All player sessions occur simultaneously due to the drafting mechanics.

1.1.4 Goals and subgoals

- Get as many points as possible.
- Complete scientific tool sets.
- Gather as many scientific cards of the same type as possible.
- Have higher military power than your neighbours.
- Complete the civilisations wonder.
- Gather as many points as possible by strategically using the dynamic point cards.
- Have enough resources to play the perfect cards.

2 Gameplay description Ricocheting Robots

Ricochet robots is a game where players challenge each other by trying to move a robot to a certain point using as few moves as possible. The game consists of a board with a grid layout. Some of the grid tiles are unique goal tiles. The goal tiles have a color that matches one of the robots(except the optional support robot) and a symbol. The board also has obstacles in the form of walls, which have been placed between some tiles. A robot cannot move through these walls, instead they ricochet along or away from the wall in the direction of the player's choice. Each turn a random goal token is revealed. Then each player simultaneously tries to figure out the path requiring the least amount of moves. The goal is to move the robot with a color matching that of the goal token to the board tile with the corresponding symbol on it.

When one player thinks he or she has found a legitimate path, that player states the amount of moves required to carry out the task. The other players have one minute to try to beat the first player's number of moves. This is done by bidding the amount of moves needed to complete the path. A players bid can never be increased, but could be lowered if he finds a better solution. A player could also bid a higher amount of moves than the original player, in case his solution turns out to be incorrect. When the time ends, the player with the fewest moves that can show his solution gets the point and a new turn begins.

The game ends when one of the players have collected a set amount of tokens, the amount required to win depends on the number of players.

2.1 Gameplay of Ricocheting Robots using the component framework

With the same motivation as stated in section 1.1, this section only contains *game instance*, *game session*, *player session* and *goals and subgoals* to give an overview of the gameplay elements.

2.1.1 A Game Instance

- Decide whether to use the optional support robot
- Place Robots randomly on board tiles
- Game session begins simultaneously for all players
- Outcome is determined by counting points based on the amount of goal tokens
- Clearing the game state

2.1.2 A Game Session

- Goal token revealed
- Figure out path given a specific robot and a goal tile
- Bid the amount of moves for that path
- During the time limit try to improve one's solution
- Repeat until one player has gathered enough tokens to win

2.1.3 A Player Session

In this game the player session is the same as the game session. All player sessions occur simultaneously due to the mutually controlled game pieces and are played in real-time.

2.1.4 Goals and subgoals

- Collect as many tokens as possible
- Find the path for given robot and goal tile with as few moves as possible
- Beat the other players move bids

3 Analysis using Game Design Patterns

We have analysed these games using Game Design patterns framework (?, ?). Some of the patterns are fetched from the wikipedia for Gameplay Design Patterns (`gdp2.tii.se`), while others are defined by us. One weakness of the Game design patterns is that every pattern either needs to be redefined in every analysis so it can not be misinterpreted or universally defined(in a database or wiki). A negative aspect of universally defining patterns is that people could partially lose track of their own analysis of the gameplay. Instead they might try to make certain predefined patterns fit, as if trying to fit a piece into a puzzle,

while possibly missing other key patterns. On the other hand, if they are not universally defined, it could be time consuming defining all of them by yourself.

To identify which patterns the gameplay consists of we have been using the *Component Framework* (?, ?), mentioned in section 1.1 and section 2.1, as well as playtesting. The framework has offered help in approaching the gameplay from certain given viewpoints. One disadvantage of the component framework is that you might not find abstract patterns which are easily discovered by playing the game. For example in Ricocheting Robots we found out that time pressure ended up resulting in less *social interaction* and *challenging gameplay*, two patterns we did not find using the component framework. Thus one should not only rely on the framework for a analysis, even though it offers a quicker way to analyse games, one should use playtesting as well when trying to find patterns. Using playtesting alone may also be disadvantageous, since it is both time consuming and all parts of the gameplay may not be tested under the playtest session. However, as previously stated, playtesting provides an opportunity for finding abstract gameplay patterns that might be hard to find using the component network.

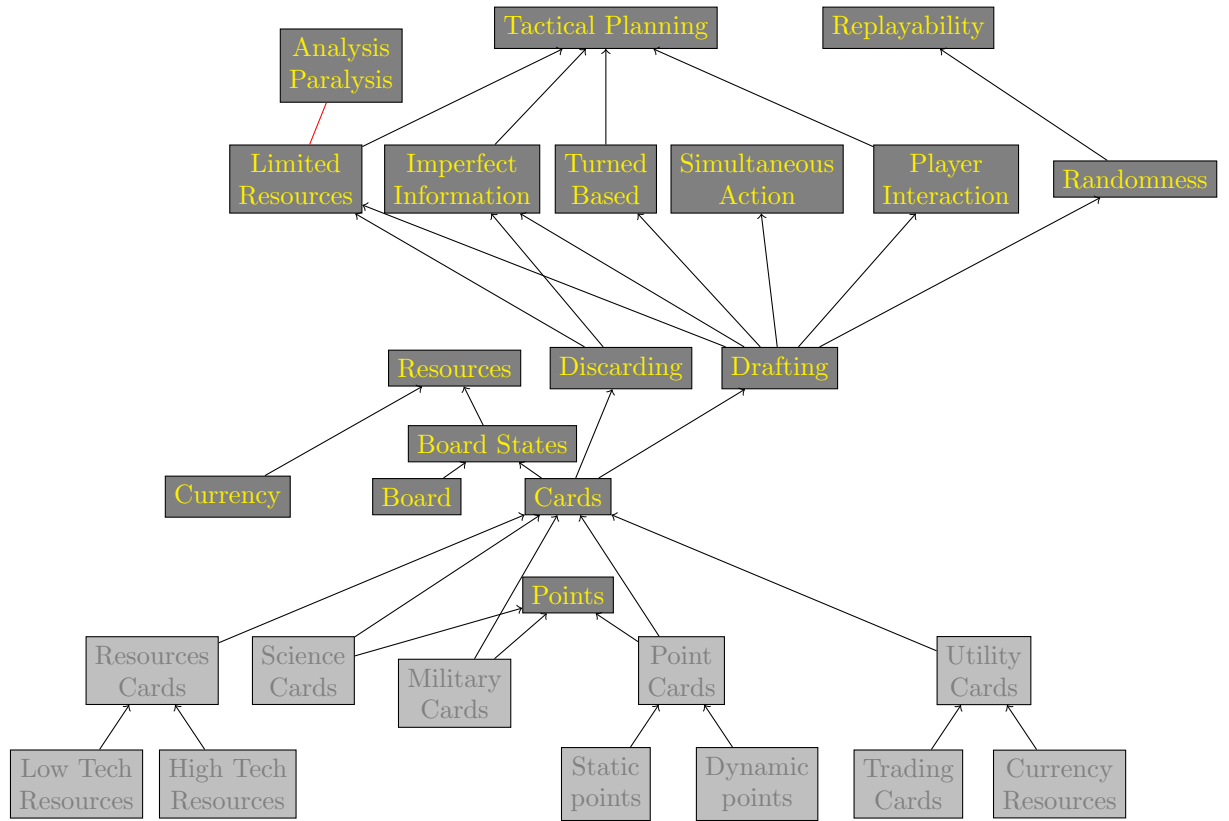## 3.1   7 Wonders analysis using Game Design Patterns

Figure 1: Analysis of 7 Wonders using Game Design Pattern. Light gray boxes indicate gameplay mechanics unique to 7 Wonders. Dark gray boxes are abstract mechanics found in other games. Edges with arrows indicate that the pattern being pointed to is instantiated by the other pattern connected to the edge. Red edges indicate that a pattern is in conflict with another pattern.

3.2 Ricocheting Robots analysed using Game Design Patterns

3.3 Similarities and difference between the game using the analysis

As can be seen in Figures 1 and 2, there are a lot of similarities between the games. Despite the fact that they are of different genres and that their basic gameplay does not share any apparent similarities. The main gameplay mechanic is that of the *tactical planning* which is important in both games. In 7 Wonders the player has to plan which card to use by *tactical planning* and in Ricocheting robots the *tactical planning* element is present when deciding how to move and place the robot pieces to reach the goal tile.

Another similarity is that both games have been able to avoid *Analysis Paralysis* through different mechanics. *Analysis Paralysis* is when a player is presented with a couple of options and takes a long time to reach a
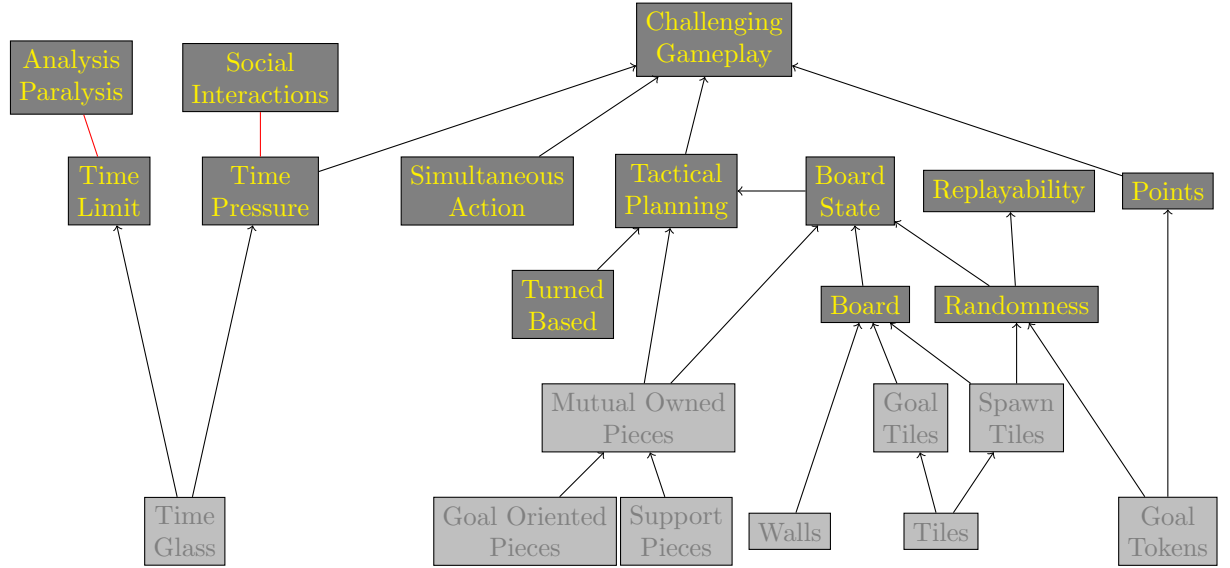
Figure 2: Analysis of Ricocheting Robots using Game Design Pattern. Light gray boxes indicate gameplay mechanics unique to Ricocheting Robots. Dark gray boxes are abstract mechanics found in other games. Edges with arrows indicate that the pattern being pointed to is instantiated by the other pattern connected to the edge. Red edges indicate that a pattern is in conflict with another pattern.

decision, which forces other players to wait before starting their player session. As our analysis states 7 Wonders have solved this by limiting a player's choices through the *Drafting* mechanic. Ricocheting robots solves this by having a time limit for a player session. Another mechanic that contributes to avoiding delays is that each player's session takes place *simultaneously* and therefore limits the waiting time that a *Analysis Paralysis* can cause.

Randomness and replayability . In both games randomness is used to give a unique player experience every time. In ricocheting robots the random order of goal tokens, the random spawn tiles in the setup phase and the shortest path found by a player are all variables which work to make every game unique. 7 Wonders also aspire to make every game instance feel unique to increase replayability. The main contributor is the randomness of shuffling cards, which results in the draft being different every time.

Social interaction is limited in Ricocheting Robots by our opinion. As the analysis concludes this is due to the time pressure when a player has found a path. Also the competitive nature and the high pace of the game keeps players more engaged in the game than engaged in *social interaction*. ? (?) disagree with our opinion and argues that Ricocheting Robots is a textitSocial interactive game in the sense of having the possibility to let an infinite amount of players play at the same time. Therefore, the game can be played during a social event and players can jump in and out of the game without much impact

on the gameplay. We agree with ? statements, but still think that due to the *time pressure* mechanic there is less *social interactions* during the player's game session.

4 Design structures in the games

This section answers the questions stated by the exercise. It focuses on what specific gameplay mechanics are used to achieve a certain goal. The questions are answered by using the *Game Design Pattern* analysis from section 3, through reasoning about arguments made in different reviews and discussions after playtesting. Italic words refer to game patterns identified in the analysis.

4.1 Keeping players engaged with the game and the feeling of playing together

Due to 7 Wonders drafting mechanics players are *playing simultaneously*. Which in the group's opinion is one of the key components for keeping players engaged during the game. Furthermore, this usually means that little to no time has to be spent on waiting for other players. Another aspect of 7 Wonders drafting mechanics is that players need to constantly analyse their opponents board state and base their card pick and overall strategy upon what they can deduce from the information available to them. Since the board state changes for each picked card there is always new information to process, which encourages players to engage more in the game. ? (?) makes an argument about the drafting design of the game. That even if a player makes a lot of decision, most of these decisions do not matter all that much. In the end what will matter is finding the "perfect card" at the right time. Our thoughts about this is that even if that is the case, this is the nature of the *drafting* mechanics. Also to be able to be in a position to profit from getting the perfect card one has to make decisions so that one minimizes the possibility that a opponent needs the same "perfect card" as oneself. Furthermore, the reward of getting the perfect card can make a player more engaged. One could argue that this could make the opponents less engaged in the game due to the sudden advantage, but our opinion is that even if a player gets a big advantage the game instances are short enough so that other players would not have time to lose interest.

In Ricocheting Robots everyone is *playing simultaneously*. In most cases you can not be certain that you have found the optimal solution, therefore a player can always try to find a better solution. This keeps players engaged even after they have found a solution. The game revolves around intense *Competitive gameplay* which is caused by trying to actively best your opponents before the time runs out. The way the game plays out is in itself very engaging. If someone were to dominate their opponents and win every round in a row, there is still a good chance that the other players would not have the time to lose interest due to how short the rounds are. ? (?) argues that this games only engages certain types of players, or rather certain types of brains. That to players who are not good at solving puzzles, or stepping through a solution in their head without moving the pieces, this game will be *Dead on arrival*. We also agree on this

point, but a game cannot satisfy everyone and we do not see it as a fault the game might have.

4.2 Ending the game in time

7 Wonders have a fixed amount of cards to play during each of the three stages of the game. One card is played each round and each stage consists of six rounds. Therefore, the time it takes to play the game is reliant on how fast players decide upon which cards they want to play.

Ricocheting Robots has a limited number of Goal tokens, which regulate the game time. There is a possibility that the game could end before all tokens are used. A player only needs to collect a set number of tokens, which is based on how many are playing, in order to win the game. There is also an hourglass which is turned when the first solution is found by a player. This affects gameplay mechanics and adds elements such as stress to the game, but it is also useful when making sure that each round lasts a reasonable amount of time.

4.3 Player interaction and the feeling of playing a game together

In 7 Wonders one can not directly interact with all other players, only one's neighbours(players on the left and right side). One can interact with neighbours by either trading gold for resources or clashing with them in a contest of military power. Since all cards have a resource requirements that must be meet to be able to play it, it is very important to watch the neighbours resource stockpile to see if one could trade with them to pay for a card. The military clash occurs at the end of each age, during which a player's military status is compared to their neighbours. The one with a higher military status gets a fixed amount of points while the loser is deducted one point. These points get counted in the *set-down* stage of the game. The number of points is determined by which age the battle is set in. The later the age, the higher the points. ? (?) argues that only interacting with your neighbours is a great design, due to never attacking a player directly in battle being more friendly for casual gamers. Since no one can get too upset when you have no choice about who you attack. ? also states that this design of limiting player interaction has other benefits in form of decreased game instance time. There are a lot of indirect interaction between all players in 7 Wonders, due to the drafting mechanic. Players should always base their picks on what their opponents are picking. For example if someone invests a lot in science cards, others need to pick this category or *hate-pick* science cards and use these to build wonders or *discarding* them for currency.

? (?) makes a statement about the scalability of players in the game. That even if this game can scale up to seven players, you as a player is mostly affected by your neighbours. Thus it is argued that 2-3 players is the optimal amount to play, because this tightens the gameplay and also contributes to the feeling of being in the same game.

On the other hand ? (?) suggest that its best with four players. We have tried to play the game with three players and five players. When playing with many player we can agree with ? that one feels somewhat distant to and disconnected with players that are not neighbours. But in a game of three a

player has more information on which cards are in the draft pool, since some cards will come back twice, thus making the card pick easier.

In Ricocheting Robots the players are always trying to beat their own or other players solutions by figuring out another path to the goal using even fewer moves. Which means that the player interaction is the bread and butter of the game design. The difficulty of the game is based on cost of the current known best paths, which is always stated by a player.

Overall both games have a lot of indirect interaction between players. Both the drafting mechanics in 7 Wonders and the path finding in Ricocheting Robots are the core gameplay mechanics and they affect the other players indirectly. Based on this our conclusion is that these indirect interactions benefit the games, since it is hard to target a specific player which can make the game unsatisfying.

4.4 Make the player feel as if they are achieving something

7 Wonders gives the player the ability to build a civilisation. The player is indirectly collecting points through construction and advancement in various aspects of their civilisation. When the game ends each player's civilisation will have made significant progress in varying fields depending on the choices of the player.

In Ricocheting Robots a player has achieved something once he has found a path. Even if is not the winning path, a player will still have figured out the puzzle to some extent. The player will be rewarded further if that path is the shortest of those that were found, in which case the player will receive a token.

Overall both games is focused on either building up something or collecting something. Even if a player loses, none of the games include a destructive pattern. Each round either lets you gain something or remain on the same status as the round before. The gameplay focuses on who can achieve the most without emphasizing that it should be on someone else's behalf. Strictly speaking you are making it harder for your opponents by obtaining tokens or cards, as this limits what is available to them. However, it is done in a way so that no one can end up worse off than when the game started. Your goal is not to eliminate or steal from you opponents, instead it is to collect and attain more than them while competing alongside them.