Board Game Analysis: Risk

Name: Nathan van Niekerk Student Number: 100906047

Introduction:

Risk is a turn-based strategy board game. It is a zero-sum game that uses a victory points system in the form of winning/losing territories as represented on the board. The game uses territories and cards as assets and armies as the primary resource. The economy's system starts with armies acting as a tap resource, those resources are drained in exchange for territories on the board, and if territories are granted those assets will contribute towards opening the tap on the number of armies gained. Unfortunately, however, this causes a bloat in the number of armies in the map, and turns the game into drawn out stalemates, where players battle for fewer territories per turn in the late game. I aim to address these issues by introducing new systems into the game.

The Assets and Resources:

Assets can be defined as game objects that exist within the game state or game view, and cause a benefit to the player holding the respective asset or a disadvantage in its absence. (Ham, 2015) Assets are not always generic resources which can be easily added or removed from the game such as in the case of territories.

Resources, however, are interchangeable and generic (i.e. the resource will always behave in the same manner.) (Ham,2015) Some of these assets/resources are tap resources. Mark Brown from the YouTube channel *Game Maker's Toolkit* (2022) posits that tap resources are resources that generated from a source/sources and that the rate of asset/resource generation may change in the same way a tap may be opened/closed.

Territories:

Territories are used as the game's source of victory points. Victory points can either be abstract representations (which is the case for territories) or literal points such as points in *Scrabble.* (Ham, 2015) They are used to determine the winner of the game. (Ham, 2015) The player that holds all territories on the board in *Risk* wins the game. The territories also act as individual inventories for holding the armies currently in play by players.

They are also considered assets and not resources because they are neither easily interchangeable nor generic in nature. Not all territories behave in the same way, they contribute to different bonuses and attack opportunities and cannot be drained (permanently removed) from the game.

Cards:

Cards are a tap resource that can be gained once per player turn. They are a resource since they are interchangeable for armies. Whilst their behaviour is mostly generic in behaviour, they can be combined into different combinations.

Armies:

Armies are the primary resource that the game uses. They have multiple tap sources, that being:

- At the start of each turn (A default of three is assigned)
- From holding an entire continent/continents at the start of a turn
- From converting a set of cards into armies at the start of a turn
- For every 3 territories owned, another army is gained per turn

Continents:

Continents are assets that consist of groups of territories. If a player controls an entire continent, that player is entitled to receive bonus armies as indicated on the board and in the rules. Some continents are worth more armies and are practically more difficult to hold onto because they have lots of adjacent territories from which the opponents could attack.

How the assets and resources interact to create a system:

The primary system of the game is to earn armies (tap resource) at the start of each turn, convert/drain those armies out of their inventory (each territory holds the armies) in exchange for territories, and then earn even more territories per turn if more territories were gained. This acts as a positive feedback loop that gives an advantage to players willing to risk their armies to gain more territories.

The Positive Feedback Loop:

The more armies a player has at his/her disposal, the greater the statistical chance for a player to take and control more territories, granting cards and potentially continents, granting more armies, until one player has an unstoppable army. The positive feedback loop is however, being kept in check by the following factors:

Defender's advantage:

The positive feedback loop can, however, be broken because of the defender's advantage. (Georgiou, 2004) An attacker must roll a number higher and only higher than the defender to remove one (or two, depending on how many dice the defender wants to roll). This gives defenders a considerable advantage, e.g. if the defender rolls a 6 the attacker is guaranteed to lose. The result is that the attacking player will often have to keep rolling repeatedly, draining their own army to take the territory. This negative feedback loop acts to create tense moments for the players where a single defender can fend off a large army.

The dominative strategy involves players taking territory slowly:

No matter how many territories a player takes, if a single territory is taken, a card is granted to the attacker. A player who achieves a set of three cards is entitled to earn an exponentially increasing armies at the start of their turn.

The dominative strategy, therefore, is to take a single territory and earn a card which could grant a player an unfair number of armies on their next turn. Players have little incentive to take multiple territories on a single turn since taking territories will spread your armies thinner (making it harder to defend those territories from opponents once your turn ends).

This is because the game gives a defender's advantage, which means that consecutive attacks become riskier as the attacking forces will decrease at a faster rate than the defenders will.

According to Ethan Ham in *Tabletop Game Design for Video Game Designers* (2015), open economies have no limit to the size of their resources. This definition applies to *Risk* well because armies and cards can be gained infinitely. This slows the pace of the game as players gain exponentially bigger armies and the board becomes bloated with armies. Battles turn to stalemates, slowing down the pace of the game.

How these resources affect player behaviour:

Initially, players will be more incentivised to play aggressively as during the early phases of the game because players begin the game with randomly assigned territories. During this phase of aggression, players will quickly form established boundaries between the different players for the following reasons:

- Continental bonuses act as an additional source of armies
- Chokepoints will form wherever there are territories with many adjacent territories from which an attack can occur. (e.g. The Middle East can be attacked from territories in Africa, Europe, and Asia) (Robinson, 2009)

Once players have established clear borders, the pace of the game begins to slow down and players will lose the incentive to risk too many of their armies to gain more than one territory on his/her turn. Players will be able to capture fewer territories, due to the defender's armies growing larger with each turn, however, only one territory needs to be taken for a card to be granted to the attacking player.

Players also have little incentive to control continents like Asia first despite its high army bonus of 7 per turn because it is adjacent to territories in Africa, Europe, Australia and North America. Continents such as Australia and South America are highly valued by players even though they offer the lowest number of armies as a bonus because they are adjacent to less territories and thus easier to defend.

Suggestions:

I would suggest that players only earn a card if they capture an increasing number of territories, encouraging bolder, more aggressive risks from players. This territory capture requirement will be capped so that it doesn't become impossible to gain cards in the late game, but rather reduce army bloat and encourage late-game aggression.

There is a balance in place between two large armies that states that players should throw the dice to represent 5 armies per dice rather than 1. I would instead suggest that a hard cap on the number of armies that can be gained from cards be set, to accelerate the pace of the endgame. This would also reduce the amount of number crunching that the players would need to perform, reducing the number of long, drawn out games of *Risk*.

I would also suggest an inventory limit on the number of armies allowed on each territory, as this would open new strategies and risks and once again accelerate the pace of battles. For instance, given that Europe has many smaller territories, such as Western Europe, there should only be a small number of troops on that respective territory at any given time. The strict army limit in Europe would reduce the time it takes to conclude battles and in doing so, incentivise aggression and perhaps players would strategically place large armies surrounding the territory, creating a so called "blockade" around the continent.

I also recommend a "retreat" mechanic. If the defending armies could retreat into nearby friendly territory and regroup, room for new strategies could be opened. Defending players could regroup and recover their losses and attacking players could gain even more territory than they normally would be able to, and thus the pace of the game would speed up. Perhaps an aggressive player could catch a retreating army into a trap- creating more interesting and engaging dynamics, creating the aesthetic of being a strategic mastermind of the likes of Napoleon.

Conclusion:

Risk consists of 2 resources, the cards and the armies, and 2 assets, territories and continents. The primary gameplay loop in *Risk* is a positive feedback loop, where players gain armies from tap resources, then convert/drain them into territories, which opens the tap resources to earn even more armies, until one player holds all territories on the board.

In the early phases of the game, players will play more aggressively to assert clear boundaries between themselves and opponents. Once the players have defined borders, however, the pace of the game slows down and the board quickly becomes bloated with too many armies, ironically discouraging aggressive play through the mechanic “defender’s advantage”.

I aimed to break these pitfalls by increasing the number of captured territories required to gain a single card, setting a hard cap on the number of armies that can be gained from card sets, placing an inventory limit on the number of armies allowed on a single territory, a “retreat” mechanic.

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