Extraction of Typical Story Plot Patterns from Genres within Japanese Popular Entertainment Works

Hajime Murai, Shuuhei Toyosawa, Takayuki Shiratori, Takumi Yoshida,
Shougo Nakamura, Yuuri Saito, Kazuki Ishikawa, Sakura Nemoto,
Junya Iwasaki, Shoki Ohta, Arisa Ohba, Takaki Fukumoto
Computer Science Department
Future University Hakodate
Hakodate, Hokkaido, 041-8655, Japan
h_murai@fun.ac.jp

Abstract

Several narratological studies have investigated plot patterns within specific story genres. However, these studies focused only on specific genres; thus, the common characteristics of general plot structures have not been recognized. In this study, cross-genre and sub-genre comparisons of plot patterns were quantitatively performed based on common symbol sets to describe the plot structures. Common symbol sets for describing the plot structures were utilized for analyzing the plot structure to compare different genre plot patterns. The target genres and stories were selected based on sales rankings and popularity rankings for popular Japanese entertainment works. Typical plot patterns for each genre were extracted from the analyzed plot structures using the N-gram-based pattern extraction method. Inner structures of genres were extracted using hierarchical clustering. As a result, common plot characteristics and differences between genres, and interpretable subgenre plot patterns were extracted. Although the results of this paper are limited to the popular Japanese entertainment genre, the proposed method can apply to other stories and genres in different cultures.

Introduction

Automatic story generation based on computational literary studies has become a popular research method. There are various methods for automatic story generation, for instance, applying plot patterns based on traditional narratology (Gervas 2014), utilizing agent-based approaches (Binks, Roberts and Young 2016), or deep learning methods (Fan, Lewis and Dauphin 2019). It would be useful to clarify the characteristics and structures of existing stories for the development of these methods and to establish a method for human-like storytelling ability using artificial intelligence.

Narratology is the academic field dealing with the characteristics and structures of stories. There are several traditional studies on narratology. For instance, Propp insisted that 31 functional elements can compose about 300 Russian folktales about magic, based on analysis of story structure (Propp 1968). Furthermore, Campbell proposes that there is a common story structure within myths all over the world (Campbell 1949). Due to the influence of philosophical structuralism, the characteristics of those research targets were thought to be various structures (structures of plots, characters, and narratives); therefore, these research methods are called story structure analysis (Barthes 1968). Several studies have clarified that it is possible to extract the common plot structure of stories belonging to a specific genre by collecting and analyzing several such stories. Based on these old humanistic studies, recent research focusing on several specific genre stories has clarified that the quantitative and objective extraction of common plot structures can be executed using computational methods (Murai 2020; Suzuki, Sasaki and Hakamada 2018; Saito, Yoshida and Nakamura 2021; Iwasaki, Toyosawa and Ishikawa 2021; Oba, Ota and Amano 2021). In these recent studies, the plot structures were described as sequences of symbolized scenes or functions. The common plot structures of specific genres were extracted using quantitative methods for symbolized sequences.

However, these studies focused only on specific genres; thus, the common characteristics of general plot structures have not been recognized. Therefore, common symbol sets for describing the plot structures of several different genres have been developed (Murai, Toyosawa and Shiratori 2021a). Identifying common symbols across story genres enables a comparison of the characteristics of typical plot patterns of each genre. In addition, the internal structure of each genre has not yet been investigated. Moreover, the extracted typical patterns could become a foundation for automatic story-generation systems. In this study, cross-genre and sub-genre comparisons of plot patterns were quantitatively performed based on common symbol sets to describe the plot structures. Cross-genre comparison and sub-genre analysis would enable more sophisticated story

generation for instance, genre combined story generation, and user's taste oriented detailed story generation.

Materials and Methods

Dataset and categories for plot analysis

Comics, games, and novels of several popular genres in modern Japanese entertainment culture were selected, based on the sales and popularity rankings, to compare different story genres (Murai, Toyosawa and Shiratori 2021a). The most popular selected genres were "Adventure," "Battle," "Love," "Detective," and "Horror." These are based on hypotheses that popular works should include some fascinating plot patterns for most people, and that typical plot patterns can be extracted quantitatively by gathering same genre works. To extract typical plot structures for each genre, works of combined genres (such as "love comedy") were eliminated, and popular short stories were selected based on the rankings. In cases where there were not enough popular short stories, popular long stories were divided into short stories based on the changes in the purpose of the stories' protagonists (Nakamura and Murai 2020).

Subsequently, the selected stories were divided into scenes, and scenes were categorized manually by researchers of narratology based on the functions of each scene as a story plot. The criteria of the story division are as follows (Murai, Matsumoto and Sato 2011):
· Physical transitions of places
· Elapsed time (except very short case for instance, a few seconds of silence)
· Appearance, exit, or movement to another place; birth and death of main characters
· End of explanation for readers (except very short case)
These criteria are based on traditional scene divisions in narratology.

After the scene division, the classification of each scene was performed based on the category table (Murai, Toyosawa and Shiratori 2021a; Murai, Toyosawa and Shiratori 2021b)

Table 1 depicts the number of analyzed stories and scenes in five genres. Table 2 lists the nine regions and 29 large categories of the plot elements. One story is depicted as a sequence of 29 scene types. For instance, if there is a story about a protagonist who encounters some man-made disaster, such as a battle, and finally defeats the ringleader behind it using a special given power (an example of a typical battle genre plot), that story can be depicted as a sequence of several large categories: "Disaster," "Ability improvement," "Confrontation," and "Everyday."

Moreover, 29 large categories were divided into 227 small categories. The relationships between the large and small categories are depicted in Table 3. In the categorization process, each scene was categorized based on small and large categories.

Each scene division and categorization process were performed by at least two individual analysts. When the results of the two analysts were different, they discussed which was better and decided on the final result. This type of collegial system (Someren, Barnard and Sandberg 1994) is often utilized in the literary analysis of the humanities field.

Table 1. Analyzed stories and scenes for each genre.

	Story	Scene	Average scenes per story
Adventure	226	1750	7.7
Battle	375	2994	8.0
Love	172	1604	9.3
Detective	134	1281	9.6
Horror	167	1484	8.9

Genre clustering based on plot sequence

To investigate the subgenre structure of each story genre, a clustering method was applied. The categorized scene sequences of the stories were clustered based on the Levenshtein distance of sequences composed of small categories. To avoid the effect of story length, the Levenshtein distance of two stories was divided by the shorter length of the two stories. More specifically, the hierarchical clustering from the Ward method was applied.

Plot pattern extraction

Each story genre was assumed to have a typical plot pattern. There are several methods to investigate frequently appearing serial symbol patterns, such as the N-gram or Markov chain. In this study, an N-gram-based pattern extraction method was applied (Saito, Yoshida and Nakamura 2021; Iwasaki, Toyosawa and Ishikawa 2021). In this algorithm, if the order of appearance of symbols is appropriate, non-continuous sequences are also calculated as N-gram pattern. The pattern extraction process was as follows:

1. N-gram distribution is computed based on plot sequences within target stories
2. Several patterns with high frequency are selected from N-gram
3. One element is added to the selected patterns under the condition that the added pattern appears as frequently as possible in the N-gram.
4. Several patterns in which the sum of the included N-gram's frequency is larger are selected.
5. Steps 3 and 4 are repeated until the pattern length becomes of the specified length which user can decide.

By applying this algorithm to a group of similar stories, a typical plot pattern can be extracted with an arbitrary length (Murai, Toyosawa and Shiratori 2021b).

A typical plot pattern of each story genre was extracted based on whole target genre stories for comparison. Moreover, to investigate the inner structure of each genre, typical plot patterns of clusters within genres were extracted based on stories within the target cluster.

An example of steps of 1 to 3 are also described in Figure 1. In Figure 1, 3-gram is calculated at first. In the next

step, frequently appeared pattern(s) in 3-gram (in this example "ABC") was selected. In the third step, one symbol is added to the selected frequently appeared pattern "ABC" in order to include as match pattern as in calculated 3-gram. In this example, added pattern "ABCD" includes "ABC", "ACD" and "BCD."

Table 2. Large categories for cross-genre plot analysis.

Region	Large category	Description
Existence	Arrival	Encounter with the protagonist, including events such as birth and revival
	Leaving	Leaving from the story, including permanent departure such as death
	Change	Change in a character's attributes (e.g., swap, transform, and face change by plastic surgery)
Capability	Ability improvement	Positive change in a character's ability
	Ability decline	Negative change in a character's ability
Movement	Getting travel route	A character is able to travel
	Escape	Escaping from something (e.g., retreat, withdrawal, liberation, and prison break)
	Losing travel route	A character cannot move (e.g., losing transportation facilities, detention, kidnapping, and arrest)
Information	Search	Effort for obtaining information (e.g., exploration, survey, and research)
	Discovery	Disclosure of some information or hidden truth
	Misunderstanding	A character has a misunderstanding
	Doubt	A character notices something suspicious and has doubts
	Concealment	Some scenes about hiding information (e.g., concealment, disguise, and scam)
	External information	External information presentation for audiences through elements such as prologue and epilogue to explain about the world of the story
Regularity	Order, promise	It includes not only promise, transaction, and compliance, but also warning and prophecy.
	Violation	It includes crime, negligence, ignorance of warnings, and inattention.
	Intention, request	It includes scenes related to characters making decisions, that is, scenes involving wishing, request, persuasion, and invitation.
Intention	Completion of request	A scene that mainly consists of fulfilment of a request
	Failure of request	A scene that mainly consists of a failure or refusal to grant or fulfil a request
	Insanity	Situation wherein the character cannot control themselves (e.g., madness, confusion, and possession by evil spirits)
Relationship	Positive relationship	Positive changes in human relationships (e.g., conversion, reflection, reconciliation, expression of gratitude)
	Negative relationship	Negative changes in human relationships (e.g., quarrel, betrayal, arrogance, and disgust)
	Positive love relationship	Positive changes in human love (e.g., falling in love, confession of feelings, dating, and marriage)
	Negative love relationship	Negative changes in human relationships in the context of love (e.g., jealousy, broken heart, and divorce)
Influence	Aid	It includes many types of "help," such as rescue, nursing, assistance, encouragement, and sacrifice.
	Interference	It includes not only explicit interferences, but also acts that intentionally make the other person uncomfortable.
	Confrontation	Combat and competitions, including sports
Environment	Everyday	Scenes of ordinary everyday life
	Disaster	It includes not only natural disasters, but also accidents and mental crises such as severe depression

Table 3. Small categories for cross-genre plot analysis.

Large category	Small categories
Arrival	Arrival, Encounter, Resurrection, Birth, Making acquaintance, Reunited, Noticing a person
Leaving	Leaving, Exit, Death, Suicide, Exclusion, Sealed, Separation, Exorcism
Change	Change, Character's transformation, Replacement, Becoming another person, Memory loss, Pregnancy
Ability improvement	Ability improvement, Growth, Releasing sealed abilities, Becoming a companion, Getting back lost item, Gaining an item, Recovery, Recovery of physical condition, Healing, Improvement of social position, Enabling equipment, Cosmetic surgery
Ability decline	Ability decline, Withdrawal of a companion, Item loss, Stealing, Debility, Deterioration of physical condition, Illness, Injury, Social demotion, Incapacity, Sealed abilities, Memory loss
Getting travel route	Getting travel route, Opening a route, Acquisition of method for movement, Transportation, Moving
Escape	Escape, Retreat, Withdrawal, Extrication, Liberation, Disappearance
Losing travel route	Losing travel route, Detention, Kidnapping, Confinement, House arrest, Arrest, Blockade, Limitation of travel route, Change of travel route, Loss of method for movement
Search	Search, Exploration, Investigation, Expedition, Research, Experiment, Tracking, Vigilance
Discovery	Discovery, Disclosure, Confession, Exposure, Recovery of lost memory, Correct reasoning, Invention, Ingenuity
Misunderstanding	Misunderstandings, Misinterpretation, Mutual misunderstandings, Hallucinations
Doubt	Doubt, Mystery occurrence, Strange event, Disturbance, Misguided reasoning, Suspicion, Sign, Clue, Unaccounted
Concealment	Concealment, Deception, Takeover, Disguise, Fraud, Camouflage, Secret sharing, Ambush
External information	External information, Disclosure of world settings, Lessons learned, Recipes, Prologues, Epilogues, Afterglow, Side story
Order, promise	Order, Promise, Negotiation, Compliance, Warning, Notice, Prophecy
Violation	Violation, Stealing, Infidelity, Carelessness, Negligence, Ignoring warnings
Intention, request	Intention, Request, Determination, Declaration, Persuasion, Invitation, Acceptance, Seduction, Noticing a goal, Noticing a destination
Completion of request	Completion of request, Fulfillment of wish, Achievement of goal
Failure of request	Failure of request, Abandonment of wish, Failure to achieve the goal
Insanity	Insanity, Runaway, Possession, Confusion, Derangement, Stunned, Syncope, Drunkenness, Brainwashing, Enslavement
Positive relationship	Positive relationship, Conversion, Remorse, Reconciliation, Soothing, Acceptance of requests, Gratitude, Forgiveness, Hospitality
Negative relationship	Negative relationship, Quarrel, Betrayal, Arrogance, Disgust, Refusal of request, Provocation, Rebuke, Unkindness
Positive love relationship	Positive love relationship, One-sided love, Mutual love, Falling in love, Confession of love, Date, Dating, Marriage, Reconciliation of lovers, Physical relationship
Negative love relationship	Negative love relationship, Jealousy, Breaking up, Quarrel of lovers, Rejected love, Divorce, Prohibited romance
Aid	Aid, Protection, Rescue, Nursing, Encouragement, Sacrifice, Relief, Support
Interference	Interference, Enemy appearance, Intentional man-made disaster, Unreasonable demand, Intimidation, Annoying seduction, Bullying, Casting a spell, Revenge, Persecution
Confrontation	Confrontation, Battle, Competition
Everyday	Every day, Peace, Quiet, Daily event, Relaxation, Rest, Solution, Satisfaction, Praise
Disaster	Disaster, Damage, Natural disaster, Curse, Unintentional man-made disaster, Ordeal, Predicament, Disappointment, Despair, Shame, Regret, Dissatisfaction

Results

Hierarchical clustering of each story genre

The results of hierarchical clustering are presented in Figures 2–6. The dotted line indicates the cutting point of the dendrogram tree. Similarly, to compare each genre, five genres were divided into several clusters according to the number of stories included. Stories shorter than three elements were eliminated during the clustering process.

Typical plot pattern of each genre

To compare the typical plot patterns of each genre, an N-gram based plot pattern extraction algorithm [9, 10] was applied to stories of five genres. Table 4 shows the results of typical plot patterns based on a large category description of the plot sequences. Table 5 depicts the results based on the small category description. The number of scenes was set to eight, which was close to the average plot length.

Moreover, to extract typical plot patterns within genres and to investigate their internal structure, typical plot patterns of clusters within each genre were extracted based on small categories. Table 6 depicts the results of the adventure genre, Table 7 depicts the battle genre, Table 8 depicts the love genre, Table 9 depicts the detective genre, and Table 10 depicts the horror genre. The number of scenes in the typical plot patterns was set to 8 (this is near to average plot length).

Step 1. Calculating N-gram

Pattern	Frequency
ABC	10
ACD	7
BCD	6
ADB	3
BCA	2
...	...

Step 2. Selection for High frequency pattern(s)

Pattern	Frequency
ABC	10

Step 3. Adding one symbol in order to include N-gram patterns as much as possible

Pattern	Frequency
ABC**D**	10+7+6

Pattern	Frequency
ABC	10
ACD	7
BCD	6

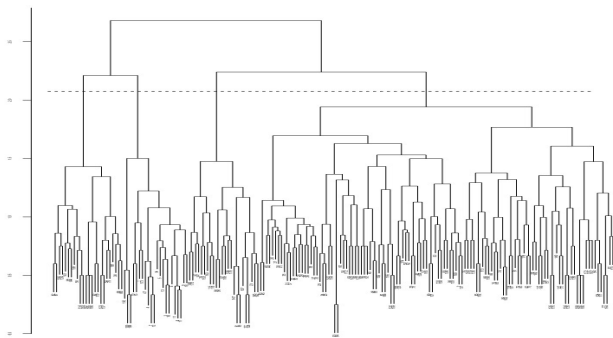**Figure 1.** An example of pattern extraction algorithm

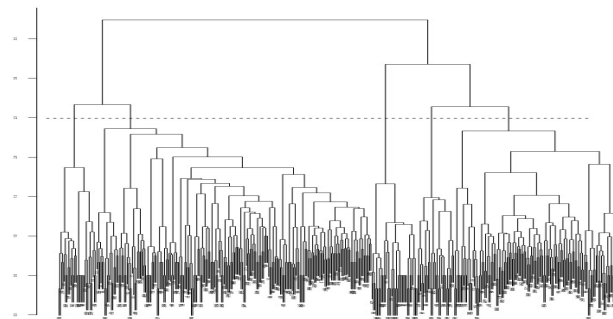**Figure 2.** Clustering results of plot patterns in adventure genre

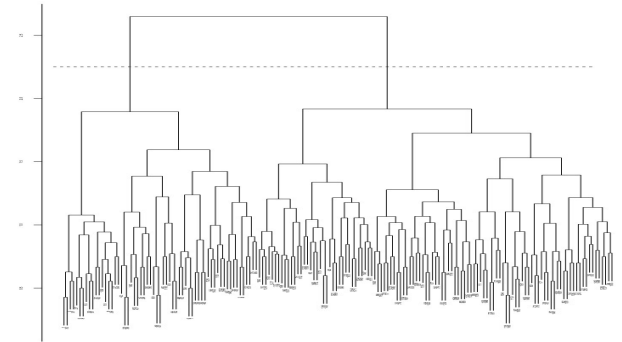**Figure 3.** Clustering results of plot patterns in battle genre

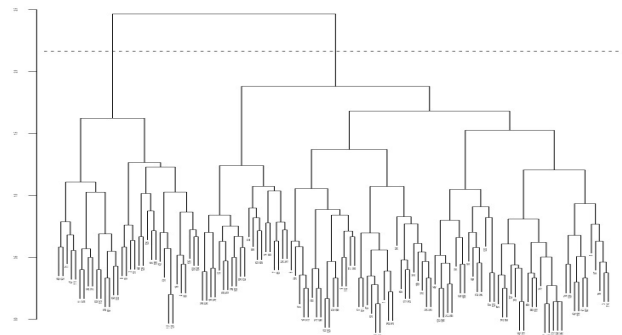**Figure 4.** Clustering results of plot patterns in love genre

Figure 5. Clustering results of plot patterns in detective genre
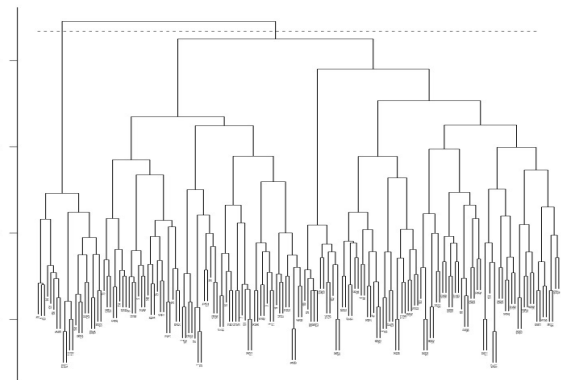

Figure 6. Clustering results of plot patterns in horror genre

Table 4. Genre-typical plot patterns based on large categories for cross-genre plot analysis.

	Adventure	Battle	Love	Detective	Horror
1	Search	Arrival	Positive love relationship	Discovery	Arrival
2	Discovery	Interference	Negative love relationship	Intention	Intention
3	Losing travel route	Aid	Arrival	Search	Discovery
4	Intention	Confrontation	Aid	Arrival	Exit
5	Ability improvement	Exit	Positive love relationship	Discovery	Completion of request
6	Getting travel route	Discovery	Discovery	Interference	Arrival
7	Search	Interference	Negative love relationship	Search	Intention
8	Discovery	Aid	Positive love relationship	Discovery	Discovery

Table 5. Genre-typical plot patterns based on small categories for cross-genre plot analysis.

	Adventure	Battle	Love	Detective	Horror
1	Blockade	Battle	Making acquaintance	Discovery	Request
2	Opening a route	Exclusion	Date	Investigation	Leaving
3	Expedition	Enemy appearance	Falling in love	Encounter	Completion of request
4	Arrogance	Interference	Confession of love	Exposure	Gaining an item
5	Battle	Incapacity	Positive love relationship	Discovery	Making acquaintance
6	Battle	Support	Dating	Investigation	Discovery
7	Death	Battle	Disclosure	Correct reasoning	Request
8	Opening a route	Exclusion	Date	Confession	Completion of request

Table 6. Genre-typical plot patterns of clusters in adventure genre based on small categories.

	Cluster 1	Cluster 2	Cluster 3	Cluster 4
1	Expedition	Blockade	Reunited	Gaining an item
2	Blockade	Arrogance	Exposure	Reunited
3	Provocation	Battle	Search	Change
4	Battle	Battle	Nursing	Blockade
5	Gaining an item	Death	Exposure	Battle
6	Opening a route	Opening a route	Confusion	Support
7	Expedition	Rescue	Request	Change
8	Battle	Disclosure	Rebuke	Battle

Table 7. Genre-typical plot patterns of clusters in battle genre based on small categories.

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
1	Interference	Disturbing	Enemy appearance	Battle	Reunited
2	Support	Completion of request	Quarrel	Enemy appearance	Battle
3	Battle	Reunited	Detention	Interference	Battle
4	Exclusion	Exposure	Intimidation	Incapacity	Reunited
5	Exposure	Request	Support	Support	Betrayal
6	Interference	Exposure	Aid	Gaining an item	Battle
7	Support	Nursing	Battle	Battle	Incapacity
8	Battle	Ordeal	Relief	Exclusion	Negative relationship

Discussion

Table 4 indicates that each genre pattern includes characteristic plot elements. For instance, Adventure and Detective genres include "Search" and "Discovery" twice. However, the difference of "Search" between adventure and detective genre is unclear. Conversely, Table 5 indicates that "Expedition" appears in the Adventure genre and "investigation" appears in the Detective genre. Therefore, a small category would be appropriate for extracting the differences between typical plot patterns in each genre. However, to extract the commonality of different genres, large category-based plot patterns would be appropriate.

Considering the similarities between different genres, each one has "Discovery" based on a large category. Therefore, the common plot structure for the five genres would be to disclose new information to the reader with surprise. Moreover, "Arrival" of new characters is also a common function for several genres. However, the identity of the new character may differ depending on the genre.

From the viewpoint of differences, there are various differences between genres based on small categories, even if those plot elements are included in the same large category.

These differences can be investigated by analyzing the internal structures of genres. Typical plot patterns based on clustered stories in each genre indicate that there are various subtypes within a genre. Table 11 shows a manual interpretation of the extracted plot patterns for each cluster. These plot patterns can be interpreted as typical patterns within a specific genre.

Conclusions

Based on the category table for cross-genre plot analysis and five genres of plot data sets of Japanese popular entertainment stories, cross-genre comparisons for typical plot patterns were performed in this study. As a result, common plot elements were extracted and differences between genres were depicted. Moreover, genre stories were clustered using the hierarchical clustering method, and typical plot patterns of each cluster were also extracted. The extracted plot patterns of clusters can be interpreted as typical story types within the target genres. Since the resulting patterns can be thought to be eligible detailed characteristics of the target genres, those features would be applicable to develop more sophisticated story generation algorithms. In addition to the plot patterns, if the patterns within the relationships and the roles of story characters can be quantitatively extracted, it would become the basis for more impressive story generation ability in the future.

The results of this study are confined to the popular Japanese entertainment genre, and the number of analyzed stories was about only 1,000. Therefore, the obtained clusters and patterns cannot be claimed to be general or universal. However, the method proposed in this paper can be applied to other stories and other genres in different cultures by expanding the category table appropriately. Moreover, it could be possible to investigate more detailed genre inner structures by adding many more stories to the plot data set.

Author Contributions

HM substantially contributed to the study conceptualization and the manuscript drafting. ST, TS, TY, SN, YS, KI, SN, JI, SO, AO and TF significantly contributed to data analysis and interpretation. All authors approved the final version for submission.

References

Barthes, R. 1968. *Elements of Semiology.* Hill and Wang, New York, USA.

Binks, A. A.; Roberts, D. L.; and Young, R. M. 2016. Summarizing and Comparing Story Plans. In *Proceedings of Workshop on Computational Models of Narrative 2016*, 107–123.

Campbell, J. 1949. *The Hero with a Thousand Faces*. Pantheon Books, USA.

Fan, A.; Lewis, M.; and Dauphin, Y. 2019. Strategies for Structuring Story Generation. In *Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics 2019*, 2650–2660.

Gervas, P. 2014. Reviewing Propp's Story Generation Procedure in the Light of Computational Creativity. In *Proceedings of The Society for the Study of Artificial Intelligence and Simulation for Behaviour*, Goldsmiths, University of London.

Iwasaki, J.; Toyosawa, S.; Ishikawa, K.; Ohta, S.; and Murai, H. 2021. Cross-genre Plot Analysis of Detective and Horror Genres. In *Proceedings of JADH Annual Conference*, 106–110.

Murai, H.; Matsumoto, N.; Sato, C.; and Tokosumi, A. 2011. Towards the numerical analysis of narrative structure: The characteristics of narrative structure within the short stories of Shinichi Hoshi. *JSIK*, 21 (1):6-17 (in Japanese).

Murai, H. 2020. Factors of the Detective Story and the Extraction of Plot Patterns Based on Japanese Detective Comics. J. *Jpn. Assoc. Digit. Humanit.* 2020, 5(1):4–21.

Murai, H.; Toyosawa, S.; Shiratori, T.; et al. 2021. Dataset Construction for Cross-genre Plot Structure Extraction. In *Proceedings of JADH Annual Conference*, 93–96.

Murai, H.; Toyosawa, S.; Shiratori, T.; et al. 2021. Extraction of factors that characterize the structures of plot within each story genre. In *Proceedings of IPSJ SIG Computers and the Humanities Symposium 2021*, 16-23 (in Japanese).

Nakamura, S. and Murai, H. 2020. Proposal of a method for analyzing story structure of role-playing games focusing on quests structure. In *Proceedings of IPSJ SIG Computers and the Humanities Symposium*, 149–156 (in Japanese).

Oba, A.; Ota, S.; Amano, T.; et al. 2021. Construction of a game system that automatically generates integrated quest scenarios, sound effects, and characters which focus on immersiveness. In *Proceedings of the 35th Annual Conference of the Japanese Society for Artificial Intelligence 2021*, 3D1-OS-12a-02 (in Japanese).

Propp, V. 1968. *Morphology of the Folk Tale*. University of Texas Press, USA.

Saito, T.; Yoshida, T.; Nakamura, S.; et al. 2021. Basic Plot Structure in the Adventure and Battle Genres. In *Proceedings of JADH Annual Conference*, 97–100.

Someren, M. W.; Barnard, Y.; and Sandberg, J. 1994. *The Think Aloud Method*, London, UK: Academic Press.

Suzuki, R.; Sasaki, S.; Hakamada, S.; et al. 2018. Examination and development of an integrated system for automatic generation of plots and visualization of scenes. *SIG Technical Reports 2018*, 2018-EC-50 (28):1–8 (in Japanese).

5	Confession of love	Positive love relationship
6	Dating	Making acquaintance
7	Jealousy	Date
8	Date	Disclosure

Table 9. Genre-typical plot patterns of clusters in detective genre based on small categories.

	Cluster 1	Cluster 2
1	Discovery	Request
2	Investigation	Exposure
3	Encounter	Investigation
4	Exposure	Correct reasoning
5	Discovery	Confession
6	Investigation	Discovery
7	Correct reasoning	Escape
8	Confession	Battle

Table 10. Genre-typical plot patterns of clusters in horror genre based on small categories.

	Cluster 1	Cluster 2
1	Request	Hospitality
2	Leaving	Gaining an item
3	Completion of request	Quiet
4	Gaining an item	Discovery
5	Making acquaintance	Arrival
6	Discovery	Hospitality
7	Request	Leaving
8	Completion of request	Discovery

Table 8. Genre typical plot patterns of clusters in love genre based on small categories.

	Cluster 1	Cluster 2
1	Date	Prologues
2	Positive love relationship	Making acquaintance
3	Mutual misunderstandings	Request
4	Falling in love	Rescue

Table 11. Interpretation of each story type of extracted plot patterns based on cluster.

Genre	Cluster	Story type
Adventure	1	Expedition for extermination of an enemy
	2	Expedition for finding a truth
	3	Resolution of some illness or injury
	4	Problem and solution about a change in a characters' attribute
Battle	1	Resistance against repeated interference
	2	Guidance to an ordeal
	3	Relief for victims
	4	Victory by obtaining special power
	5	Detection and punishment against traitors
Love	1	Resolving misunderstandings between lovers
	2	Prince Charming
Detective	1	Encounter to a murder case
	2	Request for resolving a murder case
Horror	1	Request from a ghost
	2	Requital of a favor by a ghost