

Major Developments in the Evolution of Tabletop Game Design

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Abstract—Tabletop game design is very much an incremental art. Designers build upon the ideas of previous games, often improving and combining already defined game mechanics. In this work, we look at a collection of the most impactful tabletop game designs, or games that have caused a significant shift in the tabletop game design space. This work seeks to record those shifts, and does so with the aid of empirical analysis. For each game, a brief description of the game’s history and mechanics is given, followed by a discussion on its impact within tabletop game design.

Index Terms—Game Design, Mechanics, Impact.

I. INTRODUCTION

There are many elements that go into creating a successful tabletop game. These can include the components, rulebooks, and art. One of the most important, are the rules that players use to interact with the game and each other. Tabletop game rules are often broken up into mechanics, or systems of rules that govern certain game elements [1]. Designers rarely come up with new mechanics, causing many tabletop games to share mechanics. Instead, designers will combine already established mechanics or tweak mechanics to create a better play experience.

This way of designing games is commonplace in the tabletop games industry. Despite having over 125,000 unique games, BoardGameGeek [2] only lists a total of 183 unique game mechanics. The current highest rated game on BoardGameGeek, Gloomhaven [3], is listed as having a total of 20 unique mechanics, none of which originated with the game. The same can be said for almost all popular modern tabletop games.

However, this is not true for all games. Throughout the life of the tabletop games industry, a small subset of games have caused the tabletop games industry to shift dramatically, either through the development of new game mechanics or the rapid popularization of an already developed mechanic. Looking at and understanding these games is critical for tabletop game design as a whole, as many present ideas that are the foundation of tabletop game design. As such, this work is highly beneficial to tabletop game designers. This work also has relevance for game designers in other spheres, as many of

these same concepts can and have been used in video game design.

Although some of these breakthroughs might be already known by long time game designers, it is important to formally document these developments. By doing so, we can not only bridge the gap between experienced and novice game designers, but we can also begin to facilitate scholarly discussion on the evolution of games. Furthermore, this research is of interest to those within the tabletop game industry as it provides analysis on major developments in the field. It is also our belief that this work can be useful to academics, specifically those in the fields of game design, game analytics, and game generation AI.

In this paper, we present eight games that have caused major developments within tabletop game design. They are presented in the following and chronological order: Tactics, Diplomacy, Cosmic Encounter, Magic: The Gathering, Catan, Dominion, Pandemic, and Pandemic Legacy, Season 1. For each of these games an overview of the game is given, detailing important mechanics and design elements followed by a discussion of their effect. It should be noted that this work focuses on the American school of design, not the European style. A discussion of European design can be found in [4]. For most games empirical evidence on their impact is given. It is important to note that this work does not list all games that caused a major shift in the tabletop game design space, and that may be an area for future work.

II. BACKGROUND

A. Definitions

There are numerous works that attempt to define what constitutes a tabletop game. Doing so has proven to be difficult, and the exact definition of general game is somewhat debated [5]–[7]. For our purposes we will use the following rule, if a product has a BoardGameGeek page, we will consider it a tabletop game. This assumption is almost required as attempting to define tabletop games could be a work on its own. Additionally, this greatly eases empirical analysis, as BoardGameGeek is the main sources of data. The full page on what BoardGameGeek considers a tabletop game is available at [8]. Generally, all games considered tabletop games are included, with the main exception being Role Playing Games as they lack a predetermined quantifiable outcomes [9].

When it comes to defining a game mechanics, there is no widely accepted definition [10]. A commonly used definition is that “A game’s mechanics are the rules and procedures that guide the player and the game response to the player’s moves or actions” [11]. Attempting to define game mechanics is beyond the scope of this paper, and to ease analysis we will be using the game mechanics defined in Geoff Engelstein and Isaac Shalev’s book *Building Blocks of Tabletop Game Design: An Encyclopedia of Mechanisms* [12]. The book is an encyclopedia of around 200 mechanics, and is also the basis for BoardGameGeek’s mechanic list [13]. Although the book does not provide formal definitions on a mechanic, it does formalise the definitions of many mechanics. As such, all mechanics discussed will be taken from this work.

B. BoardGameGeek

Before beginning our discussion on tabletop game evolution, it is important to discuss BoardGameGeek as a source, as most of the quantitative data used in the rest of the work is drawn from it. BoardGameGeek is an online website used by board game hobbyists to rate, discuss and trade board games. BoardGameGeek also has a database of over 125,000 games, making it the largest tabletop game database at time of writing. For this reason, almost all quantitative data will be pulled from BoardGameGeek’s database.

There are shortcomings of the BoardGameGeek database, mainly that it is community run. BoardGameGeek has administrators that monitor and check all submissions. However, that does not mean the database is infallible. In a recent study, researchers found that the accuracy of drug information on Wikipedia, another community run database, was $99.7\% \pm 0.2\%$ when compared to textbook data [14]. The same study also found that Wikipedia has a significantly lower completeness on drug information, $83.8 \pm 1.5\%$ [14]. If there is any error within the BoardGameGeek database, it is also likely to be in its completeness, mainly when dealing with extremely niche game products. The most likely effect is that when citing the number of published games in a certain scope, that number may be lower than the actual. However, if the game does not exist within BoardGameGeek’s database it is likely of little consequence to the industry as a whole.

C. Methodology

The final background point to discuss is the following question, what constitutes a major development in tabletop game design? In this work, we have tried to identify and select games that have caused a definite shift in tabletop game design. As mentioned in the introduction, this work does not seek to categorize all highly impactful games, only to argue that without the discussed games the tabletop game industry would look very different.

As an example, take *Tactics* [15], which will be discussed following this section. Many of the ideas in *Tactics* come from traditional wargames, used to train military personnel. Before *Tactics*, these ideas had never been used in a commercial tabletop game, but following *Tactics*’ release became

very popular in the commercial tabletop game market. For a game that, while being popular, does not constitute a major development look at *Monopoly*. *Monopoly*’s major mechanic is roll/spin and move, a mechanic that is not highly used in modern tabletop game [16]. As such, it does not constitute a major development.

III. GAMES

A. *Tactics*

Tactics [15] is a tabletop war game, designed by Charles S. Roberts in 1953, first published in 1954 [17]. By today’s measurement, *Tactics* is a relatively simple game. It features nameless countries with generic post World War II armies clashing. That is not to say that the game did not feature innovative mechanics, it very much did and they will be discussed later, but unlike other games discussed in this work *Tactics* is not widely played today. However, the effects of it cannot be understated, as it set the foundation for all of modern tabletop gaming.

Tactics is important for two main reasons. The first is that it created a market for commercial wargames. Wargaming has a deep history, dating back to Prussian military in the 18th century. At that time, wargames were mainly used as a teaching tool for future officers, with a very small group of hobbyists [18]. Discussing the history of non-commercial war gaming is beyond the scope of this work, although a number of works exist on this [18]–[20]. Before *Tactics*’ release, no market for adult games existed. On a whim, Roberts decided to sell his design, ultimately selling around 2,000 copies [21]. This eventually led him to found Avalon Hill, one of the most successful board game publishers up until its selling to Hasbro in 1998 [22]. During this time Avalon Hill published a multitude of wargames that built upon the ideas of *Tactics* and started the tabletop games hobby and industry. Because of this, *Tactics* is generally cited as the beginning of the commercial war game market and is directly responsible for popularizing war game mechanics. As commercial wargames can be argued as the starting point for all of modern tabletop game design *Tactics* is also often cited as the beginning of the adult tabletop game industry [23].

Many other important games draw inspiration from wargames, specifically American games, some of which will be touched on later. However, since we have ruled out tabletop role playing games from our definition, it should be noted that role playing games, *Dungeons and Dragons* specifically, are rooted in the wargaming tradition. *Dungeons and Dragons* began with the wargame *Chainmail*, written by Gary Gygax and Jeff Perren to simulate medieval combat [24]. Overtime the game evolved into the current iteration of *Dungeons and Dragons*, but many of the original ideas are based on commercial wargames, including the idea of rolling dice to resolve combat, as well as the idea of “hit points.”

In terms of design, *Tactics* was also highly impactful. One reason being that it created a number of mechanics that would become staples in later game systems. One example is the combat results table. A staple in older wargames, players

would compare the strengths of fighting units, then combine that ratio with a dice roll, to determine combat roles. Tactics is also the first commercial board game to introduce the idea of movement points, or that each unit has a different number of points to spend on movement. This mechanic is quite common in wargames. In movement point games, individual units have a number of movement points, which are expended to move on the board. Traditionally, different spaces have cost different values in order to model various terrains. Unlike the combat results table, movement points have continued to be prevalent in current game design. Many popular tabletop games like *Scythe* [25] and *War of the Ring: Second Edition* [26] use movement points. Movement points are also popular in strategy video games like *Civilization* [27].

B. Diplomacy

Diplomacy [28], is a war game designed by Allan Calhammer between the years of 1954 and 1958. It was first commercially released in 1959 [29]. The game is set in Europe before the start of World War I. In *Diplomacy*, between two and seven players control one of the “Great Powers of Europe” and fight for control of the continent. To win a single player must take control of 18 (out of 34) supply centers, although at any point all remaining players can choose to end the game in a draw. *Diplomacy* has often been referred to as the game “that ruins friendships” [30] as well as “The Most Evil Board Game Ever” [31].

Diplomacy’s design is unlike all other wargames released during that time. Unlike other traditional wargames, *Diplomacy*’s rules are heavily abstracted and simplified. Various wargame mechanics, including combat role charts, different unit strengths, and complex movement rules have all been removed. Instead all units have the same combat strength and the game has only two types of units, armies and fleets. This allows players to focus on the main mechanic of *Diplomacy*, negotiation [29].

Social interaction is at the heart of *Diplomacy*, as very little can be accomplished without the aid of other players [32]. Players are constantly communicating with each other, trying to form agreements and alliances, all of which can be broken at a moment’s notice. According to BoardGameGeek, *Diplomacy* is the earliest released game to feature negotiation as a mechanic, something that a multitude of later games would use [33]. *Diplomacy* is also responsible for creating the political game genre, being the first published game within the Politics Category on BoardGameGeek. After *Diplomacy*’s release political games have continued to grow as demonstrated by Figure 1 [34].

Diplomacy also popularized another idea within tabletop game design, simultaneous action selection. Simultaneous action selection, is a mechanic which has players simultaneously determine action often in secret from the other players at the table. Once all actions are selected, players then reveal them at the same time. A couple of other games used this mechanic before *Diplomacy* did, the most popular being *Football Strategy* [35]. However, *Football Strategy* uses this as more of a Rock-

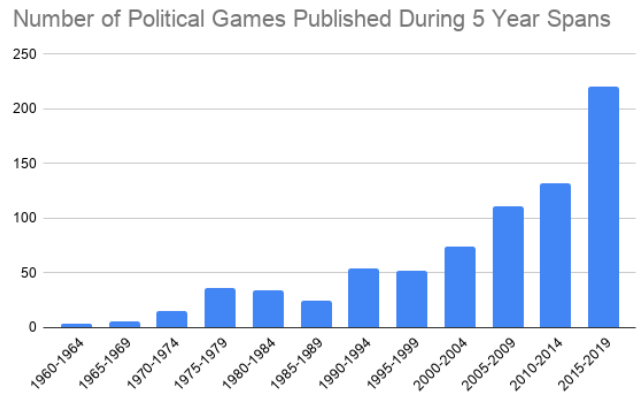


Fig. 1. Number of Political Games Published During 5 Year Spans, According to BoardGameGeek. Dates start after *Diplomacy*’s release.

Paper-Scissors mechanic, and was largely inconsequential. On the other hand, *Diplomacy* uses Simultaneous Action Selection in a way that plays into the game’s political themes. Players would only know what actions every one else had taken, after negotiations concluded for the round. This forced players to act without any guarantee that their allies would continue to support them, and created the distrust that *Diplomacy* is known for. This mechanic has been used by a number of games including *Twilight Struggle* [36] and *Spirit Island* [37], both of which are within the top 15 games on BoardGameGeek [2]. The mechanic is also popular in social deduction games. One example is 2008’s *The Resistance*, in which players simultaneously and secretly select actions, allowing for the games traitor to remain unknown from the other players.

C. Cosmic Encounter

Cosmic Encounter [39] is a science fiction board game designed by Peter Olotka, Jack Kittredge, Bill Eberle, and Bill Norton. The game was first published in 1977 by Eon Games, a corporation founded by the original designers. Since then, the game has been republished multiple times, with the most recent version being published by Fantasy Flight Games in 2018 [40]. In *Cosmic Encounter* each player is the leader of an alien race, attempting to establish colonies in other players’ home systems. The game is highly dynamic and focuses on player interaction. Almost all of the mechanics within the game encourage players to interact, argue, form alliances, make deals, and double cross.

Cosmic Encounter is often considered to be a landmark in terms of design as it introduced the mechanic of variable player powers [4]. As mentioned above, players in *Cosmic Encounter* control an alien race and depending on which race players have been given, they are allowed to break the rules in specific ways. This was revolutionary in game design. Before *Cosmic Encounter*, players all played with the same rule set, a concept that was one of the main tenets of game design. *Cosmic Encounter* challenged this notion, and in the process revolutionized the tabletop gaming industry. Currently

48 out of the top 100 hundred games on BoardGameGeek use variable powers, including *Scythe* [25], and *Terraforming Mars* [41] both of which were among the top 10 best selling games of 2017 [42]. Additionally, a multitude of game designers including Richard Garfield [43] and Bruno Faidutti [44] cite *Cosmic Encounter* as being a primary influence on their designs.

One of the main reasons that designers cite *Cosmic Encounter* as a major influence is that the game has “limitless variety” [43]. The introduction of variable player powers dramatically increased the replay value of *Cosmic Encounter*, as each game would contain a unique combination of aliens, likely one that players had never seen before. In the current *Fantasy Flight* iteration, a total of 196 aliens have been published. Assuming a game with 5 players, this means there are a total of 2,289,653,184 possible combinations of aliens that could exist. The concept of being able to have a unique experience each time one played a game proved to be highly influential and will be seen throughout the games analyzed in this work.

Cosmic Encounter’s introduction of variable player powers also allowed for increased theming within games which has led to the creation of thematic style board games. By allowing individual players to have separate sets of rules, designers are able to design mechanics that better represent the story of the game. An example of this is the *Pacifist*, an alien in *Cosmic Encounter*. Players playing as the *Pacifist* are encouraged to play peacefully, as they receive a bonus for doing so. This allows for players to feel as if they are actually a pacifist alien, creating a dramatic story through game play. This idea has been implemented in numerous tabletop games, including *Twilight Imperium* [45], and *Robinson Crusoe: Adventures on the Cursed Island* [47].

D. Magic: The Gathering

Magic: The Gathering, sometimes referred to as *Magic* or *MtG*, [48] is a collectable card game released in 1993 by Wizards of the Coast and designed by Richard Garfield. In *Magic: The Gathering* players take on the role of Planeswalkers, battling other players through the use of spells, creatures and artifacts, represented by cards in each player’s deck. Cards are traditionally purchased in booster packs, small packs of cards containing a random subset of cards. The game is extremely popular, with an estimated player count of over 35 million players in 2018 [6]. Since its release, the game has spawned two digital versions, as well as several single player video games. The game has had continual support by its publisher since its initial release and has developed an organized play scene, with a world championship tournament that awards 1 million USD in prizes [50].

Magic: The Gathering is solely responsible for creating the collectable card game genre [51], introducing a number of new ideas and mechanics into the game design space. First, it introduced deck construction. Deck construction is a mechanic in which before the game, players will assemble a collection of cards, or a deck, that is then used in gameplay. This concept

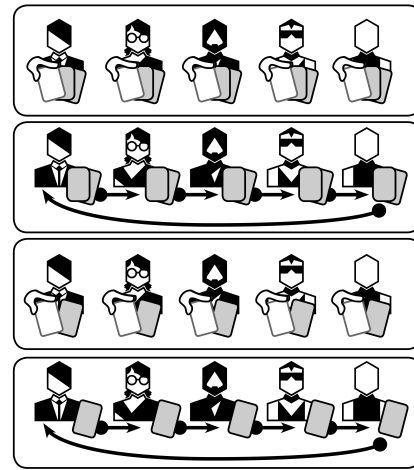


Fig. 2. An example of the drafting mechanic with packs of cards. [4]

allows for each game to be a wholly unique experience, as players are able to choose from a large pool of cards, few of which are used every game [52]. Deck construction as a mechanic has become increasingly popular since its inception. A number of other collectable card games were released following *Magic: The Gathering*. Two of the most popular are *Yu-Gi-Oh*, and *Pokemon*, both of which have sold over 30 billion cards [53], [54]. In later years, designers have started to turn away from the collectable card game model, instead using a fixed distribution model. An example of this is *Fantasy Flight*’s *Living Card Game* model [55]. With this model, new cards are released in fixed sets, allowing for customers to know exactly what cards they are purchasing ahead of time. This model has been highly successful and has a number of games on BoardGameGeek top 100 including *Arkham Horror: The Card Game* [56] and *Marvel Champions: The Card Game* [57].

Deck construction also shifts the complexity of learning the game significantly. In many other games, the main point of difficulty, in terms of learning the game, are the rules themselves. However, in deck construction games, the main complexity comes from the individual game pieces, in this instance the cards. This can help new players begin to play much faster. Other examples of this include the *Castles of Mad King Ludwig* [58] and *Suburbia* [59].

Magic: The Gathering is also responsible for popularizing drafts as a game mechanic. Drafting is a way of distributing game components to the players in an ordered and closed selection process. Typically this is implemented by each player being given an equal number of cards, with players then picking one or more of the cards and then passing the leftover cards to the player sitting on their left. An example of how drafting works can be seen in Figure 2. According to Wizards of the Coast, draft had always been a part of *Magic: The Gathering*, tracing back to its early playtesting days [60]. Although the official origins of booster draft are unknown [60] draft has been an official part of *Magic: The Gathering*

since 1996 [61]. In recent years, designers have taken draft as a mechanic and created whole games around it. The most successful of these games has been 7 Wonders which has sold over 1 million copies [62]. A number of other popular games have used drafting as a mechanic, including BloodRage [63] and Inis [64] both of which draw inspiration from Magic: The Gathering.

E. Catan

Catan, formerly known as The Settlers of Catan, is a German style board game designed by Klaus Teuber and first published in 1995. In Catan, players take on the role of settlers, attempting to build infrastructure on the island of Catan, by collecting and trading resources with other players. Players are given points as they grow their settlement, with the first player to reach a set number of points winning. Since its release, Catan has received a number of expansions and spin offs, including a Game of Thrones version [65]. The game has sold over 32 million copies since its release [66], with sales increasing during the Covid-19 pandemic [67].

Catan's influence comes from its success, as it was largely responsible for introducing German-style board games to a worldwide audience [68]. Before continuing this discussion it is important to define two terms. In board game design spheres, there have traditionally been two main schools of design. The first is the American school of design, sometimes referred to as "Ameritrash" [69]. American style board games typically have a prominent theme, favor player conflict, and usually feature luck. European style games tend to be the opposite. European games or "Eurogames" often have less player interaction, focus more on the mechanics, and have low randomness. Neither of these terms are properly defined, and many would argue they are not relevant [70], as many games blend these two schools of thought.

However, there are general mechanical differences between the schools of game design, and, as mentioned above, German style games were not really played outside of Germany before Catan. After the release of Catan, American audiences began to explore other Eurogames including El Grande and Tigris and Euphrates [4]. Additionally, American designers began experimenting with German style mechanics. One of the most popular is Jamey Stegmaier, whose games Viticulture and Scythe have rely heavily on German style mechanics [71]. At the same time, designers have also started to combine German and American style mechanics. One of the most popular examples of this is the aforementioned Gloomhaven [3]. Finally, Catan has also allowed later German designed games to be extremely successful in the United States. Examples of this include PowerGrid, Agricola, and Terra Mystica. [72].

Catan also popularized the idea of a modular board. In Catan, the playing board is made up of individual hexes and number tokens. Before play begins, players can choose to use a predetermined board, or create a new one by randomly placing tokens and assign each a number token. This ensures that each play of Catan is unique, and forces players to adapt and change their strategies between plays. This can be seen



Fig. 3. Catan's modular hexagonal board in the process of being constructed.

in Figure 3. Examples of this include Twilight Imperium [45] and Mansions of Madness [46].

F. Dominion

Dominion [73], is a deck-building game designed by Donald X. Vaccarino and first published in 2008 by Rio Grande Games. In Dominion, players take the role of a monarch, who seeks to expand their control. The game has received 8 large expansions and was the winner of the Spiel de Jahres, a prestigious board game award, in 2009 [74].

Dominion is often cited as the first game to use deck building as a mechanic [75]. Deck building, while similar to deck construction has major differences. Instead of creating a deck before the game, players create their decks during gameplay. At the beginning of Dominion, players are given a small predetermined collection of cards. As the game progresses, players will add new cards to their decks, often choosing them from the public selection. These new cards will then be shuffled into the players deck and used to purchase new cards, continuing to build the players deck. Finally, in most deck building games, players choose a subset of all included cards to be available for purchase in a given game. This concept is drawn from earlier games discussed in this work, and it allows for players to play a unique version of Dominion during each play.

Deck building as a mechanic has become increasingly popular since Dominions release, and has played a major role in tabletop game design since its inception [76]. Since Dominion's release, a number of other games which have deck building as a main mechanic have been published. Some of these include Thunderstone, Clank! A Deck Building Adventure, and Legendary: A Marvel Deck Building Game! [77]. Designers have also expanded the deck building mechanic, creating games which build pools of other components. Some examples include Quarriors [78], a game in which players build pools of dice and The Quacks of Quedlinburg [79], where players build a bag of tokens. Finally, other games have started to combine deck building with other popular mechanics. One recent example is Dune: Imperium, a game that combines deck building and worker placement [80].

G. Pandemic

Pandemic is a cooperative board game designed by Matt Leacock and published by Z-Man games in 2008 [86]. In Pandemic, players take on the role of disease fighting specialists, attempting to stop the spread of four diseases. Players in Pandemic do not play against each other, instead they work together playing against the game's systems. The game has received three expansions, and is also the most rated game on BoardGameGeek [82].

Pandemic's influence is very similar to that of Catan's, in that although the game presents no new ideas, its widespread success has caused a significant shift in board game design. Before Pandemic, a number of cooperative games had commercial success. Two of the most popular being Arkham Horror, a game set in the Call of Cthulhu universe [83], and The Lord of the Rings [84]. Both of these games were highly successful; however, neither of them caused a significant shift in game design trends.

Unlike other early cooperative games, Pandemic has caused a significant trend in game design [85]. This is demonstrated by Figure 4, which shows the rise of cooperative elements in games since Pandemic's release. One of the main reasons for Pandemic's success is its easily understood ruleset [86]. Previous cooperative games, like Arkham Horror, had lengthy rulesets that were not approachable by general audiences. Pandemic was one of the first games to greatly streamline the cooperative experience, allowing it to appeal to less experienced players. Since its release, Pandemic has become one of the most popular "Gateway" games, a term used to describe games that are used to introduce people to modern game design. It is also important to note that Pandemic utilized many of the popularized ideas from games discussed earlier in this work. Pandemic uses the variant player powers mechanic from Cosmic Encounter, with each player randomly assigned a unique power. Pandemic also draws from Catan's design philosophy of streamlining game mechanics.

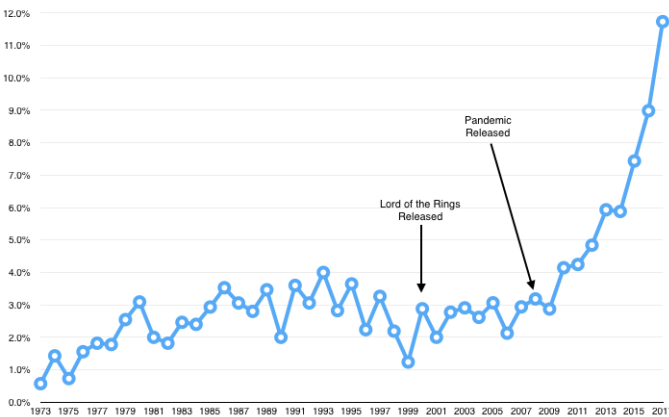


Fig. 4. The percentage of games that feature cooperative play [87]

H. Pandemic Legacy, Season 1

The final game discussed in this work is Pandemic Legacy, Season 1 [88]. The game was designed by Rob Daviau and Matt Leacock and published by Z-Man games in 2015. Pandemic Legacy, Season 1, is a cooperative game that is largely based on Pandemic's main gameplay loop. However, Pandemic Legacy, Season 1 is fundamentally different from Pandemic, as it features a campaign, or legacy mechanic, which will be defined later in this section. The game released to widespread critical acclaim [86], [89], and is currently the 2nd highest rated game on BoardGameGeek.

Before discussing Pandemic Legacy, Season 1's effects, it is important to properly define what a legacy mechanic means. Traditionally, a legacy game is a campaign game, in which players play through a series of games, often making decisions that permanently change the game's systems for future plays. As players play sessions of Pandemic Legacy, new rules and components are added, often presenting a new challenge, or fundamentally changing some of the game's base assumptions. Players may also be asked to permanently alter game components. This can include writing and ripping cards, as well as adding stickers and other marks to the game board. Generally, once players have completed a legacy game, they are unable to replay the game, as many of the components have been permanently changed.

Pandemic Legacy, Season 1, although being the game that popularized legacy mechanics, was not the first legacy game. That title goes to Risk Legacy, a legacy game based on Risk designed by Rob Daviau and Chris Dupuis. While the game was a success, winning the 2012 Golden Geek Best Innovative Board Game award, it did not have the same commercial effect that Pandemic Legacy, Season 1 has. One possible reason for this, is that Risk is generally considered inferior to many modern games [91]. Still, this acted as a proof of concept to Rob Daviau who would then go on to design Pandemic Legacy, Season 1 with Matt Leacock.

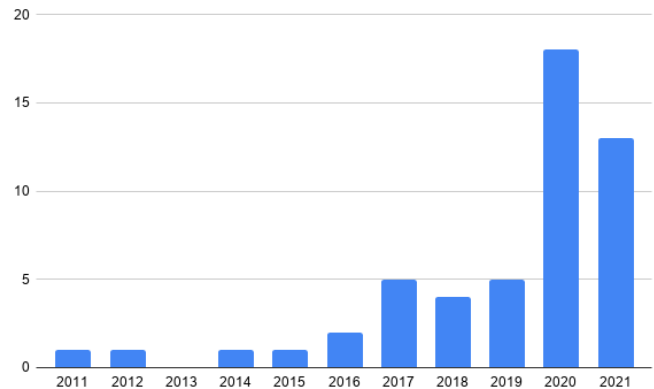


Fig. 5. The number of legacy games released in each year since Risk Legacy's release. Pandemic Legacy, Season 1 was released in 2014.

As mentioned earlier, Pandemic Legacy, Season 1 released to critical acclaim, and was the number 1 game on

BoardGameGeek. A number of reasons for its success exist. Board game critic website, Shut Up and Sit Down, praised the game for its constant surprises, and how decisions made in one game will affect later sessions. The game was also praised for its ability to tell a story through play [92]. At the same time, Pandemic Legacy also started the legacy game trend within modern board game design. Since Pandemic Legacy, Season 1's release, over 40 other Legacy games have been released, and more continued to be released each year. Popular examples include Clank! Legacy: Acquisitions Incorporated, a game which combines legacy and deck building mechanics.

IV. DISCUSSION AND CONCLUSION

In this paper, we have presented 8 tabletop games that have been highly impactful in tabletop game design. For each of them, a description of their contributions as well as examples of their impact have been given. By presenting them, we hope that future and current game designers are able to learn from these design breakthroughs and better their own designs. Furthermore, very little academic literature exists on tabletop game design, despite tabletop games taking up a significant portion of the games industry as a whole. Finally, by formulating the history of tabletop game development, we help preserve the rich history of tabletop games.

Although these games are presented individually, many of them rely on advancements made by previous games, including others not mentioned here. Additionally almost all currently released tabletop games can be traced back to at least one of the games mentioned here. One of the best examples of this is Gloomhaven [3], the current number 1 game on BoardGameGeek, which draws inspiration from all of the games listed here. It takes grid movement from Tactics, simultaneous action selection from Diplomacy, variable player powers from Cosmic Encounter, variable boards from Catan, deck construction from Magic: The Gathering, deck building from Dominion, player cooperation from Pandemic, and legacy systems from Pandemic Legacy, Season 1.

Additionally, the concepts discussed in this work are applicable to other areas of game design. One of the main areas is in video game design, an area in which more game designers are starting to understand the importance of tabletop game design. Many of the mechanics in popular video game genres are drawn directly from tabletop games. One of the most obvious connections is the role playing game genre, which draws heavily from tabletop role playing games. Conferences have also started to highlight tabletop game design. An example of this is the Game Developers Conference having a Board Game Design Day during its 2019 meeting.

Finally, the concepts in this paper may be used in more technical fields. Many of the mechanics and ideas discussed in this paper may be useful as guidelines for procedural game generators, or can be used as a way to determine a game's likelihood of commercial success.

Ultimately, looking at the history of tabletop game design will always be important, as game design is very much a series of incremental steps, and by better understanding the

foundation, a designer will be more successful in attempting to innovate and expand game design.

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