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Faculty of Music, University of Arts in Belgrade

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Effect of Music on Subjective Experience of Dance Performances

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Abstract

As previous works showed a difference in the subjective experiences of different types of dance, the aim of this paper is to check whether there are differences in the effects of music between different types of dance: classical ballet, hip hop, and contemporary dance. The sample is convenient and consists of 45 students of psychology (male 9, female 36), from the Faculty of Philosophy in Niš. The age range was from 19 to 23 years (M = 19.27, SD = .69). The participants were shown six dance performances, 2 for each type of dance, for an average duration of 1 minute and 30 seconds. After each performance, respondents answered the question, "How much music influenced your preference for this performance?" on the 7-point Likert scale. Analysis of variance showed that the effect of music on performance preference is different for different types of dance ($F(2) = 20.176$, $p < .000$). Post hoc testing showed this effect is greatest for contemporary dance, where the effect of music on preferences differs statistically significantly from both ballet ($p < .011$) and hip hop ($p < .000$), and both differences are on benefit of contemporary dance. The smallest effect of music is on hip hop, which differs statistically significant from ballet ($p < .002$) and contemporary dance ($p < .000$), but both differences are in favor of these two types of dance. From the results of this paper, we can conclude that the music that follows the performance has a different effect on different types of dance. For further studies, we suggest including several types of dance with the same music, to check if there is an interaction between dance performance and music, or music has an effect on the preference of dance independently.

Introduction

This research aims to examine the importance of music in the subjective experience of dance, and whether there are any differences in the effects of music on the subjective experience of different types of dance.

When it comes to the possibilities of dance as a creative and self-expressive aesthetic activity, so far, little has been said directly about the criteria that one can refer to when teaching dance, or when judged as an artistic performance (Redfern, 1983, as cited in Arnold, 1986). Besides, different individuals may have different attitudes toward the work of art, which, in turn, may influence the way the artwork is perceived (Macel, 2008, as cited in Nadal, Munar, Capó, Rosselló, & Cela-Conde, 2008). And dance is, of course, a form of art.

Dance is a basic form of human expression that involves rhythmic and arrhythmic movements of the body, which are often accompanied by music (Bachrach, Fontbonne, Joufflineau, & Ulloa, 2015). It is performed alone or in a group and is practiced in many cultures as a form of emotional expression, social interaction, and physical exercise (Bachrach et al., 2015).

Dance has many aspects, and the rhythm stands out as one. This aspect of dance has also been the subject of a number of researches into this type of art (Brown & Parsons, 2008), in the context of its importance for dance creation. Less explored is the question of how rhythm is perceived by observers and how it affects them (Bachrach et al., 2015). Also, each dance creation or style consists of multiple rhythms and different dimensions and fragments. Sometimes rhythm can be clearly seen in movement patterns or music; it is explicit, and in the latter case this rhythm appears in the structure of the choreography or expressiveness of the dancer (and it may be considered implicit). In contemporary dance, implicit rhythms are of particular interest, as it is often the case that music (if present at all) and movement have no explicit rhythmic structure (Bachrach et al., 2015).

Another important variable in our research, inseparable from dance, is music. Specifically, previous research suggests that our brains have specific abilities to process music (Ayotte, Per-

etz, & Hyde, 2002), which means that we are already physiologically prepared to listen and enjoy music, making it a critical phenomenon worth exploring. Roederer (1984) advocates the idea that music could serve to advance social cohesion, which has been supported by many researchers (Brown, 2000; Freeman, 1995, 2000; Richman, 1987, as cited in Hagen & Bryant, 2003). Evolutionary models explicitly advocate the idea of individuals joining groups because they can reap the benefits of maintaining good health by being members of the group, and in turn, providing good health for the group itself (Axelrod & Dion, 1988, as cited in Roederer, 1984). Such cooperative strategies usually take the form of either a benefit exchange or a symbiosis.

It is important to state that music can reliably convey recognizable emotions to listeners, even those who listen to music from an unknown repertoire of tones (Balkwill & Thompson, 1999). Given that people have rich social interactions at the group level, this is assumed to be an adaptive function of the group signaling the collective emotional state of the group to others. For example, anger expresses the intention to launch an attack. At the individual level, music could be an analogy to group-level signals that are associated with emotions (Hagen & Bryant, 2003).

Regarding previous research on similar topics, Maja Vukadinović (2013) examined the subjective judgments of the audience about freedom of artistic expression in classical ballet, modern ballet and flamenco, through three criteria, freedom of expression of emotions, freedom of use of dance figures and freedom of the usage of space. This research showed that the freedom of expression of emotions in classical ballet was estimated at statistically significantly lower values compared to the other two criteria for evaluating the freedom of artistic expression. This is reflected through the formal characteristics of the ballet, the strict form of the movement, the point, the precisely defined body positions, etc. Then, the freedom of expression of emotions within modern ballet was assessed with statistically significantly lower values compared to the other two criteria. Such a result could be expected given the basic concepts of modern ballet, which convey (communicate) the message of human existence (Au, 2002; Huxley, 1994; Jowitt, 1994; Press & Warburton, 2007, as cited in Vukadinović, 2013) and the complexity of human nature via its formal features. (Duncan, 1981; Graham, 1991; Huxley, 1994; Jowitt, 1994, as cited in Vukadinovic, 2013) It can be stated that the freedom to use space and the freedom to use dance figures are significant foundations of the essential ideas of modern ballet since it has previously been shown (Camurri, Lagerlof, & Volpe, 2003) that the expression of basic emotions (anger, fear, sadness, and happiness) is easily recognized in modern ballet. Expression freedom was the highest in flamenco dance. The fact that flamenco scores the lowest for freedom of use of space is probably because flamenco excels at dancing in small spaces among friends and other flamenco dancers (Candelori & Díaz, 1998). In the context of this research, this means that the creative process of choreography does not depend solely on the original performance components that relate to the creator, which implies skills relevant to the area in which he or she is engaged, skills related to creativity and motivation to complete the task (Amabile, 1983, as cited in Vukadinović, 2013), but also to a broader cultural context (Glăveanu, 2010), which is reflected through the formal characteristics of the particular dance for which the choreography was created.

As earlier work has shown that there is a difference in the subjective experience of different types of dance, this paper aims to determine if there are differences in the effects of music between different kinds of dance: classical ballet, hip hop, and contemporary dance.

Method

Sample and Procedure

The sample is convenient and consists of 45 subjects (male 9, female 36) from the first year of study of psychology at the Faculty of Philosophy in Niš. The age of the respondents ranged from 19 to 23 years (M = 19.27, SD = .69). In this sample, five respondents are active in dancing and the other 40 not. All subjects participat-

ed in all six levels of the independent variable, with counterbalancing applied. The preference for a particular dance was not a control variable in this study. All participants volunteered for this research.

The choreographies were exhibited using a video projector in the form of visual and auditory recordings in a predetermined order. Respondents observed the recordings in groups and made assessments immediately after viewing the recording. Participants were asked to focus their attention on the music that accompanies each dance performance. While looking at the dance performance, the task of the respondents was to evaluate the choreography in each part of the research on seven-point scales (from -3 to +3) following three criteria for freedom of artistic expression: the freedom to use space, freedom to use different dance figures and freedom to express emotions.

Stimuli

The stimuli consisted of six choreographies lasting an average of minutes and 30 seconds. For each of the three types of dance, the subjects were shown two choreographies, and all of them were exposed through a video presentation.

Instruments

A seven-point semantic differential scale (from -3 to +3) was used to examine the extent to which extent the music in the background of dance performance influenced the experience of dance performance. Also, respondents were asked to indicate their age, year of study, and whether they had previous experience in dance.

Results

The analysis of variance revealed that the effect of music on liking was different for different types of dance ($F(2) = 20.176$, $p < .000$). Post hoc testing has shown that this effect is most significant for contemporary dance, where the impact of music on liking differs statistically significantly from ballet ($p = .011$) and hip hop ($p < .000$), and these differences are in both cases in the benefit of contemporary dance. Music has the smallest effect on hip hop, which is also statistically significantly different from ballet ($p < .002$) and contemporary dance ($p < .000$), but these differences are in both cases in favor of these two types of dance.

We also checked if different aspects of the subjective experiences of the dance performances can predict the effects of music.

Table 1. Regression analysis: Prediction of usage of space in the dance performances by the effects of music.

Predictor	R^2	β	F	p
Effects of music	.021	0.144	5.695	.018

The results presented in Table 1 showed that the use of space in dance performance was a statistically significant predictor of the influence of music on liking dance performance, with a positive correlation. When space is used to a greater extent in dance performance, the effect of music on liking the performance itself is more pronounced. The predictor mentioned here explains 2.1% of the variance of the criterion variable.

Table 2. Regression analysis: Prediction of usage of figures in the dance performances by the effects of music.

Predictor	R^2	β	F	p
Effects of music	.03	0.174	8.393	.004

The variable Using dance figures in dance performance was also shown to be a statistically significant predictor of the influence of music on liking dance performance, with a positive correlation. The more dance figures were used in a dance performance, the more effect music had on liking the performance itself. This predictor explains 3% of the variance of the criterion variable.

Table 3. Regression analysis: Prediction emotion expression in the dance performances by the effects of music.

Predictor	R^2	β	F	p
Effects of music	.118	0.344	35.896	< .001

When it comes to expressing emotions during a dance performance, this variable is a statistically significant predictor of the influence of music on liking dance performance, and there is a positive correlation between predictors and criteria. Specifically, greater emotional expressiveness during the performance of a dance performance is associated with a more considerable influence of the music that accompanies the dance performance to its liking. This predictor explains the highest percentage of variance in the criterion variable compared to the previous two, or 11.8%.

Discussion

Given that music's effect on liking, dance performance has been found to be different for different types of dance, these findings are consistent with previous research indicating that our brains have specific abilities to process music (Ayotte et al., 2002), meaning that we are already physiologically prepared to listen and enjoy music. Both dance and music have such a relationship that can be considered a collation (Jackendoff & Lerdahl, 2006), so the obtained results are not surprising.

Post hoc analysis found that music in the background of dance performance has the most significant effect on contemporary dance. This type of dance is characterized by unpredictable changes in rhythm, speed, and direction, and it can be assumed that choreographers choose music that will emphasize the characteristics of this type of dance. Synchronization and variation, as the two qualities inherent in the coalition of music and dance (Jackendoff & Lerdahl, 2006), suggest that this coalition is internally stable and will be able to execute a fast, complex and coordinated action (Jackendoff & Lerdahl, 2006).

The smallest effect of music is on liking dance performances is on the hip hop dance, a dance with an emphasis on freestyle, with a lot of attention being paid to musicality, that is, in hip hop dance dictates the rhythm and strives for creativity. It should be borne in mind that the music accompanying the choreographies shown to the interviewees within this type of dance is not the choice of the choreographer himself. Still, it rather is a competitive solo performance in the category of hip hop freestyle where the judges choose the music. This information could explain the results obtained in this research.

The results showed that the variables *use of space in dance performance* and *use of dance figures* are statistically significant predictors of the influence of music on the liking of dance performance, where there is a positive correlation, that is when space is more used in dance performance, there is a more significant influence of music towards liking the performance itself. These results can be accounted for if we recall some of the previous studies. Namely, (Vukadinović, 2013), it is known that the type of dance is defined as an existing structure of symbols and established norms (existing artifact) through its formal characteristics, which affects not only the way in which a particular choreography will be created (a new artifact), the freedom to use space, different dance figures and to express emotions, but also how the audience (others) will experience it (Vukadinović, 2013). Since dance and music form a coalition system (Hagen & Bryant, 2003), it can be assumed that dance type is a variable that is a potential mediator between the subjective experience of dance and the effect of music on this experience, which can be verified in some subsequent papers.

It was also found that the *expression of emotions in dance performance* is a statistically significant predictor of the influence of music on liking dance performance. Besides, this predictor accounts for the most significant percentage of the variance of the before mentioned criterion variable. We can understand these results if we are reminded that music can reliably convey recognizable emotions to listeners, even those who listen to music from an unknown repertoire of tones (Balkwill & Thompson, 1999).

Conclusion

The results of this paper suggest that there is indeed a difference in how much music influences liking dance performances, between dif-

ferent types of dance. Based on these results, we can conclude that music is essential to contemporary dance, both in relation to ballet and hip hop. Music shows the lowest effects on liking when it comes to hip hop. Research also shows that emotional expression is the most crucial predictor of music's impact on dance performance.

The theoretical significance of this research lies in a better understanding of the close relationship between music and dance. On the other hand, the practical importance is above all for dance instructors, who can use these results for practical purposes, they can, for example, pay greater attention to music and the choice of music that goes with a given dance, so that students can relax and learn the necessary steps more easily.

The disadvantages of this research are that only three types of dance are included, so for further research, we suggest including more types of dance. Further, another drawback is that music was not a manipulative variable. Namely, it is necessary to take into account contemporary dance goes with contemporary music, that is, music adapted to the age in which we now live and that, consequently, this type of music is probably the most appealing to the respondents. Due to this, we suggest presenting different types of dances to the respondents for further research, but with the additional variation of music, to check whether music is really essential for the experience of contemporary dance, or whether contemporary music is most pleasing to the respondents, which additionally influences the more pronounced liking of this type of dance. We also go over the examination of both dancers and non-dancers and compare their results.

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