

# A Taxonomy of Narrative-centric Board and Card Games

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## ABSTRACT

Narrative-centric analog games<sup>1</sup> have emerged from a hybridization of genres: they borrow conventions from pen and paper-based role-playing games such as Dungeons and Dragons, as well as the foundations of eurogames and war games. Historically, board game narratives and themes have primarily been imposed through design elements rather than mechanics: in his study of Eurogames, Woods noted that while players often value a "sense of narrative" that unifies theme and mechanics, this is rarely an emphasis of the genre [34]. However, modern narrative-centric board games demonstrate new levels of unity between play and story, integrating players into the narrative as meaningful actors and borrowing conventions from video games to build nonlinear play. In this paper, we examine and compare some exemplars of the narrative-centric board game genre, and use these games as a lens to propose a taxonomy of narrative-based physical games that builds from and extends Espen Aarseth's narrative theory of digital games [1] and suggest new possibilities for digital game narratives.

## CCS CONCEPTS

Applied computing~Computer games

## KEYWORDS

Game narrative, physical games, board games, game analysis, narratology

## ACM Reference format:

Anne Sullivan and Anastasia Salter. 2017. A Taxonomy of Narrative-centric Board and Card Games. In Proceedings of

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FDG'17, August 14-17, 2017, Hyannis, MA, USA  
© 2017 Copyright is held by the owner/author(s). Publication rights licensed to ACM.  
ACM 978-1-4503-5319-9/17/08...\$15.00  
<http://dx.doi.org/10.1145/3102071.3102100>

FDG'17, Hyannis, MA, USA, August 14-17, 2017, 10 pages.

DOI: 10.1145/3102071.3102100

## 1 INTRODUCTION

Nearly 3000 versions of Monopoly have been released over the last few decades, each sporting a different property: a player can easily purchase a version themed to their university, favorite television show, comic franchise, children's cartoon, or even boy band [35]. These many iterations, rapidly produced with minimal changes in the game's mechanics, demonstrate the superficiality of many board game's themes and narratives: any sense of connection to those external themes is imposed primarily through visual design and renaming, while the essential experience of the game remains consistent. This type of visual and theme-level relationship of narrative and play is also common in more complex hobbyist board games, despite board game players often placing a value on narrative [34]. This is akin to discussions in video games, which have observed that narrative segments are often constrained or emphasized primarily in non-interactive components of play, such as cut scenes [32].

While visual design and theming can and do have impact on the narrative of the game, we are interested in focusing on games that use narrative as part of the game mechanics. Approaches to narrative video game design have fundamentally evolved thanks in part to the work of designers in genres such as adventure games and interactive fiction, spurred on by roots in both tabletop role-playing and the narrative-centric format of *Choose Your Own Adventure* books [31].

Hjaltason, et al. ran an experiment in mechanic-centered storytelling in virtual games, which demonstrated that players do view mechanics as part of the experience of narrative and will try to make sense of game narrative in those terms [19]. Modern board games fuse design methods and approaches from digital games with classic mechanics, and in doing so take advantage of increasingly complex systems of representation through physical mechanisms. Examining these approaches provides us with a new lens for examining the interaction between narrative and mechanics of play, which in turn can suggest new possibilities for digital game narratives.

In this paper we examine twelve narrative-centric board and card games and present a narrative taxonomy created from this study. Using the taxonomy as a lens, we present patterns in the

games and how the games' choices in narrative structure have an effect on the play style of the game. Finally, we suggest ways in which this taxonomy can be used to point towards new area of study and exploration in digital games.

## 2 METHODS

The twelve games chosen for this close play examination represent games characterized by reviewers on BoardGameGeek [37], a community hub for board game enthusiasts, as representatives of narrative-centric game design pushing the boundaries and expectations of physical interactive storytelling. Released over the last 30 years, these games demonstrate the evolution of narrative board game design as happening alongside and in conversation with videogames.

To focus this study on an emerging category of game narrative, we examined only games defined as "board" or "card" games, rather than tabletop roleplaying games. Roleplaying games include a wide range of play styles from largely improvisational to story-in-a-box. Because of this, we feel they deserve their own study and are outside the scope of this paper.

The games for study were chosen by cross-referencing games on BoardGameGeeks that were tagged with "storytelling" as a mechanic and sorting by reviewer-based rankings [38]. We started with the top 20 games and discounted those in which the story elements appeared to be a minimal part of play. Games that were no longer in print or otherwise unavailable were also removed from the list. This narrowed the list to eight games: T.I.M.E. Stories, Gloom, Betrayal at House on the Hill, Dixit, Tales of the Arabian Nights, Agents of SMERSH, Once Upon a Time, and Mythos Tales / Sherlock Holmes Consulting Detective.

Four additional games were added to the pool based on other story-centric genres. Mansions of Madness is a role-playing board game, complete with an app that takes the role of the game master. Pandemic Legacy is a part of the legacy genre – games played over a series of seasons that permanently change over time based on the player's experiences through the game. Mysterium is a murder-mystery game in which the players work together to solve a mystery. And finally Eldritch Horror is a novel-based, character-driven adventure game, built around the collected works of H.P. Lovecraft.

For each game played, we will briefly discuss the experience of the game through the lens of close play, using an extended version of Aarseth's dimensions of digital game narrative. We emphasize the correlation of the physical embodiment of the game with the experience of narrative.

## 3 DEFINING THE DIMENSIONS OF BOARD GAME NARRATIVE

Espen Aarseth suggests that the ludo-narrative space of digital games can be understood through four ontic dimensions: worlds, objects, agents, and events [1]. Anil and Ramakrishnan add temporality concerns to these [2], which we find useful for categorizing the way narrative is used in the physical games we examined.

With the addition of time, we use the following elements in our analysis of narrative board game design:

*Events* – Often represented by cards, storybooks, or text on the board itself, events are happenings that generally have a consequence for both game mechanics and narrative.

*Players / Agents* – As modeling independent agents outside of player action is difficult in physical games, any agents must be understood as existing through either player action or as representations outside of the player within the game space.

*Objects / Items* – Usually represented by either tokens, markers, or cards, objects and items exist primarily as a means to track the state of the system within a physical game.

*Time* – Generally indicated by turn-based mechanics such as card draws, movement along a board, or use of a tracker, and more rarely imposed outright using a timer or hourglass. Time is central to limitations on many board games.

*Playing Space / Board* – Replacing the digital world and environment, the playing space or board may act as a spatial metaphor or serve primarily as a surface for tracking the state of play, depending on the game's approach to representing narrative.

Aarseth describes the world as being the key component for the shape of narrative in digital games and defines world in two categories: *ludic* (the space of play) and *extra-ludic* (non-playable space). However, in physical games, the ludic space is constrained by playing space or the board and the extra-ludic, if it is part of the game at all, resides in the players' minds. Travel is frequently instantaneous between locations and therefore narrative is not constrained by the shape of the world.

Objects and agents do exist in narrative-based physical games, but they do not generally play a role in the shape of the narrative. Given the physical nature of these games, objects and agents are typically pre-conceived and static, with no easy system for modeling change. While characters exist that the player may take on the role of or interact with, these characters are typically shallow and only important for moving the narrative forward. Both objects and agents are generally used to add flavor to the narrative as opposed to direct the shape of it.

From the original list proposed by Aarseth, we have found that events play the largest role in shaping the narrative and in turn the gameplay experience in narrative-centric physical games. Chatman uses the terms *kernel* (story-defining events) and *satellites* (supporting events) when discussing narrative more broadly in fiction [9], and we found these terms useful for more accurately defining the roles of the player and the game mechanics in shaping the narrative.

Unlike digital games, the emergent elements of these systems are primarily dictated by either time-driven structures or the application of chance. Every narrative board game observed for this study uses some element of chance, usually driven by either the roll of a die or the shuffling of cards. Given the requirements of ludic narrative, it is difficult to imagine a design structure that wouldn't at least to some extent incorporate random elements to provide multiple possible traversals and experiences from the same representative components.

### 3.1 Classifying Narrative-centric Physical Games

Given the differences in the way stories are expressed in physical games and digital games, it is not surprising that the framework proposed by Aarseth is a useful starting point, but not a final destination. Instead, we propose a two-axis classification with one axis describing the content of events, and the other axis describing the temporal ordering of events.

The content of events may be *game-specified* or *player-created* while the ordering may be *static* or *dynamic*. The dynamic nature of the ordering may be due to game randomization or player chosen ordering. For our classifications, we weight the influence on kernels higher than satellite events as the narrative is more strongly driven by the content and ordering of kernels.

Many of the games fit somewhere along the spectrum rather than at either end, but we describe the four quadrants as:

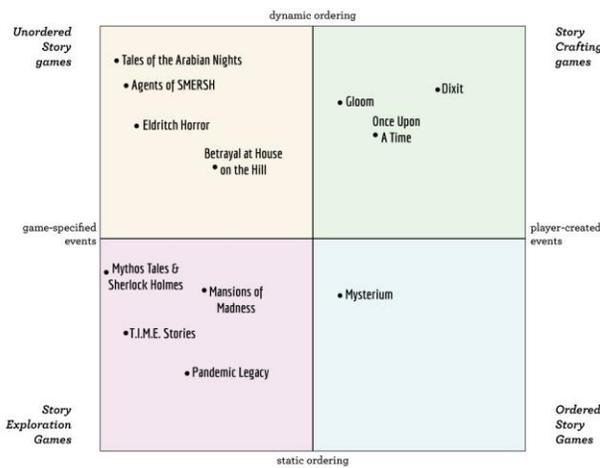


Figure 1: The twelve games we studied in relation to our proposed taxonomy.

*Story crafting games* – games in which the majority of kernel and satellite events are player-created and the ordering is dynamic. Players are provided with a general narrative structure and evocative elements from which they can construct a greater sense of meaning.

*Unordered story games* – games in which kernel and satellite events are mainly game-specified and the ordering is dynamic. These games are often spatially centered, with locations that often contain randomized fragments of narrative meaning.

*Story exploration games* – games in which events are game-specified and at minimum, the kernel ordering is static. Exploration is central, and finding different locations and objects is key to advancing the story.

*Ordered story games* – games in which the majority of events are player-created and at minimum, the kernel ordering is static. Only one example of this style of game was found in our study.

This taxonomy offers a starting point for understanding the changing landscape of physical games, and particularly the many

ways that design approaches are intersecting with those of digital narrative games despite the very distinct constraints of each medium. These categorizations do not attempt to reflect board game genre labels, which vary wildly (particularly between countries of origin) and often include marketing terms that fade in and out, such as the currently popular “Legacy” designation that Z-Man Games uses to denote their ongoing narrative campaigns.



Figure 2: *Gloom* is a story crafting game that uses limited pre-defined narrative, relying on the player to provide narrative connection. *Gloom* also uses transparent cards to layer events and their consequences.

## 4 CASE STUDIES

### 4.1 Story Crafting Games

*4.1.1 Gloom.* Released in 2005, *Gloom* [3] is one of the first games to make use of cards printed on transparency to allow for the easy layering of events and characters to track changing states and mechanics. *Gloom* relies on Gorey-inspired imagery to represent several sets of families, with one family controlled by each player. In a reversal of expectations – yet appropriate to the theme – players compete to have their own family members die as miserably as possible while trying to reward love, happiness, and fortune to the competing players’ families.

Player creation of narrative is imposed in the rulebook, which states that as players place an event card on a character they should provide a story for how the character transitioned narratively from one state to the next. The event ordering is dynamic as players choose which cards to play, although the narrative normally comes to an end after death (with a few exceptions thanks to cards providing reversals.)

As an example of play, if Angel (a serial-killer) was last being “pursued by poodles” and one of the players now wants to play “lucky in love”, the player needs to provide an explanation for

the progression, e.g. “chased by poodles, Angel had no choice but to hurdle a garden fence: however, she wasn’t watching, and landed on a young woman out for a walk on the other side...”

Gloom demonstrates how game-specified and player-created events can work together to create a narrative experience: the cards provide just enough detail to inspire; each card contains a situation and brief flavor text. The flavor text throughout has a consistent sensibility, adding to its potential to inspire storytelling: however, it is fundamentally incomplete without the player-created narrative bridge provided by the player when laying down a card. These elements combined with the character-driven aspects of Gloom inspired MacCallum-Stewart’s placement of the game as part of the evolving role-playing genre [25].

**4.1.2 Dixit.** Released in 2008, Dixit [30] is a story crafting game that provides a limited framework for emergent narrative in the form of cards that are each painted with unique dream-like scenes and characters. Cards contain an assortment of images, things such as a white poppy in a grassy field surrounded by a number of red poppies, or a rabbit in a suit of armor facing three unique doors.

Dixit does not tell a story, but rather gives the players opportunities to create their own mini-narratives based on the cards they are dealt. Players use the cards as inspiration, but the game places no limitations on the narrative structure available for use, and the majority of the narrative is player-created. Players take turns being the active player, creating a story based on one of their cards. The other players take the reverse role, in which they are trying to match a card in their hand to the prescribed story.

The scoring mechanics are such that the active player benefits from creating a story that is neither too specific, nor too vague. Therefore the skill in the game comes from the active player finding connections that will be understandable by the other players and creating interpretations or short stories explaining their chosen card such that they give some of the connections away, but leaving room open for interpretation.

This method of storied gameplay works due to the ambiguous nature of the cards allowing the players to create their own story events in a dynamic order. The dream-like contents give the players ways to make references to other experiences and stories without dictating the narrative to the players. Eladhari, Lopes, and Yannakis suggest that this combination of mechanics in Dixit and similar games creates a random stimulus encouraging lateral thinking, or creative storytelling with multiple interpretations [16]. This is a common theme among the story crafting games we studied.

**4.1.3 Once Upon a Time.** Originally released in 1994 with several new editions since, Once Upon a Time [22] is a particularly lasting example of the story crafting category. The cards include traditional elements of fairytales, and each player is continually able to take over the narrative by playing cards that connect to the thread of the storyline. Each player’s goal is to use up the cards (representing narrative elements ranging from characters

to objects to events) and direct the story towards their goal ending as represented by a card in their hand.

The cards are written in a fairy-tale style, and the endings imply a progression, with text such as “And in the course of time they became king and queen,” “So the spell was broken and they were free,” and “They thanked the hero who had saved them all.” This recalls the structural elements of the fairy tale as identified by Bruno Bettelheim [4], simultaneously implying a narrative path towards the outcome while allowing for dynamic ordering in combining and recombining familiar structures. The other cards are similarly vague, with story elements and “interrupts” that allow players to easily grab the story thread and create their own events: “an argument,” “two people fall in love,” “something is revealed,” “ring”, and “book” are all examples of narrative elements.

The emphasis of play is thus on the experience of emergent storytelling: while the using up of cards is a traditional game mechanic, the association of the story crafting with the use of cards ties every game action back to plot.

## 4.2 Unordered Story Games

**4.2.1 Betrayal at House on the Hill.** Betrayal at House on the Hill [12] was re-released in 2010 after the initial printing became an expensive and hard-to-obtain collector’s item, sought after by narrative game enthusiasts. Its appeal rests in its re-playability, which a recent expansion extended significantly. Similar to most of the unordered story games discussed in this section, Betrayal at House on the Hill uses a combination of game-specified, text-heavy cards and story manual to provide rule-driven yet randomized ordering for the game narrative.

The game’s conceit is an exploration of a haunted house, which begins as only a few tiles. Each player has the option to move to new rooms, initially cooperating in their reveal of the house, filling the space with different traps and symbolic spaces that change in significance once the narrative progresses. The passing of time brings the climax of the game closer and closer, as omens triggered by exploration factor into a die roll that, once failed, starts the game’s traitor event.

The introduction of the traitor introduces asymmetric play to the previously cooperative game, in a mechanism similar to the betrayal and faction mechanics in Battlestar Galactica [20] and Shadows Over Camelot [7]. However, in both of those examples the player is aware of their role in the narrative prior to betraying the group. Battlestar Galactica is what Booth terms a paratextual game, where an understanding of the original media product (the tv series) is integral to understanding the roles in the game’s narrative[5]. While Betrayal at House on the Hill is referential to many familiar premises, including several horror movies, its narrative is far more emergent and the traitorous roles broader. In Betrayal at House on the Hill, none of the players know who the traitor will be or what scenario they will be playing until the event (the “haunt”) begins. Thus the haunt opens with the traitor leaving the room to read their backstory, rules, and objectives, while the remaining players review their own materials, giving each different insight and points of blindness for narrative as well as strategy.

Different traitor scenarios introduce a combination of objects and characters to the game, represented through tokens. As the heroes and traitor work towards their own end goal, they take actions which create a dynamic set of events that work towards one of the two possible ending scenarios – one in which the heroes win, the other when the traitor is victorious.

After the haunting, the game often incorporates timed game mechanics in the form of a track counter that may be regulated by either the players or the traitor. In some cases the track itself is invisible to the players, who only experience the effects as reported by the traitor.



**Figure 3: *Tales of the Arabian Nights* is a prime example of an unordered story game. The game comes with a thick book of encounters that describe stand-alone events and relies on the player to create a narrative arc between them.**

**4.2.2 *Tales of the Arabian Nights*.** Released in 2009 after substantial revision from its original 1985 edition, *Tales of the Arabian Nights* [17] has previously been categorized by Costikyan as a “paragraph-system boardgame” [10]. The work is extensively text-driven, with a narrative that draws heavily on the game-specified frameworks of short, pattern-based, and game-specified adventure stories from its inspiration, Sheherazade’s thousand and one tales [6], which has been translated, retold, and re-imagined repeatedly.

In *Tales of the Arabian Nights*, players start with a quest they are trying to fulfill, along with a goal for reaching a specific number of Story and Destiny points which are used to determine the winning state. As players move around the board, they have random encounters with characters, objects, or even locations as represented by cards. These events in the narrative are dynamic due to randomization, although the player does have minimal input into how the event unfolds.

For every interaction, the player is given a choice of how they want to react to the encounter. For instance, when encountering an old beggar, the player may choose to “Steal from”, “Ask for Help”, or “Talk To” among many other options.

Based on the player’s chosen reaction to the encounter, which can be modified by a roll of the fate dice, a numbered story event is read for the player. The event may have multiple outcomes based on potential player character skills or items.

Each event comes with consequences, either moving the player forward or hindering their progress towards their quest and end game goals. However, due to the high levels of randomization, the player has little to no control over the outcome of their actions.

The structure of this game thus recalls the physical act of traversing a Choose Your Own Adventure novel. The player is both moving through space and narrative tropes, with a range of endings reflecting a variety similar to the fates of the protagonists of the original tales. The parallels to the CYOA genre also persist in the feeling of solo play, as each player’s character is on an individual narrative journey with few intersections or overlaps.

**4.2.3 *Agents of SMERSH*.** *Agents of SMERSH* [26], released in 2012, is strikingly similar to *Tales of the Arabian Nights* and is likewise an unordered story game. *Agents of SMERSH* uses a 70’s spy theme, with the players choosing secret agent characters who are traveling the world to defeat Dr. Lobo and his henchmen. Gestwicki, Rittichier, and DeArmond place both *Agents of SMERSH* and *Tales of the Arabian Nights* into the category of a culture-narration game, suggesting that they both share common properties including a consistent setting, narrative as feedback, measurable goals, meaningful ambiguous decisions, and rewarding players for demonstrating an understanding of the culture represented within the game [18].

Similar to *Tales of the Arabian Nights*, *Agents of SMERSH* has randomized encounters at each location, giving the player options as to how they react to the encounter, and a fate deck adding yet more randomization. The location, reaction, and fate deck together point to the game-specified event text, which explains a stand-alone situation that happened to the player’s character. There is often a skill test involved, and depending on the dice-based outcome, the player will pass or fail and receive the appropriate narrative outcome and consequences.

There are some differences between the two games, however. *Agents of SMERSH* is cooperative, while *Tales of the Arabian Nights* is not. In *Tales of the Arabian Nights*, the players rarely interact, each player is attempting to meet their own goals and finish their own story before the other players. In *Agents of SMERSH*, the players work together to bring down the evil villain with some interaction deciding who will go where and how to allocate gathered resources.

The game also offers a simplified mechanism for exploring game-specified events: players have the option of using randomized Encounter Cards instead of the Book of Encounters and forego the reaction choices. The encounter cards contain two scenarios, depending on whether or not there is a piece of intel at the location the player is interacting with.

The game also includes henchmen characters, which players fight throughout the course of the game. The event progression through the fights is static and also lacking in details. This gives

the players the opportunity to create their own story explaining how they successfully (or not) took down the henchman. For these reasons, Agents of SMERSH and Tales of the Arabian Nights do not occupy the same space in our graph.

**4.2.4 Eldritch Horror.** A cooperative unordered story game, Eldritch Horror [21] was released in 2013 as a reimagined version of its more complicated predecessor, Arkham Horror [23]. Both games share a common ancestry in Lovecraftian horror, pitting players against elder gods in Cthulhu mythos. The game board is spatially oriented, with the players navigating and investigating the signs and relics of an emerging threat.

Each player's investigator has a strong personal story, and different strengths to bring to the game-specified, card-driven encounters throughout the game. Like most unordered story games, there is a general narrative framework in place, but the encounters are dynamic through randomization and stand-alone, relying on the strong theming to provide narrative coherence.

The game's board and the world remain constant, but the deck of cards changes with each god the team faces over different play sessions. Cards marked with the image of the particular god chosen for a session are used to denote the "Mystery" quests that must be overcome to stop the god's rise.

The difficulty of the game is thus set through the narrative and the challenge presented by a god: one of the easiest to overcome, Azathoth, is described in flavor text as "The Idiot God sits at the center of all things, spreading madness and death. Its seeds descend from the stars, threatening to crack the world in half." The sense of urgency increases over time in response to "gates" which open and unleash monster tokens into the gameworld, each with different attributes triggered by cards and player interactions.

Cards include detailed narrative told in the second person, as each particular investigator takes risks to their health and sanity through the encounters in the course of the game. An "omen" track serves as a mechanism for representing time, with different encounters progressing the time track towards the apocalyptic moment of the god's rise.

### 4.3 Story Exploration Games

**4.3.1 T.I.M.E. Stories.** Released in 2015, T.I.M.E. Stories [8] is described by its designers as a game of "decksploration." Events in the game are game-specified as text on cards that the players explore through play. These cards can be uncovered in a dynamic order, although kernels are kept static by using gating mechanisms to enforce ordering. The dynamic elements put the game close to the unordered story games quadrant, but enough of the temporal nature of the narrative is fixed that it falls in the story exploration quadrant.

The players occupy the position of time travelers charged with eliminating paradoxes from past and future times and dimensions, thus setting in place the central theme that allows for the game's expandability--each deck acts as a self-contained, non-linear narrative, opening with instructions for the time travel mission and proceeding towards finding and eliminating a threat to the sanctity of time. Unlike many physical games, the

board doesn't represent a map or spatial metaphor, but rather an organization surface for tracking different types of cards, revealing locations as the players explore and tracking the amount of time the players have left.



**Figure 4:** *T.I.M.E. Stories* is a story exploration game in which the player explores each location by choosing which card they want to interact with. Each location has a different descriptive panorama that is created through the art on the back of the cards.

As the game's narrative is contained in the deck of cards, these cards must serve several roles, acting simultaneously as world, agents, objects, and events. Character cards lay out each player's potential roles and abilities using a stats-driven system, which can be adapted for each expansion's narrative context. Objects (labeled as items) are both functional keys for progressing and narrative clues for recollection and puzzle solving. In each location the two sides of the cards serve different narrative roles: the backs of cards are used to show the environment as a panoramic, while the reverse side contains narrative and events only unlocked through traveling to explore that portion of the room. Players choose which location to explore as a group, and then divide up within the room to explore the sections of the location, potentially encountering characters and challenges that may result in unlocking items, moving to another location, or even dying and temporarily being removed from the field of play.

The sense of motion (tracked by a marker on a map shaped of cards, which are replaced as the players learn more about the setting) is assisted by a strong mechanism of time limits, with each player action moving the time marker towards zero. The game includes a number of ways to lose time, such as a dungeons that recall similar mazes in digital games [11].

Runs can end in many ways based on a combination of mechanisms (such as running out of time) and player decisions.

However, players are allowed to continue to a new run, restarting from a fresh deck with their own gained knowledge. Structurally, this means the branching patterns of outcomes and location exploration are fundamentally nonlinear. Unlike typical game structures, where this type of player knowledge would be considered external to the game's narrative and thus potentially undermine the narrative, the experience gained over repeated runs is understood to be the experience of the T.I.M.E agents learning from their explorations. Player and character identities thus meld, adding coherency to the narrative and allowing the multiple endings to coexist.

*4.3.2 Pandemic Legacy.* Pandemic [24] was released in 2007 and models the threat of global outbreak, with four colors representing different diseases that spread across the world map that makes up most of the game board. The imminent threat is conveyed through markers on the board and a countdown, with increasing consequences the closer the players get to disaster.

Pandemic has gone through several iterations, the most compelling of which is Pandemic Legacy: Season 1 (2015) [13]. Pandemic Legacy introduces the idea of campaign-based play with events lasting over twelve months. Players are encouraged to take on each segment with the same team, and thus preserve the sense of an ongoing story, which opens with the typical Pandemic viruses and eventually escalates to include zombie-like "Faded" characters spreading across the board while the military appears to be complicit in the outbreaks.

The narrative of Pandemic Legacy is delivered using a deck of cards with game-specified events that are revealed throughout the 12 months in a static ordering that is preset through card order. The game box contains hidden cards, stickers, characters, and rules relating to changes to mechanics that are used throughout the game play experience. The stickers are used to denote permanent rule changes by literally overwriting previous rules, and game state changes to the cities on the board. The stickers permanence is such that the game cannot be reverted to its previous state, which recalls the unrepeatable model of a tabletop role-playing game campaign. Mosca notes that the consequences of these design patterns include the introduction of permanent death and irreversibility, making the game "more similar to reality than to fiction" [27].

Each group experiencing Pandemic Legacy will face slightly different mechanical challenges: at the crucial moment of transformation, where one of the typical diseases becomes the zombie plague, the choice is made based on which disease the players have had the least success in battling. That disease's cubes are replaced by translucent zombie figures to indicate the change in effect. Likewise, the city where the first outbreak occurs is marked with a plague symbol to indicate its new narrative role.

Over time these primarily change the strategy and emergent narrative of each month while the imposed static narrative structure of the overall conflict pushes onward, using the sense of consequence to give every decision added weight.

*4.3.3 Mythos Tales and Sherlock Holmes Consulting Detective.* Mythos Tales (2016) [14] and Sherlock Holmes Consulting Detective (1981) [15] are almost identical games with different themes. Both are story exploration games with the players working together to solve the mystery in either an H.P. Lovecraft setting as in Mythos Tales, or a Victorian setting in Sherlock Holmes Consulting Detective. Both games introduce a timed element by giving players a best-case number of moves and penalizing them during the scoring phase for going over that number. However, finding out additional related information rewards bonus points, which gives the players a boon for exploring more fully if they desire.

Both games rely heavily on the game-specified narrative, with an initial setup story, a daily newspaper, and a book of narrative snippets that are associated with each salient location or character a player may visit while trying to solve the mystery.

After receiving the initial setup story and reading the paper, players work together to choose what location or character they will visit first. When they choose, the narrative associated with the visit is read, which may or may not give the players more to work from. From there they continue to work together visiting different locations to put together the pieces to the mystery.

There are many possible locations and characters for the players to visit, far more than are involved in each scenario. As the players are unlikely to choose a location randomly given the large number of options and sense of limited moves, this allows the game to add static ordering to the events by not mentioning a location as a possible place to visit until they have visited a previous location.

When the players feel they know enough to solve the mystery, investigation ends and a list of questions is revealed. Each question has a point total associated with it based on whether the answer was correct. The number of location changes is factored into the final score, with fewer moves being rewarded more heavily. This score ranks their efforts and a final narrative snippet is read. There is no sense of varied endings, just of level of success or failure as evaluated through discovering the true narrative among the false leads.

With both of these games, once the story has been completed, they are not replayable as the mystery has been solved, and the story does not change.

*4.3.4 Mansions of Madness.* Originally released in 2011, Mansions of Madness [33] is a story exploration game that borrows many conventions of role-playing games and adapts them to a board game. This went so far as requiring a player to take on the role as a game master in the first edition – moving monsters, setting up puzzles, and managing non-player characters. The second edition, released in 2013, uses a free digital app that takes the place of the game master, allowing all the characters to play cooperatively to work through the scenario.

In Mansions of Madness, players take on the role of investigator characters, each with a unique set of stats and starting health and sanity. The players explore the location, investigating areas, finding and using items, fighting monsters, and solving puzzles.

While there is randomization of the map in the game, unlike *Betrayal at House on the Hill*, the layout of the map is not randomized during play, but chosen from a limited set of options at the start of the game and unveiled to the player. The game is set in an H.P. Lovecraft setting, which provides a narrative framework for the monsters and investigative areas.

The kernel events in the narrative are game-specified in a static order. However, satellites in the form of what the characters do within that narrative framework are both randomized and player-chosen which adds some dynamism to the narrative. The players also have high agency within the narrative structure, which gives the narrative some player-created elements.

The app-as-GM contains a hidden timer, which will begin to advance elements of the narrative if the player takes too long. For instance, in the initial scenario, a ritual is taking place. If the players reach it before it has completed, they have different choices, fight different monsters, and may have a different ending than if they take too long and the ritual completes.

Due to the limited randomization and static narrative, the replayability is limited, as the overarching story does not change. However, the fights, objects, and starting characters may be different which allows some variance if the players do not mind following the same story.

#### 4.4 Ordered Story Games

**4.4.1 *Mysterium*.** *Mysterium* [28] was released in 2015 and relies on asymmetric game play in which one player occupies the silent role of the ghost of a murder victim. The ghost literally holds all the cards of the narrative: they know who killed them, but cannot tell the players through any direct mechanisms. Essentially, the game functions similarly to the classic board game *Clue* [29], but with one player silently directing the other players with hints derived from knowledge of what's inside the murder card pouch.

The ghost can only communicate through pictorial cards, deliberately designed with abstract imagery, similar to the cards found in *Dixit*, described above. These cards are difficult to place in the dimensions of narrative: they may contain items or characters in abstraction, but they act upon the narrative as events, representing dreams and visions sent by the ghost.

From the imagery on the card alone (and with no direct input from the ghost), players must decide on the suspect, location, and weapon of the murder. Given the abstract quality of the cards, the intent and interpretation of the events are player-created even though the correct answer is game-specified.

Time is one of the most explicit narrative mechanisms of the game: the players turn lasts for two minutes, as an hourglass ticks down the time available to interpret the ghost's communications. This adds urgency to the action, as well as a sense that the time available to capture the killer is fleeting.

The players progress linearly through the static narrative towards an outcome of either success (capturing the killer and putting the ghost to rest) or failure. While this narrative seems simple, the emergent theories and connections generated by the ghost's choices in visions can be dynamic and wildly varied,

putting the impetus on the player to draw upon the evocative imagery and fill in the narrative gaps.



**Figure 5: An example of an ordered story game, *Mysterium* uses a framework for a murder mystery and gives the players painted cards as the main form of communication and framework for event creation.**

## 5 DISCUSSION

Through the lens of the proposed taxonomy, we were able to note similarities between games due to the narrative structure imposed by the way each game handled events. Below we discuss the patterns we noticed at the poles and quadrants of our mapping. We follow up with a discussion of strategies for abstracting this work for digital games.

### 5.1 Characterization at the Poles

Looking at the axis defined by game-specified and player-created events, we found distinct differences in the structure of the games. For games that have a high number of game-specified events, the games necessarily include books, cards, or an app with large amounts of pre-written narrative. This leads to a fair deal of reading or listening to other people read the narrative of the game. *T.I.M.E. Stories* attempts to minimize this to some degree by suggesting players summarize their encounter instead of reading the cards directly. *Mansions of Madness* uses an app, which has a professional voice actor reading the kernel event text, which can alleviate some of the issues that can come from listening to someone read text out loud.

At the other end of the pole is player-created events. These games offer short text snippets or artwork as a way to frame and inspire the event creation, but it leaves much up to the player. Because these games are often lacking a strong narrative structure (allowing the players to have room for their own creativity), they tend to rely heavily on cards and in most cases do not have a board at all. The amount of structure provided in the cards and the themes vary, but overall are suggestions only.

For instance, Dixit uses a board for keeping score, but the majority of play is through the cards. Each card offers only a spark of inspiration for narrative in the form of an evocative illustration. The bulk of narrative creation is left to the player.

For the axis defined by static and dynamic ordering, there are also differences in the structure of games at each end. For games defined by static-ordered events, we found the games required adding more ludic elements and game mechanics to keep the experience from turning into a hyper-fiction or linear story.

For *Mysterium*, the kernels are kept hidden from the player, and the game play is about abstracted and imperfect player-created communication to discover what they are. In *Pandemic Legacy*, all the mechanics of the standard *Pandemic* are still present, but the narrative kernels are triggered by specific events happening during game play. This would function as primarily a narrative wrapper except that the kernels then in turn affect the mechanics of the game.

Dynamic ordering on the other hand is represented by games with a lack of strong, cohesive narrative arcs. For instance, *Tales of Arabian Nights* is a series of stand-alone events that happen to the character, which can have an impact on the mechanics of the game, but little to no impact on future events. Games like *Gloom* combat this by having the player do the work of creating the narrative glue between the randomized events – as each card is placed the player describes what happens to connect the two events together.

## 5.2 Characterization in the Quadrants

In story crafted games, all the games we examined were strictly card games with no board elements other than a scorekeeper in Dixit. We hypothesize that this is due to the amount of control the player has over both the content and the ordering, which would make it difficult to create a board to encapsulate all the possibilities. Additionally, while there is a randomization of the constraints in the form of shuffled cards, the ordering and narrative creation relies on the player in all the games we sampled. Because of the dynamic ordering, it is up to the players to create the narrative arc. *Once Upon A Time* makes that part of the game, where the players are competing to complete their own narrative.

For unordered story games, these games balance player and game narrative for a co-creation experience. All of the games sampled rely heavily on storybooks or text-heavy cards to relay satellite and kernel events. The beginning and ending kernels are generally fixed with the possibility of multiple endings, but the other events are randomized, with some player input to narrow the randomization. For instance, in *Betrayal at House on the Hill*, the player chooses which level of the house to explore which places limitations on the possible rooms and what can happen in them. Giving more sense of control over the event, *Agents of SMERSH* provides a title of an encounter (e.g. “Tailed!”) and the player chooses from a list of possible reactions to narrow down the type of encounter they will have. Because of the randomized ordering of events, these games tend to be heavily themed to keep some cohesion with the narrative, although like all

dynamic ordered games it is up to the player to create a narrative arc between them.

Story exploration games have strong narratives supplied by the game. While there may be multiple endings, all of the games sampled were not generally replayable as the narrative was such a key component of the game, but was static and therefore would not change between play sessions. All of the games except one provided multiple scenarios or seasons in the base box to give the sense that they were not play-once games. The one game that did not is *T.I.M.E. Stories*, which provided mechanics for replaying the story. Instead of using game elements to hide the fact that the general narrative structure did not change, they made it part of the strategy of replay. If players do not finish the narrative in the allotted time, they can optimize their path through the game in subsequent runs until they have reached success. In that vein, while time is used in games other than story exploration games, all the games we surveyed in this quadrant had timed elements. Time is a useful constraint in keeping the player from exploring the entire narrative space and breaking the smoke and mirrors effect of the limited paths. Time or some other game mechanic is also necessary to also keep the ludic quality, as without it, these games would be stories.

Finally, ordered story games do not currently have enough samples to draw any real conclusions. However, given the two poles that influence the style of play, we posit that the games would also be co-creation games, with the game providing the static framework of the kernel event ordering, and the players creating the content of the kernel or satellites to fit that framework. Similar to story crafting games, these games would require enough freedom in play to allow the players to create events and therefore would likely be a card-based game with limited pre-scripted narrative. Additionally, because the ordering of the kernel events is static, some game mechanics would likely need to be added to keep it from being a fill-in-the-blank story activity. *Mysterium* does fit this mold in that it is a card-based game with the cards providing limited and evocative game-specified narrative as a framework to allow the player to fill in the details. There is also added gameplay elements using hidden information and timed elements to retain the ludic quality.

## 5.3 Digital Lessons from Physical Games

Although there are distinct differences between physical and digital games, we feel that there are some takeaways from this study that can be applied to the realm of digital games. While we did not do an exhaustive study of digital games in regards to our taxonomy, we are encouraged by some of the possible directions this work proposes.

In Aarseth's original paper, he states that the world is the defining factor in the narrative structure in digital games. While location is an important part of a narrative, we have found that the method physical games use to abstract away the world to be an effective way to allow players to concentrate on the events of the story. Throughout recent history, there has been a push for more realistic worlds in digital games to the point where some role-playing games such as *Skyrim* [36] require hours of travel to get from one end of the game to the other. Physical games

suggest that there are interesting areas of exploration where the world is abstracted and travel is not a large part of the narrative.

Additionally, the most story-based genres in digital games – role-playing games, interactive fiction, and adventure games – all fall mainly in the story exploration quadrant of our taxonomy where events are generally game-specified and in a static order. There has been interest in more recent role-playing games and within the AI community to increase the number of options available to the player, but this still falls into the game-specified half of the graph. Likewise, the ordering is often constrained to preserve a sense of narrative quality. While some narrative-centric digital games exist outside of story exploration, the physical games we studied suggest that there are other interesting game possibilities within the other three quadrants that are currently underexplored in digital games.

## 6 CONCLUSION

Physical games are often ignored in conversations about design principles, particularly where narrative is concerned: while specific genres of narrative-driven play, like role-playing games and adventure games have been well-studied in digital games, their physical counterparts often go overlooked.

Story-centric board and card games offer far more potential in the emergent and co-created narrative category than most genres of digital games currently explore: this suggests that the physical systems of story crafting games, which allow players to build from abstractions and components to share a story, provide some unique affordances for narrative. The closest parallels to these mechanisms in digital games are games that create shared spaces for role-playing and other story-driven play, such as classic MUDs and MOOs and their massively multiplayer heirs.

By examining physical story-based games and including them in the conversation on ludo-narrative design, we can further our understanding of the different possibilities for the interaction between narrative and play, and the strategies for engaging players in varied dimensions of the experience.

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