Bodily expression of emotion in sports: Examining cultural differences in body movements of gold medalists at the Olympic Games

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Abstract

Winning or losing a medal in Olympic games is one of the most powerful emotional experiences in the lives of athletes. This study focuses on athletes' nonverbal emotional expressions in order to find out the difference between athletes from high-context (HC) and low-context (LC) cultures in bodily expressions for their emotions in winning an Olympic gold medal. The bodily movements we analyzed in this study were divided into explicit movements and implicit movements. The results showed that the average total scores of explicit movements and implicit movements did not differ significantly between LC and HC cultures. Neither did the average total scores for the amount of movements. Only three categories showed significant results in independent-samples t-tests: lifting the medal, folded hands on the back and the creative movement. Some limitations will be discussed at the end of the study.

Keywords: Non-verbal communication; bodily expressions; winning; cross-cultural.

Introduction

For many athletes, the Olympic Games are the pinnacle of one's athletic career. Winning or losing a medal here is one of the most powerful emotional experiences in the lives of athletes. Therefore, this study focuses on athletes' nonverbal emotional expressions of winning the Olympic Games. Because of its high popularity and global character, winning the Olympics often causes a strong feeling of national and sport-related pride (Van Hilvoorde, Elling, & Stokvis, 2010) as well as other emotions (Matsumoto & Willingham, 2006). As a consequence, winners show a lot of post-performance emotional expressions. There are plenty of studies that have examined athletes' facial expressions of victory and loss and that indicate the differences in culture (e.g. Matsumoto & Willingham, 2006; Furley & Schweizer, 2013). Culture determines how individuals express themselves both verbally and nonverbally (Gudykunst, 2005; Hofstede, 1984; Matsumoto, 2006). As athletes' facial expressions of victory and loss have cultural differences, we expect a similar pattern for bodily expressions of emotions. Therefore, the focus of this study will be on cultural differences in bodily expressions of victory.

Culture itself is an abstract concept which is difficult to be measured. Scholars often use patterns according to the behavior of a certain group of people to differentiate cultures, such as Hall's (1976) model of high- and low- context cultures and Hofstede's (1984) six cultural dimensions. This research will mainly focus on Hall's (1976) model for the classification of different cultures since this model specifically illustrates the cultural differences in how individuals express themselves, which matches with the aim of this paper. Hall (1976) indicated that the cultures can be compared on a scale from high-context (HC) to low-context (LC). The main difference between the two sides of the scale is the importance that each culture places on the delivered context and the actual message. According to Hall (1976), in HC cultures most of the information is in the physical context, while very little is in the explicitly coded part of the message. By contrast, LC culture messages are straightforward.

Fernández, Carrera, Sánchez, Paez, and Candia (2000) analyzed the relationship between several cultural dimensions and the emotional verbal and nonverbal reactions in prototypical emotions. The results show that cultures that are low in power distance and high in cultural femininity accept the expression of emotions more than masculine and high-power distance cultures. They value the freedom of expressive emotions and therefore are more expressive in showing their emotions. According to Brett (2000), LC cultures are usually also individualistic, low in power distance and likely to be high in femininity. HC cultures are also described as being collectivistic and have a high-power distance and are likely to be masculine cultures. Since body movements are deliberately used as a prime vehicle of expression (Sachs, 1937), a similar pattern in expressiveness is expected for the bodily expressions of emotions for winning an Olympic gold medal. Therefore, the following research question will be central: Is there a difference between athletes from high-context and low-context culture in bodily expressions for their emotions in winning an Olympic gold medal?

Based on the existing literature about cultural differences in nonverbal behavior and expression of emotion, we expect that athletes from low-context cultures show more body movements in order to express their emotions than athletes from high-context cultures. Also, we expect that most of LC culture athletes' movements are more explicit, whereas most of HC culture athletes' movements are expected to be implicit to present their pride, joy, and other emotions. These expectations lead to the following hypotheses:

H1: LC athletes show more body movements, which indicates both explicit and implicit ones, than HC athletes.

H2a: HC athletes show more implicit movements than LC athletes.

H2b: LC athletes show more explicit movements than HC athletes.

Matsumoto and Willingham's (2006) study shows that emotional expressions are particularly elicited by emotional evocative contexts, such as during the honouring ceremony. Therefore, this study will specifically investigate the nonverbal expressions of medalists right after they stepped on stage. Since the emotional experience could differ for gold and silver or bronze medal winners (Matsumoto & Willingham, 2006), only gold medal winners will be observed in this paper. Moreover, Hall & Hall (1990) have designed a table categorizing the countries from the highest context culture at the top to the lowest culture at the bottom (Figure 1.). However, their table was created over two decades ago. Meyer (2014) conducted a culture map (Figure 2.) based on Hall and Hall's (1990) HC and LC framework providing a more up to date view of national culture categorization. Therefore, this research will be using Meyer's (2014) culture map to select samples for HC and LC cultures.

Figure 1: High and low context culture by country (Hall & Hall, 1990)

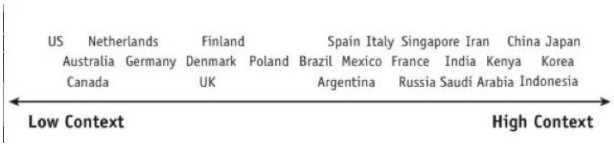

Figure 2: Culture map: High and low context culture (Meyer, 2014).

From the initial data review, 24 codes of body movements were recognized. 13 of them were considered to be explicit and 11 of them were considered as implicit. The explicit movements in this paper can be defined as relatively big movements or gestures that are often include a lot of emotion. The implicit movements can be defined as relatively small and respectful movements or gestures. Example movements and their categories will be explained in the next few paragraphs.

According to Tracy and Robins (2014) raising the arms represents a prototypical expression of emotion. In addition, Hwang and Matsumoto (2014) coded their images based on criteria that were associated with triumph expressions, which included raising the arms above the shoulders and moving the arms away from the body. They also referred to fists, clapping and thumbs up as expressive emotions. Therefore, movements such as waving, folding hands in fists and clapping could all be indicated as explicit movements, as long as they occur above the shoulders. Inferring from this, all the movements mentioned before could be less expressive when they occur below the shoulders. In Japan, a LC culture, body movements are an important part of the communication. However, they use less arm movements or arm gestures, since they consider it to be threatening the harmony of the group (Varner, 2005). In contrast, in most western cultures (HC cultures) big arm movements or arm gestures are used as power posing to enhance speakers' confidence and to convince the listener. Therefore, big movements, such as jumping, are considered to be more explicit movements.

The behavior of kissing is generally considered to be an expressive symbolism. Opler (1969) indicated that kissing is a very emotional behavior which indicates love and bonding. However, in this study we looked at winners that blow kisses to the audience, rather than kissing another person. Yet, it can still be regarded as an emotional and expressive gesture, but the movement will be included in a so called "creative category" of gestures. Other gestures that can be included in this category are the Usain Bolt-gesture (gesturing lightning by using both hands) and a kind of "exaggerated bow", as sometimes can be seen after a musical or theatre. These gestures are seen as explicit since they are quite big and often emotional gestures (Varner, 2005; Opler, 1969).

A bowing movement is an indicator of respect in many Asian cultures, since it concerns status and rank of two people communicating (Wang, 2009). For example, in Japan, the person with the lowest status starts bowing first. Thus, since bowing mainly indicates respect (Wang, 2009), it will be categorized as an implicit body movement. Other movements that could indicate respect are touching the medal after receiving it and placing one or two hands on the chest and are thus also implicit movements.

Method

Materials

The corpus consisted of 40 recent gold medal ceremonies videos of individual athletes of the Winter Olympics of 2018 in Pyeongchang and the Summer Olympics of 2016 in Rio de Janeiro. Twenty videos were selected per type of culture (low context and high context), and divided across eight different countries: the Netherlands, the USA, Germany, Canada (all LC), Japan, China, South-Korea and France (all HC). These videos were randomly chosen from the internet. There was an intent of having an equal division of gender per country, having a range of different types of sports and having athletes only be analyzed once.

Each video was examined separately by the criteria listed in the Areas of Analysis. Videos were analyzed from the moment the gold winner stepped on stage until approximately five seconds after standing straight from getting the gold medal. In case athletes received a small gift on top of the medal, five seconds after standing straight from getting the gift were examined as well.

Areas of analysis

In this study, the bodily movements athletes make during a medal ceremony were analyzed. Following the literature (Opler, 1969; Tracy and Robins, 2014; Varner, 2005) the analysis can be divided into two fields: explicit movements and implicit movements. The explicit movement included 13 features and the implicit movement included 11 features. Features followed from literature and presence in the videos. The full list of bodily movements including explanation can be found in Appendix 1: Bodily Movement Coding Guide.

Explicit bodily movements refer to movements that are large and powerful (Tracy & Robins, 2014; Hwang & Matsumoto, 2014). Often, these movements performed above the body level of the shoulders. Examples of explicit bodily movements are: jumping and waving above the shoulders. A special category in explicit movements is the creative movement, referring to theatrical movements (Varner, 2005; Opler, 1969). Implicit bodily movements refer to small movements close to the body, showing respect (Wang, 2005). Bowing and touching the medal are examples of implicit bodily movements.

Data analysis

Six trained coders each recorded the types of movements for each area of analysis for all videos. Eight videos were double-coded (20% of the total videos) and compared for the intercoder reliability. Each movement was coded as either occurring in the video (1) or not (0), independently of the amount of times a movement occurred. If there was disagreement on a movement during the double-coding, a movement was coded as occurring (1). The overall intercoder reliability using the Kappa statistic was on the level of substantial agreement ($\kappa = 0.79$, $p < .001$). Besides, separated Kappa statistics were performed per type of movement. There was almost perfect agreement on explicit movements ($\kappa = 0.82$, $p < .001$), and moderate agreement on implicit movements ($\kappa = 0.63$, $p < .001$). Some excessive disagreement was found for the features 'Fold hands at back' and 'Touch medal', so the coders discussed them and specified the definition of the feature. After these eight videos, the coders worked independently annotating the 32 remaining videos.

The total amount of movements, and total amount per type, were calculated by adding all movements. First, Kolmogorov-Smirnov tests were conducted to check for normality. Independent-samples t-tests were conducted for comparisons across types of culture for total amount of movements and total amount per type. If assumption of homogeneity had been violated, Levene's test was reported. To estimate the overall trend per bodily movement, the patterns were checked.

Results

Normality tests

The total scores on explicit and implicit movements were not normally distributed; both Kolmogorov-Smirnov tests were significant ($D_E(40) = .21$, $p < .001$; $D_I(40) = .26$, $p < .001$) and there was a significant amount of skewness and kurtosis in the explicit movements scale (z-score skewness = 2.33; z-score kurtosis = 9.10), but not in the implicit movements scale (z-score skewness = 0.63; z-score kurtosis = 0.47). Consequently, the scores on total movements were also not normally distributed, as the Kolmogorov-Smirnov test was significant ($D_T(40) = .19$, $p = .001$) and there was a significant amount of kurtosis in the scale (z-score skewness = 1.63; z-score kurtosis = 6.20).

Differences between LC and HC cultures per movement category

In order to measure the effects of context culture (low vs. high) on type of movement (explicit vs. implicit) and total movements, three independent-samples t-tests were conducted. First of all, the descriptives were explored; the means and standard deviations are displayed in Figure 3. LC culture athletes were found to show on average 3.30 explicit movements per clip ($SD = 1.98$) as compared to HC culture athletes, who showed an average of 2.60 explicit movements per clip ($SD = 1.00$). The assumption of homogeneity of variances between the average total scores of explicit movements for LC cultures and HC cultures was met, as Levene's test was not significant ($F = 2.76$, $p = .105$). Following this assumption, the average total scores of explicit movements did not differ significantly between LC cultures and HC cultures ($Mdif = .70$, $t(38) = 1.42$, $p = .165$, 95% CI [-0.22, 1.75]). With regard to the total scores of implicit movements, the average score for LC cultures ($M = 1.35$; $SD = 0.93$) was slightly higher than the average score for HC cultures ($M = 1.30$; $SD = 0.98$). Although there was homogeneity of variances between LC and HC cultures for the average total scores of implicit movements ($F = 0.13$, $p = .717$), there was no significant difference between both groups ($Mdif = .05$, $t(38) = 0.17$, $p = .870$, 95% CI [-0.60, 0.63]). Finally, there was an average total amount of 4.65 ($SD = 1.76$) movements for LC culture athletes and 3.90 ($SD = 1.48$) movements for HC culture athletes. Still, no significant differences were found between the LC and HC cultures for the average total scores for the amount of movements ($F = 0.00$, $p = .989$; $Mdif = .75$, $t(38) = 1.46$, $p = .153$, 95% CI [-0.17, 1.75]).

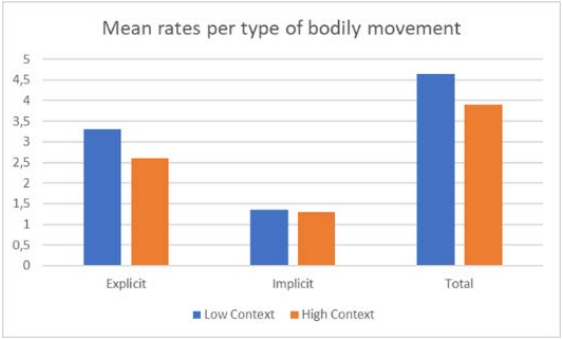

Figure 3: Mean rates per type of culture (HC, LC) for movement categories: explicit, implicit, and total.

Differences between LC and HC cultures per movement

Since none of the differences in total scores appeared to be significant, independent-samples t-tests were also conducted for each movement separately. These tests showed significant results for three categories. First, lifting medal scores were not homogeneous between the groups (F = 10.69, p = .002) and were significantly higher for the HC cultures (M = 0.80, SD = 0.41) than for the LC cultures (M = 0.50, SD = 0.51) ($Mdif$ = -.30, t(36,25) = -2.04, p = .048). Second, folded hands on the back scores were also not homogeneous between the groups (F = 192.11, p < .001) and were significantly higher for the LC cultures (M = 0.35, SD = 0.49) than for the HC cultures (M = 0.00, SD = 0.00) ($Mdif$ = .35, t(19) = 3.20, p = .005). Third, creative movement scores were not homogeneous between LC and HC cultures (F = 27.85, p < .001) and were significantly higher for the LC cultures (M = 0.30, SD = 0.47) than for the HC cultures (M = 0.05, SD = 0.22) ($Mdif$ = .25, t(27,18) = 2.15, p = .041). In Figure 4, the means and standard deviations for these three movements are depicted.

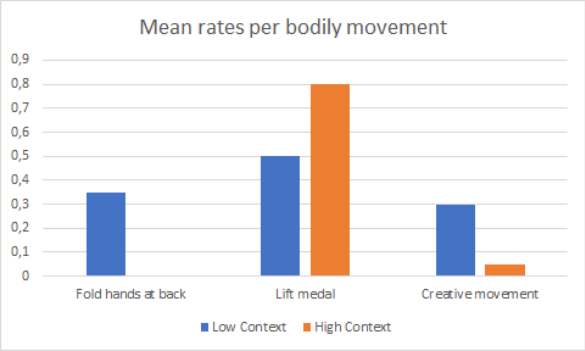

Figure 4: Mean rates per culture (HC, LC) for type of movement: lifting medal, folded hands on the back, and creative movement.

Although there were no significant differences for the remaining movements, the direction of the patterns could be checked. For 9 out of the 19 remaining movements (jump; kiss medal; wave with two hands above shoulders; clap with two hands above shoulders; thumb up with one hand above shoulders; thumbs up with two hands above shoulders; touch chest with two hands; wave with one hand below shoulders; clap with two hands below shoulders) scores were higher for LC cultures than for HC cultures. For 2 movements (fist with two hands above shoulders; bow) scores were higher for HC cultures than for LC cultures, and for 8 movements (wave with one hand above shoulders; fist with one hand above shoulders; touch medal; touch chest with one hand; wave with two hands below shoulders; thumb up with one hand below shoulders; thumbs up with two hands below shoulders; fold hands in front) scores were equally high for both groups.

Conclusion & Discussion

The aim of this study was to investigate athletes' nonverbal emotional expressions when winning a gold medal at the Olympic Games. Specifically, whether there is a difference between athletes from high-context and low-context culture in bodily expressions of their emotions in winning an Olympic gold medal. The results of this study showed that none of the three hypotheses were significant. Thus, there is no difference in bodily expressions of athletes from HC and LC culture. However, when each movement was tested individually three movements showed a significant effect. Although these were the only movements that were significant, approximately half of the other movements displayed a pattern in the expected direction.

The first hypothesis stated that LC athletes show more body movements, including both explicit and implicit movements, than HC athletes. Our findings reveal that low context athletes do not show more body movements than high context athletes. A reason for this might be that LC athletes display more expressive body movements and HC countries show as much body movements, but in a less expressive form. According to Hwang and Matsumoto (2014) body movements are an important part of communication in LC cultures, although less arm movements or arm gestures are used (Varner, 2005), which might explain why the movements of HC athletes were not as expressive as of LC athletes.

Further, it was expected that HC athletes show more implicit movements than LC athletes. However, this study has been unable to demonstrate that HC athletes express their emotions with more implicit movements than LC athletes. A possible explanation for this might be that the athletes believed that they did not share a common body of knowledge with the other athletes and/or audience, so they did not use their implicit body movements as much as they normally would. This possible explanation is based on Hall's (1990) theory that LC cultures consider that they have a shared body of knowledge while communicating, which is why their communication is more implicit. Another possible explanation for this might be that France was chosen to represent the LC culture, but France is located slightly more to the center of Meyer's (2014) culture map (See Figure 2.). Therefore, there is a possibility that French athletes did not display the same amount of implicit body movements as the other LC countries.

The last hypothesis stated that LC athletes show more explicit movements than HC athletes. Yet, contrary to expectations, this study did not find a significant difference in explicit movements between LC athletes and HC athletes. This might have to do with the inference that was made based on the following theories, which do not appear to be applicable for this study. Fernández et al. (2000) stated that cultures that have a low power distance and a high cultural femininity are more acceptable of expressions of emotions; therefore, place more importance and display more expressive emotions, which Brett (2000) acknowledges as LC cultures. Moreover, according to Sachs (1937) body

movements are one of the most important instruments for expressing emotions.

An interesting finding was that, when an additional independent t-test was conducted for each movement separately, three bodily movements showed significance. The reason for their significant differences might be closely related to the cultural differences between high- and low-context countries. Both folding hands on the back and creative movements were considered as explicit because they are relatively big gestures and include strong emotions like happiness and proud. Following our expectations, athletes from LC culture received a much higher score on these movements than HC athletes. This is probably because LC cultures value the freedom of passionate emotions and therefore are more expressive in showing their emotions. Athletes from HC cultures received a higher score on lifting the medal, which was an unexpected outcome. This movement might be seen as a way of showing patriotism, because strong patriotic sentiments are often considered as the attributes of collectivism (Realo, 2003), which HC cultures tend to be (Würtz, 2005).

Since this study was rather small, there are some limitations. Firstly, we merely selected countries from two sides of Meyer's (2014) culturemap, for which we could find adequate clips to analyze. Countries that appeared to have not enough Olympic winners (less than 5) or not that many videos available were left out (such as North Korea for HC and Australia for LC). In addition, we only analyzed 24 movements in this study. Other body gestures could be observed in the videos as well, such as athletes shaking hands with the silver and bronze medalist which were mostly seen in athletes from HC cultures. These movements were not included in the areas of analysis but are worth researching in future studies. In future research, it would also be interesting to look at bodily movements over time.

As a product of globalization, bodily expressions could have changed across decades, to the more consistent movements for both cultures that were found in this study. For a better understanding of bodily expressions, and especially the understanding of expressing emotions during winning, a large corpus of videos would be needed.

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Appendix 1: Bodily Movement Coding Guide

Colours are used to represent the type of movement: blue is used for explicit movements, grey is used for implicit movements. If necessary, screenshots of videos are given to illustrate the movement.

Bodily movement	Explanation	Example (if necessary)
Jump	Spring clear of the ground	
Lift medal	Raise the medal in the air	 Suzanne Schulting, 2018
Kiss medal	Touch medal with lips	 Sanne Wevers, 2016
Wave with one hand (above shoulders)	Move one hand in alternately opposite direction, movement is positioned above shoulders	
Wave with both hands (above shoulders)	Move both hands in alternately opposite direction, movement is positioned above shoulders	 Esmee Visser, 2018
Fist with one hand (above shoulders)	Raise one arm and close the hand tightly, movement is positioned above shoulders	

Fist with both hands (above shoulders)	Raise both arms and close both hands tightly, movement is positioned above shoulders	 Sebastian Brendel, 2016
Clap with both hands (above shoulders)	Raise both arms and strike both hands against each other, movement is positioned above shoulders	 Henri Junghänel, 2016
Thumb up with one hand (above shoulders)	Raise arm and put up one thumb, movement is positioned above shoulders	
Thumbs up with both hands (above shoulders)	Raise both arms and put up both thumbs, movement is positioned above shoulders	 Christian Taylor, 2016
Fold hands on back	Bring both hands together at the back	
Creative movement	Large, theatrical movements, such as blowing kisses to the public or gesturing a lightning bolt with both hands	 Christoph Harting, 2016

Touch medal	Bring a hand or finger in short contact with the medal to feel it (not grabbing)
Touch chest with one hand	Bring a hand in short contact with the chest
Touch chest with both hands	Bring both hands in short contact with the chest
Wave with one hand (below shoulders)	Move one hand in alternately opposite direction, movement is positioned below shoulders
Wave with both hands (below shoulders)	Move both hands in alternately opposite direction, movement is positioned below shoulders
Clap with both hands (below shoulders)	Strike both hands against each other, movement is positioned below shoulders
Thumb up with one hand (below shoulders)	Put up one thumb, movement is positioned below shoulders
Thumbs up with both hands (below shoulders)	Put up both thumbs, movement is positioned below shoulders
Fold hands in front	Bring both hands together in front of the body
Bow	Bend the body downwards