Designing a Narrative Generation Game Based on the Russian Invasion of Ukraine

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Abstract

In a previous paper, we proposed an automatic narrative generation game. In this paper, we propose a game concept based on the framework of the automatic narrative generation game. The proposed game is based on the ongoing Russian invasion of Ukraine (beginning in February 2022). The game is based on an analog game in which participants advance a shared storyline mainly through dialog. The proposed game facilitates story generation. Accordingly, as an application, we intend to use the game to support the creation of stories.

Keywords: Story Generation, Automatic Narrative Generation Game, Ukraine, TRPG

1. Introduction

Caillois [1] defined play as "an activity that is essentially isolated and carefully insulated from the rest of life, which is usually completed within the definite limits of time and place." In general, play is an isolated and fictional activity. Play is generally executed through a shared narrative among participants under the control of the rules of play. In the space of play, participants experience events in a simulated manner through their own independent actions during the period specified by the rules of the particular play. As play is a fictional activity, it has no direct impact on the real world. Therefore, failures are allowed in play.

The above qualities in play are also present in games (the "play" referred to by Caillois includes a wide range of activities such as sports, theater, raffles, and merry-go-rounds). The "play" we refer to as "games" herein narrows the scope to games as defined by Juul [2]. Notably, there are examples of using games as a medium for proactively simulating a narrative. For example, games such as table-top role-playing games (TRPGs) and live-action role-playing games (LARPs) are used to simulate fictional and real-life stories. In particular, the player plays the role of a character in a fictional story or real historical event. LARPs allow players to simulate a subjective perspective in a story by playing the role of a character; correspondingly, their nature has attracted attention as a method for learning cultural heritage [3]. However, according to Ensslin [4], the voices and perspectives of narrators in novels and films have been replaced by the experiential qualities in games. In this context, whether a game itself can be considered a "narrative" has been debated.

In particular, there are games concerning events in the real world (such as those for learning about cultural heritage) and intended for educational purposes; these are known as "serious" games. They have been defined as "(digital) games that are developed and used to solve problems in various areas of society" (Toru Fujimoto, CEDEC 2022 lecture,*). One recent example is *Ukraine War Stories* [5], an adventure game based on the Russian

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* https://cedec.cesa.or.jp/2022/session/detail/115

invasion of Ukraine beginning on February 24, 2022, and still ongoing as of this writing. The game was released in October 2022 and a demo version is currently available. There are three storylines set in Hostomel, Bucha, and Mariupol, respectively. All of the game's images are based on actual events and eyewitness testimonies. In addition, the images used in the game are based on photographs taken on the battlefield.

In a previous paper, we proposed a narrative auto-generating game modeled on a TRPG [6]. This paper proposes a game concept based on the framework of the auto-generated narrative game. This paper is also an extended version based on [7]. As with *Ukraine War Stories*, our game is also based on the Russian invasion of Ukraine beginning in February 2022 and still ongoing (September 2022). In this paper, we refer to the invasion as the "Ukrainian War."

2. What's TRPG

TRPG is an analog game in which participants advance a shared storyline, mainly through dialog. The shared storyline works as a constraint. There are two roles in TRPGs. One is the game master (GM), and the other is the player (PL). In playing a TRPG, the GM and PLs share a single storyline called a scenario.

Figure 1 is an image of a scenario in TRPG. The GM has a fair overview of the scenario and, depending on how the PL's actions turn out, modifies the scenario's scenes to steer the story in a certain direction. The resulting story can be a tragedy or comedy. However, as TRPGs are intended to be entertaining, the ending should usually satisfy both the GM and PLs. PLs insert new

Fig. 1. Image of a scenario in TRPG

scenes according to the scenarios provided by the game master. PLs do not know the entire scenario; PLs insert scenes based on the scripts of the various stories memorized by the PLs.

Because TRPG is a game and virtual experience, it provides an environment in which it is easy (and acceptable) to make mistakes. There have been attempts to use TRPG to support leisure time activities for children with developmental disabilities [8]. In addition, there may be large or small differences in the continuation of the shared story as recalled between the participants. The main plot of the story may change according to such differences. In addition to "actually playing," there are other ways to enjoy TRPGs, such as by recording and publishing scenes of the game in writing or video, or live-streaming the game on a video distribution site. In other words, the game itself is a work of art that can be watched and enjoyed. The game proposed herein facilitates story generation; as an application of this game, we intend to support the creation of stories through the game.

3. Proposed Game Format

The proposed game is a text adventure game in which the player must maintain morale (which is being lowered by public opinion that the nation should surrender) and keep the nation alive. In terms of existing works, the proposed game is similar to a game that simulates the manipulation of public opinion through actual or fake news, as discussed below.

Headliner [9] and *Headliner: Novi News* [10] are adventure games in which the player becomes the editorial director of a news bureau or newspaper in a fictional nation and manipulates public opinion. The game is not about fake news *per se*, but the selection of the articles submitted by writers can drastically change the state of affairs in the country where the game takes place. *Plague Inc.* [11] is a simulation game in which the player becomes an epidemic, aiming to evolve and destroy the human race. In 2019, under the supervision of the American fact-checking organization Politifact and others, a mode for spreading fake news was added to the game. *Bad News* [12] is a game developed by researchers at the University of Cambridge for simulating the spread of fake news.

In terms of story creation support, the game proposed herein is similar to a game called "Solo Journaling RPG" (https://itch.io/jam/solo-journaling-rpg-jam). Solo Journaling RPG concerns creating a story and writing a
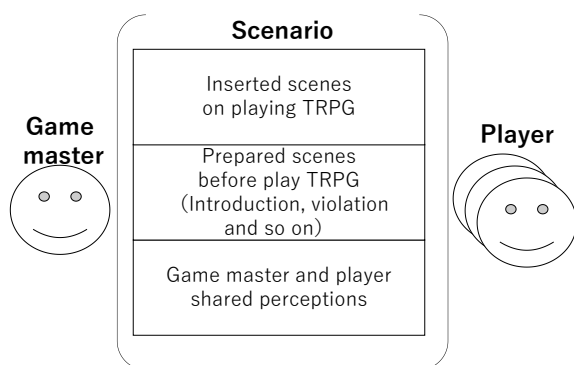
record from an introspective game experience. The story is created by the player by matching relationships between events and the storyline from fragments and sequences of events selected using random number generators such as dice and playing cards. The main focus is on how the players themselves (or the characters they have created) feel about the events, as recorded in their diaries or monologs. As another example, *Skyworthy* (developed by A Couple of Drakes, https://acoupleofdrakes.itch.io/skyworthyzine) is a game in which a player acts as a flying boat with many sailors on board and writes a diary of his observations of the lives of the crew members. Other narratives include a ronin who saves a village from bandits who owe him a night's lodging and meal as inspired by Akira Kurosawa's "Seven Samurai," an adventure story about the inhabitants of a fairy tale world, and a life memoir for a vampire with one hour left to live.

4. Model for Story Generation

We propose a model for story generation based on the automatic story generation game proposed by Ono and Ogata [7]. Figure 2 shows the model. A scenario is a structure that determines the scenes that start the story and scenes that can occur during the story. The story is a collection of scenes told by the GM. The story state changes with the scenes. Each PL monitors the state of the story and interfere with the story when the state of the story meets certain conditions. Here, "interference" refers to the process of rewriting the scenes that the GM plans to tell. The user creates a single PL.

Figure 3 shows the process of story generation in the proposed model. The GM inserts a scene consisting of an
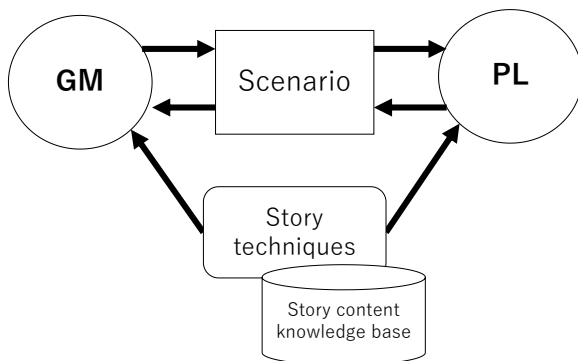

Fig. 2. Model of story generation

event and corresponding states into the story. The GM

inserts a scene according to the story framework prepared in advance (the framework is prepared by a user or another generation system). States has information about the characters, objects, and places in a scene.

Based on the scene inserted by the GM, the PL inserts a scene following the scene or overwrites the scene with a different scene. PL's insertion gives small change to a story. The PL inserts a scene that is related to the scene inserted by the GM. Therefore, the scenes inserted by the PL often follow the flow of scenes that the framework has. In this model, scene relationship means a causal or temporal relationship. On the other hand, overwriting gives big change to a story. By rewriting a scene that the framework has, it cuts off the flow of scenes that the framework has in the future. Overwrite expects to generate different stories.

The GM changes the scenes to be inserted based on the scenes indicated by the PL. The GM will insert a scene that deviates from the prepared story framework, especially if the PL's overwrite creates a significant change in the story. The following paragraphs describe the methods of generation more specifically.

The GM and PL control the characters in the scenario. The characters have story techniques that change the storyline in the scenario. As mentioned above, the story is based on the Ukrainian War. We prepared the storyline for the Ukrainian War based on the article "The invasion of Ukraine in chronological order" published by Sankei Shimbun (https://www.sankei.com/article/20220301-KYQCEGX7GRFBPJBC2BFQPXQ754/). The article concerns the Ukrainian War and is arranged in chronological order, starting with the publication of the article at 12:18 on February 24, 2022. Notably, the article is still being updated. The characters are the people and government in Ukraine, people and government in Russia, and "World Commander Hashimoto-kun" [13]. The PL corresponds to one of the characters and the GM corresponds to the other characters.

The generation algorithm is as follows. In this description, a story is a variable for storing the stories to be generated. The list of processes is a variable storing the reserved story generation processes.

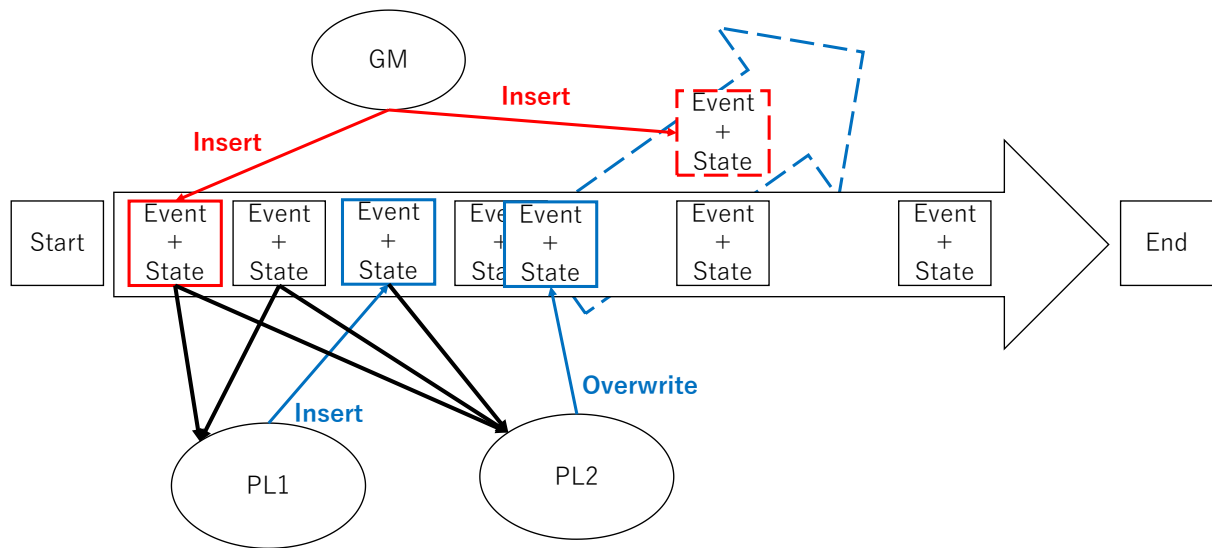 (i) The user enters a scenario.
(ii) The user determines PL1.

Fig. 3. Image of story generation

(iii) The process from the GM is inserted into the list of processes.

(iv) One process is selected from the list of processes.

(v) Scenes are inserted into the story based on the retrieved process.

(vi) A process is inserted into the list of processes (or not) based on the last scene added to the story.

(vii) If the list of procedures is empty, generation is terminated. Otherwise, the algorithm returns to Step (iv).

Morale is also set as a game mechanism. Morale is expressed as an integer with an initial value of 100. There are no lower or upper limits. In addition to increasing or decreasing depending on the scenes inserted by the GM, the morale also changes depending on the scenes inserted by the PL. A scene increases or decreases morale by a certain amount. The GM transitions the war as the story progresses. The PL inserts a scene in which anti-war statements decrease morale. The GM inserts a scene in which the PL fully accepts anti-war views and surrenders if morale falls below 0. The PL's objective is either to accept the surrender and end the story as an anti-war faction or to continue the story until victory as an anti-war faction.

5. Example of Story Generation

As mentioned above, the system uses Sankei Shimbun's timeline of the war in Ukraine. In particular, the timeline is used as transcribed through April 31, 2022 and classified by item. The "date" and "time" refer to the date and time the article was published. The content is the title of the article and indicates the event that took place. "Subject" indicates the classification of the event. "Military" refers to military actions and damage. "Negotiations" refers to meetings, conferences, and speeches. "Economy" refers to finances, imports, and exports. "Anti-war" refers to anti-war speeches and demonstrations. "Sports" refers to sports played by athletes.

In the story generation, the GM first presents a scene in which Vladimir Putin decides on a military operation in eastern Ukraine. In response, the PL, acting as "World Commander Hashimoto-kun" (hereafter referred to as "Hashimoto-kun"), is presented with the following instructional statement: "The mission of a country with no military power (such as Ukraine) should be to protect its citizens, and should refrain (in Hashimoto Toru's opinion) from raising grandiose ideals that are beyond its own power." He also mentions that "Japan, which is constrained by Article 9 of the Constitution, should do the same." In the context of Ukraine (with low military strength), this directive statement encourages flight and

decreases its morale as a nation. The anti-war PL (user) responds "yes" or "no" to the statement. Morale is decreased when the directive statement is affirmed and increased when it is denied. The directive does not necessarily only decrease morale; in alternative cases, the increase or decrease in morale owing to an affirmation or denial is reversed.

6. Conclusion

We proposed a game concept based on the Ukrainian War using the framework of a narrative auto-generating game. Based on the timeline of the Ukrainian War as published by Sankei Shimbun, we prepared a story of the Ukrainian War up to April 30. We then summarized the characters and progression of the story based on the Ukrainian War story within the framework of the story auto-generating game. We then presented an example of story generation using the prepared story. In this example, the story progressed when the user (i.e., the player) accepted or rejected the statements of instructions given by "World Commander Hashimoto-kun."

Acknowledgements

References

1. Caillois, R., TadaM., Tsukazaki, M. (Trans.), Asobi To Ningen. Kodansha, 1990.
2. Juul, J., Matsunaga, S. (trans.), Harf Real: Kyojitsu no aida no video game. New Games Order, 2016.
3. Mochocki, M., *Role-play as a Heritage Practice*. Taylor & Francis, 2021.
4. Ensslin, A., Video Games as Complex Narratives and Embodied Metalepsis. *Routledge Companion to Narrative Theory*. pp. 411-422. Routledge, 2022.
5. Starni Games (2022). "Ukraine War Stories." Starni Games.
6. Ono, J., Ogata, T., Monogatari Jido Sesei Game Ni Okeru Odoroki To Monogatari: Odoroki Ni Motoduku Story Seisei Notameno Gap Giho. In, Ogata, T. (ed.), Post-narratology No Shoso: Jinko Chino No Jidai No Narratology Ni Mukete 1. Shin'yosya, 2021.
7. Ono, J., Ogata, T., Narrative Generation Game Based on the Ukraine War. The Japanese Society for Artificial Intelligence SIG-LSE0C31, 69, 143-148, 2022.
8. Horiguchi T., Table-talk Role Playing Game (TRPG) no Jissen. In, Kato, K. (ed.), Tsuge, M. (supervision), Hattasu Shogai No Aru Kodomo / Wakamono No Yoka Katsudo Shien Handy series Hattatsu Shogai Shien / Tokubetsu Kyoiku Navi. Kaneko Shobo, 2021.
9. Unbound Creations, The Headliner. Unbound Creations, 2017.
10. Unbound Creations, Headliner: Novi News. Unbound Creations, 2018.
11. Ndemic Creations, Plague Inc.. Ndemic Creations, 2021.
12. Cambridge Social Decision-Making Lab., Bad News Game. https://www.getbadnews.com/en/play, 2018.
13. Ogata, T, War and Narrative Generation Amateur Talk: Beyond the Landscape, in Sad Japan Where There is Also a World's Commander Hashimoto-kun. The Japanese Society for Artificial Intelligence SIG-LSE0C31, 17-142, 2022.

Authors Introduction

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