

Process of Improvisational Contemporary Dance

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Abstract

The purpose of this study is to investigate the process of improvisational contemporary dance. To achieve this goal, we combine two types of methodology: analysis of data from interviews with dancers and analysis of their dance performances. Our findings reveal that while dancing, in order to create their movements, improvisational dancers interact with various stimuli that come from inside and outside of themselves (for example, images and feelings that they entertain during their dancing, and the music, space and audience of their dance performances). Through such interactions, dancers organize movements in their performances extemporarily, using various expressive techniques (for example, changing speed or image intentionally and seeing themselves from the viewpoint of a third person).

Keywords: Improvisation; Contemporary dance; Creativity

Introduction

What happens in artists' minds when they generate their expressions or works? Recently research interest in artistic creation has been growing. There have been some empirical studies in psychology and cognitive science focused on artistic creation (e.g., Yokochi & Okada (2005) on Chinese ink painting, Tsuchikura (2010) on movie making, Tayanagi (2010) on jazz music, and Goan & Tujita (2007) on stage direction). Of the various forms of art, this study seeks to reveal the process of artistic creation empirically by focusing on dance, in particular improvisational contemporary dance.

Improvisation plays a critical role in the process of artistic expression. Sasaki, a scholar of aesthetics, has pointed out the importance of improvisation as follows: "In the exact moment of their generation, expressions in the artistic genres, such as fine arts, music, and drama are not generated based on predetermined plans, but based on impromptu activities" (Sasaki, 1995). Thus, it can be considered that improvisation exists as an essential part of the process of artistic expression.

Improvisational dance is one form of artistic expression in which such a process of improvisation saliently appears. Because improvisational dance presents audiences with the process of dance creation itself, making dance movements based on predetermined plans or repeating movements during dance performance is meaningless. Therefore, the

process of improvisational dance contains the essence of artistic creation and expression.

Previous studies in the domain of dance have pointed out the importance of improvisation in the creation of dance works, and the importance of impromptu expressions themselves (Fukumoto, 2007; 2009; Hosokawa, 2011; De Spain, 1997; Ribeiro & Fonseca, 2011; Soma & Hosokawa, 2007; Tsujimoto, 2010). Reviewing previous studies focused on how historically eminent dancers used improvisation to express themselves or create their dance works, Tsujimoto (2010) emphasized the significance of improvisation in dance. Tsujimoto (2010) also described an anecdote that when dancing extemporarily, the dancer's body instantly responded to stimuli from dance partners, the surrounding environment, and sensations born within the body. Through reviews of previous studies, Ribeiro & Fonseca (2011) also reported dancers' experience while dancing extemporarily. They suggested that improvisational dance is formed by "the interaction of the body with the environment and the affective and cognitive systems" (Ribeiro & Fonseca, 2011). Although these studies offer useful insights, these findings are based on reviews and anecdotal evidence, rather than on empirical evidence. They did not empirically investigate what stimuli dancers interact with in the process of improvisation or how dancers create their works.

In contrast, using information from reviews of a dancer's works, interviews with her, and field experiments, Hosokawa (2011) studied the process and skills of improvisational dance, focusing on Kei Takei, a famous contemporary dancer. On the basis of the results of the study, Hosokawa (2011) suggests that Kei Takei generates movement sequences intuitively based on her physical skill, and polishes movement sequences to develop her dance work in keeping with her dance philosophy. De Spain (1997) constructed a theoretical model about the process of solo dance improvisation through interviews and introspective reports with improvisers of dance. De Spain's model broke down the elements of improvisation into the categories of physical operands/operators, cognitive/affective operands/operators, determination, and attention. "The model also emphasized the importance of considering the existing state and flow of the improvisation at the moment of new action/interaction" (De Spain, 1997). Although Hosokawa (2011) and De Spain (1997) revealed

the process of improvisational dance, these studies focused only on the case of solo dance and their results are based mainly on verbal evidence such as interviews. In order to fully understand the process of improvisational dance in reality, it is necessary for us to analyze dance performance data in addition to interview data. Since the main medium for dancers to express what they want to express is their bodies, it is essential for researchers to analyze improvisational dance performances to understand how such a medium is used effectively. Therefore, we investigate the process of improvisational contemporary dance combining two types of methodology, analyses of data from interviews with dancers, and analyses of their dance performances.

Hence, this exploratory study aims at empirically investigating the improvisational process of contemporary dance by solo and duo dancers. Specifically, this study examines the relationship between dancers' internal processes and their dance performances, through: (1) interviews with dancers about what they pay attention to

while improvising; (2) fieldwork analyses of actual dance performances with introspective reports by the dancers.

Study 1 Interviews with Dancers

In this interview study, we investigate what dancers think when they are dancing extemporarily.

Methods

Participants. Ten professional contemporary dancers who have experience in improvisational dance participated in this study. (We use aliases A to J for these participants.)

Procedure. We conducted semi-structured interviews with the dancers about what they think when they are dancing extemporarily. The interviews were held between August and October 2010, with each interview lasting 90-120 minutes. All the interviews were recorded with a digital audio recorder, and the first author additionally took notes.

We asked the dancers about what they were thinking and what they valued when they were dancing extemporarily by

Table 1: Categories and definitions of dancers attention while dancing extemporarily

Category			Definition
Interaction with oneself	Internal experience	Message	To dance being aware of the message
		Feeling	To express the feeling that the dancer entertains while dancing
		Images	To dance retaining images that come into the dancer's mind while dancing
	Physical experience	Physical sensation	To enjoy the physical sensations that spring forth from the dancer's own body while dancing
Interaction with the outside	Stimuli from outside	Music	To dance being inspired by the music
		Space	To dance being inspired by the space
		Audience	Dialogue with the audience to touch their hearts or to surprise them
		Other dancers	To dance being inspired by other dancers
Means of expression	Confidence in oneself	Trust in inner experience	To move based on what the dancer feels without applying preformulated dance movements
		Trust in physical experience	To move following one's movements without conscious thought
	Expressive techniques	Switching	To change speed, rhythm, image or texture of movement intentionally
		Development	To develop movements or stories
		Seeing oneself from the viewpoint of a third person	To be conscious of how the dance looks to the audience
		Coordination with other dancers	To move together with other dancers, similarly, contrastingly or separately
	Personal decisions	Choice	To choose the most appropriate expression based on one's own feeling and the environment
		Continuation	Continue the current movement until satisfied

themselves and with other dancers. All the interviews were conducted in Japanese.

Preparation for data analysis. We analyzed the data by adapting the KJ method, a method to analyze the qualitative data. In detail, using the following procedure, the recorded interviews were prepared for analysis: 1. Transcription; 2. General understanding of the contents; 3. Identification of statements regarding attention or behaviour during extemporaneous dance; 4. Labelling of the statements with respect to dancers' attention or behaviour during extemporaneous dance; 5. Generation of categories by gathering similar labels together; 6. Consideration of the relationships between categories. We segmented the statements based on the speakers' turns, and coded all the segmented units based on what the dancer paid attention to while dancing extemporaneously. In some cases, multiple codes are used for a single unit. Later, we assembled categories with similar meaning to create final categories.

During the coding process, several researchers and graduate students majoring in cognitive science checked the validity of the categories and revised inappropriate parts of labels and categories made by the first author.

Results and Discussion

Table 1 is a collection of categories based on the interview data relating to what dancers pay attention to while dancing extemporaneously. The statements were divided into three major categories, [interaction with oneself], [interaction with the

outside] and [means of expression]. Additionally, [interaction with oneself] was divided into <<internal experience>> and <<physical experience>>. The categories under <<internal experience>> are <message>, <feeling> and <images>. The category under <<physical experience>> is <physical sensation>. [Interaction with the outside] includes <<stimuli from outside>>, <music>, <space>, <audience> and <other dancers>. Topics associated with [means of expression] include the following three subcategories, <<confidence in oneself>>, <<expressive techniques>> and <<personal decisions>>. Subcategories under <<confidence in oneself>> are <trust in inner experience>, <trust in physical experience>; those under <<expressive techniques>> are <switching>, <development>, <seeing oneself from the viewpoint of a third person>, <coordination with other dancers>; those under <<personal decisions>> are <choice> and <continuation>. Table 2 shows which dancers referred to each category. In improvisational dance, dancers first pay attention to [interaction with oneself] and [interaction with the outside] and then, using [means of expression], they create a dance performance based on information from these interactions. Thus, when a dancer is dancing extemporaneously, s/he interacts with factors such as <message>, <feeling>, <images>, <physical sensation>, <music>, <space>, <audience>, or <other dancers>. By combining this interaction with <<confidence in oneself>>, s/he creates physical movements as a dance performance.

Table 2: Dancers who referred to each categories

Category / dancers	A	B	C	D	E	F	G	H	I	J	total
Message	○	○		○	○		○	○		○	7
Feeling		○		○	○				○		4
Images									○		1
Physical sensation		○				○	○		○		4
Music		○	○	○	○	○	○	○	○	○	9
Space		○		○	○		○	○			5
Audiences			○		○		○	○	○		5
Other dancers	○	○	○	○	○	○	○	○	○	○	10
Trust in inner experience	○		○	○				○	○		5
Trust in physically experience	○	○	○	○	○	○	○	○	○	○	10
Switching		○					○	○	○		4
Development			○			○			○	○	4
Seeing oneself from the viewpoint of a third person	○	○	○	○	○	○	○	○	○	○	10
Coordination with other dancers	○	○	○	○	○	○	○	○	○	○	10
Choice									○		1
Continuation						○					1

Dancers choose such interactions flexibly by listening to their feelings and responding to their surroundings. Dancers continue the interaction that they chose until they are satisfied with their own decisions. Thus, in improvisational dance, dancers pay attention to many things that normally go unnoticed (their own feelings, physical sensations, the music, space, other dancers etc.) and they create dance movements by responding carefully to these.

In order not to let the interaction cease and so to create dance works that are fixed at a certain time and place, dancers use expressive techniques, such as <switching>, <development>, <seeing oneself from the viewpoint of a third person> and <coordination with other dancers>. Improvisational dancers present to audiences the process of dance creation as a dance work. Therefore, in addition to producing movements, it is also necessary to organize them into dance pieces.

In other words, while dancing, in order to create their dance, improvisational dancers interact with various stimuli that come from inside and outside of themselves (for example, images and feelings that they entertain during their dancing, and the music, space and audiences of their dance performances). Dancers use these interactions for their expression by responding to them sincerely and carefully. Through such interactions, dancers organize movements in their performances extemporarily, using various expressive techniques (for example, switching; changing speed or image intentionally and seeing themselves from the viewpoint of a third person).

The next important questions are how much interaction occurs and with which kind of stimuli in improvisational dance, and how these interactions affect the development of dance. In order to answer these questions, Study 2 examines dancers' internal processes and behavioural processes through introspective reports and analyses of performances.

Study 2 Field Experiment

What exactly do dancers think and feel while dancing in a performance? In Study 2, we conducted a field experiment to capture the relationship between the introspective reports mentioned above and actual dance performances. The analysis of reflection focuses on which stimuli dancers pay attention to during the performance. Also, in the case of duo dance performance, a dance partner is an additional stimulus in the circumstance. We will analyze how a dance partner's movements affect the dancers' movements in duo dance performance.

Method

Participants and procedure. We conducted a field experiment to analyze the improvisational dance performance of two expert dancers (H and M, both with more than 10 years of dance experience) on 5 November, 2010. After having them dance solo performances, we asked them dance together. We recorded the performance with four video cameras. Additionally, directly after the performance, we showed the video of the performance to

the dancers and asked them to reflect on how they felt, thought and moved during the performance.

The same music was used for both solo and duo performances. The theme H chose for her dance was, "Did you know that manifesto means to leave a handprint? To leave a handprint", and the theme M chose for his dance was "Inside a framed picture". H's solo ran 4 minutes 18 seconds. M's solo ran 4 minutes 17 seconds. Their duo piece ran for 4 minutes 30 seconds. In the duo performance, the dancers each maintained their own theme from their solo work. The only difference this time was that they had to dance with a partner who was expressing a different theme.

Preparation for data analysis.

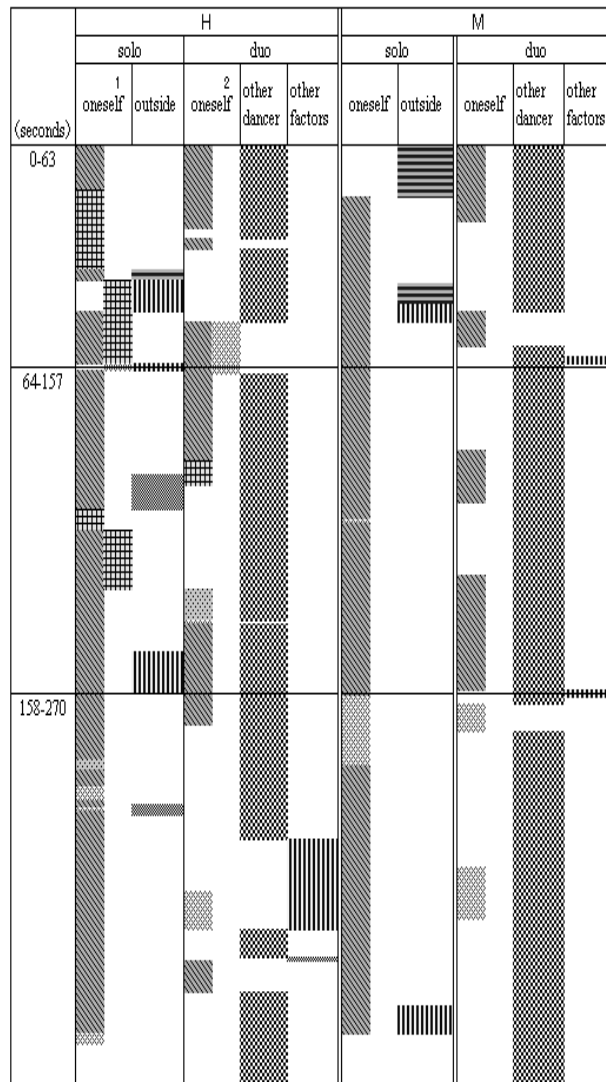
Introspective reports: After transcribing the introspective reports, we coded the statements based on what kind of stimuli and interactions occurred using the categories from Study 1.

Performance analysis: In order to objectively analyze the dance performance, we first focused on the vertical change of the centre of gravity of the dancers. Specifically, we coded each video frame (30 frames = 1 second) focused on the centre of gravity (1 lying down, 2 sitting, 3 kneeling, 4 standing, 5 stretching up, 6 jumping). We calculated the average score for the change in the centre of gravity, by dividing the score for the successive changes by the total time (in seconds).

Results and Discussion

Introspective reports. After transcribing all of the introspective reports, we identified the contents of the performances that the verbal reports indicated. Then we identified which stimuli the dancers interacted with. We coded the data according to the categories used in Study 1. Because it was difficult to distinguish between "images" and "message", we coded the statements relating to both of these terms as "theme". Therefore, the categories for the statements are "theme", "physical sensation", "feeling", "dance technique", "music", "other dancers", "audience", and "space". Figure 1 shows how the objects of the dancers' attention change throughout the performance second by second. The columns in Figure 1 indicate "oneself" ("theme", "physical sensation", "feeling", "dance technique") and "outside" ("music", "audiences", "space") in the case of solo performance and "oneself" ("theme", "physical sensation", "feeling", "dance technique"), "other dancer", and "other factors" ("music", "audience", "space") in the case of duo performance.

The results show that H paid attention to "theme" in 81% of the solo performance time, and M did so in 86%. Therefore, it is clear that among the various stimuli, interaction with "theme" plays a central role in the development of the solo performance. Meanwhile, in duo performance, 80% of H's performance and 94% of M's performance were focused on the "other dancer", indicating that attention to the "other dancer" plays a central role in the development of the duo performance.



1: Whether the lines are right or left has no significance. This is only because the dancers referred to more than two categories at the same time.
 2: Whether the lines are right or left has no significance. This is only because the dancers referred to more than two categories at the same time.

pattern	category
	theme
	physical sensation
	feeling
	dance technique
	music
	other dancer
	audience
	space

Figure 1: Change per second for the different categories

Table 3 : The average values for the position of the centre of gravity per second

	H		M	
	solo	duo	solo	duo
Part 1				
Sum of changing values	66	53	12	44
Duration of music (s)	64	64	64	64
Average value	1.03	0.83	0.19	0.69
Part 2				
Sum of changing values	43	45	45	54
Duration of music (s)	95	95	95	95
Average value	0.45	0.47	0.47	0.57
3 part				
Sum of changing values	53	91	41	44
Duration of music (s)	99	111	98	111
Average value	0.54	0.82	0.42	0.40

Performance Analysis. The music used in this performance was composed in such a way as to be easily split into three distinct sections. Therefore, by dividing the overall performance into three sections, we checked the change in the dancers' centre of gravity. The first section of the music (therefore the first section of the dance performance) took 64 seconds and the second took 95 seconds. The third section of the dance performance was determined by the time when the dancers finished the dance. The third section of H's solo took 99 seconds, and M's took 98 seconds. That of the duo performance took 111 seconds. The results of the centre of gravity analysis are shown in Table 3.

During the first section of the duo performance, the dancers somewhat adjusted their own movements to their partner's. H's score for the change in the centre of the gravity was higher (1.03) in the solo performance, and became lower (0.83) in the duo performance. M's score changed in the opposite direction (from 0.19 to 0.69). This result is consistent with the introspective data. According to the introspective reports, when paying attention to the dance partner, dancers sometimes adjusted their dance movements to the partner's and sometimes created a contrast during the first section.

In the second section, the two dancers' scores for the centre of the gravity were similar (0.47 for H and 0.57 for M). The introspective report is consistent with this finding

in the sense that both dancers thought that they were following their partner's movements. There was also little difference in the scores between solo and duo performances, which may be attributed to the slow music in this section.

In the third section, H's score was 0.82, while M's was 0.40. In the introspective report, each of the dancers stated that they had focused on the stimuli that s/he wanted to interact with, while paying attention to her/his dance partner. In particular, H was more influenced by the interaction with the music and the audience, while M interacted more with his own feelings. The fact that both of the dancers were concentrating on their own dance in this section seems to explain the difference between the dancers' scores.

These results suggest that dancers' dance movements in the duo performance are affected by the interaction with the other dancer's movements, as well as other stimuli such as their own feelings and music.

General Discussion

In this study, based on interviews and introspective reports, we find that dancers take interactions with various stimuli seriously when improvising dance. Paying attention mainly to their own theme in solo performance and to the other dancers in duo performance, dancers use expressive techniques to construct an improvisational dance performance. In addition, from the performance analysis in Study 2, we find that dancing with another dancer changes a dancer's movements. From the data on changes in the centre of gravity, it is shown that other stimuli also affect the dance performance.

These findings are consistent with the claim by dance scholars Tsujimoto (2010) and Amagasaki (2004) that when dancing extemporarily, the dancer's body instantly responds to stimuli from dance partners, the surrounding environment and sensations born within the body. This study offers empirical evidence for such an anecdotal statement. In other words, through analyses of both verbal and performance data, this study reveals dancers' interaction with the internal process and the external environment in actual solo and duo performances.

This research also reveals that dancers use various expressive techniques to organize their dance movements as a dance piece. These findings are consistent with the claim by the dance scholar, Hosokawa (2011). However, this study offers concrete examples of these expressive techniques. Since there have not hitherto been any empirical studies focused on improvisational dance, our research makes a contribution to this field of research. Our findings suggest that new artistic expressions beyond a dancer's own repertory are born through interactions with the various stimuli at the actual moment of creation.

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