

Supporting Rereadability Through Narrative Play

Alex Mitchell and Kevin McGee

National University of Singapore
Singapore
{alexm,mckevin}@nus.edu.sg

Abstract. In this paper, we investigate the use of *narrative play* as a means of encouraging rereading in interactive stories. To explore this, we created a storytelling game in which the reader/player takes on the role of a film director whose objective is to shoot a film in the face of a series of complications. We discuss the iterative design and playtesting of the prototype of our game, and argue that our design encourages a different type of rereading which involves a shift away from the usual concern for “narrative closure” and more towards a desire to *do better*. We also discuss the use of storytelling games as a way to explore new forms of interactive storytelling by focusing on the mechanics of interactive storytelling, rather than technical implementation details, without losing sight of the need for an eventual computer-based implementation.

Key words: interactive storytelling, rereadability, narrative play, storytelling games, prototyping techniques

1 Introduction

It is commonly agreed that the experience of an interactive story must provide a sense of *agency*, the feeling that the reader/player is able to take action which impacts the story [1]. This implies that, for each reader of an interactive story, the storytelling system should respond with a variation of the story which matches the choices that this reader has made. In addition, if the same reader encounters an interactive story more than once, the system should respond with variations which match each successive set of choices.

Most solutions to interactive storytelling [2–5] focus on customizing the story experience to different readers, ensuring that each reader’s choices will result in a feeling of agency. Those approaches which do consider supporting repeated satisfying experiences for the same reader [6] focus on maintaining consistency within reading sessions, using variety as a way to motivate rereading. However, the tendency for readers of these type of stories to look for some form of narrative closure makes it difficult to motivate rereading beyond a few repetitions [7].

There are, however, other interactive experiences which people want to re-experience, namely challenge-based games such as Tetris. It is worth considering how these games motivate and reward repeated play, to see if the approaches

used in these games can be applied to interactive storytelling. In each play session of a game such as Tetris, there is a challenge which the player must repeatedly overcome through the performance of some specific actions, such as rotating and positioning a block. Overcoming this challenge provides a sense of satisfaction. In addition, the player often ends the game with a sense that they *could have done better*. The desire to do better is one of the main motivations for replay [8].

This suggests that a different approach to the problem of motivating rereading is to provide an experience in which the reader is clearly making choices, directly related to the narrative, at which they could do better next time, and to provide a way in which this experience can be repeated, while at the same time incorporating variation. One form which potentially satisfies these requirements is *storytelling games*, non-computer-based games in which players are competing to tell a story [9]. Examples of storytelling games include *Once Upon a Time*, *The Extraordinary Adventures of Baron Munchausen* and *Dark Cults*.

Storytelling games usually consist of a set of game elements (pieces or cards) which represent narrative elements (characters, events, locations, or objects). Players take turns placing these pieces, with the placement constrained in different ways. As players place their pieces they tell a continuation of the story to this point, which must be somehow related to the piece they are placing. The winner is the first player to achieve some goal, such as discarding all pieces while meeting the placement requirements. The player’s moves, placement of pieces, and winning condition may relate somewhat to storytelling, but often are more directly related to gameplay. This tends to result in storytelling being subordinated to gameplay in many storytelling games, such as *Once Upon a Time*, where winning is largely about getting rid of your cards as fast as possible [10].

2 Related Work

There has not been much work looking at the intersection of storytelling and gameplay in storytelling games. Hindmarch has concluded that the way to balance game and story in storytelling games is to accept that the “*process* is the point, not the *output*” [11] (emphasis added). In contrast, Wallis has put forward the goal of creating storytelling games “in which the story created and the gameplay used to create it are equal, which is both fun and creates a satisfying story” [9], suggesting the possibility of support for both gameplay and storytelling. Mitchell and McGee suggest that a combination of narrative moves and gameplay moves is essential for the design of successful storytelling games, encouraging what they call *narrative play*. They claim that the way to accomplish this is to “ensure that *all* narrative choices have strategic/gameplay consequences – and that all strategic/game decisions have narrative impact” [10].

3 Problem Statement

The concept of narrative play provides a clear metric for designing and evaluating storytelling games (and, by extension, interactive story systems). By necessity,

non-computer-based games are designed to be replayed. So a successful storytelling game will tend to be a good model for something rereadable/replayable. Ways in which a reader could “do better” in the context of narrative play include getting better at creating the final story, and getting better at making real-time storytelling decisions. So, one question that arises is whether games that support narrative play will also encourage replaying.

This paper addresses the question: how can we create interactive stories which provide repeated satisfying experiences through narrative play?

4 Method

To address this question, we created an interactive story in the form of a *storytelling game* designed to provide choices which involve narrative play. We conducted 4 rounds of iterative playtesting and redesign using this prototype. The study involved 3 participants, all of whom were all graduate students in the same department as the researchers. One of the participants took part in the playtesting twice.



Fig. 1. An early prototype of our storytelling game

The sessions involved a combination of playtesting and a semi-structured interview, which made it possible to vary the materials presented to the participants in such a way as to uncover the underlying processes at work during the participants’ experience of the storytelling game. The study materials consisted of a paper prototype of the storytelling game (see Figure 1). The prototype made use of printed paper cards and plastic tokens to represent the various story elements, and a set of written rules.

Participants were asked to play through the storytelling game once. After the session, the researcher asked the participant a number of questions related

to the experience of the storytelling game, and the participant’s motivations to re-experience the story. During the interview, the researcher and the participant sat at the table where the prototype had just been played, with the prototype left as it was at the end of the playtesting session. This allowed both researcher and participant to make reference to the game and to directly manipulate game elements as part of their discussion. Each session took approximately 2 hours.

Data collection consisted of researcher notes and an audio recording of the session, which was later coded and analyzed. Any physical artifacts created during the session, such as the text written on the description cards, was also collected to aid the analysis, and photographs were taken of the final game state.

5 Design of the Storytelling Game

The design of our storytelling game is intended to support rereading through narrative play. We will now discuss how we arrived at this design, and give a detailed description of the game itself. Over the course of the four playtesting sessions, the design evolved in response to issues observed by the researchers. The description given below is that of the final version of the game.

We consider a work to be *rereadable* if the reader/player wants to re-experience the story immediately after a given session with the work. To support this, our approach was to design for a sense of *difficulty and challenge* for the reader/player as they go through the work, and a sense of being able to *do better next time*. However, unlike a challenge-based game such as Tetris, we wanted to tie both the difficulty and the feeling of being able to do better to the *narrative*, not just the gameplay, within the work. To do this, we made use of the concept of *narrative play* as discussed above: the idea that the core action that the reader/player is performing over and over again should be both a narrative move *and* a gameplay move. This means that the action taken by the player moves the narrative towards a narrative goal, and at the same time moves the game state towards a gameplay goal. There should also not be any way for the player to win solely by narrative moves or solely by gameplay moves.

In our storytelling game, the reader/player takes the role of a *Director* of a movie. The Director’s goal is to plan, and then shoot, an action/spy movie with a story in the style of a *James Bond* movie. During planning, the Director arranges a set of cards, representing events, settings and characters, to form an outline of the scenes of a movie. In addition, the Director writes a short, 1-2 sentence description of each scene. During shooting, scenes are “shot” one at a time. After each scene is shot, *Fate* will introduce *complications* which disrupt the Director’s plans. Each complication involves a change in the configuration of the movie, such as making a character or setting unavailable, introducing a new event or setting, or removing a shot scene. The complication is chosen such that the story will not be coherent if the complication is not resolved.

The complication creates what Mitchell and McGee call “narrative problems that the other players must address in their narrative moves” [10]. To resolve the complication, the player must take action to restore coherence. which involves re-

vising the story, by either replacing or rearranging the events, characters and/or settings, or by changing the description of a scene. The player’s action is both a narrative move, as it moves the story towards a desired narrative state, and a gameplay move, as it involves overcoming an obstacle and moving the state of the game towards the winning condition.

Most storytelling games are competitive experiences involving several players. In our game, there is only one player: the Director. The role of Fate, who creates complications for the Director, is played by the researcher. Our observations and discussion are focused on the experience of the Director, with the assumption that in a computer-based implementation of the game, the role of Fate would be taken on by the storytelling system. We discuss the implications of this approach in detail later (see Section 7 below).

6 Observations From Playtesting Sessions

We will now discuss the observations from our playtesting sessions. We found that players did indeed seem to be making both narrative and gameplay moves as they went through the game, and that our intention of creating a storytelling game which involves narrative play had been achieved. There was, however, still some tension between the narrative and gameplay elements of the experience, in particular in terms of the ways in which players went about resolving complications. There were also problems with the difficulty of resolving complications, which were, at times, perceived by players as either too easy or too hard to resolve. Despite these problems, we observed that players wanted to replay the game, and wanted to do so, not to reach any form of narrative closure, but instead to *do better* at telling their story.

6.1 Supporting Narrative Play

Our intention when designing our storytelling game was to support narrative play, which requires that players make a combination of narrative moves and gameplay moves to move towards a goal which combines both narrative and gameplay objectives. We will now discuss the ways in which player behaviour suggests that we achieved this design objective.

One important component of narrative play is that the actions which players take in the game encompass both narrative and gameplay moves. When asked “what are you doing”, players tended to focus on “arranging events and characters” as the main activity during the planning phase, and “dealing with complications” as what they were doing during the shooting phase. These actions involve both manipulation of the game elements, and manipulation of the direction of the story, which overlaps both narrative and gameplay.

When asked to describe their best and worst moves in the game, players clearly described those parts of the experience where they had successfully recovered from complications as their best moves. For example, when faced with a particularly difficult complication, one of the players recalled that he was able to

overcome the problem by requesting a “rewrite”, which allowed him to swap out one event card for another. He characterized this as a risk, as he would not know what event he would get, but he felt it was a risk worth taking, and it paid off, as he was able to use the new event to overcome the complication. The players described the complications as difficult and challenging, and felt that they were crucial to the experience, without which it would not have been as enjoyable, although they still could have created a story.

An interesting observation made by one of the players was that there seemed to be a trade-off between creating events which were somewhat “bland” or general, and therefore more easily adaptable to complications, versus more specifically detailed and therefore more interesting but also “riskier” events which made the story more engaging, but would be harder to adapt. The fact that players were thinking about this type of trade-off, which is very much about gameplay, but were thinking of it in terms of the impact on the narrative, further reinforces our claim that the storytelling game has successfully incorporated narrative play. This is an important point in support of the presence of narrative play in the game, since narrative play requires that obstacles placed in the way of players create both gameplay and narrative difficulty, and must be overcome by both narrative and gameplay moves.

This sense of risk and reward ties in to the notion of the difficulty of the complications. One of the players played the game twice, and, after the second session, commented that the experience didn’t seem as hard as the previous session. When asked why, he initially commented that he had “got better” at writing the descriptions, and had tried to plan for the need to possibly adjust the events to accommodate complications. However, on reflection, he added that he also felt that the complications were “not as difficult” in the second session. It turns out that the complications within the second session were mostly focused on upcoming scenes, those which had not yet been shot. In comparison, the complications in the previous session had involved disruption to scenes which had already been shot. It may be that those complications which disrupt parts of the story which the player felt had already been fixed are more difficult to overcome. This raises the problem of balancing the difficulty of complications, which we will come back to later (see Section 6.2 below).

After completing the game, players were asked how they felt about the experience as a game, and whether they felt that they had “won” the game. One player described that he felt satisfied with the game, and that he felt that he had won, because the resulting story was “Bond-esque” and “would make a good Bond movie.” When asked what would be considered losing the game, players suggested that if they ended up in a situation where it was “hard to recover to a coherent story”, they would have lost the game. This is interesting, as we did not explicitly state the losing condition, only that the objective of the game was to “shoot a movie”. Players immediately brought to bear their understanding of what a story, in this case a movie, should be, and used criteria such as coherence and dramatic tension to judge whether they had achieved their goal as a player. This is worth investigating further.

The players' perception of the winning and losing conditions of the game, and the ways in which the players described their actions, are consistent with our desire to have the experience involve both actions which involve manipulating the gameplay elements in an attempt to overcome obstacles (rearranging characters, events and settings to resolve complications), and a simultaneous attempt to tell a story. There were, however, some problems with the design, which led players to occasionally focus solely on the narrative elements of the experience, rather than the gameplay. We will now discuss these issues in more detail.

6.2 Tension Between Narrative Moves and Gameplay Moves

One problem that arose with our design was the tendency for players to try to resolve complications *purely through narrative moves*, rather than through a combination of narrative and gameplay moves. The intention was for players, when faced with a complication, to have to reconsider their plan for the story, and then resolve the complication through a combination of both rearranging the various story elements, and editing the scene description. However, there were several instances where players found that it was enough for them to simply edit the description.

For example, during one of the sessions, the player had planned a scene in a particular setting. The complication which was chosen was that the setting had become unavailable, and had to be swapped out for another setting. The combination of the new setting and the existing event as it had been described in the scene description did not make narrative sense. To resolve this, rather than making any direct changes to the game elements, the player was able to reword the description of the scene to incorporate the new setting. In this case, the player is making a narrative move, but is not actually manipulating the game elements, making it difficult to see this as a gameplay move.

The problem here is that the complication did not actually impact the story structure, since the setting was not particularly important for the current scene. To solve this, the design would need to specify that the complication chosen must create sufficient impact to force the player to make both a narrative and a gameplay move. This is difficult, since it requires that Fate (whether controlled by a human or the storytelling system) have some notion of both the story structure and how the complication will change that structure.

It is also important that the complication not create too much of a disruption to the structure, to the extent that the player has no way to repair the story. This is essentially a question of game balance, which needs to be resolved through further playtesting and iterative design.

6.3 Reasons to Replay

When asked, all of the players said that they wanted to replay the game. What is more interesting is their explanations as to *why* they would want to replay. When asked, they explained that they felt that they could do better next time they played. When probed as to what they mean by "do better", they said that,

if they were to play again, they felt that they would be able to get better at handling complications, and that a measure of whether they had done better would be how much the story felt like a “Bond” movie. They also were able to list specific ways that they would advise other players to approach the game. For example, one player said that he would advise players to spread out characters across different settings, so that if a setting is removed due to a complication, the character would not be completely removed from the movie. He also suggested that, if possible, the player should try to shoot the final scene as early as possible, to make sure that it is in the movie, although he did admit that this may be a “false sense of security”, given that complications can impact shot scenes as well as upcoming scenes. This can be seen as the recognition by the players that there is the possibility of developing a *strategy* for doing better at the game. It also suggests that there is a certain level of tension within the game, as shown by the player’s desire to get the final scene shot so that it would be out of danger.

The fact that players want to repeat the experience of our storytelling game to *get better* at overcoming difficulty, in the form of complications, and that they felt that they could indeed get better at this, suggests that there is a different form of motivation here than the desire for closure that occurs in other interactive stories. One key difference with our storytelling game is that the player is in the role of the *teller* rather than the *receiver* of the story. Although the designer of the storytelling game has set the rough parameters for the story, in the form of the settings, characters and events, and the player’s cultural awareness of the “Bond” genre provides a rough framework with which to structure the story, the actual, specific details of the story are coming from the player herself.

However, this change of role on its own is not enough to create a desire to replay. When asked at the end of the planning phase whether they were happy with their story, players all said that they were. They said that they would not go back and do the planning phase again, as they were quite happy with the outcome. Once they had finished the shooting phase, during which they were forced to overcome a series of complications which disrupted their story, we asked them again if they wanted to replay. At this point, all players said that they would want to play the game again. When probed as to why, one answer was that they would like to try different ways of structuring the story during the planning phase, so that they could better handle complications. They also said that they might try different recovery strategies during the shooting phase.

Interestingly, although several players felt that the final story at the end of the shooting phase was *better* than their original plan, they still wanted to go back and try again, to see if they could do a better job of “maintaining the original story”. To probe about the apparent contradiction between their perception that the final story was better than the original, and their desire to do a better job at maintaining the original (and presumably not-so-good) story, we asked whether the player would prefer not to have had the complications. The player said that this would have been less satisfying, as the process of overcoming complications “adds realism”, and makes him “appreciate the difficulty” of creating a story. This particular player suggested that he would be interested in

seeing the “making of” the story, in the form of a replay of the process. This is similar to watching recordings of gameplay, such as speed runs of *Super Mario Brothers*, where what is appreciated is the skill required to overcome various obstacles. Another player mentioned that he would judge other players’ ability at the game, not based on the quality of the final story, but on “how well” the players had done at overcoming complications during shooting.

What is happening here is that the players are very much focused on the process of telling the story, but are, at the same time, motivated to replay to *tell a better story*. This is very different from the desire to go back and re-experience the interactive story to find narrative closure. It is interesting that the prospect of telling a different story is not enough to encourage replay. After playing through the planning phase, the players were happy with their story, and didn’t have any desire to try again. However, after the shooting phase, they *did* want to replay. It is the challenge which they faced during the shooting phase, and the possibility that they could improve at overcoming this challenge, which motivated replay.

It is important to note that, although we began by introducing the problem of encouraging *rereading* in interactive stories, throughout the discussion above we have been referring to “players” and their desire to “replay” a storytelling game. This raises the issue of whether the “reader” is still a reader, and whether repeat experiences of a storytelling game can be considered “rereading”. This problem is not unique to storytelling games, as it is not clear whether someone experiencing any interactive story is a reader, a player, or is taking on some new, not yet clearly defined role. Resolving this issue is beyond the scope of this paper. However, it is important to acknowledge the problematic nature of the terminology, and how this reflects the complexity of the underlying issues.

7 Prototyping With Storytelling Games

In this paper, we have been exploring ways in which narrative play can encourage rereadability in interactive storytelling systems through the use of a storytelling game. We will now discuss how this approach can be used more generally as a way to explore ideas about the design of interactive storytelling systems. There are a number of lessons that can be drawn from our experience, both in terms of the possibilities and the possible problems with using this approach.

For the work we have presented here, we have been using a non-computer-based prototype to explore design ideas for interactive storytelling systems. This approach allows exploration of conceptually interesting but potentially computationally challenging designs. What this involves is crafting a set of rules and related materials, which can then be used to play through a paper-based version of an interactive story experience. This can either involve a system which is designed to be played by several people, mediated by the storytelling system, or can be a system which is eventually intended to be a single-user experience. In the latter case, the “system” is replaced by a human, who takes on the role of the computer, and closely follows the rules which describe the system’s behaviour. It is this second approach which we have used in this project.

7.1 Advantages

There are several advantages to this approach. Complex systems which may require that designers and implementers solve difficult technical problems can be approximated through the use of a human as the “artificial intelligence” within the system. For example, in our “spy game”, we have specified a design where the human player, the Director, has to resolve complications created by Fate, as represented by the storytelling system. These complications must be chosen such that they disrupt the coherence of the current story, in such a way that the player is challenged, but has a chance to resolve the problem.

This is an approach to interactive storytelling which is the inverse of what is usually considered in the research community – rather than the system maintaining coherence in the face of player actions, the player must maintain coherence in the face of system-generated complications. This is a potentially interesting approach, but without some form of playable prototype, it is only an idea, and there is no evidence that it would actually lead to an interesting experience for players. Rather than expend the effort to solve the computational problems involved, it makes more sense to first attempt to gain insight into how people will respond to this type of design by creating a prototype in which the role of Fate is played by a human, who closely follows the rules specified by the designer so as to mimic the behaviour of the not-yet-implemented storytelling system. This can be done through the use of a storytelling game.

In addition to allowing designers to quickly get feedback as to how people will respond to a new design idea, this approach also allows designers to engage in iterative design, tweaking the rule system and the story content on the fly, in response to observations of how players respond. Since the system is implemented as a set of written rules and physical cards, the system can be revised without any need for programming. This allows for rapid iterations, and also puts the author/designer directly in control of the design process, without the need for a programmer and/or an authoring system to act as an intermediary.

This is very similar to the type of paper prototyping advocated in the game design community [12]. Unlike paper prototyping as performed by interaction designers, where the main focus is on the interface behaviours [13], game prototypes, and the type of storytelling games we have described, are intended to provide insight into the ways in which people respond to the rule systems and design choices at the system level.

7.2 Possible Problems

There are, of course, possible problems with this approach. The experience of playing a storytelling game with other people, even when there is only one other player who is acting as the “system”, is a social experience. This may interfere with the designers’ interpretations of the player’s reactions, as the actual, single player experience will not include this social dimension. For example, in our study, players mentioned that part of the enjoyment of the experience came from the fact that another person, the researcher, was sharing the experience

with them, even though the researcher’s contribution was limited to playing the role of Fate. We attempted to minimize this problem by having the person playing the role of Fate stick as closely as possible to the rules as set out by the designers, and not engage in any unnecessary communication with the player. This is an issue which anyone using this approach needs to be mindful of both when designing the study, and when interpreting the results of the study.

A more problematic issue is that of the potential computational complexity of the system being designed. Although the use of a human to mimic the “system” removes the immediate need to solve the implementation problems, it is crucial that researchers using this method are aware of, and take into consideration, the actual technical issues involved in implementing their designs. Otherwise, there is the danger that ideas will be proposed which could never be implemented, making their actual contribution to the development of the field negligible. For example, in our study we avoided the problem of implementing a computational system to determine the complication with which to confront the player, which is a potentially difficult technical problem. For this system to be implemented, the system would need to be able to determine which changes to the Director’s story would make it no longer coherent. Similarly, once the Director has attempted to resolve the complication, the system would need to be able to determine whether or not the complication has actually been successfully resolved. As mentioned above, this is essentially the inverse of the typical drama management problem, where the system needs to have some means of knowing when a player action has disrupted coherence, and take action to resolve the problem. In both situations, there is the need for some representation of the story which captures a notion of “coherence”, and a set of actions which can be clearly specified in terms of how they change the structure of the story. This is clearly a non-trivial problem, the complexity of which we need to keep in mind when discussing our results.

8 Conclusion

In this paper, we have explored the possibility of supporting repeated satisfying experiences of interactive stories through the use of *narrative play*. We created a prototype storytelling game using this approach, in which the player takes on the role of the Director of a movie who must attempt to tell a story in the face of a series of complications created by Fate.

Our playtesting of this prototype suggests that this is a promising approach. Our storytelling game managed to successfully combine the process of telling a story with gameplay. We saw that players were motivated by the desire to *do better*, which they articulated in terms of both developing better strategies to overcome complications, and in terms of telling a better story. This is a very different form of repeated experience from the type of rereading seen in other interactive stories, which tend to encourage a focus on narrative closure. There were, however, some problematic issues, including the question of how to balance the difficulty of the complications faced by players, and how to maintain a focus on both narrative and gameplay moves as players progress through the game.

We also discussed the methodology which we employed: the use of a prototype storytelling game as a way of exploring new paradigms for interactive storytelling. We have shown that this is a useful approach, but that it also raises several potential problems for researchers, the most important of which is the need to keep in mind the implementation issues which a new design idea may involve. This methodology provides a new way in which researchers can explore innovative approaches to interactive storytelling at the design level, while maintaining awareness of the attendant technical challenges.

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