

JUDGING OBJECTIVITY ANALYSIS WITH JUDGING COMPONENT “MOVEMENT TO MUSIC” IN STANDARD SPORT DANCE “TANGO”

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(Original scientific paper)

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Abstract

Depending on the level and the stage of the appropriate competition, detailed elaborate criteria are used that represent the basic requirements and parameters for assessing the technical and artistic indicators of the dance performance. The application of the Absolute Judging System (AJS) 3.0 to assess the performance of DanceSport Couple (DSC) should contribute to improvement of the following characteristics: greater objectivity; transparency; better understanding by the audience and the media; providing guidance for athletes and coaches; improving the performance of the dancers. Judges have a key influence on the final result, both objectively and subjectively. The subjective factor is often a blow to the professional field. Three components are the main ones that make it work: dance judges have become both coaches and judges, opening up the possibility of favouring your own couples; realistically insufficient assessment time; lack of answers and analysis to DSCs as feedback. This research on the quality of judging using the AJS 3.0, “Movement to Music” judging component for the Standard Sport Dance (SSD) “Tango”, as well as the consistency of judges in knowing and applying this criterion and its indicators, should lead to suppression of bias, inconsistency and subjectivism as factors of poor quality of judging in DanceSport.

Key Words: *DanceSport, Absolute Judging, Judging Objectivity, Judging Component, Movement to Music*

Introduction

Since 1929, English Waltz, Tango, Slowfox, Quickstep and Blues are danced in the Standard Dance group. The same year, France, Germany, the Scandinavian countries and Belgium took over the English style. Alex Moore took the most care of spreading the style. A crucial event for this group of dances was the reception of the Viennese Waltz choreographed by the German dance teacher Paul Krebs. In 1954, all technical details of the Standard Sport Dances were completed. Guy Howard had the most credit for it.

According to the WDSF (World DanceSport Federation) competition rulebook, there are five dances in the Standard DanceSport Group: English Waltz (EW), Tango (T), Viennese Waltz (VW), Slowfox (SF) and Quickstep (QS). Their main feature is natural and dynamic movement, rhythmic change of sequences with great precision in movement and fast reactions, as well as the so-called "floating weightless state". The starting point is the natural movement inherent in the specific SSD, which requires great control of energy consumption with as little effort as possible. The dance is composed of a series of dance figures and images, which are made in motion through space and choreographically structured so that the DSCs can display as much of their dancing skills and qualities as possible. The dances abound with distinctive poses and dance positions, a special movement technique and "fusion of the dancers into one". That lightness is the one that constantly creates the illusion of "floating".

SSDs are a very challenging, complex and difficult sport because of their technique and movement. There is a high degree of coordination between two bodies that produce simultaneous multidimensional spatial time actions on all parts of the body, including internal emotional dimensions. High classes of DSCs look "inseparable" and acts as an individual. Such a high level of harmony between the two bodies requires exceptional psychophysical readiness, harmony, concentration and aesthetic perfection.

Material

The main purpose of this research is to analyze the judging objectivity of the Tango in the SSD group, according to the Absolute Judging System (AJS) 3.0.

Tango is one of the most difficult representative dances of the Standard DanceSport Discipline. It uses a modified dance hold, more compact than the normal closed position ballroom hold. The man and lady stand slightly farther offset, causing the man's right arm to be positioned farther around the lady's back so that the fingers of his right hand lay across her spine. Instead of placing her left arm on top of his, she will hook her forearm underneath his elbow and upper arm. Her wrist will be positioned directly underneath his arm (possibly, but not necessarily in contact) with palm facing inward, her fingers just reaching his torso. The lady's right hand and man's left hand are joined in an upper-hand clasp at approximately the lady's eye level. The man's left and lady's right elbow may be held slightly higher than normal, with a more acute angle at the elbow.

There is no rise & fall action in Tango. The body level should remain constant throughout. The feet pick up and place onto the floor, rather than gliding along in constant contact with the floor. The foot action is highly articulated, often being compared to the sneaking or stalking action of a cat. The movements are strong, staccato and floor sweeping. Forward walks are placed with the heel first, then flat. Backward walks are taken with a toe first, with the heel lowering as the body moves over it. At the same time, the toe of the forward foot should release from the floor as the body moves away. Side steps and chasses normally use a whole foot or ball-flat action. Forward walks normally curve gradually to the left, therefore the left foot forward walk is taken with Contra Body Movement (CBM), while the right foot forward walk is taken with a right side leading. Backward walks also normally curve gradually to the left, therefore the right foot backward walk is taken with CBM, while the left foot backward walk is taken with a left side leading.

The music used for dancing Tango has a sharper, staccato, march-like rhythm, typically accented by drums and occasionally other percussion instruments, and the bandoneon is usually replaced by an accordion, although even this latter instrument may be absent. Tango has a strict invariable tempo and it has developed its own tango melodies for dancing and lyrics may be in the native language of the location of dancing (e.g., English, German, French).

It is danced as a second dance of the Sport Dance Competitions (SDC) in SSD. Here are some of the basic features of Tango:

- Beat: 4/4;
- Tempo: 31 – 33 beats / minute;
- Accent: On the first and the third beat;
- Rise and Fall: None;
- Dynamics: Well balanced weight and spatial – temporal movement.

Methods

Sample of competition and respondents

The research was conducted on a sample of 24 DSCs in the SSD discipline. The parameters of the DSCs and SDC sample are given in the following table:

- Class of SDC:	WDSF World Open Standard;
- Age group:	Adult;
- Age range:	19 – 35 years of age;
- Number of DSCs:	61 from 38 countries;
- Number of DSCs (sample):	24 from 17 countries (1/4 final);
- Class of DSCs (sample):	High (7.00 – 10.00);
- Number of Adjudicators (sample):	12 from 12 countries.

Sample variable

The criterion variable in this research for estimating the success of SSD–T performance is Movement to Music (MM). Possible technical errors in SSD–T performance that refer to the MM criterion, are manifested through deviations in terms of sub-criteria that in detail describe the complete action that DSC should implement at a given moment. The MM criterion has the following sub-criteria:

- *Timing/Shuffle Timing*: The ability of the dancers to match the tempo of the music;
- *Rhythm*: The ability of the dancers to match their movement to the rhythmical accents of the music;
- *Musical Structure*: The ability of the dancers to dance to all other elements of the music (Phrase, Melody, Chorus, Intensity, etc).

Program and procedure for evaluating success rate of SSD–T performance

For the DSCs sample, the success rate of the SSD–T performance according to the MM criterion was determined by 6 out of 12 WDSF licensed judges from 6 countries: Germany, Bulgaria, Croatia, Netherlands, Montenegro and Austria. Chairperson was from Russia who does not judge but cares of the complete implementation of the WDSF competition rules. According to WDSF rules, licensed adjudicators must meet the following requirements:

- To have passed for a adjudicator’s license for judging according to AJS 3.0;
- To be determined on the judge's list of the specific match by WDSF;
- To have an active license for AJS 3.0 at the time of the competition.

The assessment was performed according to the subjective and objective assessment of the judges for the specific criterion for evaluating the dance performance of the specific DSC. The evaluation scale is from 1 - 10 with the possibility of evaluation with a range of 0.25:

- | | |
|---------------|-------------------|
| 1. Very Poor; | 6. Above Average; |
| 2. Poor; | 7. Good; |
| 3. Weak; | 8. Very Good; |
| 4. Fair; | 9. Superior; |
| 5. Average; | 10. Outstanding. |

Performance Assessment Standards (PAS) define the actions that describe the expected ways and skills needed to perform them. What judges perceive when evaluating according to AJS 3.0 using a specific criterion are Indicative Qualities (IQs). They are a detailed description of the indicative indicators that result from the successful execution of technically correct dance actions and expressions. PAS and their IQ for grades 6, 8 and 10 are defined and described by the Dance Sports Academy (DSA), as an authorized WDSF professional body. The following table shows the definitions of the PAS for Above Average (6 points), Very Good (8 points) and Outstanding (10 points) performance of DSCs, for all 3 sub-criteria of the criterion MM:

SUB CRITERIA	PERFORMANCE ASSESSMENT STANDARDS		
	Above Average – 6 points	Very Good – 8 points	Outstanding – 10 points
TIMING/ SHUFFLE TIMING	Perform dance steps and figures to the tempo and time signature of the music.	Perform dance steps and figures accurately to the tempo and time signature of the music.	Demonstrate timing and shuffle timing in all dance related movement and actions.
RHYTHM	Express the strong, medium and weak beats with the use of body speed and foot actions.	Express the musical accents, percussive accent, strong, medium and weak beats with the use of body speed and foot actions.	Use input of energy level, body speed, foot action and range of movement to accurately express the musical accent, percussive accent, strong, medium and weak beats in order to create the characteristics of the dance.
MUSICAL STRUCTURE	Demonstrate the melody of the music with the use of foot action, leg actions and shapes.	Demonstrate the melody of the music with the use of all dance related movement.	Demonstrate the melody and counter melody with the use of dance related movement in order to express the characteristics of the dance.

When evaluating decimals (e.g. 7.25; 7.50; 7.75), judges use the technique listed in the following table:

Rating Achieved PAS and IQs + percentage coefficient

- 6.5 Achieved PAS and IQs required for 6 and up to 25% of PAS and IQs required for 8
- 7.0 Achieved PAS and IQs required for 6 and up to 50% of PAS and IQs required for 8
- 7.5 Achieved PAS and IQs required for 6 and up to 75% of PAS and IQs required for 8
- 8,5 Achieved PAS and IQs required for 8 and up to 25% of PAS and IQs required for 10
- 9.0 Achieved PAS and IQs required for 8 and up to 50% of PAS and IQs required for 10
- 9.5 Achieved PAS and IQs required for 8 and up to 75% of PAS and IQs required for 10

Data processing methods

In order to obtain relevant scientific information, the obtained data are processed with an appropriate and compatible statistical programming system. The factor method was used to analyze the judging assessment objectivity and to determine the metric characteristics for estimating SSD–T dance performance for each DSC.

Results

From the analysis of the basic central and dispersion parameters of judges' evaluations (Table 1) it can be seen that the values of the arithmetic means are approximately identical and tend towards the average evaluations. Also, the standard deviations of all judges in assessing the criteria for evaluating dance performance have been equated.

Table 1: Descriptive statistical parameters

	Mean	Minimum	Maximum	Range	Variance	Std.Dev.	Coef.Var.	Standard	Skewness	Kurtosis
SUD 1 MM	8,2292	7,0000	9,5000	2,5000	0,3745	0,6120	7,4370	0,1249	0,1826	0,3495
SUD 2 MM	8,2188	7,0000	9,5000	2,5000	0,4474	0,6688	8,1380	0,1365	-0,0327	-0,2884
SUD 3 MM	8,3021	7,0000	9,2500	2,2500	0,3531	0,5943	7,1580	0,1213	-0,8208	0,0930
SUD 4 MM	8,0625	6,7500	9,0000	2,2500	0,3057	0,5529	6,8578	0,1129	-0,1874	0,1770
SUD 5 MM	8,5521	7,7500	9,2500	1,5000	0,1901	0,4360	5,0983	0,0890	-0,3482	-0,7180
SUD 6 MM	8,2396	7,2500	9,0000	1,7500	0,2798	0,5289	6,4195	0,1080	-0,3612	-0,6795
SUD AVE MM	8,2674	7,6667	9,1667	1,5000	0,1606	0,4008	4,8476	0,0818	0,6780	-0,2301

Table 2. Kolmogorov – Smyrna test (Table 2) indicates that all judges' assessments of the selected Movement to Music (MM) variable are normally distributed.

	N	max D	K-S
SUD 1 MM	24	0,236	p < ,15
SUD 2 MM	24	0,129	p > ,20
SUD 3 MM	24	0,214	p < ,20
SUD 4 MM	24	0,170	p > ,20
SUD 5 MM	24	0,217	p < ,20
SUD 6 MM	24	0,147	p > ,20
SUD AVE MM	24	0,180	p > ,20

Pearson's correlation (Table 3) between judges generally ranges from very low to quite high. A very low correlation between the mean scores of the Movement to Music (MM) variable was found between the 1st and 3rd judge ($r = 0,377$; $p < 0,01$), the 1st and 6th judge ($r = 0,276$; $p < 0,01$), the 2nd and 3rd judge ($r = 0,004$; $p < 0,01$), the 2nd and 6th judge ($r = 0,145$; $p < 0,01$) and the 5th and 6th judge ($r = 0,250$; $p < 0,01$).

Table 3: Inter-correlation

	SUD 1 MM	SUD 2 MM	SUD 3 MM	SUD 4 MM	SUD 5 MM	SUD 6 MM
SUD 1 MM	1,000	,516	,377	,566	,513	,276
SUD 2 MM	,516	1,000	,004	,380	,369	,145
SUD 3 MM	,377	,004	1,000	,511	,388	,693
SUD 4 MM	,566	,380	,511	1,000	,516	,616
SUD 5 MM	,513	,369	,388	,516	1,000	,250
SUD 6 MM	,276	,145	,693	,616	,250	1,000

The first main components are isolated by the analysis of the inter-corelation matrices (Table 4). From the projection of the average marks of the judges of the first main component it can be seen that all six judges have relatively high projections with the first main component of the variable. The highest projection

of the first major component of the variable is shown by the fourth judge. The lowest projection of the first major component of the variable is shown by the second judge. The total variability of the judging of all six judges in this variable is explained by the first main component with 51,49%. The remaining percentage can probably be explained by the specific way of assessing and the mistakes that are made during the judging, as well as the impact of the environment, that is the atmosphere that prevails during the judging process. Despite all the results, the reliability indices are relatively high.

Table 4

MM	H ₁
SUD 1	0,757
SUD 2	0,519
SUD 3	0,714
SUD 4	0,857
SUD 5	0,707
SUD 6	0,710
λ	3,089
$\lambda\%$	51,490

The variability of the judging reliability is estimated based on Kronbah alfe (α) and ICC coefficient, and the mean correlation between the scores (r) was shown. The values of Kronbah alfe (α) coefficient in the variable Movement to Music (MM) are 0.805, the value of ICC coefficient is 0.795, while the average correlation r is 0.408.

	r	ICC	α
MM	0,408	0,795	0,805

Discussion

The relatively small differences between the judges' marks when using the Criteria for Movement to Music of the 1/4 final DSCs when performing SSD-T show that the judges perceived their presentation with a high degree of objective interpretation of the evaluation scale according to pre-defined PAS and IQ.

The inclusion of half of the panel of judges for evaluation of two out of four criteria among which is the criterion that is the subject of this paper which is one of the essential changes in the judging with the previous system 2.0 where the panel of judges was divided into 4 groups of 3 judges shows that it leads to a reduction in the differences between the judges through the expressed average and an algorithm that in its code annuls the extreme values which casts their influence on the final result.

If we take into account the relative number of sub-criteria and indicative qualities that describe the standard used as a variable in this paper, then we can safely explain the relatively high coefficient of judging objectivity because the technical part where criterion of MM is included with its accuracy and detailed description guarantees that. Certainly starting from the fact of the good educational readiness of the panel of judges, their many years of experience and ability for quick and sharp perception.

In the course of development of DanceSport, the judging system has been changed and improved in order to objectify the places won by dance couples and decide the winners. Since the contest result depends on the scores given by qualified judges in accordance with the established protocol, there are inevitable subjective factors that interfere with this procedure and can significantly affect the final result. In this view, the judging systems evolve towards objectification of the scores given by the panel of judges. The evolution of judging systems starting from the Skating System to the currently used AJS 3.0 System and the approaches used in both systems as well as earlier AJS 1.0/2.0 Systems is with the purpose to increase their objectivity. It was concluded that in the judging system, where competitive performance of dance couples is assessed by comparing them with each other, subjective scoring and inaccurate assessment are highly possible. Although judges are trained and licensed, they score subjectively, which is why the judging systems with strict rating parameters have an advantage in terms of objectivity.

On the other hand, it can be a double-edged sword if you take into account the relatively short time for estimating the technical part of the dance performance where in about one and a half minute the judge is required to make a final decision.

Regardless of the high professionalism of the judges, it should be borne in mind that the influence from the previous system of comparative method is still present to some extent. However, it takes time for the "pure" mental transformation of judges who have such experience in their careers.

At DSCs, which was taken as a sample in this paper, there was a participation of 15 DSCs from the first 50 places on the world ranking list for SSD. Given the fact that 12 of them are placed in the semi-final, it can be concluded that they have shown continuous top performance in this match or the adjudicators in a subjective approach assess them as a pass in the next round regardless of the fact that some of those DSCs may not deserve it. For this reason, maybe the right solution is to not allow the judges to have any possibility to look at the competition lists of the DSCs before the competition.

Conclusions

It can be concluded that the objectivity of the judging with the MM criterion as one of two technical criteria of the dance performance using AJS 3.0 has a high coefficient of objectivity in the given circumstances. However, it is still possible to influence judges who may give points that are inappropriate for certain performance components but minimized by introducing the method for determining the median value in the AJS 2.1 System and its later version AJS 3.0.

The dose of subjectivism is not excluded, which, taking into account the rank of the competition, the class of DSCs and the quality of the panel of judges, is minimized.

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