

## Socio-Psychological Determinants of Physical Fitness and a Value System of a Reference Group Based on the Case of the Polish Handball Federation's Referees

### Authors' Contribution:

A – Study Design  
 B – Data Collection  
 C – Statistical Analysis  
 D – Data Interpretation  
 E – Manuscript Preparation  
 F – Literature Search  
 G – Funds Collection

**Piotr Włodarczyk** (A, B, C, D, E, F, G), **Anna Strzałkowska** (B, D, E, F),  
**Artur Ziółkowski** (C, D)

Jedrzej Sniadecki Academy of Physical Education and Sport in Gdansk,  
 Poland

**Key words:** *sociology of a sports team, referees, value system, physical capacity*

### Abstract

**Background:** *This paper deals with determinants of physical fitness and of a value system of the Polish Handball Federation's [Polski Związek Piłki Ręcznej] referees (N=61). The reference group theory describing the transfer of a value system within a group of referees constitutes the theoretical foundation of the paper.*

**Material/Methods:** *The referees' age ranged from 19 to 59 years (M=30.56 years SD=7.16 years). The measurement was carried out by means of the Scheler Values Scale constructed by Piotr Brzozowski and the Questionnaire of Ethics constructed by Wiesław Baryła and Bogdan Wojciszke.*

**Results:** *The results of the six basic hierarchies of values were analysed: sanctity, hedonistic, vital, aesthetic, truth, and moral. Comparisons of data obtained from a group of referees preferring common good ethics with referees showing low acceptance of the common good ethics have not revealed a considerably higher acceptance rate only in the case of values of truth and aesthetics values.*

**Conclusions:** *The remaining hierarchies demonstrated considerable statistical variance. Further research on the determinants of referees' moral behaviours should focus on determining the impact of the subject's sex and a change in temperament traits on the development of a refereeing career.*

**Word count:** 6,644

**Tables:** 11

**Figures:** 1

**References:** 45

**Received:** September 2011

**Accepted:** September 2011

**Published:** October 2011

### Address for correspondence:

Dr Piotr Włodarczyk

Dep. of Informatics and Statistics, Academy of Physical Education and Sport, 80-336 Gdańsk, Poland, ul. K. Górskiego 1

Phone:+4858 55-47-239, e-mail: pw@awf.gda.pl

## Introduction

It is easy to agree with the thesis that a referee is unquestionably a co-author of a sports event. Few Polish publications, which comprehensively describe the psychological functioning in sports [1, 2], deal with the psychology of refereeing as well. They are based on modest, source-based research relying on the theoretical background provided by psychology [3, 4, 5, 6, 7] and sociology [8]. As indicated by the practice of modern sport, the growing professionalization requires more precise studies detailing, explaining and forecasting trends in the improvement of referees' performance.

As probably most readers have many a time found out for themselves, a good sports event brings uncommon lustre, providing *catharsis* to millions of spectators. In the antiquity, the mechanism was reserved solely for men. The actors of a spectacle – heroes – were representatives of a religious dimension of the ancient *agones*; their tangible (physical) half-divinity placed the struggles of the then Olympic Games winners within a symbolic framework. However, already in the times of reforms introduced by the first archon – Solon (c. 640–560 BC) – there appeared tendencies which we would call “the professionalization or desacralisation of sports activities” [9]. Nowadays, a mass audience has access to various sports channels from all over the world. Sports betting services, which go hand in hand with sports events, attract millions of popular culture consumers. Regardless of their sex or age, modern-day fans may accompany their idols during a sports event and/or in their private lives. A rise in the number of fans boosts the interest of advertising agencies in accessing this community or – more adequately – “the future and current consumers”. The core qualities constituting the social and the psychological profile of a potential customer – a consumer of a sport event, a user of goods promoted during sports events – are as follows: “dynamic, wealthy, with high achievement motivation, frequently gullible and emotionally charged”, whereby he easily and effectively absorbs an advertising message.

Equally successful among advertisers and sponsors are stadiums and sportspersons' bodies used as advertisement areas, which ensure spectatorship figures proportional to rental fees. An example are tattoos on the torsos of boxers fighting for the title of the world champion of a higher paying federation. Therefore, sports marketing specialists ably evaluate the ROI (Return on Investment) of a given event or a cycle of sports events (leagues, meetings). This may be illustrated by annual revenues from advertisements in global sports magazines accrued in the previous year. The market grew by almost 25%, despite or maybe by way of the world economic crisis. The growth dynamics are presented in Table 1. The present-day business is a self-regulating system. A decrease in one parameter generates growth of a different one. The saying “bread and circuses” (from Latin: *panem et circenses*), coined by Juvenal, has bluntly explained the essence of the sportive social demand to this day. Modern sport has already become a branch of the global economy.

The media machine of television broadcasts invites us on a journey the destination of which is unclear. An analysis of market trends reveals a long-term, systematic increase in the new sports business potential. A demand for entertainment, emotions, unpredictability and spontaneity has been present in the society since the ancient times. In 2004, the European football market was worth €11bn [11], whereas the 2009/2010 season brought about a 4% growth to €16.3bn relative to the previous season. At the same time, earnings in the five largest football leagues on the old continent rose by 8% to €5.5bn [12].

The business, which uses and creates the sports market, pays players and buys dramatic effects and dynamism. The business sells a compact, readable and essentially true physical activity of modern sportspersons. A temporary nature of the message – today you are somebody, tomorrow you may be nobody – forms a part of the postmodern discourse. Senders of messages, heroes of the arenas, are classified in the category of media giants. Hence, modern sport has been for many years now in the category of “the immediate performance culture” [13; p. 92]. We may pose the question: What brings fans before the screens and to the stadiums? For sure, it is the unpredictability of the last minutes of a sports event, an escape from the everyday life. However, arguably the most valued commodity is the identity of a strong, mentally and physically resilient master – the idol. Newspapers, television and electronic media are rife with news creating the

modern day idols who endorse, by the strength of their shaky authority, the importance of one or another sports event and, by the way, of this or that product or style of life.

Tab. 1. Comparison of changes in advertising revenues [10]

SPORTS MAGAZINE AD REVENUE FOR 2010 PUBLICATION	2010 AD REV.	2009 AD REV.	% +/-
Sports Illustrated	\$571,975,853	\$560,365,030	2.1%
ESPN The Magazine	\$306,154,553	\$243,402,998	25.8%
Golf Magazine	\$151,979,817	\$144,821,976	4.9%
Golf Digest	\$127,687,044	\$128,436,213	-0.6%
Runners World	\$86,550,866	\$69,452,641	24.6%
Bicycling	\$35,831,092	\$33,528,251	6.9%
Golf World	\$33,745,218	\$34,727,317	-2.8%
Cycle World	\$28,207,544	\$32,847,432	-14.1%
Transworld Skateboarding	\$23,771,505	\$27,919,640	-14.9%
Sporting News	\$23,223,624	\$22,563,050	2.9%
Transworld Snowboarding	\$18,669,912	\$18,375,348	1.6%
Tennis	\$15,774,714	\$19,484,994	-19.0%
Transworld Motocross	\$10,911,103	\$12,406,533	-12.1%
Transworld Surf	\$9,393,741	\$9,354,709	0.4%
SI for Kids	\$6,713,738	\$15,184,366	-55.8%
Transworld Ride BMX	\$4,263,194	\$3,913,988	8.9%
Transworld Wakeboarding	\$3,730,956	\$5,340,527	-30.1%

Sometimes they are instantaneous heroes who become temporary or, rarely, long-term trend creators. Due to media leverage, sportspersons may shape tendencies or fashion trends, thus becoming role models. As Zygmunt Bauman writes in his book [14; p. 36], “the formation process of a fashion trend is a type of a peculiar pendulum” propelled by the forces of individualisation and originality on the one hand and the community spirit and the need of community acceptance on the other. Tenacity, conscientiousness, intransigence, and most of all the authenticity of athletes attract spectators looking for inspirational role models. An important function is also played by the possibility to promote a healthy lifestyle and mental and physical wellbeing in the course of one’s sports career and – in the case of few sportspersons – a refereeing career. It is worth noting that for athletes health constitutes an existential value, not an autotelic one [15]. We should ask how the modern referees – “the priests” of sports events – feel fulfilled in this situation? They stand in the shadow of each sports event and simultaneously they are its chief moderators. The fate of a sports career, spectators’ emotions and sports betting results hinge on referees’ professionalism. The business offers capital ensuring the “fire” of development providing energy and favourable conditions. However, out of referees’ control, the fire may burn and destroy.

According to Andrzej Pawłucki [15], a fan demonstrating ideal competencies – a referee – is a guardian of a sports event. His or her conduct and decisions influence the axionormative environment of adult and adolescent sportspersons. Unfortunately, there have been cases of corrupt referees undermining the idea of fair play [7]. Therefore, the same force of media impact may strengthen the system of modern sport by pumping considerable funds into it and by shaping opinions, convictions and activities of large numbers of people. The power of sport to create axioms and personalities is or may be at the same time the blade of a guillotine gelding sport of humanistic values. This brings a question: can referees foster the humanism of modern sport? What values are shaped by their environment? What values form their long-term commitment to sport? May this report contribute to the discussion.

On a macroscale, the desacralisation and commercialisation of sport events paradoxically reinforces the process of their professionalization, forcing at least semblance of activities free of negative influences. On a microscale, understood as an interschool league, a referee is a model of

values. His or her omnipotence over the fate of a match stabilises the event in the eyes of adolescent athletes.

Also, a modern referee wants to be physically fit, since this may be the factor determining his or her ranking in a given region or, more broadly, in a given country. Improving the quality of a product is a natural market process. Enhancing physical capacity or refereeing skills is an answer to a market demand. But is it only a market demand? On the one hand, a customer orders a product of the highest possible quality by choosing from a wide range of available alternatives an event which he or she deems the best. Through the use of a remote control, they specifically shape the postmodern sports market. Match transmissions for multi-million audiences enable a more accurate, detailed observation of sports events. Close-ups, slow motion replays, multi-camera shots, which are frequently taken in the real time, make it possible to pick up the smallest mistakes of athletes. If a referee does not prove himself or herself to be a good expert and fan – a customer of the event will certainly react. The subsequent discussions and comments in newspapers and on online message boards will drive the changes bringing improvement to the systems of training and preparation of referees. On the microscale, discussions among athletes, conducted in the changing room after a match, do not carry such a great driving force. On the other hand, referees also seek to derive satisfaction from fulfilling their role. They improve their skills and physical fitness.

Nowadays, the process of developing competencies of referees involves both physical fitness, technical preparation and, increasingly more often, psychological preparation or coaching understood as a non-directive support and improvement of referees' knowledge, skills and habits. The process is assessed and carried out by mentors (delegates). Most frequently, these are experienced referees, experts nominated by a referees board of the Polish Handball Federation. Nowadays, long-term competence enhancement processes are supported by general public periodicals, which essentially form part of the refereeing culture [26]. Moreover, activities supporting a referee's development also include trainings and observations conducted by selected branches of Polish sports associations. Periodic activities encompass: seminars, additional training events and supervision over the work of referees exercised by qualified observers (delegates). An assessment of referees' qualifications is conducted by way of annual training conferences coupled with verification of the level of physical fitness and of the knowledge of regulations. The meetings provide an opportunity to shape the referees' lifestyle. Activities promoting active leisure time, broadening experience and knowledge regarding regulations directly influence the shape of a value system which – if not fully internalised – is certainly declared by the referees as their own.

The mechanism of the social formation of values and attitudes is based on two basic research directions: the sociological and the psychological ones. The former stems from the reference group theory of Teodor Newcomb [16]. According to sociologists [27, 28] using the division devised by Robert Merton [29], we may distinguish two types of reference groups: the comparative and the normative ones. The groups function by means of two mechanisms: a relative privilege or a relative disadvantage [30]. The second research direction in social psychology relates to the theory of attitude formation. The social and the cognitive function of an attitude [19] allows an individual to take over all components (cognitive, emotional, behavioural) from representatives of a reference group. The mechanism of conformity or of subjective norm formation, described by Icek Ajzen and Martin Fishbein [20, 31], may mediate such behaviours.

The choice of handball referees was dictated by the need to select a group which best combines characteristics of an amateur and a professional approach to modern sport. Several arguments justify this decision. On the one hand, handball is a sport striving for popularity. On the other hand, it certainly does not enjoy the popularity of football. The level of funding of the latter is several times higher, which entails much stronger political and economic impact, thus introducing corrupt inducements. At this stage of the research process, the authors' goal was to verify a research procedure and tools in the context of a sport essentially resilient to a potential influence of interfering factors.

In the case of the Polish Handball Federation, the system of supporting referees is coordinated by a body of referees consisting of seven experts reporting to the management board of the Polish

Handball Federation. Therefore, the Association exercises a direct influence on the methods of selection and training of modern hellanodics and may play the role of a reference group. The Polish Handball Federation's referees are predominantly athletes strongly identifying with the practised sport. This sense of belonging differs from the so-called athletic identity [17]. Athletic achievements of the contemporary referees do not have to correlate with a high level of athletic identity. Therefore, a present-day referee is not an old-time titan of arenas. Modern-day referees of the Polish Handball Federation are athletes at the end of the first stage of contact with handball.

The choice to continue their career in the capacity of a referee may be explained by Eugen Litwak's theory [18], as it provides former athletes with an opportunity to participate in a sport by meeting their fundamental needs and values even after the end of their sports career. Practising a sport constitutes a peculiar doorway to further development. The role of a referee provides a chance to prolong the period of not only physical but also intellectual and social activity. The new role determines new motives, whereby it assigns new meanings to the already formed values, such as vital values. The driving force may be similar to the one present during a sports career; however, the activity area is prestigious and frequently autotelic. Anna Pawlak states that [8, p. 22]: "while in the case of athletes morality is one of elements ... in the case of referees morality constitutes the main element ... of the subsystem". Therefore, in the case of referees – as Józef Lipiec put it – we deal with activities in the spirit of "collectivistic nominalism" supported by values building inner bonds of a team [21]. For the purposes of this research, a team is to be understood as two referees or the whole community of the Polish Handball Federation's referees. Thus, the community of referees has a transparent hierarchy. Older referees are the carriers of values for the younger generation of novices. Candidates for referees acquire knowledge and habits embedded in a specific system of values of experienced colleagues from the reference group. Of course, a question arises as to the content of the message. What is the preferred model of values in the referees' group of the Polish Handball Federation? These questions formed the basis for writing this paper.

### Aim of the research

The paper describes the determinants of referees' moral attitudes formation in a group of referees of diverse experience. The authors of this analysis wish to present a supplement, containing an overview of the moral functioning of handball referees. The assumption forms an inherent part of a definitional and identity relationship between sport and morality [see 22, 23, 24]. The aim of the study is to determine a model of values preferred by a group of expert referees and to compare the results with a model of values favoured by less experienced and less competent referees. In this context, competencies include not only knowledge and skills, but also habits and attitudes concerning refereeing. It was assumed that values, being more central to attitudes [32, 33], may have a regulatory influence on conduct, and in particular may predict a possible advancement in the refereeing career. Unfortunately, the literature does not provide information regarding indicators which would help to construct a reference point for the assessment of candidates for referees.

For thus defined problem, two research hypotheses have been formulated:

1. Referees' job experience impacts a difference in preferences in the lower values (aesthetic, hedonistic and vital), since the length of participation in a sport and the role played in it influence the differentiation of a value system of referees representing a reference group which supports the formation of a value system of less experienced referees.
2. Referees' value system with the predominant ethics of common good will substantially differentiate the group with regard to the higher values, as participation in a sport and an assumption of the role of a referee frequently provide an opportunity for evaluative conduct, which may in turn reinforce behaviour consistent with higher values.
3. The value system referring to population norms and the physical fitness of referees with a high level of refereeing competencies are stricter and better developed as compared with the value system and the physical fitness of referees showing average refereeing competencies, since being a referee impacts the intensity of social functioning and

a declaration of moral norms, thus becoming a social proof of rigorous moral functioning. In the case of highly competent referees, maintaining full fitness at a basic level is both an emanation of internalised values and an element of a lifestyle.

## **Materials and Methods**

The study was carried out among referees of the Polish Handball Federation. Initially, 112 questionnaires had been distributed, out of which 73 were filled in and collected. An analysis revealed that the number of correctly completed questionnaires (F=5; M=56) closed at (N=61). The study was carried out in August 2010. The respondents' age ranged from 19 to 59 years. The referees' values profile was studied by means of the Scheler Values Scale (the SVS), a tool constructed by Piotr Brzozowski, which refers to Max Scheler's theses on an objective and universal hierarchy of values represented by each individual. The scale allows a study of a subjective weight of 50 values. It enables an assessment of similarities between subjective values and an objective and ideal population (norms) prototype based on the general population norms of the inhabitants of the Lublin agglomeration.

The SVS comprises 50 values grouped into the following six basic scales of values: sanctities (S), hedonistic (H), vital (V), aesthetic (A), truth (T), moral (M). Moreover, the subscale of vital values is divided into two factor subscales: physical fitness and strength values (PFS) and endurance values (END). The subscale of sanctity values is composed of secular sanctities (SS) and religious sanctities (RS). The six basic scales and the sanctity subscales (SS and RS) were used for the analysis. The respondent's task was to assess the subjective significance of a given value on a one hundred point scale. The average questionnaire completion time amounted to 30 minutes. The statistical analysis of the collected data was carried out by means of the SPSS software. Moreover, respondents took an exercise test (ET), which consisted in running outdoors a distance of 3,500 meters. The time of completing the distance was measured by a stopwatch with accuracy to one millisecond. In addition, referees filled in the Ethics Questionnaire constructed by Wiesław Baryła and Bogdan Wojciszke. The common good ethics, one of the dimensions of the above tool, was used as a differentiating variable dividing the respondents by a median value into two subgroups. During the analysis, the normality of distribution of the dependent variable was verified by means of the Kolmogorov-Smirnov test and the Shapiro-Wilk test, and then the significance of differences by a relevant t-Student test or the Mann-Whitney test. A comparison of mean values and medians of the SVS questionnaire scales results and the exercise test (ET) was carried out.

## **Results**

The analysis of results begins with a presentation of descriptive statistics referring to particular dimensions of the SVS test and the exercise test (ET) by a division into referees with shorter and longer experience.

Another step in the analysis of results was to verify the statistical significance of the differences observed above (with reference to the descriptive statistics). The first stage of the procedure was to check the normality of distribution by means of relevant tests (Tab. 2).

It follows from the obtained results that the distribution of the dependent variable in the test is normal as far as truth, aesthetic, and hedonistic values are concerned (the value of the W test is not significant statistically). The other variables (secular\* and religious\* sanctities, moral\*, vital\*) and the results of the exercise test do not show a normal distribution. A comparison of the statistics is presented in Table 3. The verification of the statistical significance of the obtained differences was conducted for the normally distributed variables by means of a t-Student test for independent samples. Relevant rows were adjusted for heterogeneous variances measured against the Levene's test (Tab. 4). In the case of other variables, the Mann-Whitney U test was applied (Tab. 5).

Tab. 2. The descriptive statistics for the SVS dimensions and for the exercise test (EST) in the group of referees with up to eight years of experience (N=30) and referees with over eight years of experience (N=31) (source: own research)

Variables	Referees with short experience (N=30)				Referees with long experience (N=31)			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Truth	74.25	11.12	52.00	95.00	77.89	12.29	49.00	97.00
Aesthetic	52.57	18.77	15.00	84.00	57.56	20.74	18.00	97.00
Hedonistic	64.72	14.44	36.00	86.00	68.69	13.73	42.00	92.00
Religious sanctities	62.26	29.59	0.00	100.00	66.33	29.86	0.00	100.00
Secular sanctities	66.75	20.16	20.00	100.00	74.42	20.77	20.00	100.00
Moral	75.18	14.85	34.00	100.00	79.81	12.55	46.00	98.00
Vital	61.46	16.72	25.00	93.00	59.09	20.09	25.00	88.00
Exercise test (ET)	10.74	0.59	9.20	11.59	10.74	0.51	10.05	11.53

Tab. 3. The verification of the normality of distribution of the dependent variable in the research group (N=61) (the Shapiro-Wilk test)

Dependent Variables of Values	RESPONDENTS N=61		"W" VALUE	P
	Mean	SD		
Truth	76.10	11.78	0.98	0.469
Aesthetic	55.10	19.79	0.96	0.073
Hedonistic	66.74	14.11	0.97	0.167
Religious sanctities	64.33	29.55	0.91	0.001*
Secular sanctities	70.16	20.76	0.96	0.032*
Moral	77.53	13.81	0.94	0.008*
Vital	60.25	18.39	0.94	0.008*
ET [sec.]	10.74	0.56	0.92	0.001*

An analysis of the results of the SVS in the group of referees with short and long experience (Tab. 4 and 5) did not indicate statistically significant differentiation. The referees with up to 8 years of experience do not differ considerably from the referees with longer experience as far as the values profile is concerned, regardless of whether lower or higher values are compared. Also the endurance performance dimension did not show statistically significant differences. Additionally, notable is the homogeneity of the values represented by the studied groups.

Tab. 4. The verification of significant differences (p) in the mean dimensions of the SVS and the exercise test in the group of referees with short and long experience (source: own research)

Variables	Referees with up to 8 years of experience (N=30)		Referees with over 8 years of experience (N=31)		Absolute difference in mean values	"t" value	p
	Mean	SD	Mean	SD			
Truth*	74.25	11.12	77.89	12.29	-3.64	-1.21	0.230
Aesthetic*	52.57	18.77	57.56	20.74	-4.99	-0.98	0.329
Hedonistic*	64.72	14.44	68.69	13.73	-3.97	-1.10	0.277

\* the variances of variables did not differ in a statistically significant way

Tab. 5. The verification of significant differences in the mean ranks of the SVS dimensions in the group of referees with short (N=30) and long (N=31) experience as compared by means of the Mann-Whitney U test (source: own research)

Variables	Referees with up to eight years of experience N=30		Referees with over eight years of experience N=31		“U” value	p
	Mean rank	Sum of ranks	Mean rank	Sum of ranks		
Religious sanctities	29.28	878.50	32.66	1012.50	413.50	0.457
Secular sanctities	26.80	804.00	35.06	1087.00	339.00	0.069
Moral	28.03	841.00	33.87	1050.00	376.00	0.199
Vital	31.58	947.50	30.44	943.50	447.50	0.801
ET	31.60	948.00	30.42	943.00	447.00	0.795

Another analysis consisted in dividing the studied population into two subgroups based on the common good ethics. The median (MED=44) was chosen for a split point. A comparison of the descriptive statistics is presented in Table 6. The code of the common good ethics regards norms whose beneficiary is a community as a whole; even when this happens at the expense of individuals or groups who lose as a result of such a treatment. The scale was selected because of its strictly humanistic source underlying the essence of sport.

Tab. 6. The descriptive statistics for the SVS dimensions and the exercise test (ET) in the group of referees showing a low preference for the common good ethics (N=31) and referees demonstrating high acceptance of the common good ethics (N=30) (source: own research)

Variables	Referees with a low level of the common good ethics (N=31)				Referees with a high level of the common good ethics (N=30)			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Truth	73.24	10.48	52.75	95.00	79.07	12.47	49.30	97.50
Aesthetic	53.66	20.86	14.71	84.00	56.61	18.87	18.28	83.57
Hedonistic	63.71	14.91	36.16	86.00	69.87	12.74	48.80	92.50
Religious sanctities	58.24	28.50	0.00	100.00	70.62	29.77	0.00	100.00
Secular sanctities	63.19	21.52	20.00	100.00	77.37	17.54	45.80	100.00
Moral	71.93	14.88	34.00	100.00	83.33	9.87	55.40	100.00
Vital	55.24	18.58	25.00	93.00	65.44	16.98	26.60	93.90
Exercise test (ET)	10.70	0.58	9.20	11.59	10.80	0.51	10.10	11.53

Subsequently, relevant tests for the significance of differences were applied in order to verify the statistical significance of the observed differences in the mean values between the groups with low and high acceptance of the common good ethics (Tab. 7). Statistically significant differences were recorded in the case of sanctities (secular and religious), moral and vital values. The remaining values and the results of the exercise test did not differentiate the studied group.

Tab. 7. The verification of the significance of differences in the mean dimensions of the SVS in the group of referees showing a low preference for the common good ethics (N=31) and referees demonstrating high acceptance of the common good ethics (N=30) (source: own research)

Variables	Referees with a low preference for the common good ethics (N=31)		Referees with a high preference for the common good ethics (N=30)		Absolute difference in mean values	“t” value	p
	Mean	SD	Mean	SD			
Truth*	73.24	10.48	79.07	12.47	-5.83	-1.98	0.052
Aesthetic*	53.66	20.86	56.61	18.87	-2.95	-0.58	0.565
Hedonistic*	63.71	14.91	69.87	12.74	-6.16	-1.73	0.088**

\* the variances of variables did not differ in a statistically significant way; \*\* p ≤ 0.05



Tab. 8. The verification of the significance of differences in the mean dimensions of the SVS and the exercise test in the group of referees showing a low preference for the common good ethics (N=31) and referees demonstrating high acceptance for the common good ethics (N=30) (source: own research)

Variables	Referees with a low preference for the common good ethics N=31		Referees with a high preference for the common good ethics N=30		“U” value	P
	Mean rank	Sum of ranks	Mean rank	Sum of ranks		
Religious sanctities	26.44	819.50	35.72	1071.50	323.50	0.041*
Secular sanctities	25.34	785.50	36.85	1105.50	289.50	0.011*
Moral	24.21	750.50	38.02	1140.50	254.50	0.002*
Vital	26.47	820.50	35.68	1070.50	324.50	0.043*
ET	29.60	917.50	32.45	973.50	421.50	0.530

\* -  $p \leq 0.05$

Both with regard to the higher values (religious and secular sanctities, moral, and truth) and the lower values (vital, aesthetic, and hedonistic), higher results were recorded in the group of referees showing a greater preference for the common good ethics (Tab. 8).

The next step was to compare groups with better and worse refereeing competencies. In this case, the differentiating variable was an indicator by means of which the studied population was divided into the referees with high level competencies, frequently refereeing extra-class and international matches, and the referees demonstrating basic competencies, refereeing first, second, and youth leagues. The relevant descriptive statistics are shown in Table 9.

Tab. 9. The descriptive statistics for the SVS dimensions and the exercise test (ET) in the group of referees with basic refereeing competencies (N=31) and referees with a high level of refereeing competencies (N=30) (source: own research)

Variables	Referees with basic refereeing competencies (N=31)				Referees with high level refereeing competencies (N=30)			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Truth	74.75	13.10	49.30	95.00	77.51	10.27	58.50	97.50
Aesthetic	54.27	19.21	14.71	83.57	55.97	20.68	18.28	97.10
Hedonistic	65.00	14.11	36.16	85.00	68.54	14.13	36.20	92.50
Religious sanctities	61.49	30.95	0.00	100.00	67.27	28.25	17.50	100.00
Secular sanctities	68.30	21.20	20.00	100.00	72.09	20.49	20.00	100.00
Moral	76.32	16.05	34.00	100.00	78.80	11.18	52.40	96.36
Vital	62.12	18.55	26.60	93.90	58.33	18.35	25.00	87.83
Exercise test (ET)	10.89	0.55	10.05	11.59	10.61	0.51	9.20	11.54

Next, significant differences between the groups of referees with high and basic level competencies were verified (Tab. 10 and Tab. 11).

Tab. 10. The verification of the significance of differences in the mean dimensions of the SVS in the group of referees with basic refereeing competencies (N=31) and referees with a high level of refereeing competencies (N=30) (source: own research)

Variables	Referees with basic competencies (N=31)		Referees with high level competencies (N=30)		Absolute difference in mean values	“t” value	p
	Mean	SD	Mean	SD			
Truth*	74.75	13.10	77.51	10.27	-2.75	-0.91	0.366
Aesthetic*	54.27	19.21	55.97	20.68	-1.70	-0.33	0.740
Hedonistic*	65.00	14.11	68.54	14.13	-3.54	-0.98	0.331

\*the variances of variables did not differ in a statistically significant way

Tab. 11. The verification of the significance of differences in the mean dimensions of the SVS and the exercise test in the group of referees with basic refereeing competencies (N=31) and referees with a high level of refereeing competencies (N=30) (source: own research)

Variables	Referees with basic refereeing competence N=31		Referees with a high level of refereeing competence N=30		“U” value	p
	Mean rank	Sum of ranks	Mean rank	Sum of ranks		
Religious sanctities	29.02	899.50	33.05	991.50	403.50	0.374
Secular sanctities	29.52	915.00	32.53	976.00	419.00	0.507
Moral	30.37	941.50	31.65	949.50	445.50	0.778
Vital	32.85	1018.50	29.08	872.50	407.50	0.407
ET	34.61	1073.00	27.27	818.00	353.00	0.106

\* -  $p \leq 0.05$

As a supplement to the conducted research, referees’ value profiles were compared by means of a graphic representation of the data (Fig. 1).

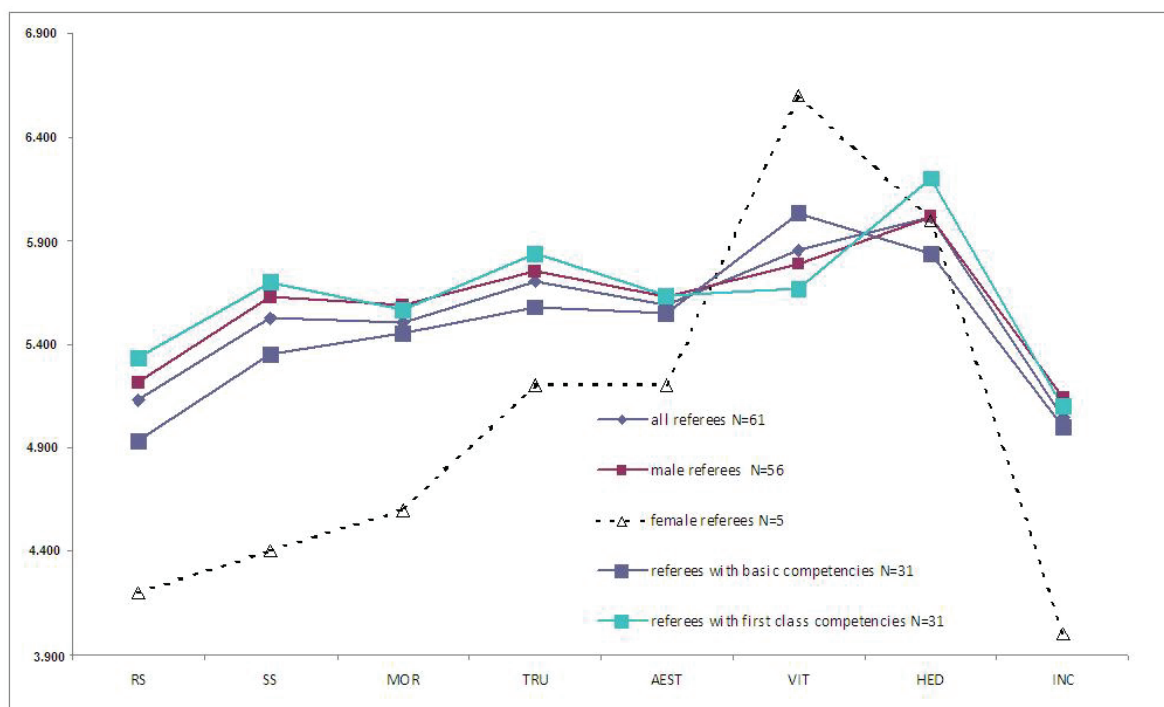


Fig. 1. The distribution of the normalised profiles of the SVS scales by groups [results in sten scores] (source: own research)

Due to a small number of women in the group of referees, a comparative study was abandoned and the results have been presented in a graphic way. As it is easily noticed, in the case of (RS, SS, MOR), female referees achieve results which do not exceed the sten score of 5, that is the median of the reference profile. As far as vital and hedonistic values are concerned, the results go far beyond the median values. The general indicator of similarity between individual hierarchies and the model hierarchy (INC) was determined at the sten score of 4. In the case of male referees, the INC indicator nears the sten score of 5, and all analysed scales reach median values of the scales (the sten score of 5). Only vital (VIT) and hedonistic (HED) values show results close to the sten score of 6. An important conclusion to be drawn from the above comparison is a necessity to conduct a comparative study in a group of female referees, assuming that the studied population will be symmetrical in number.

## **Conclusions**

The conducted analyses lead to the following conclusions. Primarily, the first hypothesis is to be rejected: referees' job experience does not differentiate their value profile. Irrespective of the analysed profiles of values (higher and lower), referees who have participated in sport for a longer time do not differ significantly from less experienced referees. This finding complies with earlier research on determinants of fair play attitudes conducted among young athletes from sports schools and schools managed by religious associations [40] and is consistent with Andrzej Pawłucki's theoretical speculations [15, 23], who draws our attention to the fact that thoughtless participation or participation measured by means of time dedicated to sports activities are not the only factors influencing the formation of moral attitudes. Only an adequate and morally estimated increase in "the values deposit", based on interiorisation of values through reflective participation in sports, may become a tool for "multiplying treasures of human wisdom".

Therefore, it may be concluded that referees' job experience does not impact the difference in preferences for the lower values (aesthetic, hedonistic, and vital). Refereeing may be a way of continuing a sports career, allowing thus implementation of an instilled idea of personal happiness and simultaneously contributing to the shaping of cognitive and moral maturity and to moral development [35, 36]. However, sole participation does not guarantee the formation of a different value system or an increase in moral functioning.

As far as youth – including young referees – are concerned, undertaking physical activity [37] and assuming the role of a referee may moderate the process of values formation by building up self-esteem. In this way mature referees may create an image of the ideal self. The literature lacks transparent evidence of such a dyadic relationship between physical activity and moral functioning [38, 39] and between the assumption of the role of a referee and moral functioning understood as the formation of a specific value system. Thus, this reminds us of buying a product without a guarantee of (moral) quality. Therefore, the first hypothesis claiming stricter morality of referees with mature competencies needs to be rejected. Hence, at the same time, it is hard to indicate a specific reference group in the Polish Handball Association which would determine values favoured in the social environment, since more experienced referees do not differ significantly from less experienced ones with regard to the level of preference for lower and higher values. This entails considerable cohesion of individual value systems, independent of the extent of refereeing experience. Although an upward trend was observed, we did not record statistically significant differences. In the case of more experienced referees, this may result from the impact exerted by the respondents' age. According to Piotr Brzozowski [34], age significantly modifies subjective profiles of values. The above findings comply with Andrzej Pawłucki' concept [15] that "a fan with ideal competencies is not an example of moral perfectness", and in the course of his or her career [22] "does not become a straightforward moral model", although he or she eagerly undertakes physical activity and may boast high physical endurance.

Paradoxically, lack of differences in the studied groups speaks for the essential cohesion of their value systems. Therefore, it may be concluded that the case of referees corroborates the thesis of Herbert Hiram Hyman that referees with longer practice do not constitute a reference group for less experienced referees but may gradually become one. Younger referees direct the formation of values in sportspersons whose matches they officiate. Thus, we may describe one of the loops of the system of migration of values between the groups. We could succumb to the temptation of defining cause and effect relationships by looking for relevant theories based on Bertalanffy's General Systems Theory; however, an experienced researcher may take this for hypostasis. The obtained results should be perceived rather as showing tendencies and inviting to conduct detailed research on the observed phenomena.

In the case of the second hypothesis, the influence of the preference for the common good ethics on the formation of a value system of referees was analysed. The ethics refer to norms whose beneficiary is the society viewed as a whole. The norms are especially active when an individual loses (and not gains) in the confrontation with the values of the whole society. The value system of the referees with the predominant common good ethics significantly differed from the value system of the group showing a lower preference for the common good ethics. The obtained

result complies with Józef Lipiec's assumption [41], who viewed sport by the prism of a stadium providing an opportunity, *inter alia*, to implement socially useful values by means of the channelling function. This is important to understand the essence of sport as perceived from the point of view of implementing higher values, since sports participation and the assumption of the role of a referee provide frequent opportunities for evaluative conduct, which in turn may strengthen behaviour consistent with higher values. Ontologically speaking, sports rivalry and religion grow on the soil of a humanistic pursuit of happiness and perfectness by means of self-realisation. Insofar as referees are concerned, the self-realisation gains a special dimension through the more or less subtle influence of the value system, norms, or prohibitions, both written down and customary, which leave their regulatory stamp on the conduct of sportspersons, coaches, and large numbers of sports fans.

In the light of the findings, the third hypothesis, which presupposes an increase in a strict approach to morality and in the physical capacity of referees with higher refereeing competencies, has to be rejected. The findings do not corroborate the presupposition. It was assumed that referees with higher refereeing competencies would favour stricter value systems and, simultaneously, display better physical fitness.

Sport forms a part of social life and contributes to the development of traits that support socialisation of individuals [42]. However, no research has been conducted that would explicitly confirm the influence of sports participation on the formation of a stronger, axiologically central orientation. To be more precise, sport is a context within which youth and adults (including referees) are provided with an opportunity to establish positive relations in the group in which they function. Sport is a training ground, where actors and spectators of a sports event experience consequences of their conduct, both moral and immoral. The conduct is being assessed by referees in real time. They interpret the conduct of sportspersons as compliant or non-compliant with the rules. The formation of moral attitudes in sportspersons depends on their physical fitness and attitude towards abiding by the rules.

The paper combines the economic and the ethical dimension in order to present a duality of roles played by a referee. On the one hand, he or she is a living representative of the Christian mediaeval [43] ethics of chivalry with the ethics of dignity [44] forming its paramount value. An attribute of the latter are the words: always and under any conditions retain your personal dignity. The underlying virtues include toughening one's body and character, spirituality, inner development, honour, disdain for material values, maintaining purity of a class or a social group. These stand in opposition to defilement, a loss of honour, ruthless pursuit of material goods, modifying traditions, degradation of oneself, neglecting development of one's skills, neglecting one's spiritual development. On the other hand, modern sport and referees follow the ethics of productivity. Its underlying virtues include: usefulness, effectiveness, diligence, postponing gratification, an individual success. The cardinal sins encompass: sloth, unproductivity, waste, hasty and excessive consumption, sentimental and *ad hoc* functioning. This ethical code is strictly bound with the Protestant [45] model of the functioning of wealthy societies with a high economic growth rate.

Specifically in the case of referees, attention should be paid to the choice of methods for the assessment of competencies, taking also into account the dimension of ethical functioning. Such support may take the form of mentoring or coaching provided by a referee observer of the Polish Handball Federation. Referees with a high potential should serve as moral role models. Therefore, the task of the body of referees responsible for the promotion of candidates is to apply scientific methods for the assessment of a development potential and coordinate support methods. The aim of this process is to select candidates with the highest potential, both physical and moral. Only referees with an established value system may become depositaries of the modern sport values. The role of referees who verify promotion is to check and support candidates whose attitude and value system are those of a model referee, maybe a bit idealised but certainly worth emulating. Thanks to that, candidates from younger generations will profit from the values of the previous generation. Finally, it should be added that next stages of research need to be focused on verifying

relationships between a structure of temperament, a value system, and the diagnosis of a future referees' potential.

## References

1. Bartczak G, Tyszka T. Ocenianie i sędziowanie w sporcie [in Polish] [Assessment and refereeing in sports]. In: Tyszka T, editor. *Psychologia i sport [Psychology and sports]*. Warszawa: AWF; 1991, 183-199.
2. Gracz J, Sankowski T. Psychologia aktywności sportowej [in Polish] [Psychology of sports activity]. Poznań: AWF; 2004.
3. Barczyk A. Próba określenia modelu osobowościowego sędziego w gimnastyce sportowej [in Polish] [An attempt to define the personality model of a referee in artistic gymnastic. Competitive sport] *Sport Wyczynowy* 1972;1:42-47.
4. Ziobro H. Próba eksperymentalnego określenia niektórych cech psychicznych sędziego piłkarskiego [in Polish] [An attempt to determine experimentally some psychological traits of a football referee]. *Zeszyty Naukowe AWF we Wrocławiu* 1972;12:189-191.
5. Wierzbicka A. Psychospołeczne uwarunkowania stronniczości sędziego sportowego [in Polish] [Psychosocial conditioning of the partiality of a referee]. *Roczniki Naukowe AWF Poznań* 1993;43:43-50.
6. Andryszczak M. Idealny arbiter – czy to możliwe? Analiza porównawcza sędziów piłkarskich w kontekście społecznego spostrzegania [in Polish] [An ideal referee – is it possible? A comparative analysis of football referees in the context of social perception.] [Wkład nauk humanistycznych do wiedzy o kulturze fizycznej]. In: Rychta T, Guskowska M, editors. *Wkład nauk humanistycznych do wiedzy o kulturze fizycznej*. Warszawa: PTNKF Sekcja Psychologii Sportu; 2003, 183-190.
7. Włodarczyk P, Ziółkowski A. Psychospołeczne uwarunkowania kompetencji moralnych i zdrowotnych sędziów Związku Piłki Ręcznej w Polsce [in Polish] [Psycho-social determinants of moral and health competencies of the Polish Handball Federation's referees]. *Rozprawy Naukowe AWF we Wrocławiu* 2009;27:160-166.
8. Pawlak A. Autoportret polskich sędziów sportowych [in Polish] [Self-portrait of Polish referees]. Warszawa: AWF; 1987.
9. McIntosh PC. Sport in society. London: C.A. Watts & Co. Ltd; 1963.
10. The Official Website Sport Business Daily [accessed April 2011] available at <http://www.sportsbusinessdaily.com/Daily/Issues/2011/02/Feb-9/Research-and-Ratings/Sports-mag-revenue.aspx>
11. Buhler AW. Football as an international business: an Anglo-German comparison. *Eur J Sport Soc* 2006;1:25-41.
12. The Official Website Deloitte [accessed May 2011] available at [http://www.deloitte.com/view/en\\_GB/uk/industries/sportsbusinessgroup/sports/football/annual-review-of-football-finance-2011/index.htm](http://www.deloitte.com/view/en_GB/uk/industries/sportsbusinessgroup/sports/football/annual-review-of-football-finance-2011/index.htm)
13. Kłoskowska A. Kultura masowa. Krytyka i obrona [in Polish] [Mass culture. Criticism and defence]. Warszawa: PWN; 1964.
14. Bauman Z. Kultura w płynnej nowoczesności [in Polish] [Culture in liquid modernity]. Warszawa: Agora SA; 2011.
15. Pawłucki A. Wychowanie jako kulturowa rzeczywistość. Na przykładzie wychowania do wartości ciała [in Polish] [Upbringing as a cultural reality as exemplified by education in the body value]. Gdańsk: AWF; 1992.
16. Newcomb ThM. Personality and social change: Attitude formation in a student community. (Reprint 1943). New York: Dryden Press; 1957.
17. Łuszczynska A. Psychologia sportu i aktywności sportowej [in Polish] [Psychology of sports and physical activity]. Warszawa: PWN; 2011.
18. Litwak E. Reference group theory, bureaucratic career, and neighborhood primary group cohesion. *Sociometry* 1960;23:72-73.
19. Wojciszke B. Człowiek wśród ludzi. Zarys psychologii społecznej [in Polish] [An individual among people. Outline of social psychology]. Warszawa: Scholar; 2004.
20. Wren K. Wpływ społeczny [in Polish] [Social influence]. Gdańsk: Wydawnictwo Psychologiczne; 2005.
21. Lipiec J. Podmiotowość zespołu [in Polish] [Collective subjectivity]. In: Żak S, Spieszny M, Klocek T, editors. *Gry zespołowe w wychowaniu fizycznym i sporcie. Studia i Monografie AWF w Krakowie* 33;2005:21-30.
22. Dziubiński Z. Wychowawcze aspekty sportu [in Polish] [Educational aspects of sports]. Warszawa: SALOS; 1993.
23. Pawłucki A. Osoba w pedagogice ciała. Prawo pokoju olimpijskiego [in Polish] [The person the pedagogy of the body. The Olympic Truce]. Gdańsk-Olsztyn: Olsztyńska Szkoła Wyższa; 2007.

24. Kowalczyk S. Elementy filozofii i teologii sportu [in Polish] [Elements of the philosophy and theology of sports]. Lublin: TN KUL; 2002.
25. Ferguson AG, Takane Y. Elementy filozofii i analiza statystyczna w psychologii i pedagogice [in Polish] [Elements of philosophy and a statistical analysis in psychology and pedagogy]. Warszawa: PWN; 1997.
26. The Polish Handball Association Official Website [accessed May 2011] available at <http://www.zprp.pl/upload/pliki/Biuletyn%20KSW%20nr%2027.pdf>
27. Turowski J. Socjologia. Małe struktury społeczne [in Polish] [Sociology. Small social cultures]. Lublin: TN KUL; 1993.
28. Szmatka J. Małe struktury społeczne: wstęp do mikrosocjologii strukturalnej [in Polish] [Small social cultures: an introduction to structural microsociology]. Warszawa: PWN; 1989.
29. Merton RK. Social theory and social structure. New York: Free Press; 1969.
30. Stouffer SA, Suchman EA, DeVinney LC, Star SA, Williams Jr RM. The American soldier. Princeton: University Press; 1949.
31. Fishbein M, Ajzen I. Belief, attitude, intention and behavior: Introduction to theory and research. Menlo Park: Addison-Wesley; 1975.
32. Karolczak-Biernacka B. Wartość sportu wśród innych wartości [in Polish] [The value of sport among other values] *Kultura Fizyczna* 1996;11-12:1-7.
33. Martynowicz E. Wartości oraz ich wpływ na działanie [in Polish] [Values and their impact on actions]. In: Martynowicz E, editor. *Motywy, cele, wartości. Przyczynek do zrozumienia stanu ducha i umysłu współczesnych Polaków*. Kraków: Impuls; 2004, 21-37.
34. Brzozowski P. Skala Wartości Schelerowskich SWS – podręcznik [in Polish] [The Scheler Values Scale SVS – Handbook]. Warszawa: PTP; 1995.
35. Shields D, Bredemeier B. Moral development and behavior in sport. In: Singer RN, Hausenblas HA, Janelle CM, editors. *Handbook of sport psychology*. 2nd ed. New York: Wiley & Sons; 2001, 585-603.
36. Telama R. Moral development. In: Auweele YV, Bakker F, Biddle S, Durand M, Seiler R, editors. *Psychology for physical educators*. Champaign, IL: Human Kinetics; 1999, 321-342.
37. Proios M, Balasas D. Self-esteem as a moderator agent for the improvement of the adolescents' moral behavior. *Int J Phys Educ* 2007;44(2):67-74.
38. Bredemeier B, Shields D. Game reasoning and interactional morality. *J Genet Psychol* 1986;142:257-275.
39. Bredemeier B. Divergence in children's moral reasoning about issues in daily life and sport specific contexts. *Int J Sport Psychol* 1995; 26:453-463.
40. Ziółkowski A, Strzałkowska A, Włodarczyk P. Rodzinne uwarunkowania potocznego rozumowania moralnego sportowców i młodzieży nietreningowej [in Polish] [Family determinants of the popular moral reasoning of sportspersons and non-training youth]. *Rozprawy Naukowe AWF we Wrocławiu* 2009;27:152-159.
41. Lipiec J. Filozofia olimpizmu [in Polish] [Philosophy of Olympism]. Warszawa: Polskie Wydawnictwo Sportowe SPRINT; 1999.
42. Wankel LM, Berger BG. The psychological and social benefits of sport and physical activity. *J Leisure Res* 1990;22:167-182.
43. Ossowska M. Etos rycerski i jego odmiany [in Polish] [The chivalric ethos and its varieties]. Warszawa: PWN; 1973.
44. Wojciszke B, Baryła W. Potoczne rozumienie moralności: pięć kodów etycznych i narzędzie ich pomiaru [in Polish] [The popular understanding of morality: five codes of ethics and a tool for their measurement]. *Przegląd Psychologiczny* 2000;43:395-421.
45. Weber M. Etyka protestancka a duch kapitalizmu [in Polish] [The Protestant ethic and the spirit of capitalism]. Lublin: Wydawnictwo TEST; 1990.