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Montesquieu hypothesis and football: players from hot countries are more expressive after scoring a goal

Abstract: *Analysis of sportsmen behavior enabled the authors to conduct simultaneous analysis of emotional expression of people from many distinct countries and cultures. In the study, participants from Nigeria and Poland watched all the goals scored in group matches of the 1998, 2002 and 2006 World Cups and assessed the emotions players expressed after scoring each goal on three scales (happiness, anger, and excitement). Based on the assessment of the participants, emotional expression of football players from 51 countries was analyzed. Basing on "Montesquieu hypothesis", it was shown that players born in warmer climates (controlling for HDI of their country) express more excitement and happiness after scoring a goal. Further cross-cultural differences were also found. The results are discussed in context of previous cross-cultural studies regarding emotional expression.*

Key words: *emotional expression, football, Montesquieu hypothesis, temperature, cross-cultural differences*

Introduction

Ever since Darwin's times (1872) it was claimed that people's emotional expression is identical all over the World, independently from their race or culture. However, that thesis had not been verified experimentally until Ekman and his collaborators (Ekman & Friesen, 1971; Ekman, Sorenson, & Friensen, 1969) and Izard (1971) showed that emotional expression indicating 'basic' emotions is universal. Their experiments started a long debate on whether emotions are universal or remain under the influence of culture. These matters have been extensively analyzed (Mesquita & Frijda, 1992; Russell, 1994). To explain the discrepancies, Ekman and Friesen (1969) proposed a hypothesis of cultural display rules i.e., despite the universality of emotions, cultures create the desired and the undesired norms of emotional expression and behavior under the influence of emotions. Cultural display rules are acquired during socialization and are used automatically after some time. This hypothesis has been confirmed in many studies (Matsumoto, 1993; Scollon, Diener, & Oishi, 2004; Stephan, et al., 1996).

People can present different levels of emotions not only because of cultural display rules, but also because of different intensity of actual emotions. Although generally people are thought to experience similar levels of emotions (Mauro, Sato, & Tucker, 1992) there exist some cross-cultural differences with regard to this aspect. For example Scherer's et al (1988) self-report questionnaire showed slight cross-cultural differences in frequency, intensity and length of certain emotional experiences.

Results of many studies showed also that recognition of facial emotional expression can be universal. Classic research (Ekman & Friesen, 1971; Ekman, et al., 1969; Izard, 1971) showed that participants from various and distinct cultures agreed upon which emotions were demonstrated by the models' faces. These results were confirmed in numerous studies (e.g. Boucher & Carlson,

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1980). Similar agreement was found when assessments of relative strength of expression were analyzed (Ekman, et al., 1987). However, in the latter case, slight cross-cultural differences were also observed. For example, Asian participants assessed intensity of happiness, astonishment and fear as lower than people from other continents. These results were explained with culturally different decoding rules acquired in socialization (Ekman, et al., 1987). Additionally, there exist some differences in recognition of emotions. For example, Matsumoto (1989) found that individualism was related to the mean assessments of anger and fear, which might be an explanation as to why the Americans are better in recognition of negative emotions than the Japanese (Matsumoto, 1992).

Research on cross-cultural differences in emotional expression and its detection has broad theoretical background. However, some issues still need further investigation. First of all, in some regions (even continents) the emotional expression has been poorly investigated, or not investigated at all. Much of the empirical research was focused on differences between East-West norms, neglecting those in other cultures and societies. For example, it is hard to find any studies concerning Latin America, and almost impossible to encounter research analyzing emotional expression among the Africans (we found only two: Eshun, 1999; Kim-Prieto & Eid, 2004). What is more, the results of the abovementioned studies are inconsistent.

The second problem is that majority of the studies (e.g., Basabe, Paez, Palencia, Gonzalez, Rime, & Diener, 2002; Pennebaker, Rime, & Blankenship, 1996) were based on self-report questionnaires (e.g., ‘‘During the past month, how often did you feel each emotion?”, etc.). In fact, there lacks experimental research where emotional expression would be assessed in real situations. Using self-reports might have significantly influenced the results. For example, “happy and optimistic” nations might notice more positive emotions in themselves. What is more, self-assessments might be influenced by stereotypes some nations have about themselves (i.e., hot-blooded Spanish and cold English) (Linssen & Hagendoorn, 1994). Such stereotypes do not necessarily have to reflect real emotionality of the people, similarly as stereotype about national character does not reflect mean personality trait levels in 49 cultures (Terracciano, et al., 2005).

Finally, relatively few mechanisms explaining the global differences in emotional expression were proposed. One of the most interesting hypotheses of this type is the so-called “Montesquieu hypothesis” (1989/1748). In the eighteenth century, Montesquieu (1989/1748) proposed a reverse climate theory for emotional experience, hypothesizing that warm temperatures relax the skin and stimulate the nervous system: “warm or hot weather was said to make individuals relatively lazy, pleasure seeking, and impulsive” (p. 372). Such thesis seems to be confirmed by works of cultural anthropologists (e.g., Gilmore, 1990; Llobera, 1987) and finds some support in psychological data. Many studies have shown that a warm climate promotes aggression (Anderson, 1989; Anderson & Anderson 1996; Rotter, 1986). What is more, Pennebaker, et al. (1996) found, at a within-country level (United States), that people living in the South reported being more emotionally expressive than those living in more Northern regions (the “Old World’’ and in the Northern Hemisphere). Pennebaker, et al. (1996) suggested that higher temperature in the South can increase the frequency of interactions and thereby it is more likely that people are involved in emotional situations, reinforcing emotional intensity and frequency.

Another confirmation of relationship between climate and expressiveness might be investigating the stereotypes of certain nations. It was found that variables related to climate were associated with stereotypes about emotionality of seven European nationalities (Linssen & Hagendoorn 1994) and personality of 49 nationalities (McCrae, Terracciano, Realo, & Allik, 2007). McCrae, et al. (2007) showed that high temperature, even controlling for GDP (Gross Domestic Product), was associated with attributions of high extraversion (especially warmth, gregariousness, excitement seeking, positive emotions) and high openness (feeling, actions) to the typical culture member.

On the other hand, Basabe, et al. (2002) compared the influence of various, socio-cultural variables on subjective experience of emotions (Individualism; Power-distance; Masculinity; Uncertainty avoidance; Human development index; Latitude; Life expectancy at birth, Human rights.) in their 4-study metaanalysis. The authors stated that the climatic effects „are weakened when social and cultural factors are taken into account”.

It needs to be highlighted that all the aforementioned studies investigated self-reported emotional expressiveness. As we wrote, this method has some serious limitations. In our opinion emotional expression should be analyzed also in “real life”. One of the best “natural” occasions to analyze emotional expression of people from many cultures might be sports events. Sport is one of the social situations in which undisturbed emotional expression can be observed (Lazarus, 2000; Tracy & Matsumoto, 2008). Analysis of sportsmen behavior could enable to conduct simultaneous analysis of emotional expression of people from many distinct countries and cultures. We present such study in this article.

The aim of our research was to confront the previous results regarding emotional expression with the results of analysis of sportsmen expression and to obtain data on cross-cultural differences in emotional expression in regions which have received little or no research attention. We also tried to verify Montesquieu hypothesis about relationship between temperature and emotional expression.

Method

Participants

Participants of this study were 40 students from Poland and Nigeria. Our research was first conducted in Wroclaw, Poland, where raters were 20 students of both sexes (aged from 19 to 28) with mean age of 24.1 and then in Nsukka, Nigeria, where raters were 20 students of both

sexes (aged from 18 to 32) with mean age of 24.65. All the raters volunteered to participate in the study. The research was conducted in two countries of different cultures because of cross-cultural differences in emotion recognition (e.g. Ekman, et al., 1987) and in stereotypes (e.g. Linssen & Hagendoorn 1994). Such procedure enables to minimize these problems.

Procedure

Our participants watched a DVD with all goals scored in group matches of the 1998, 2002 and 2006 World Cups and were requested to assess the emotions players expressed after scoring each goal on three scales (happiness, anger, and excitement) from 1 (definitely not showing) to 5 (definitely showing). The questionnaire was constructed on the basis of Sport Emotion Questionnaire of Jones, Lane, Bray, Uphill, and Catlin (2005). We simplified the original questionnaire and presented only three scales. The raters were instructed that in the questionnaire the assessed emotions were understood as (1) happiness as pleased + joyful + happy + cheerful, (2) anger as irritated + furious + annoyed + angry, (3) excitement as exhilarated + excited + enthusiastic + energetic (in the original work these elements were connected in factor analysis). Assessing anger after scoring a goal might seem unusual, but it was shown that sportsmen might express this emotion in such a moment (Sorokowski, 2007). This is consistent with the results showing that pride may have evolved to motivate the attainment of dominance, a high status that is achieved through force, threat, and intimidation (Henrich & Gil-White, 2001).

In Poland the questionnaire was in Polish and in Nigeria in English. We used back-translation to convert the questionnaire from English to Polish. Because the study was also conducted in Polish language, we present the Polish version of the employed instruction (1) radość, czyli zadowolony + wesoły + radosny + szczęśliwy; (2) złość, czyli zirytowany + wściekły + rozdrażniony + zły; (3) ekscytacja, czyli rozradowany + podekscytowany + entuzjastyczny + pełen energii.

The participants assessed each goal separately. Only the goals in the group matches (not the play-offs) were shown, for emotional reactions can differ on different stages of championships and – what is more – teams from some parts of the World statistically have higher chances to promote beyond the group stages (i.e. until now, World Cups were won only by European and South American teams). We excluded own goals from the analyses.

All the players who scored a goal in the group matches during the 1998, 2002 and 2006 World Cups were included to the test of Montesquieu hypothesis (N=250, players of 51 countries). If someone scored more than one goal, assessments of his emotional expression were averaged. We determined the place of birth of each player (data from http://www.en.wikipedia.org). The average annual 24-hour mean temperature of his city of birth or other, large city in the region (data available for 16,439 cities worldwide; http://www.weatherbase.com) was included to the analysis. We did not use the average temperature for the country (as in previous analyses of this type), for within-country temperature/climate variations can be very high.

With regard to the influence of socioeconomic development on the subjective experience of emotion, Wallbott and Scherer (1988) found that lower income was related to higher intensity of emotional experience. Therefore, we controlled the wealth of countries where the players were born. As an index of quality of life and wealth, the 2010 Human Development Index (HDI) was used. It is a most commonly used, yearly published, composite statistic ranking the countries by level of "human development". The statistic is composed from data on life expectancy, education and GDP per capita. Because HDI considers a lot of characteristics that measure a person's living standard, it is better than "GDP per capita" which can be biased by a small group of very rich people that makes the average go up superficially. However, HDI is available only for whole countries, not the separate cities or regions. Similarly as in case of temperature, it is possible that there exist high within-country variations of wealth and quality of life.

Results

Test of Montesquieu Hypothesis

To assess the effects of temperature and HDI on emotional expression, multiple regression was used. The model was computed separately for three scale (happiness, anger, excitement) scored/evaluated by two groups Nigerians and Polish raters.

When all the variables were entered simultaneously, both "temperature" (when rated by Nigerians: $\beta = .34$; $p < .001$; when rated by Poles: $\beta = .53$; $p < .00001$) and "HDI" (when rated by Nigerians: $\beta = .33$; $p < .001$; when rated by Poles: $\beta = .26$; $p < .01$) were significant predictors of happiness of player after scoring a goal.

Both for Nigerians and Poles, standard regression models were statistically significant (for Nigerians: adjusted $R^2 = .05$, $F(2,247) = 6.41$, $p < .0001$; for Poles: adjusted $R^2 = .31$, $F(2,247) = 58.33$, $p < .0001$).

In case of players' anger, both "temperature" (when rated by Nigerians: $\beta = -.13$; $p = .20$; when rated by Poles: $\beta = -.05$; $p = .68$) and "HDI" (when rated by Nigerians: $\beta = -.13$; $p = .18$; when rated by Poles: $\beta = -.10$; $p = .25$) were nonsignificant predictors of this emotion.

Both for Nigerians and Poles, standard regression models were not statistically significant (for Nigerians: adjusted $R^2 = .02$, $F(2,247) = 2.96$, $p = .06$; for Poles: adjusted $R^2 = .02$, $F(2,247) = 2.26$, $p = .11$).

"Temperature" (when rated by Nigerians: $\beta = .30$; $p = .003$; when rated by Poles: $\beta = .37$; $p < .001$) was a significant predictor of excitement of player after scoring a goal, whereas "HDI" (when rated by Nigerians: $\beta = .14$; $p = .15$; when rated by Poles: $\beta = .17$; $p = .06$) was a nonsignificant predictor of excitement of player after scoring a goal.

Both for Nigerians and Poles, standard regression models were statistically significant (for Nigerians: adjusted $R^2 = .03$, $F(2,247) = 5.43$, $p < .01$; for Poles: adjusted $R^2 = .05$, $F(2,247) = 7.49$, $p < .001$).

Further analyses

First, the countries were grouped into 14 regions (as demonstrated in Table 1. *pages 425-426*). The division was based on the ones used in World Health Organization (WHO) reports. To test the differences between expression and decoding of emotion in various regions, a GLM model with repeated measures (ANOVA) was used. We used a 2 x (3 x 14) ANOVA [rater's country * (kind of emotion * region)]. All the main and interactive effects proved to be significant (Table 2a. *page 427*). As there were many simple effects obtained, we describe only the most interesting and important ones.

In comparison to Polish (M = 2.92), Nigerian raters (M = 2.58) assessed the intensity of emotions (all the emotions combined) as significantly lower (p = .001), but this effect was rather small (η^2_p = .24). However these differences originated mainly in variance of assessments of anger of the football players from various regions, not the other emotions (Figure 2. *page 428*). In turn, assessments of Nigerian and Polish people regarding the expression of excitement were very similar.

The assessed differences between regions in exhibiting the tested emotions were very high (p < . 0001; η^2_p = .79). The most intensive emotional expression (all emotions combined) was assessed among African (M = 3.27), Australian (M = 3.13) and Eastern Asian players (M = 3.01). In these regions, the strength of emotional expression was assessed as significantly higher than in all the other regions (all ps < .007). However, the participants assessed that the African and Australian players demonstrated high intensity of happiness (Africa - M = 4.09, Australia - M = 3.85) and anger (Africa - M = 1.71, Australia - M = 1.69), whereas players from Eastern Asia demonstrated only high happiness (M = 3.84) – their level of anger (M = 1.27) was very low in comparison to all the other regions (all ps < .05). Another region where high happiness was observed was South America (M = 3.72); at the same time the anger level there (M = 1.24) was the lowest from all the regions. Expression of players from North America was assessed as contrary, with relatively high anger (M = 1.51) and the lowest happiness level (M = 3.06), (Figure 1. *page 427*, exact results for all the regions – Table 1.).

For better visibility of the results, analyzed countries were divided into continents. Because of relatively low number of goals from Australia (5) and North America (6) these continents were excluded from the analysis. Central America was included to South America (Latin America). We used a 2 x (3 x 4) ANOVA [raters' country * (kind of emotion * continent)]. All the main and interaction effects proved to be significant (Table 2b. *page 427*). As there were many simple effects obtained, we describe only the most important of them.

Generally, the assessed differences between various continents in demonstration of the tested emotions were high (p < . 0001; η^2_p = .44), but the origin of participants weakly influenced these results (despite p < .05, the effect size was small η^2_p = .13). The analysis of the most complex effect (continent * emotions * raters' country) showed that Nigerian people (M = 1.07 – mean for all the continents) assessed anger in emotional expression of players from different regions as significantly lower than Polish people (M = 1.66 – mean for all the continents) (Figure 3. *page 428*). In turn, differences in ratings of emotional expression (especially happiness) of players from various continents were higher for the Polish participants. They assessed that the highest intensity of happiness was demonstrated by Latino-American players (M = 4.03), followed by Asian players (M = 3.88), African players (M = 3.68) and European players (M = 3.47) (the differences were statistically significant for each inter-continent comparison, all ps < .01). Although Nigerian participants' assessments were quite the same (Latin America – M = 3.44, Asia – M = 3.36, Africa – M = 3.34, Europe – M = 3.23), differences between their ratings were only at the trend level.

Polish and Nigerian participants assessed excitement of the players from various continents similarly. Both groups assessed that the highest level of excitement was demonstrated by the African players (Polish M = 3.6, Nigerian M = 3.53). The observed difference in excitement between African and other players was significant for each continent in assessment of both Polish (all ps < .01) and Nigerian participants (all ps < .01).

Also the anger assessments proved to be relatively similar in Poland and Nigeria. However, in opinion of the Nigerian participants, African players demonstrated higher anger level only in comparison to Latino-American players (p = .025). In turn, Polish participants assessed anger of African players as higher than in all the other continents (all ps < .01), and anger of Latino-American players as lower than in all the other continents (all ps < .01).

Discussion

Similarly to many previous reports (e.g., Matsumoto, 1993; Scollon, et al., 2004; Stephan, et al., 1996) our analysis of emotional expression (happiness, excitement and anger) of football players from 51 countries confirmed the existence of cross-cultural differences in this matter. In the context of the observed effect sizes, it might be stated that these differences were very strong.

First of all, our results seem to support the "Montesquieu hypothesis" about possible connection between climate and emotional expression. We found that football players from different climates expressed their emotions after scoring a goal differently. The players born in hotter climate expressed more excitement, and this effect was independent of HDI influence. What is interesting, our results are in disagreement with few studies regarding the influence of warm climate on aggression (Anderson, 1989, Anderson & Anderson 1996, Rotter, 1986). In our study neither temperature nor HDI influenced footballers' anger. It is probably a consequence of specific conditions (scoring a goal in championships) which we analyzed.

As there exists only a few studies investigating the relationship between climate and emotional expression, the presented Montesquieu hypothesis needs further verification. We suggest that additional experimental studies (e.g., during weddings, funerals, celebrations, etc.) would

Table 1 (*part 1*[*]). Strength of emotional expression (Happiness, Anger, Excitement) in all the countries.

COUNTRY/***REGION***/CONTINENT (and number of goals)	Happiness	Anger	Excitement
EUROPE			
Eastern Europe (17)			
Ukraine (5)	3.74 ± .74	1.35 ± .51	3.59 ± .66
Russia (4)	3.07 ± .61	1.37 ± .38	2.76 ± .72
Poland (5)	3.32 ± .67	1.42 ± .61	2.82 ±.8
Czech Republic (3)	3.95 ± .9	1.78 ± 1.18	3.98 ± .81
Northern Europe (19)			
Sweden (7)	3.93 ± .56	1.44 ± .57	3.85 ± .71
Norway (4)	2.99 ± .68	1.16 ± .34	2.71 ± .67
Denmark (8)	3.12 ± .49	1.19 ± .26	2.79 ± .56
British Isles (18)			
Scotland (2)	3.25 ± .96	1.12 ± .44	3.23 ± .96
Ireland (5)	3.82 ± .66	1.36 ± .52	3.89 ± .44
England (11)	3.65 ± .67	1.41 ± .45	3.36 ± .69
Central Europe (62)			
Switzerland (4)	3.7 ± .97	1.66 ± .98	3.76 ± .82
Netherlands (10)	3.6 ± .60	1.32 ± .44	3.24 ± .61
Belgium (10)	3.26 ± .64	1.34 ± .46	3.17 ± .52
France (11)	3.13 ± .72	1.12 ± .14	3.14 ± .58
Germany (24)	3.19 ± .58	1.43 ± .48	3.05 ± .62
Austria (3)	2.66 ± .71	1.25 ± .4	2.38 ± 1.0
Balkans (15)			
Serbia (formerly Yugoslavia) (6)	3.54 ± .76	1.39 ± .5	3.4 ± .68
Bulgaria (1)	2.52 ± 1.19	1.3 ± .75	2.12 ± 1.18
Croatia (2)	3.24 ± .62	1.38 ± .43	3.0 ± .66
Slovenia (2)	3.25 ± 1.02	1.87 ± 1.15	3.86 ± .69
Romania (4)	3.09 ± .88	1.16 ± .45	2.99 ± .69
Southern Europe (52)			
Italy (17)	3.34 ± .5	1.28 ± .31	3.27 ± .52
Portugal (10)	3.74 ± .61	1.33 ± .39	3.812 ± .49
Spain (25)	3.33± .45	1.3 ± .34	3.11 ± .51

[*] *Part 2 on page 426*

Table 1 (*part 2*). Strength of emotional expression (Happiness, Anger, Excitement) in all the countries.

COUNTRY/***REGION***/CONTINENT (and number of goals)	Happiness	Anger	Excitement
ASIA			
Middle East (11)			
Turkey (5)	3.49 ± .64	1.46 ± .64	3.56 ± .6
Iran (3)	3.57 ± .86	1.61 ± .74	1.61 ± .74
Saudi Arabia (3)	3.32 ± .6	1.2 ± .26	3.08 ± .67
Eastern Asia (16)			
South Korea (9)	3.88 ± .55	1.22 ± .27	4.07 ± .56
Japan (7)	3.82 ± .57	1.33 ± .49	3.79 ± .58
NORTHERN AMERICA			
United States (6)	3.08 ± .57	1.51 ± .56	2.83 ± .61
LATIN AMERICA AND THE CARIBBEAN			
Southern America (65)			
Brazil (23)	3.66 ± .49	1.19 ± .28	3.31 ± .54
Argentina (17)	3.82 ± .57	1.35 ± .49	3.58 ± .56
Paraguay (9)	3.67 ± .73	1.26 ± .37	3.47 ± .66
Columbia (1)	4.15 ± 1.17	1.1 ± .44	3.65 ± 1.14
Chile (4)	3.59 ± .72	1.06 ± .14	3.04 ± .83
Uruguay (4)	3.56 ± .78	1.41 ± .68	3.74 ± .59
Ecuador (7)	3.68 ± .73	1.36 ± .51	3.09 ± .56
Central America & Caribbean (26)			
Costa Rica (8)	3.26 ± .67	1.5 ± .54	3.17 ± .48
Mexico (15)	3.61 ± .73	1.44 ± .53	3.88 ± .39
Jamaica (3)	2.75 ± .88	1.97 ± .59	1.85 ± .71
AFRICA			
South-Central Africa (34)			
Senegal (5)	3.36 ± .72	1.23 ± .4	3.09 ± .59
South Africa (8)	2.62 ± .54	1.57 ± .3	2.69 ± .6
Nigeria (6)	3.61 ± .91	1.07 ± .25	3.6 ± .61
Ivory Coast (5)	3.33 ± .82	1.94 ± 1.03	3.55 ± .68
Ghana (4)	3.77 ± .96	1.67 ± .93	3.96 ± .8
Togo (1)	4.27 ± .99	1.77 ± 1.07	4.32 ± .94
Cameron (4)	3.84 ± .87	1.08 ± .24	4.11 ± .57
Angola (1)	3.27 ± 1.09	1.75 ± 1.06	3.32 ± 1.05
Northern Africa (10)			
Tunisia (5)	3.64 ± .66	1.6 ± .59	3.73 ± .59
Morocco (5)	3.33 ± .91	1.14 ± .3	3.27 ± .72
AUSTRALIA & OCEANIA			
Australia (5)	3.85 ± .98	1.68 ± 1.03	3.84 ± .77

Table 2a. All main and interaction effects obtained in the study.

	df	*F*	*p*	η^2_p
Raters' country	1	11.7	.002	.24
Region	13	52.7	.0001	.59
Region * Raters' country	13	2.8	.001	.07
Emotion	2	470.5	.0001	.92
Emotion * Raters' country	2	6.4	.003	.18
Region * Emotion	26	21.1	.0001	.79
Region * Emotion * Raters' country	26	3.3	.0001	.06

Table 2b. All main and interaction effects obtained in the study.

Raters' country	1	16,8	.000	.31
Continent	3	36,5	.000	.49
Continent * Raters' country	3	6,0	.001	.14
Emotion	2	583,9	.000	.93
Emotion * Raters' country	2	5,3	.007	.12
Continent * Emotion	6	29,9	.000	.44
Continent * Emotion * Raters' country	6	5,6	.000	.13

Figure 1. Differences in emotional expression in particular regions.

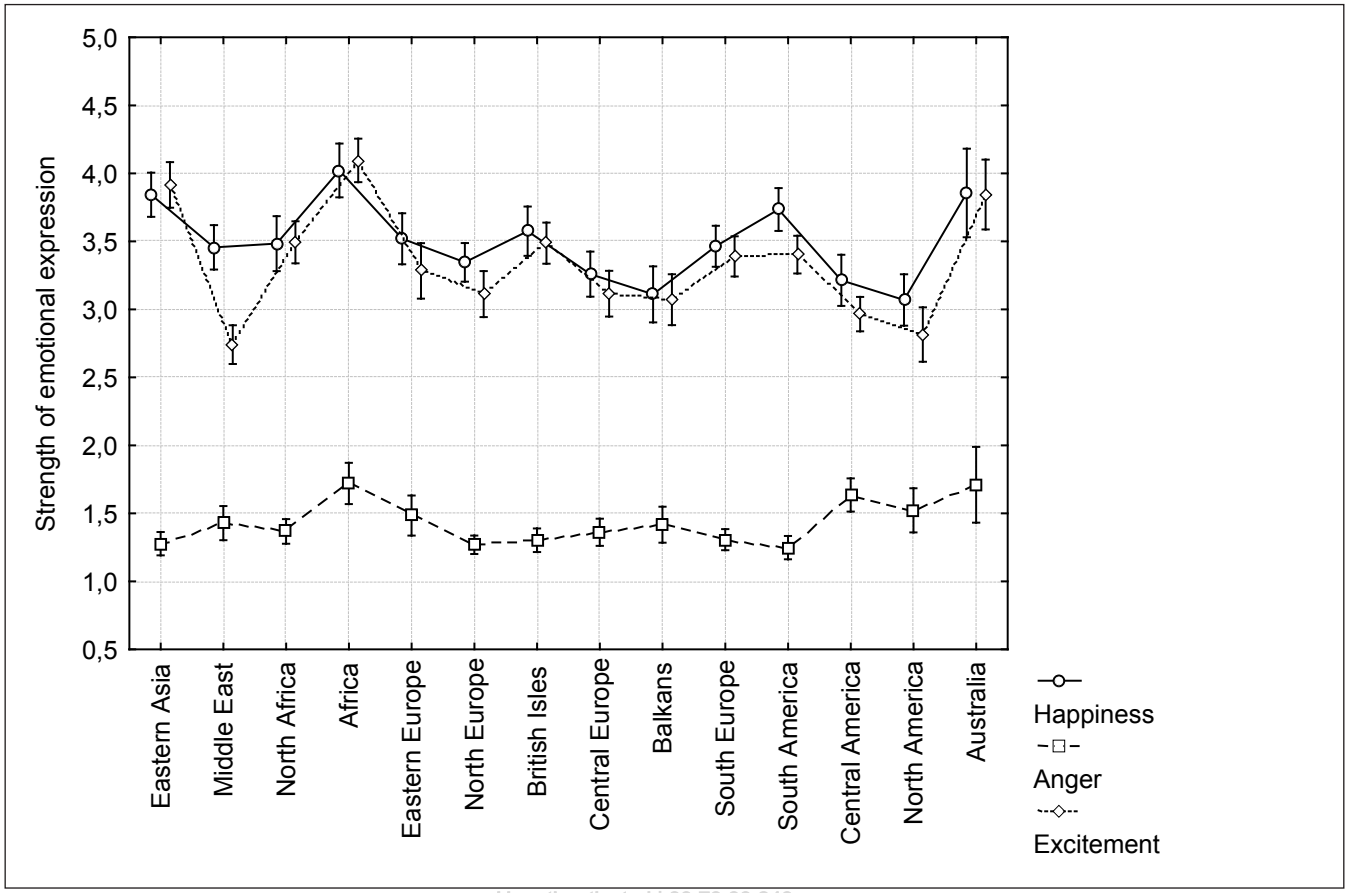


Figure 2. Differences in Polish and Nigerian ratings of strength of emotional expression in all regions.

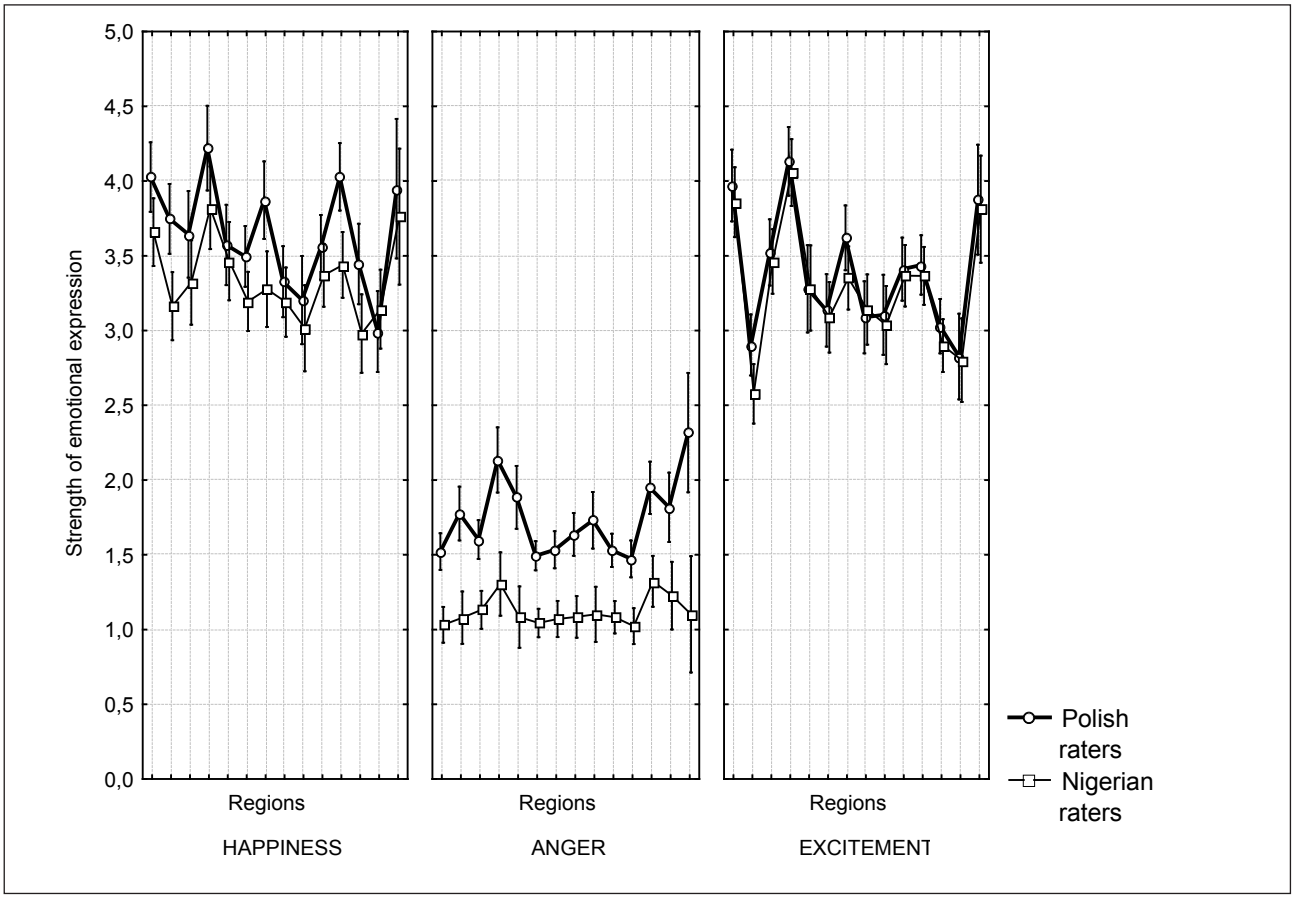
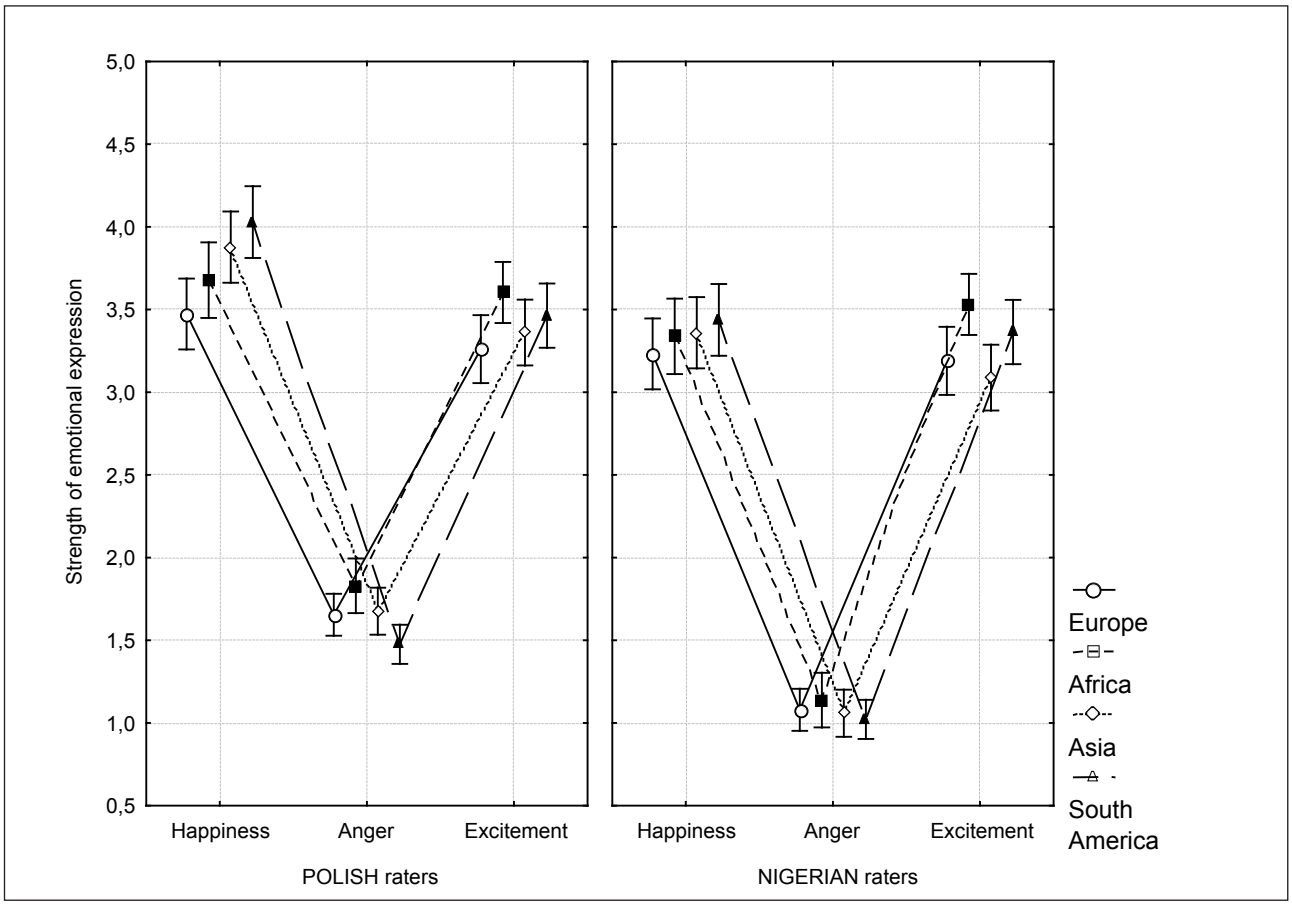


Figure 3. Differences in emotional expression in various continents.



be an interesting alternative for questionnaires in analyses regarding emotional expression.

More detailed analysis of the results showed that general excitement was the highest in Africa, South America, Australia and Eastern Asia (Japan, South Korea). In turn, level of excitement expression was the lowest in Middle East. These results are very interesting because in many Eastern Asian countries (especially in the Far East), Confucian Ideology and culture dominates, and low level of emotional arousal and moderation in expression are favored (e.g., Klineberg, 1938; Potter, 1988). It was proven by the studies on emotional expression, particularly in case of positive emotions (Diener, et al., 1995; Tsai & Levenson, 1997). Hence, football players of Asian origin should, contrary to the players from the other parts of the world, exhibit a greater restraint in showing emotions after scoring a goal. Our study, however, did not confirm such hypothesis.

As for happiness, relatively high level of this emotion was exhibited by the players from South America, Africa and Australia. The lowest level was observed in the European and USA players (however results regarding Australia and the USA need to be interpreted with caution, since they were calculated on the basis of 5 and 6 goals, respectively). Generally, these results are consistent with previous studies. It was suggested that in a Latino-American culture free and unhampered expression of emotions is valued (Garza, 1978; Soto, et al., 2005; Triandis, et al., 1984). However, a few past studies have shown that not only Latino, but also European Americans tend to emphasize good feelings, and individuals in these cultures are likely to engage in self-enhancement, including the enhancement of positive feelings (Diener, et al., 2000; Heine, et al., 1999; Triandis, et al., 1984). In our study, in turn, expression of happiness of Europeans from majority of the regions was assessed as low, however there existed some differences between regions. The exception were the people from British Isles and not, as it might have been predicted, the stereotypically "hot" and expressive inhabitants of Southern Europe or Balkans. We showed also that intensive expression of happiness was characteristic for the players from Africa.

The level of anger expression was the highest for the African players. This result is interesting, but not really surprising – it is consistent for example, with findings of Matsumoto (1993), who showed that Afro-Americans exhibit higher levels of anger than for example Americans deriving from Europe, Asia or Latin America. At the same time, we found that high level of anger was also expressed by players from Central America, Eastern Europe, the USA and Australia, what – at least in case of Central America – is inconsistent with some previous research, showing that in this region acts of anger are perceived as unacceptable. Previous studies showed that inhabitants of this part of world rather suppress expression of negative emotions (Deffenbacher & Swaim, 1999; Stephan, et al., 1996).

Very interesting results were obtained for Eastern Asia. We found that in players from that region high happiness was observed, and that their level of anger was assessed as very low in comparison to all the other regions. This is contrary to previous reports, demonstrating that individuals from Asian cultures tend to report less pleasant emotions, and greater negative emotions compared to North Americans (e.g., Diener, Diener, & Diener, 1995; Kitayama, Markus, & Kurokama, 2000).

Comparison of assessments of participants from Nigeria and Poland confirmed that even people from very distinct cultures, despite the racial and physiognomic differences, or rules determining emotions' perception, similarly assess emotional expression and its intensity. Despite many statistically significant differences between the ratings of Poles and Nigerians, the observed effect sizes were rather small (or at least much smaller than the differences in assessed emotional expression in various regions). Different outcome would have suggested that our results can be influenced by cultural rules and stereotypes regarding emotional expression (Linssen & Hagendoorn, 1994). An interesting result was that assessments of excitement expression was (almost) identical in Poland and Nigeria (Fig. 2), whereas in case of anger assessments the differences were the highest. Generally, in both groups the results' pattern was very similar (apart from opinion about Australians' expression), but Polish participants perceived the anger level as much higher. We presume that in Nigeria the anger (aggression, etc.) can be much more frequent than in Poland. It might have caused that participants from Nigeria, accustomed to high level of anger, were somehow less sensitive to this emotion and assessed its expression as lower. However, this is only a post-hoc explanation and this result could be probably interpreted differently.

Summarizing, analyzing the behavior of football players from 51 countries (from all the continents except Antarctica) we showed that emotional expression is related to the temperature in the country. The players born in warmer countries (controlling for their HDI) expressed more excitement and happiness after scoring a goal. What is more, our study investigated the emotional expression in the regions where no research regarding this issue has been conducted. For example, we showed that African football players are one of the most expressive in the World. Additionally, our study is one of the first attempts of comparison of emotional expression of people from various countries not with a self-assessment questionnaire. It seems to be a promising method for future studies.

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