



Analyzing the Stage Performance Structure of a Kabuki-Dance, *Kyōganoko Musume Dōjōji*, Using an Animation System

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Abstract. Although Kabuki-dance *Kyōganoko Musume Dōjōji* is a type of sequel to the original Dōjōji legend, it has been performed by several excellent onnagata actors since the Edo era as a masterpiece that has original content beyond the original legends. Referring to the analysis of *Kyōganoko Musume Dōjōji* by Tamotsu Watanabe, this study aims to analyze in detail its “stage performance structures” that include characters, background (stage setting), music (instruments, musicians, and genres), poetry, prose, speech, and core conceptual themes of scenes as the main elements. Furthermore, using a system called KOSERUBE, that the authors have developed, as an animation tool for a narrative generation system, this study builds its stage performance structures as an easy visual image. The future goal of the application of the system as a representation method for narrative generation systems, computer games, and automatic generation content, among others.

Keywords: Kabuki · *Kyōganoko musume dōjōji* · Narrative generation · Stage performance structure

1 Introduction

Kabuki is a Japanese cultural heritage. We chose Kabuki because we thought it would lead to the maintenance and inheritance of cultural heritage.

Kabuki is a genre of performing arts that originated in Shijō-gawara, Kyōto, by a female entertainer called Izumo no Okuni around 1600 (the beginning of the Edo period). Although initially performed by all-female troupes (On’na Kabuki or women’s Kabuki), because of the Edo shogunate’s oppression it transformed to an all-male art or drama (Yarō Kabuki), and the tradition has continued to the present day. The vital characteristics of Kabuki are its synthesis and comprehensiveness. In other words, Kabuki is a kind of comprehensive art form that combines performing arts, drama, dance, and music (performance, song, and narration), and the stories performed in Kabuki are based on and incorporate several traditional Japanese stories, literature, history, and characters (this paragraph is a summary of Sect. 3 in [1]).

In recent years, in Kabuki, there have been several stages using “Hatsune Miku” and computer graphics. “Hatsune Miku” is a vocal sound source compatible with the voice synthesis system, “Vocaloid.” One can sing by entering the melody and lyrics. Therefore, there are several studies that introduced computer graphics in Kabuki. For example, Oda and Genda research characteristics motion in Kabuki using motion chapter system [2]. Omoto et al. create a model of Minamiza in Kyōto (Minamiza is a traditional Kabuki theatre) [3].

In addition, there is a study comparing Western dance, the ballet *La sylphide*, and the Japanese dance of *Kyōganoko Musume Dōjōji* to approach creative dance [4]. That research focused below. This research focuses on “Furi” (swing), mainly analyzing small movements such as walking and hand expressions. However, our research is different. The purpose of this research is to understand the stage structure in detail and reproduce the entire stage. Further, we aim to incorporate Kabuki in automatic story generation. The purpose is to visualize the entire stage. Therefore, only the dance of *Kyōganoko Musume Dōjōji* was analyzed. Moreover, the dance part is simple. This system does not require the precise movements of the dance to be reproduced.

The authors of this paper have conducted a series of studies on Kabuki as a story generation system. Ogata [5, 6] investigated and analyzed several of the elements that comprise Kabuki and developed a system that simulates the interplay of stories. Initially, the authors proposed an approach to configure the stage performance structure of *Kyōganoko Musume Dōjōji* by adding elements to the analysis table presented by Watanabe [7]. This table focused on the performance aspects of the Kabuki-dance with the subject of *Kyōganoko Musume Dōjōji* as one key person. Hence, Kawai and Ogata [8] made certain corrections and additions. Specifically, in his table, Watanabe [7] presented “Kokoro” (core conceptual theme), “Furi” (performance), “Kashi” (music genre), “Ishō” (costumes), “Kodougu” (props), and “Nikutai no point” (focal point in the dance). Kawai added “Hito” (character), “Gakki” (musical instrument), and “Bamen” (scene) to Watanabe’s table, and described the lyrics in “Kashi.” This analysis was performed by observing the video material of *Kyōganoko Musume Dōjōji* by Tamasaburō Bandō [9]. Additionally, each part was subdivided to correspond with the change from one scene to the next. Furthermore, Kawai and Ogata [10] used a system called KOSERUBE [11] partially reproduced the visual image of the stage performance structure of *Kyōganoko Musume Dōjōji*.

In this study, based on the results by Kawai and Ogata [10], we attempted to visually reproduce the stage performance structure of *Kyōganoko Musume Dōjōji* using the KOSERUBE and added auditory elements.

2 Visualization of Stage Performance Structure of *Kyōganoko Musume Dōjōji*

2.1 Overview of the KOSERUBE

Figure 1 presents an overview of the KOSERUBE architecture. The system comprises two parts: a narrative generation module and a user interface. Each part is implemented using Common Lisp and HSP, respectively, and connected via input and output files.

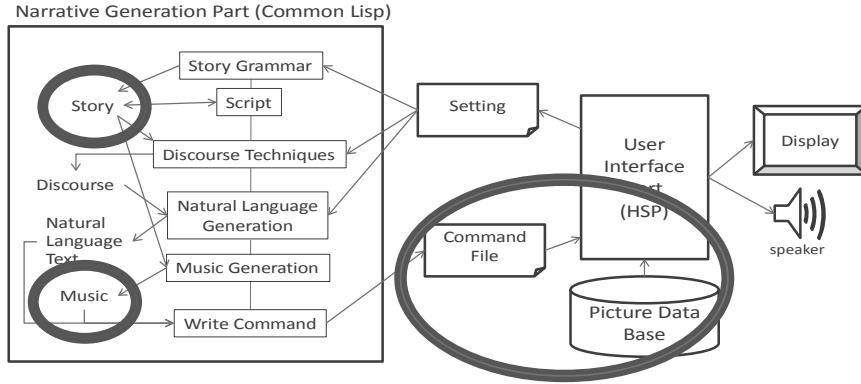


Fig. 1. The configuration of KOSERUBE

The narrative generation is executed as the structural operation in the story, discourse, and expression. Each process is performed by the three main functional components: conceptual dictionaries, story techniques, discourse techniques and control modules. The conceptual dictionaries provide semantic definitions for the components of an event, which is a fundamental element in narrative. The story techniques operate to build a story structure. The discourse techniques are generative rules to transform parts of a story structure. The control modules manage the entire generation process. Above conceptual dictionaries and above mechanisms are an integrated narrative generation [12–14]. The detailed description is illustrated by Ogata [12–14].

The KOSERUBE mainly uses above dictionaries and mechanisms. The difference is story techniques and a music mechanism. The central technique for the story generation phase is the Propp-based story grammar [15]. The music mechanism—although it adopts an original method—is fundamentally based on the music mechanism in the integrated narrative generation system [12–14].

The marked part (Fig. 1) is modified to reproduce the stage performance structure with people, background (stage equipment), music (instrument and performer), verse, and dance. In the command file, the chapters on the dance to be displayed, the reproduction timing of music, the switching of the background image enclosed with the picture database, and so on are described; animation control is described later.

2.2 Making a Stage Performance Structure

This study is based on a detailed analysis table of “stage performance structure,” which is based on the analysis by Watanabe [7], a researcher and critic of modern Kabuki. Table 1 is part of the analysis table. This table has, as its main components, the characters, backgrounds (stage devices), music (instruments, performers, and genres), verses and lines, and the principal conceptual theme of each scene.

In the KOSERUBE, the words of the dance were entered in the text data and were displayed; the background and the person were displayed as images. At the back, Nagauta singers and instrumentalists lined up in the same manner as they would on the actual stage. The person singing and performing in each scene was indicated by an arrow, and

Table 1. An example of stage performance structure (“Dance of Chūkei” part)

Hito	白拍子花子 [Shirabyōshi Hanako]							
Kokoro (Core mental theme)	娘 [Musume (Young girl)]							
Furi (Per- formance)	白拍子 [Shirabyōshi]							
Kashi (Music genre)	能(鐘づくし) [Noh (Kane-zukushi)]							
(Lyrics)	鐘に恨み は数々ござる [Kane ni urami ha no kane kazukazu gozaru] 初夜の 鐘を撞 く時は 常と響 くなり [Syooya mujo to hibiku nari] 諸行無 常と響 く時は 是生滅法 きは生滅 と響くな 滅々己響 くなり [Goya no kane meppo to hibiku nari] 後夜の 鐘を撞 く時は 是生滅法 きは生滅 と響くな 滅々己響 くなり [Zeshōō [Jinjō no shōmetsu metsui] 能の響 は寂として 人相は寂 滅為樂と 聞いて驚く 人もなし [Iriai ha odoroku hito to nashi] 晨朝の響 は寂として 人相は寂 滅為樂と 聞いて驚く 人もなし [Kiite mo goshō no tsuki wo mono kumo harete] われも五 真如の月を 障の雲晴眺 め明かさ れて [Ware ん [Shinnyo mo goshō no tsuki wo mono kumo nagame akasan]							
Gakkī (Musical instru- ment)	三味線 [Shamisen (Japanese guitar)], 太 鼓[Drum]	三味線 [Shamisen (Japanese guitar)]	三味線 [Shamisen (Japanese guitar)], 太 鼓[Drum]					
Bamen (Scene)	桜の木 (道成寺) [Sakura no ki (Cherry blossoms) (Dōjōji)]							
Ishō (Costumes)	赤 [Aka (Red)]							
Kodougu (Props)	中啓 [Chūkei]							
Nikutai no point (Focus point in the dance)	足 [Ashi (Foot)]							

a spotlight was applied to yield a visually recognizable expression. Additionally, the movement of the dance of Shirabyōshi Hanako was simply expressed.

Figure 2 depicts a screenshot of the dance of Chūkei (corresponding to Table 1). This illustrates the actual movement on the stage. In the actual stage, the actor moves his hand up and down on the spot. The objective of this research is not to pursue realistic human movements and to express them, but to visually reproduce the stage performance structure. Therefore, the dance is simplified in the KOSERBE.

In the KOSERUBE, the actual movement was simply expressed according to the code. In Fig. 2, the command “mov” is used. “mov, 11, v, -50, -25” represents move, character ID, vertical, movement distance, and speed, respectively from the left. In the first line of Fig. 2, the Shirabyōshi Hanako is moved vertically at a distance of 50 and a speed of 25 (The Shirabyōshi Hanako moves up from the current coordinates. Positive values move the Shirabyōshi Hanako downwards.). Overall, it implies bouncing Shirabyōshi Hanako three times.

Code	Animation
<pre> mov,11,v,-50,-25 mov,11,v,50,25 mov,11,v,-50,-25 mov,11,v,50,25 mov,11,v,-50,-25 mov,11,v,50,25 </pre>	<p style="text-align: center;">「初夜の鐘を撞く時は」</p>

Fig. 2. An example of visualized stage performance structure

3 Expansion of Auditory Elements Introduction

In this paper, the KOSERUBE was expanded to include auditory elements, which were added from a music score titled *Music and Sound in Kabuki*. Haikawa [16] explains from debayashi (Nagauta) to sound effects in Kabuki.

This system used a music sequencer called “text music Sakura” (<https://sakuramml.com/>, last accessed on July 9, 2020). This tool can be used to compose and edit music by simply typing the notes (C, D, E, etc.) in text form. In the KOSERUBE, the auditory element is played along with an animation.

In addition, we created music using a free composer called “Wagakuhitosuji” by referring to the score in *Shamisen Bunkahu Nagauta Kyōganoko Musume Dōjōji* by Kineie [17]. Unlike several composer tools, “Wagakuhitosuji” corresponds to the scale of Japanese music, rather than Western music, and allows composition on shamisen notation.

4 Conclusion

On KOSERUBE, the stage, dancers, and performers of the actual *Kyōganoko Musume Dōjōji* were reproduced. In addition, a part of the scene was excerpted, and a simple dance was reproduced. Although we anticipate that this system could be applied to the automatic generation of content, the main goal is to generate the standard story of Chapter 1 in the integrated narrative generation system [12–14], under development.

The authors’ study of Kabuki story generation is a concept that comprehensively examines the structure, methods, and techniques of the story in Kabuki. Chapter 2 in [13, 14] presents a comprehensive summary of the latest results. The “integrated approach to story generation” [13, 14] includes an integrated narrative generation system, an entertainment information system, post narratology as a theory, and a multiple story structure model, Kabuki. Its comprehensiveness (breadth) and thoroughness (depth) makes it the center of the story generation method, not simply one of several story genres [13].

Moreover, because this study is targeted at one genre of Kabuki called Kabuki-dance, multiple lines are not involved; it is stylistic, not realistic. Therefore, the analysis of the stage performance structure evaluated here is limited to the stage performance structure of the genre of Kabuki-dance. However, the structure is fundamentally the same as that of other genres in Kabuki, especially Kabuki Kyōgen plays that mainly use dialogue. Future work will focus on extending and developing this solution into a more comprehensive description format of the Kabuki stage performance structure, whilst retaining Watanabe's aim and intention to express the complex and multiple personality of the principal person. In addition, we anticipate that the proposed system will be used as the basis for the stage performance structure of Kabuki, and has the potential be adopted in other genres such as commercials and computer games.

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