

University of Physical Education in Kraków, Poland

# Studies in Sport Humanities

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### Editor's Office

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AWF im. B. Czecha

al. Jana Pawła II 78, 31-571 Kraków, Poland

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## From the Editors



*Studies in Sport Humanities* (previously *Studia Humanistyczne*) is a scientific journal that publishes original works on physical culture prepared from multidisciplinary approach (including the perspectives of history, pedagogy, sociology, philosophy, cultural anthropology, Olympics, physical education theory). The journal

is published by the University of Physical Education in Kraków.

The English name and gradual increase of the number of texts published in that language resulted with broadening circle of our authors, reviewers and readers. It allowed us to believe that the undertaken direction of the development is pertinent. For that reason, starting from a current edition, we publish texts only in English what has become an obligatory version for authors publishing in our periodic. We strongly believe, that such a solution will contribute to better popularisation of the Polish science achievements in the international environment, and it will encourage authors from abroad to publish their articles in our journal.

Since 2016 the *Studies in Sport Humanities* will be published under patronage and in cooperation with the International Pierre de Coubertin Committee (CIPC). It is an honour and privilege for us and we will take every effort to make our periodic better and better. Taking that opportunity I would like to thank heartfully all the Authors and Reviewers who have cooperated with us during last years thus contributing significantly to the improvement of the quality of our periodic. The cooperation with CIPC changes slightly our profile. We will prefer not only texts from the science perspective focused on humanistic aspects of the physical culture but we also will go for texts on researches concerning Olympics, especially in the context of analyses and popularisation of Pierre de Coubertin's works. We signal that change in advance with hope that authors from the research and academic centres round the world will find their interest in publishing in our periodic. We also hope that CIPC

members' articles and reviews will leverage the level of publications and prestige of the *Studies in Sport Humanities*.

The journal appears on the Ministry of Science and Higher Education scientific journals list B. It is also indexed in the Index Copernicus International database. Detailed guidance for preparing text, procedures for reviews, and other editorial requirements are located in the publishing regulations. The original version is the hardcopy version, while the electronic version can be found on the editorial board's website: [www.sporthumanities.pl](http://www.sporthumanities.pl)

Since 2016 the periodic will be published only in the electronic version (open access).

This issue of *Studies in Sport Humanities* contains selected papers from the area of sport psychology. The variety of problems it addresses, demonstrates how multidimensional this science is today. The papers concern emotions, pressures, factors related to effectiveness in sport and system of values.

Sport psychology does not only help improve athletic performance, but also describes and explains processes pertaining to sport activity.

We hope the papers will provide a better understanding of theoretical and applied tenets of sport psychology.

Editor-in-Chief

Associate Professor Halina Zdebska-Biziewska, Ph.D.

Issue Editor

Associate Professor Jan Blecharz, Ph.D.

# Coaching in positive sport: theoretical bases of *i7W* model

Artur Poczwardowski<sup>a</sup>, Ewa Serwotka, Kamil Radomski, Aleksandra Pogorzelska, Aleksandra Zienowicz, Aleksandra Krukowska

<sup>a</sup> University of Denver, USA

## Summary

Professional philosophy in sport coaching directly impacts coach behavior in practice and competitions. The coaching effectiveness in enhancing athlete performance, stimulating the individual and team potential, and supporting athlete personal growth changes across coaches' professional careers. Such changes are frequently grounded in information from other sister disciplines that support the world of sport, such as, sport psychology. In this article, we discuss the perspective of *positive sport* (PS) and present a number of practical principles for coaches' consideration. These principles were grouped together into catchy phrases as follows: inspire (*inspiruj*), explain (*wyjaśnij*), expect (*wymagaj*), support (*wspieraj*), reward (*wynagradzaj*), appreciate (*wyróżnij*), grow (*wzrastam*) and win (*wygrywam*) (in short: *i7W*). These recommendations deal with four time perspectives: one task, one training session/competition, one season, and an entire athletic career. For the development of the perspective of PS among coaches, there is a need for sound theoretical foundations that are supported in reliable basic and applied research which we review in this present report. We aspire for this content to be used by sport psychologists, coaches, and professionals in sport social sciences to increase professional qualifications among sport coaches and to enhance the social status of this important profession.

**Keywords:** positive sport, coach behavior, performance psychology

## Introduction

The challenges of contemporary sport involve not only the athlete, but also the entire coaching staff: coaches in the foreground and supporting team in the background. High performance expectations and pressure to set new records in sport are also influencing the remaining actors of the sport scene, for example, parents (both the young and adult athletes), life partners/spouses, specialists (theorists and practitioners) in physical culture and sport sciences, sport activists, as well as journalists and reporters. The pursuit of a desired outcome at any cost can cause multiple problems; all sport participants and fans can be affected in the following categories: interpersonal, health, financial, image, legal and ethical. Poczwardowski, Nowak, Parzelski and Klódecka-Różalska [2012], within the framework of the *Positive Sport* (PS), proposed an alternative to the approach focused exclusively on high performance outcomes. In short, they proposed to increase the focus on positive aspects related to the functioning of the individuals and groups involved in both competitive and recreational sport. The Positive Sport can be viewed as a dynamical system [Vallacher & Nowak 1994] in which respective concepts presented by Poczwardowski and collaborators are implemented [2012, p. 74]: (a) improv-

ing physical fitness, endurance, technical, tactical, team and psychological competences of an individual – that is, skills directly linked to competition aimed at achieving the best possible outcome in sport; (b) equally important pursuit of “non-sport” goals, related to growth in physical and mental health, and to physical, psychological and social development of an individual and groups; (c) investing in self-actualization, self-realization, and in harmonious and comprehensive development of all sport actors; and (d) creating, maintaining and promoting positive standards (role models) to follow for the sake of the common social and cultural good.

The above outlined philosophy and conceptual models of PS were created on the basis of selected sport psychology concepts. To continue with this intellectual perspective in understanding the world of sport, below, we present a few theories and their empirical verifications that have a promising practical potential for a coach's work. These are: (a) Self-determination theory [Ryan & Deci 2000], (b) models of an athlete-coach relationship [e.g., Jowett & Poczwardowski 2006], and (c) models of transformational leadership [e.g., Bass 1985; Callow, Smith, Hardy, Arthur & Hardy 2009]. From these theoretical frameworks, we have selected eight key practical principles dealing with four time perspectives:

one task, one training session/competition, one season, and an entire athletic career. For the sake of their recipients (i.e., coaches), these principles were grouped together into catchy phrases, as follows: inspire (*inspiruj*), explain (*wyjaśnij*), expect (*wymagaj*), support (*wspieraj*), reward (*wynagradzaj*), appreciate (*wyróżnij*), and as a result, grow (*wzrastam*) and win (*wygrywam*) (in short: *i7W*, see Figure 1). We want to stress that the principles grouped together in the *i7W* model are only examples chosen to address the needs of a coach's work within the framework of PS, (i.e., "good" sport that leads to a comprehensive development; sport that is socially responsible). The PS philosophy theoretical and practical power of attraction goes beyond the area covered by the *i7W* model, and, as we hope, future reports will continue to explore PS conceptually and empirically [e.g., Szykarewicz & Poczwardowski, this volume]. It should be stressed that the *i7W* model, after proper adjustments, can be applied in other domains of achievement, including teachers' interactions with students [Serwotka, Radomski & Zienowicz 2013]. Given the need for coaches' continuous professional development, and in support of sport psychologists' efforts who are trying to satisfy this need, further in this article, we give a concise presentation of the *i7W* model's theoretical bases (theories, models, concepts). At the same time, we attempt to show how a given theoretical aspect helps to understand the impact of the *i7W* in the above-mentioned four time perspectives (i.e., a task, a training session or a competition, a season, and an athletic career). Secondly, we provide some examples of specific and use-

ful coaches' behaviors for all of the eight elements of the model.

The article finishes with a summary and conclusions regarding the need for further theoretical and empirical explorations of PS, especially those related to coaches' work.

## Self-Determination Theory

Self-determination theory is one of the leading systemic frameworks explaining people's behavior in task-oriented settings. According to this theory [Ryan & Deci 2000], satisfaction of basic psychological needs (i.e., competence, relatedness, autonomy) improves the quality of learning, task-performance and achievements in a particular area of functioning, and translates positively into personal growth and psychological well-being [Czapiński 2008; Ryan & Deci 2000]. In other words, when a coach provides an athlete with opportunities to make enough visible progress (regular, even smallest successes in any areas of mastery) he is increasing a sense of competence in the athlete. Moreover, through open communication in consideration of a good coach-athlete relationship, and by stimulating friendly bonds in a team, a coach creates an environment to fulfill the need of relatedness. Finally, by a careful consideration of what choices are to be made by an athlete, a coach stresses the growth of an athlete's sense of autonomy. A list of some possible behaviors (in relation to the areas of competence, relatedness, autonomy, respectively) includes the following: (i) together with an athlete, a coach is looking for a new ways

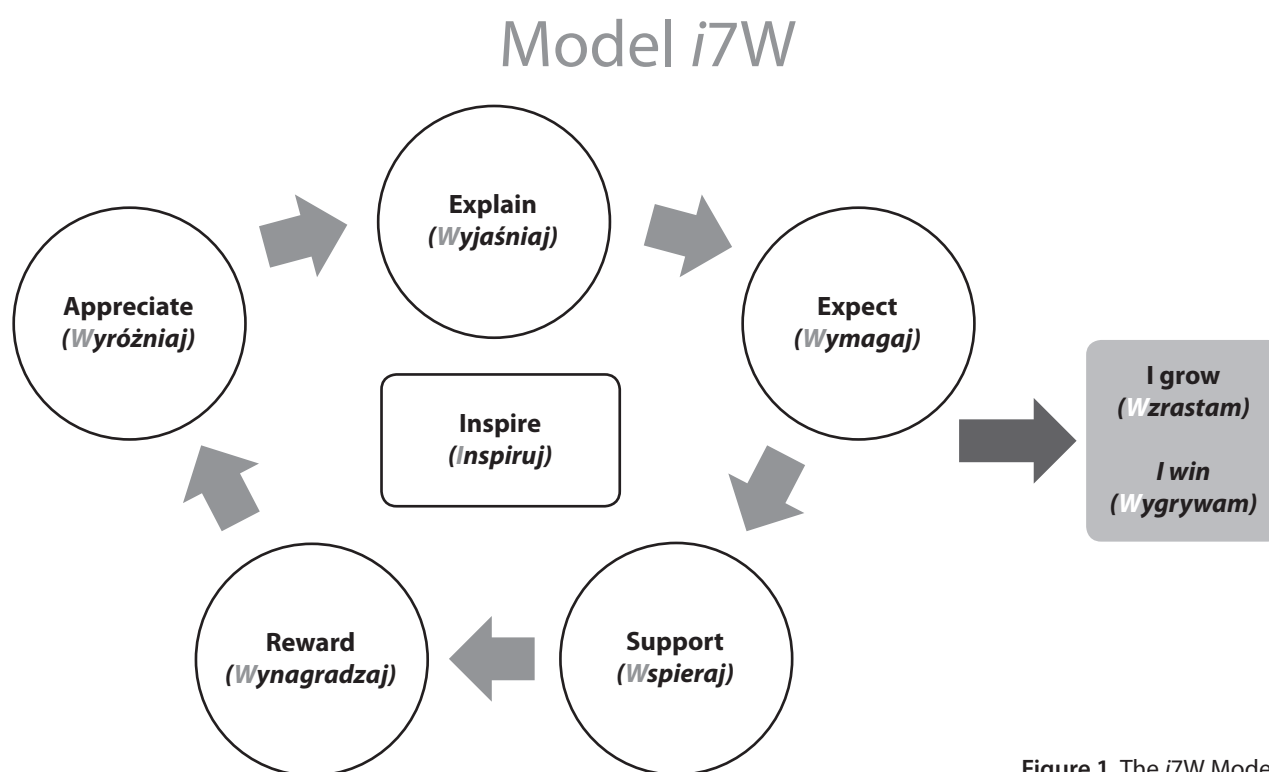


Figure 1. The *i7W* Model.

of coping during the first national team's training camp (e.g., stressing the strengths, readily available resources; while concurrently *supporting* the athlete [see *i7W*] in the context of an athletic career); (ii) s/he makes use of every opportunity to stress and reinforce team-spirited behaviors (thus, simultaneously *appreciating* [see *i7W*] in the perspective of one training [or one competition]); (iii) s/he points out different ways of solving problems and provides a choice (while at the same time *inspiring* [*i*] in the *i7W* model] within one particular training task). For example, taking perspective of a whole season, a coach can address the need to fulfill the sense of competence through regular tests of physical fitness (endurance, speed, other), technical and tactical skills, and through a constructive communication of the results and their meaning in continued growth. When communicating the results of these tests, this approach not only indicates the areas for improvement, but also stresses the progress and important achievements of the individual. For a coach who in his or her approach to an athlete uses some strategies from the *i7W* model, such a meeting is an excellent opportunity to *inspire* an athlete to engage in further efforts, to define the *expectations*, to *explain* the way to achieve the goals, to underline the existing and future resources (*support*), and also, to notice (i.e., to *appreciate*) the unique attributes of an athlete (e.g., diligence, optimism, pace of progress) that are the source of a current progress and are promising even greater improvements in the nearest future.

An optimal satisfaction of the above-mentioned three needs, when activating and relying on the intrinsic motivation to perform some tasks or activities (where on the other end of the continuum lies the lack of motivation – amotivation) is one of the mechanisms proposed by Ryan and Deci [2000] that produces positive outcomes in learning and performance. Further, the internalization of the sources of motivation results from the internalization of the behavior regulation (from external to autonomous). In another words, activities at first seen by an athlete as an obligation or something to be done to avoid negative consequences (i.e., extrinsic motivation), along with a satisfaction of the three key needs, are starting to be perceived as one's own tasks and roles; thus, more and more coherent with one's own vision and values (i.e., integrated motivation), and finally, as deeply satisfying and personal (i.e., identified motivation, which is most similar in characteristics to the intrinsic motivation). The key here is the role of the environment, in this case, it is up to a coach, who, first of all, *expects* (i.e., awaits particular efforts) and *rewards* (these are the conditions to fulfill the need of competence), *explains* and *supports* (i.e., conditions to fulfill the need of relatedness), and who *inspires* and *appreciates* (i.e., conditions to fulfill the need of autonomy).

The above sketched out coach behavior patterns are coherent with, what is described within the sport psy-

chology, characteristics of a mastery-oriented motivational climate [Ntoumanis & Biddle 1999; Kłodecka-Różalska 2003], or with widely explored characteristic of the influence of autonomy supportive environments [Conroy & Coatsworth 2007; Gagné; Ryan & Bargman 2003; Malett 2005; Reiboth & Duda 2006]. Secondly, one of the repeated correlates of the above-described strategies for coaching both individuals and teams is an effective relationship between a coach and an athlete. In line with the topics to be discussed in this article (as outlined at the beginning), the mastery orientation and autonomy supportive environments are not going to be further discussed, but the coach-athlete relationship warrants further elaboration.

## Coach-athlete relationship

Effective coach-athlete relationships [Jowett 2003; Jowett & Poczwadowski 2006] are characterized by several components that, when applied to daily practice by a coach, support positive outcomes in terms of training progress, sport performance, and the satisfaction of basic psychological needs (i.e., competence, relatedness, autonomy).

Poczwadowski and colleagues [Poczwadowski 2000; Poczwadowski, Henschen & Barott 2002] described positive elements of an athlete-coach relationship and constructed some practical indications on how to improve the functioning in an interpersonal dyad. Elements, such as “activity” (performed for another person without their presence), “interaction” (to increase performance during practice and competition), “care” (attention, trust, and respect), and “subjective positive meaning ascribed to a relationship,” contributed to the development of positive relationships. All four elements concerned both sport-related and non-sport domains of both the coach and the athletes (as proposed in *Positive Sport*). Next, the data, collected through in-depth interviews and a three-month long field observations of 18 athlete-coach relationships in a female gymnasts' team, related to four time perspectives proposed in this article, that is one task, one training session (or particular competition), one season, and a four-year athletic career (college athletics model in USA). Here are some examples of coaches' behaviors matched with elements of the *i7W* model: (i) showing interest in personal affairs, such as life decisions or academic issues (*inspire*); (ii) detailed explanation of training and competitive tasks (*explain*); (iii) expecting an injured athlete to achieve training goals, once they were consulted with a doctor regarding rehabilitation progress, or once technical elements for different programs were selected together with an athlete (*expect*); (iv) doing small favors, adjusting voice intonation to the emotions felt by an athlete, or showing patience when convincing an athlete to accept defeat in a positive



way (*support*); (v) praising an element performed by an athlete who was unaware that she was carefully watched by her coach (*reward*); and (vi) communicating an authentic care for an athlete's well-being, and underscoring, from time to time, how important an athlete is for the team (*appreciate*). Finally, the main hypothesis supported by the field data was: "the stronger and more positive an interpersonal relationship between a coach and an athlete, the more the athlete grows in sport (and a coach professionally) and in personal life (and coach as well)" [Poczwadowski 2000, p. 42]. In another words, this indicates how two principles of the *positive sport*, in the *i7W* model, *win* and *grow*, are realized among both the athletes/teams and the coach/coaches.

The 3+1C theory and research by Jowett and colleagues [Jowett 2003; Jowett & Cockerill 2003; Jowett & Meek 2000] constitute equally clear basis for the *i7W* model. Through a series of studies, an interpersonal relationship was defined as a situation in which two people's emotions, thoughts, and behaviors are mutually and causally interdependent. The emotions were expressed through the construct of Closeness (*C*), thoughts (cognitive aspect) through the notion of Commitment (*C*), and behaviors through the notion of Complementarity (*C*). In short, closeness is emotional co-dependence, trust and feeling of liked, being liked, respected, appreciated, and of being taken care of [Michalak & Poczwadowski 2015]. The principles: *inspire*, *support*, *reward* and *appreciate* are easily identifiable in this construct. According to the notion of Complementarity, coach's efforts (*explain*, *expect*) are important only when an athlete responds to them accordingly through actions (e.g., motivation to train harder), and when it correlates both with better outcome in sport (*winning*) and personal growth (*growing*). Commitment assumes focus on long-term relationship, and, if needed, resignation from some of the own benefits for the sake of this other person in the dyad, provided resignation is not too challenging on a personal level. Moreover, through maintaining their relationship over a longer period, an athlete and a coach aim to maximize the sport performance [e.g., Jowett & Cockerill 2003].

Interestingly, the principles of the *positive sport* that postulate an equal importance of sport results and well-rounded development, are in some ways coherent with the notion of harmonious and obsessive passion [Vallerand et al. 2008], which when shown by a coach in his or her professional style, can influence the relationships with the athletes. In the case of obsessive passion, the activities within a particular area of achievement have been internalized in one's identity in a way that they are subject to external control. Despite liking an activity, an athlete feels compelled (internal pressure) to perform it, and he or she derives self-worth and a feeling of being accepted from it. The internal conflicts, negative emotions and

feelings of pressure lead to less flexible form of engagement, often to the detriment of personal values, relations, and unfulfilled needs in sport. Alternatively, a harmonious passion is derived from autonomous internalization of an achievement domain into one's identity. A harmoniously passionate person exhibits openness when deciding about forms of engagement in sports, and pursuit of interests and non-sport needs. Moreover, such disposition correlates with positive emotions and decreases the experience of failure as being emotionally devastating. Lafrenière, Jowett, Vallerand, Donahue and Lorimer [2008] demonstrated, through their research on 251 athletes, that a positive coach-athlete relationship (co-determined by positive emotions) and the coach's subjective well-being are added value of the harmonious approach. It is worth stressing that for 263 athletes, harmonious passion predicts the same level of engagement and performance as obsessive passion; while bringing the added value in form of increased psychological well-being of the athletes [Vallerand et al. 2008].

The coaching styles described above lead to a particular atmosphere during training sessions and competitions, and contribute to shaping coach-athlete relationships. These coaching styles are often discussed in the literature as leadership styles, and the prevailing style in the latest sport leadership research, transformational leadership, constitutes another theoretical basis for the *i7W* model.

## Transformational Leadership

Practical advantages of transformational leadership [Bass 1998] are noticeable in different domains where human management is important: in the workplace [Pacek & Poczwadowski 2011], as well as in sport [e.g., Rowold 2006; Krukowska 2015; Krukowska, Poczwadowski & Parzelski, in print]. It applies not only to the formation of a coach-athlete relationship, but also to the influence of an individual in contact with representatives of a whole team (e.g., second coach, physiotherapist, and psychologist). In this article, we will focus on transformational leadership in the context of coach's work with an athlete and a team. To begin with a general definition, a transformational leader [Bass 1985, as cited in: Rowold 2006] is perceived as a charismatic, passionate person, driven by positive values; someone who inspires athletes to pursuit mastery performance. Transformational coaches intellectually stimulate athletes they work with, prompting their reflection. An equally important element characterizing this type of a coach is an individual approach to an athlete's physical, as well as psychological development. Such a leader [Bass 1990] takes time to know his or her athletes, to create a close relationship with them, while being clear about *expecting* high quality of performance in their respective sport.

Management style related to transformational leadership is a concept particularly well-aligned with the vision of a coach in *positive sport*, who is applying the *i7W* model in daily practice. As a result, he or she influences the functioning of the followers [Bass 1990], their motivation and sport performance [Arthur et al. 2011; Rowold 2006], thus influencing *winning* (an element of *i7W*). Increasingly, research confirms improvements in well-being of athletes coached by a transformational leader [Sivanathan, Arnold, Turner & Barling 2007; Stenling & Tafvelin 2014], because they are reinforced by sport participation and interaction with a coach (*reward* and *appreciate* from the *i7W* model). What is worth noting is the fact that an increase in transformational leadership behaviors is followed by one's own-satisfaction from being a leader and from developing professionally [Pacek & Poczwadowski 2011]. We present below examples of a coach's influence on an athlete/team in relation to the four components of transformational leadership [Bass 1985, as cited in: Rowold 2007; Callow et al. 2009] which are: (a) idealized influence; (b) inspirational motivation; (c) intellectual stimulation; (d) individualized consideration.

*Idealized influence*: (i) a coach tries to be a role model for athletes by talking about the opponents with respect (i.e., *inspiration*, see *i7W*), and during competition, by encouraging fair play behaviors; (ii) a coach *expects* athletes (see *i7W*) to verbally and non-verbally (gestures, facial expression) reassure each other when learning a new skill. Note, idealized influence, through meeting high expectations, boosts sense of competence among the followers [Shamir, House and Arthur 1993]. *Inspirational motivation*: (iii) a coach *inspires* athletes (see *i7W*) by presenting a plan (vision) for the whole season, while stressing an important role played by every athlete in realizing this vision. The *inspirational* way of motivating followers increases a sense of self-efficacy in pursuing goals [Zienowicz, Parzelski & Budnik-Przybylska 2015]. *Intellectual stimulation*: (iv) a coach *explains* (see *i7W*) that regaining concentration after a mistake in a match builds up an athlete's willpower. Bouncing back from mistakes and solving numerous problems that sport provides creates opportunities to learn and to accumulate life lessons (see Double-Goal Coach: growth in sport and in life [Thompson 2003], and *grow* and *win* in the *i7W* model). *Individualized consideration*: (v) a coach is approachable and ready to help (advice, conversation) in non-sports areas of functioning of the athletes, thus *supporting* them in life and treating their athletic careers in a holistic way (see *i7W*); (vi) when preparing strategy for a match, a coach listens to and considers athletes' suggestions – she or he *appreciates* (see *i7W*) the unique input of team members in pursuit of shared goals. This is how a coach creates open, trusting and genuine relationships with the athletes [Jowett & Cockerill 2003; Poczwadowski et al. 2002].

This way of constructing a relationship with the athletes results in an optimal (mastery or champion-like, to the extent possible given the circumstances) level of sport performance – for an individual and for a team [Riemer 2007]. Using transformational leadership style was also found to have a positive impact on intrinsic motivation [Charbonneau, Barling & Kelloway 2001], which is related to the experience of “flow” [Csikszentmihalyi 2007; a state of a complete absorption in an activity performed by an individual.

## Correlates of self-determination, of a good coach-athlete relationship and of transformational leadership

Our discussion of how coaches' actions within the *i7W* model increase chances for an optimal sport outcome and personal *growth* (two equally important goals from the perspective of *positive sport*), will be complemented with some information on selected correlates of self-determination, a productive coach-athlete relationship, and transformational leadership. On an individual level, these co-existing phenomena are: flow [Csikszentmihalyi 2007; Jackson 1996] and belief in one's own self-efficacy [Bandura 1977]. On the team level, we will discuss group cohesion and sense of team efficacy [Carron, Widmeyer & Brawley 1985].

### Flow

When discussing the functioning and performance in sport with regard to the positive emotional states, the concept of flow [Csikszentmihalyi 1990] has remained in the center of attention in the sport psychology theory and practice, and has entered the language of coaches and athletes. Flow is a state of complete absorption in an activity in which full immersion in action is a source of pleasure. Csikszentmihalyi [2000] distinguished nine dimensions of flow, which are also conditions of its occurrence. These dimensions are: (a) a balance between challenge and skill; (b) automaticity in action; (c) precisely defined goals; (d) clear interpretation of feedback; (e) full concentration on the activity; (f) feeling of being in control; (g) losing self-consciousness; (h) distortion of time; and (i) autotelic experience. It is worth considering how a coach, through the application of the *i7W* model, can reinforce occurrence of listed dimensions to stimulate flow in an athlete's experiences. Jackson [1996], in her research, discovered a strong, positive correlation of constructive coaches' behaviors and their verbal support with occurrence of flow among their athletes.

By interpreting previous research as bases for the *i7W* model, for example (in order of the conditions enumerated above) in everyday practice, a coach demands

from and *expects* (see i7W) an athlete to be engaged in a constant development of his or her skills, with simultaneous care for harmonious choice of training tasks. A coach contributes to the automaticity of task execution by designing together with an athlete a routine to be performed before every competition. Every goal related to a given performance aspect is clearly defined and *explained* (see i7W) in order to provide an athlete with a clear path to an optimal performance during competition. At the same time, a coach highlights obvious progress related to the expected performance, thus *supporting* (see i7W) unequivocal interpretation of a feedback received by an athlete during competition. A coach attempts to concentrate athlete's focus on a current task by clearly and concisely *explaining* (see i7W) different components of technique to be performed. A coach *appreciates* (see i7W) athletes' individual competencies, linking their impact on successful performance of a particular skill during a match. This is also how an athlete's feeling of being in control is shaped. Finally, an element of flow that can be consciously stimulated through a coach's influence is an autotelic experience. The main feature of an autotelic experience is that performing an activity is an end in itself. A coach, by *inspiring* (see i7W), is able to reinforce a joy-oriented attitude of feeling passionate about what an athlete is doing at the moment. One method of inspiration is through presenting quotes by famous, respected athletes, who stressed the importance of enjoying sport performance itself.

## Self-efficacy

Self-efficacy is best reflected by one's confidence in being able to perform well in a given task [Bandura 1977]. People with a strong sense of efficacy set out more challenging goals for themselves and are able to maintain a higher level of commitment over a longer period of time, even when faced with failures or mistakes [Poczwadowski, 1996; Tolli & Schmidt 2008].

Bandura [1977] identified several sources influencing a level of self-efficacy. One of them is a successful performance of a task or other actual accomplishments. A coach often enhances athletes' sense of efficacy by reminding them about their previous accomplishments, thus providing them with psychological *support* (see i7W). Another source of self-efficacy is modelling, that leads to drawing conclusions from observed behaviors (successes) of other people. A coach *explains* (see i7W) a difficult training task through its presentation by an athlete who has a sufficient level of competence. Such form of presentation is likely to increase a sense of efficacy among the athletes who are watching the model before they are about to perform the task. It is critical that the coach maintains a high level of concentration among athletes observing the task. To strengthen it, a coach in-

vites (*expects* [see i7W]) all the athletes to enumerate out loud the essential elements to be executed in a given task. Another source developing one's sense of self-efficacy is verbal persuasion – a coach, following the i7W model, tries to accentuate athletes' sense of efficacy during a practice or a competition through verbal communications, demonstrating belief in their individual competence and their abilities to achieve high quality of performance (*supports, rewards and appreciates* [see i7W]). Another source for self-efficacy are vicarious experiences. Application of visualization of one's own master performance substantially increases self-esteem [Moritz, Martin, Hall & Vadocz 1996]. Regular visualization is embedded in five elements from i7W: *explained, expected, supported, rewarded and appreciated*. Finally, depending whether the physiological state of an athlete is positive or negative, it can be a source of an increase or decrease in self-efficacy. Having *explained* the rules of healthy diet, good , and daily recovery and over the whole season, a coach later *expects* his or her athletes to act accordingly. Physiological and emotional states of an athlete are equally important in building a sense of efficacy. A coach *inspires* (see i7W) athletes by keeping composure and expressing pleasure derived from being a part of a training session or competition.

From the perspective of the essential source of sense of self-efficacy (which is successful performance), it is important to provide proper feedback with enough attention paid to smaller and bigger successes in the training and competing process. We would like to remind a reader of the four time perspectives: a task, a training or a competition, a season, whole athletic career; however, the next example involves activities over a series of training units. In their research, Smoll and Smith [2006] observed increased athlete self-efficacy and more positive reactions to coaches who provided positive feedback immediately after an athlete performed a task with high engagement. The coach behaviors that had considerable impact on positive reactions of athletes were: (i) providing instructions on how to correctly perform a task, (ii) encouraging athlete to take on a challenge, (iii) providing technical instructions, (iv) increasing a total number of encouraging and supporting communications regardless of the quality of the performance. When looking into these behaviors from the perspective of i7W model, by trying to praise every athlete at least once during a training session, this coach demonstrates principles of *supporting, rewarding and appreciating* (in case of younger athletes, journaling praises might be another good idea to follow).

## Team cohesion

Carron [1982] defined team cohesion as a dynamic process characterized by a tendency to stick together as a team,

and to stress sense of the unity of a team, as well as by a pursuit of shared goals and fulfillment of shared tasks. Ball and Carron [1978] emphasized that coaches perceive cohesion as a necessary condition of a team's success.

Through behaviors based on the *i7W* Model, a coach takes care not only of an individual athlete well-being (as described above), but also of the team cohesion development. Coach's behaviors, such as highlighting teamwork, in sport and life, and setting team goals, are also tightly linked to team cohesion [Callow et al. 2009]. To put it simply, activities in the *i7W* model are aimed at a whole team and team behaviors (and not only directed to particular individuals). A coach who *explains, expects, supports, rewards* and *appreciates* whole team, is investing in the development of team cohesion. In their observations, Gardner and colleagues [1996] and Westre and Weiss [1991] discovered that coaches develop more cohesive teams when displaying democratic behaviors, social support, and positive feedback. For example, a coach during briefing after a match might try to ask more open questions related to specific match situations. Questions are focused on what went well, what could have been done differently, and what aspects should be worked on during the upcoming training sessions. A coach *appreciates* individual players, but also team behaviors, by drawing attention to the good elements of performance, or to behavior coherent with team and club values (e.g., verbal communication and supporting gestures exchanged by athletes after mistakes or when someone experiences difficulties during a game).

In sum, we described a number of theories and constructs as theoretical and empirical assumptions (postulated foundations) for the *i7W* model. One of most important threads emerging from this discussion is the conceptual coherence with the principles of personal growth through sport participation [e.g., Tołwiński 2006], and a holistic approach to the athletic career [Stambulova 2010; Siekańska 2013; Wylleman & Lavallee 2004] with particular focus on the positive approach to children and youth sport [Blecharz & Siekańska 2009; Thompson 2009; McGuire 2012].

## Personal growth

A value derived from sport participant can (but does not have to) be a driving force of personal growth [Plato 1920], and as pointed out by Sas-Nowosielski [2008], the training process includes also athlete education on how to function in a society, among other pedagogical goals. We find that it is not the sport itself, but *positive sport* (good and socially responsible) that is fulfilling this growth-oriented potential of sport. In other words, sport in itself does not define positive or negative results, but the outcomes of sport participation are shaped by the people functioning in it. Therefore, a coach must be

equipped with the knowledge and skills of socio-pedagogical aspects of sport, because this knowledge, in a natural way, is shaping the coaching behaviors, thus influencing the envisioned comprehensive development of the athletes. Especially in children and youth sport, a relationship and contact with a coach, as well as attitudes and values represented by a coach, have a profound impact on future psychosocial attitudes of young athletes. It relies upon a coach to discern these values and to find a way to implement them into his or her own coaching practice (see *inspire, support* and *explain*).

A coach, apart from supporting an athlete in achieving a performance goal should also strive to provide an athlete with appropriate diversified stimulation, joy, pleasure and fun. Such an approach ensures comprehensive development of personality and self-reliance [Czajkowski 2004]. In this natural ability to influence the athletes, coaches not *inspire* and motivate for training and competing but also educate and guide (see two elements of *i7W*: *explain, grow*). More importantly, "we are educating not by what we are saying, but by who we are" [Czajkowski, p. 55]. Thus, coaching skills also deal with education and motivation (see *inspire* from the *i7W* model), as well as with leadership and organization (see *expect, explain*). Only when coaching skills and behaviors are supported by these four functions, they can be really effective. The two-way positive communication between a coach and an athlete is important for the development of both sport and life skills, and it is a predictor of success in sport [Gould and Carson 2008 (see *win* and *grow*)]. Moreover, a coach's respect towards other athletes and coaches (also for the opposing team), can create a behavior pattern of an athlete's respect for a coach, club colleagues, and opponents [Zawalski 2004 (see *expect*)].

In short, a coach creating a space for athlete development, should start by defining own values, needs, and then include them skillfully in one's own coaching practice. It is important for a coach to remember that, at every step of the way, she or he bears responsibility for athlete education as aligned with the classical Greek rule *kalos kaghatos* ("beautiful and virtuous"), which, apart from physical development, perceives a system of physical exercises (sport) as a means of shaping foundations for life in general [Tołwiński 2006]. As coaches go through their professional journeys, they learn and grow themselves; thus are equal beneficiaries of the growth-oriented philosophy (*wzrastam*).

## Stages and course of sport talent development

One of the more important distinctions and conditions for planning coach's work, and also applying *i7W* model, is the holistic approach to the athlete over the whole course of athletic career and consideration of the fu-



ture life outside sport. This approach entails an understanding of the specific features of a given stage of athletic career [e.g., Blecharz & Siekańska 2005]. At every stage, different methods and techniques can be crucial for a transition to further stages, including continued participation in recreational sport or regular physical activity, once an athletic career has been terminated. Such career planning, in the holistic approach, was proposed by Wylleman and Lavallee [2004]. It includes the time when a child starts to enjoy physical activities, and follows through athletic career termination. In this approach, a career can be viewed from several perspectives: (a) a developmental stage, portrayed in theory as transition phase, expressed by athlete age (10–35 years); (b) athletic career process (initiation, development, mastery/perfection, termination); (c) perspective of psychological maturity (childhood, adolescence, adulthood); (d) perspective of social relations (parents, siblings, peers during initiation stage, peers, coach, parents during adolescence, life partner, and coach during mastery stage, and family in adulthood); (e) perspective of education and professional activity (basic level, medium level, higher level, professional practice and employment) and (f) funding (financing) at consecutive stages (family, family and scholarships, scholarships, sponsors and the State as well as employer and family).

It is important to remember that coach's engagement differs at every stage of athlete development and athletic career. An Olympic champion, Leszek Blanik, when he was at the peak of his athletic career (just before Olympic Games in Beijing), heard the following words from

his coach: "You have reached a stage in your career and development, when I am merely your consultant" [Pogorzelska, manuscript in preparation]. Table 1 (below) assembles together the developmental model of athletic career with coach behavior proposed by the *i7W* model.

As we have stressed above, in the holistic approach to an athletic career, a special place is assigned to the positive approach to children and youth sport. According to the generally accepted coaching rules for children and teenagers, it is crucial that a coach adapts his or her professional style and drills to athletes' maturation process and pace of development. The early specialization, so often resulting from professionalization of youth sport, is inadvisable for an optimal and long-term, sustainable high achievement in sport [Côté, Lidor & Hackfort 2009; Siekańska 2013]. In order to maintain positive attitudes towards physical activity among young athletes, a coach should choose specific exercises and should plan a workout with thoughtful consideration of athletes' individual capacities and temperament (see *explain* and *support*). It would be also beneficial if, within this process, a coach considered acting and coping styles of the athletes, and adjusted training tasks accordingly (see *support*); which could in a positive way influence the coach-athlete relationship and the effectiveness of their cooperation. In such environment, the athletes can strive to achieve emotional mastery that allows them to achieve good results in sport and outside it (see *grow* and *win*), while maintaining joy and satisfaction [Blecharz & Siekańska 2009; Taylor 2002].

**Table 1.** Developmental model of an athletic career and the *i7W* model.

Transformation phase	Age (years)					
	10	15	20	25	30	35
Athletic career	Initiation	Development	Mastery		Termination	
<i>i7W</i>	<i>Inspire</i>	<i>Inspire, explain, support, reward and appreciate</i>	<i>Expect, support → win and grow</i>		<i>Grow and win</i>	
Psychological maturity	Childhood	Adolescence	Adulthood			
<i>i7W</i>	<i>Inspire</i>	<i>Inspire, explain, expect, reward, appreciate</i>	<i>Expect, grow and win</i>		<i>Grow and win</i>	
Social relations	Parents, siblings, peers	Peers, coach, parents	Life partner, coach		Family (coach)	
<i>i7W</i>	<i>Inspire</i>	<i>Inspire, explain, expect, reward, appreciate</i>	<i>Expect, grow and win</i>		<i>Grow and win</i>	
Education and professional activity	Basic level	Medium level	Higher level		Professional practice and employment	
<i>i7W</i>		Support, expect	Support, expect			
Funding	Family	Family and scholarships	Scholarships, sponsors		Employer, family	
<i>i7W</i>		Support	Support, expect, explain			

From the psychological perspective discussed throughout in our article, Blecharz and Siekańska [2009] identified concrete ways of influencing young athletes and captured them in ten rules of sport training for children. These are: (i) I have fun and I do what I like; (ii) I train my brain; (iii) I do my best and patiently await results; (iv) every day, I try to do something that will get me closer to my goal; (v) I know what I am good at, and how I can achieve more; (vi) I can sometimes be wrong; (vii) I can influence how/what my day looks like; (viii) I can accept defeat and can cope with obstacles; (ix) I respect my sport opponents; and (x) every competition is an opportunity to learn something about myself. These principles are coherent with the three stages of talent development in various domains (including sport) identified by Bloom [1985]: early years (initiation stage), middle years (development stage) and late years (perfection stage). The early years (initiation stage) are mostly characterized by playing and focusing on having fun. A coach during this time mainly *supports* (see *i7W*) and *inspires* (“i” in the *i7W* model) an athlete to be focused while performing one task and be engaged within one training session. Over these years, athletes particularly rely on their coaches (are *supported* by a coach), who allow for experimentation and exploration of various physical tasks, thus contributing to athlete *growth* (see *i7W*) in physical domain of human development. During this time, a coach notices first signs of athletic talent. Coach’s *appreciation* (see *i7W*) during this time is of significant importance; for example, a coach highlights individual talent/skills of an athlete and *appreciates* those who display engagement in training. In this period, a particularly important task for a coach is to foster the original motivation to play a particular sport, which includes fun and love of the sport. Through their own attitude and behavior, the coaches set an example for the athletes, which additionally stimulates athletes’ intrinsic motivation and reinforce willingness to learn and readiness to exert efforts (see *inspire* in the *i7W* model).

The middle years are dedicated to athlete technical development. The coaches *expect* (see *i7W*) and demand from their athletes to perform harder over one training task and within whole training session. This is when an athlete-coach cooperation reaches another level. To be precise, a coach starts to *expect* more and provides more information (mostly within technical aspects; *explain*; see *i7W*) within one training, one season, but also offers more guidance on functioning outside of sport. In the timeframe of one training, for example, a coach sets high, but reachable goals, simultaneously *expecting* athletes to be fully engaged in performance execution. From the perspective of the entire athletic career, a coach clearly defines healthy values (e.g., honesty, diligence, fair play), which she or he expects the athletes to follow. As a result of these combined coaches’ efforts, in a natural

way, athletes develop their skills: they *grow* (see *i7W*). During the middle years, the first attempts at competition are made, and, given favorable conditions, sport achievements might follow (*win*). For the sake of order and clarity in Table 1, the late years of development stage are the time of an athlete’s high commitment to the ultimate goal (see *grow* and *win*), with a simultaneous development in the different areas of life (e.g., studying at a sport university). Also, in this period, responsibility for the competitions and training program lies not only on the coach, but also on an athlete (see *expect* and *grow*).

## Summary and conclusions

In our discussion of coaching styles and behaviors, we have underlined a need to invest in two equally important goals of sport participation: achievement of an optimal sport results and comprehensive development of an individual along with holistic personal growth. The recommendations provided for a coach were summed up in ‘i’ and ‘5W’ within the *i7W* model – *inspire*, *explain*, *expect*, *support*, *reward*, and *appreciate*. These six principles, supported by the theory, have positive effects on athletes, and in turn contribute to “I *grow* and I *win*” for an individual (including the coach), and for a team to “We *grow* and we *win*.” The *i7W* model was justified by three key systemic theoretical frameworks: self-determination theory, coach-athlete relationship models, and models of transformational leadership. Additionally, this model was supported by selected correlates on an individual level (flow, self-efficacy) and on a team level (team cohesion). Next, we have presented two clearly emerging threads: one related to the personal development, and another one linked to the holistic, developmental approach towards an athletic career, with special consideration of the children and youth sport. We have attempted to illustrate this discussion with examples of coaching actions and behaviors in four time perspectives: one task, one training session/competition, one season, and an entire athletic career. Once again, we want to stress the fact that this present article is yet another voice in formation of an idea and methods of the *positive sport*. Therefore, beyond as we think, broad theoretical foundation, the *i7W* model has a clear practical application, so we encourage coaches to adapt it in their professional practice.

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# How not to fail in competition? Coping with pressure in sports

Łukasz Bilski<sup>a</sup>, Wojciech Kasza<sup>b</sup>

<sup>a</sup> Jagiellonian University

<sup>b</sup> University of Physical Education in Cracow

## Summary

Pressure in sporting competition is quite common; however, it can have either a positive or negative influence on an athlete's performance. Once the athlete starts seeing pressure as negative, their performance quality may drop below the expected level. The purpose of this study is to identify the optimal ways of coping with pressure. Various psychological theories regarding attention or social behaviour have been reviewed. Two tools were used in empirical research. The *Sport Pressure Checklist* by Rushall and Sherman [1987] deals with sources of pressure in the sporting environment. Pressure can be evaluated as positive, negative, or neutral. Sources of pressure were compared with psychological coping capabilities using the *Athletic Coping Skills Inventory* by Smith, Schutz, Smoll and Ptacek [1995]. Both tools were translated into Polish and adapted by the authors of this study. Research was conducted amongst volleyball players representing different levels of professionalism and experience. The results show that individual coping styles differ between athletes. There is a relationship between coping styles and perceived sources of pressure amongst athletes. The purpose of this study was to create personalized best practices for teachers, coaches, and the athletes themselves that would enable them to cope with and react to heavy pressure in the most optimal way.

**Keywords:** Pressure, coping, volleyball

## Introduction

Scientific research, especially relating to sporting rivalry, has deepened our knowledge of the possibilities and capabilities of the human body as well as its continuous growth in terms of achievement. Athletes are better prepared than ever; however, they are also being put under increasing pressure. In 1970 Krzyżanowski, in his work "Aktywność siatkarza", explored how to interpret periods of decreased activity or "loss of form" in individual players, as well as the whole team. As if by the touch of a magic wand a strongly performing player is unable to dig the simplest ball. The team wins a set by a massive margin and then scores only few points in the following set. In times like these coaches tend to lose their calm and allow themselves a couple of inappropriate comments, whilst later after a thorough analysis it becomes apparent that these comments should have been left unsaid. These drops in performance are something that should be addressed in everyday training, on a regular basis. The periods of "loss of form" often pass very quickly, especially when the opponent makes a couple of mistakes. Sometimes, however, they result in a lost game. Afterwards, in the locker-rooms, you can see players who are disappointed or even crying. Is it lack of motivation that is cau-

sing this? Or is there something else missing? Why after a fantastic game and victory over a stronger opponent does the same team lose to a weaker rival the next day? To answer questions like these we can refer to sports psychology, with its practical applications, and the working solutions used by various specialists in dealing with sportspeople. One of psychology's most important functions is its influence on increased level of achievement [Morris, Summers 1998].

Volleyball is one of the most exciting, fast-growing and highly practised team games [Wróblewski 2005]. A significant motor feature in the athletes is the ability to jump. Many activities take place at high speed. In volleyball, coordination, precision, and communication play a vital role. Krzyżanowski [1970], in analysing the requirements of the tactical game, pointed out that the player must take the appropriate place in the game, always be prepared to respond appropriately to the direction of the ball, choose the most effective way to play, and respond accurately – which requires considerable energy mobilization, mental attention, and frequent intensification of motor response. An additional difficulty in terms of the need to focus attention is the cyclical change of the setup. Another difficulty is the unpredictability – a player in an acute state of alert and full mobilization of

attention (e.g. in the defence of the playing area before an attack by the opponent) expects and prepares for any eventuality that may occur, but often does not happen (e.g. the expected attack is blocked). An experience of this type has a strong demotivating influence: the probability that nothing “bad” occurs increases the “temptation” to rest. Another difficulty lies in the involvement of the relevant types of attention, among which Krzyżanowski [1970] described: positional attention (the plot, the closest competitor, the necessity of divided attention), readiness for action (the ball and the hands of the player), the choice of activities (ball, important details of the situation, choice of the form of movement), and the accuracy with the ball (precise execution of the intentional motion). Krzyżanowski [1970] notes that the dynamics of attention is very sophisticated – each state at maximum intensity is brief, and is then replaced by the next state. During any action there is actually no situation in which activity drops to zero. When competitors are weaker or less experienced, they may lack adequate time to focus and redirect their attention. Krzyżanowski [1970] noticed the influence of emotional states on the action itself, indicating the need to master the skills of calming oneself down: strong motivation for achievement (ambition) is generally accompanied by a variety of emotional states, depending on the player’s mental characteristics and development. These states work as motivation, influencing the effectiveness of the athlete. These influences can be constructive or destructive. The team, after each error, feels threatened due to the risk of failing, and committing an error results in an even deeper state of frustration, as their positive contributions may not be recognized. Mutual criticisms among co-players increase the danger of arousing anger and thus destructivity [Krzyżanowski 1970]. The danger of negative emotions is compounded by the substantial number of limitations and regulations, as well as the lack of direct contact with the opponent. Another factor is the presence of gaps between actions and sets, presenting an opportunity to express disapproval and intensifying the discharge of negative emotions [Krzyżanowski 1970]. From this brief analysis of the requirements, we can observe the significant impact that mental components have in sporting competition, specifically in volleyball.

The goal of sports psychology is, among other things, to increase control over behaviour, emotions and actions, as well as the physiological processes that take place during sporting events; sports psychology also tries to describe, explain, control and predict these processes in order to increase achievement [Zimbardo 2002]. The concept of pressure in sports activities was first described by Murray in 1938 as external determinants of behaviour. Hanna [1979] interpreted pressures as an athlete’s susceptibility to stress. The concept of Sport Locus of Control [Stauss 1975] was based on a model by Rotter [1966]. It

took into account the dichotomous (external and internal) pressure source. Sarason et al. [1978] drew attention to the relationship between perception and assessment of the individual events which are accompanied by feeling pressure. In trying to get closer to understanding the phenomenon of pressure, the diversity of sources and the ambiguity of their impact on the outcome of competition should be taken into consideration. Among the classical theories that explain the relationship of psychological variables and actions, psychosocial mechanisms that explain the phenomenon of pressure can be found. Theories can be classified into three groups with respect to the explanatory factor, i.e. arousal, attention, and social processes. Among the theories of arousal, it is worth recalling the classic inverted U hypothesis [Yerkes and Dodson 1908], which states that for every task there is an optimal level of arousal. The ability to achieve a good result in sport increases with increasing excitation until the breaking point, and then decreases again. The optimal level of arousal for a particular task depends on the abilities required and the perceived difficulty of the task. Knowing which motor skills a given discipline of sport requires, an optimal level of arousal can be sought. This theory is a simple explanation of the reasons why players sometimes make mistakes in a situation of tension, but cannot describe the nature of arousal or the effects of certain psychological factors on the quality of the performance (e.g. cognitive anxiety) [Jarvis 2008]. Drive theory [Hull 1943] assumes that there are three factors that impact sporting performance: the complexity of the task, arousal level, and learned habits. The stronger the agitation, the greater the likelihood that there will be a habitual response. When the task is complex, the level of arousal will adversely affect performance. This theory explains why well-experienced athletes perform better in a competition situation while novices have problems with pressure. This theory does not explain, however, why even professional athletes can become too excited and start to make mistakes [Jarvis 2008]. The catastrophe model of anxiety and performance [Fazey and Hardy 1988, Hardy 1996] states that an increase of arousal over the optimum level will result in decreased quality of performance. The increase in physiological arousal over the optimal level generally leads to anxiety and a change in cognitive processes [Jarvis 2008, Łuszczynska 2011]. This results in a significant deterioration in performance, disproportionate to the changes in arousal [Hardy 1996 as cited in: Łuszczynska], while improving performance proves difficult. Paradoxically, in a state of high cognitive anxiety both the worst and best athletic performances may occur. The main practical use of this model is to demonstrate that cognitive anxiety need not interfere with performance, and in some circumstances may even have a positive effect on the score [Hardy 1996]. The model of individual zones of optimal functioning [Hanin 2000]

suggests a general relationship between emotional arousal and the result, which implies that each athlete has their preferred level of emotional arousal, and that their results would suffer as a result of underestimation or overestimation of this level. The preferred level of emotional experiences of individual players is the individual zone of optimal functioning. By modifying the range of emotions through mental exercises, the athlete can achieve the optimal level of functioning. The theory of reducing the degrees of freedom in motion [Collins et al. 2001 as cited in: Łuszczynska] states that with increased competence players learn to increase freedom of movement in individual joints, making their movement smoother and allowing more efficiency. When under pressure, degrees of freedom are restricted as a result of various biochemical mechanisms [Collins 2001]. The theory of optimal stimulation indicates that execution of a task, if performed beyond the critical level of pressure, starts to deteriorate [Easterbrook 1959 as cited in Łuszczynska]. Deterioration in performance appears due to the transfer of attention from the task itself to external and internal stimuli which are not essential for optimum performance.

Attentional theories, which explain their impact on the efficiency of the operation can be divided into two categories: distractional and self-focused. The theory of distraction [Kane 2000, Engle as cited in: Łuszczynska] states that the presence of a strong distractor in the environment affects performance. This distractor hinders the process of focusing attention and information processing. The athlete concentrates on the audience and its' reactions rather than on the task at hand. The simultaneous execution of two tasks requiring attention causes less effective information processing when it comes to opponent's behaviour, which in turn increases the likelihood of errors. Beilock's [2002] monitoring hypothesis assumes that a person under pressure becomes more aware of their own actions, focuses on performance and strives to actively regulate both these aspects.

The social impact of sporting performance is explained by social facilitation theory, which assumes that experienced athletes perform at a higher level compared to novices who are in the same situation [Strauss 2002]. However, a study shows [Beilock, Gray 2007 as cited in: Łuszczynska] that even experienced players perform worse in the presence of the audience than without it. This is known as the auditorium effect. According to a study by Michaels [1982], players whose skills were classified as low or below average played worse when observed, while the players showing a higher level of skill played much better in the presence of the public [Jarvis 2008]. The interaction effect occurs when other people take the same task, e.g. during a race or during training with players of the same team [Jarvis 2008]. An alternative theory explaining this phenomenon is the evaluation apprehension model [Cottrell 1968]. The presence of ob-

servers stimulates the athlete because they feel that their performance will be evaluated [Jarvis 2008]. Professional athletes do not mind; however, novice athletes in the same situation may feel anxiety. This impact is more visible among athletes who have less experience in performing in front of large audiences. It is also linked to the experiences of previous failures [Wallace, Baumeister, Vohs 2005 as cited in: Łuszczynska 2011]. It is worth noting that the abovementioned processes can occur simultaneously and increase the likelihood of deterioration in performance.

Clark et al. [2005] noted that in previous studies of the phenomenon of pressure in sports, there had been no precise definition of its mechanisms and moderators. Negative pressure associated with deterioration in sporting performance can manifest in four forms: choking, panic, yips and slumps. Choking under pressure is a pejorative, colloquial term used to describe a performance below expectations in stressful conditions. An athlete in this state is able to make rational decisions and select adequate techniques, but is not able to execute them during the game due to the interference of a variety of psychological factors. Choking is not a random fluctuation in the level of performance, but a specific response to the perceived negative pressure [Beilock, Gray 2007]. Panic is a condition in which the athlete is unable to think rationally, and thus complete the task. Often they take irrational decisions which lead to failure. Yips are a form of focal dystonia or disorder which comprises one or more muscles located close to each other. Yips are characterized by uncontrollable muscle spasms and involuntary random movements. Yips increase under psychological stress (as opposed to injury, etc.). They may, however, be modified by exercises [Smith et al. 2003]. A permanent deterioration embodiment (slump) occurs for a longer period of time (e.g. several successive games), and is not necessarily due to psychological pressure [Grove 2004].

Pressure in sports focuses mainly on the aspect of choking. The athlete's perception of high pressure or its expected likelihood is the key element which appears before a deterioration in performance [Beilock, Grey 2007]. The term 'choking' signifies performance below the optimum level. The optimum level of performance is assessed based on the athlete's skills, in a situation perceived as significant [Gucciardi et al. 2010 as cited in: Łuszczynska]. Choking occurs when an athlete feels under strong pressure and at the same time realizes the significant advantages and disadvantages of being assessed. Sporting performance in a choking situation is usually not very bad, but noticeably worse than the expected level that can be achieved by the player in other situations [Beilock, Grey 2007]. Characteristic elements of choking are increased levels of anxiety (worry) or increased arousal. Choking ends when the pressure is no longer perceived as threatening. Wallace, Baumwister, Voha [2005] note that it is

difficult to distinguish between losing interest in the situation and choking [Łuszczynska 2011]. Choking often happens in the following situations: significant financial benefits for the player, the possibility of financial loss in the event of failure (e.g. withdrawal of a sponsor), pressure from peers and other athletes, a significant element of the social impact assessment (performance in front of an important audience), social evaluation, as well as the situation in which the success of the team significantly depends on the performance of the player (e.g. a ploy) [Beilock, Carr 2001]. Łuszczynska [2011] noted that subtle elements of pressure may contribute to choking. Daniel [1981] observed that choking under pressure is very common among athletes who, despite heavy rigorous training, have difficulty in achieving significant results in competition. Singer [1986], when characterizing the phenomenon of choking under pressure, stated that it relates to athletes who do well in regular competitions, but function worse in high-level competitions. Weinberg and Gould [1999] saw attention deficit as the cause of choking, based on the work of R. Nideffer [1976] and his conception of attentional focus. Baumeister [1984] and Baumeister and Showers [1986] defined choking as task execution below optimal levels, as a result of pressure, indicating the conditions of its occurrence. The first condition indicates the need for assurance that a player can perform a specific task better. The athlete must be self-motivated, and the task (the situation) must be challenging, but realistic. Wang [2002] has defined choking as the inability to perform as well as previously observed [Anshel 1997, Daniel 1981, Leith 1988], suggesting multiple causes of this phenomenon (e.g. anxiety associated with injury, insufficient preparation for the competition, etc.).

Gardner and Moore [2006] argue that psychological interventions should focus on two typical reactions: avoidance and a tendency to reduce exposure or excessive involvement. If the reaction pattern includes avoidance and reduction of involvement in sport, the most common problem is not too little motivation or problems related to internal control, but the dominance of avoidance coping strategies [Heszen 2008 for the: Łuszczynska 2011]. Wang [2002] characterizes coping as a process of adapting to the perceived threat. Endler's and Parker's [1990] understanding of coping is a response to environmental and psychological challenges (expectations) in a particularly stressful situation. Folkman and Lazarus [1988] suggested that coping is related to emotional experience [1985], indicating that the process may include an element of emotional control or problem solving. Athletes show two styles of coping with difficulties: striving to solve the problem or avoiding negative emotions [Anshel 1996, Anshel and Weinberg 1999, Roth and Cochem 1986]. When the situation is determined to be stressful, there will be negative emotions as a consequence that stimulate human action to change the terms

of the situation, or to "mitigate" the emotions. Coping is a set of actions aimed at fighting a threat [Lazarus, Folkman 1984]. Depending on the nature of this threat, this process can be very complex and ultimately have a creative nature. Coping activities are different from the normal activities, they are aimed at achieving a goal in situation of imbalance. Different forms of these activities can be used both to solve the problem, as well as to control emotions. Coping is considered to be the basic process of adaptation. If the initial assessment of the situation in question is deemed to be stress, it will start the process of coping. It is mainly dependent on the secondary assessment of threatening factors in the situation that is being assessed.

## Questions

The following research questions were asked:

1. What are the sources of pressure in the group of athletes?
2. What coping strategies are represented by the athletes?
3. Are there differences between experienced athletes and novices with respect to the sources of pressure?
4. Are there differences between experienced athletes and novices in terms of coping strategies?
5. What are the relations between pressure sources and coping styles among respondents?

## Participants

The study was conducted in a group of 44 athletes representing first league volleyball for men and women, as well as a junior team. The average age of the respondents was 22. The subjects were asked to complete a test during training, immediately after the end of the season. The study was conducted in four separate groups within a space of two weeks. Both tests used were a paper-pencil type. The questionnaires used were the Athletic Coping Skills Inventory (ACSI-28) and the Sport Pressure Checklist (SPC). For the purposes of this study, the subjects were divided into two groups with respect to experience, i.e. novices (< 8 years of sports training,  $N = 22$ ) and experienced athletes (> 8 years of sports training,  $N = 22$ ). T test and ANOVA correlation analyses were conducted to describe the quantitative results. The calculations were made using the StatSoft STATISTICA Workbook.

## Instruments

The Sports Pressure Checklist was created as an attempt to explain the deterioration of sports performance i.e. performing below the expected, optimal level in a given situation. The prototype tool was created in 1984 for the purpose of C. Sherman's thesis. The tool was developed and published in 1987 in collaboration with BS Rush-



all. It measures the source of pressure seen in relation to a specific sporting event. The sources are regarded as negative, neutral or positive. The results are classified as internal (INT), external (ZEW), positive (POS) or negative (NEG) aspects of pressure. This tool makes it possible to evaluate these aspects on separate scales. It consists of 17 items. Each source is rated on a scale from -3 to +3. The tool has been written for athletes of 14 years of age or above. The SPC examines the state of situational pressures unrelated to the performance more than the relatively stable mode of operation. This tool gives the opportunity to gain an insight into the source of pressure for the athlete, as well as the ability to influence better coping strategies in difficult situations (i.e. involving the aspect of competition) and minimize the undesirable pressures perceived by the player.

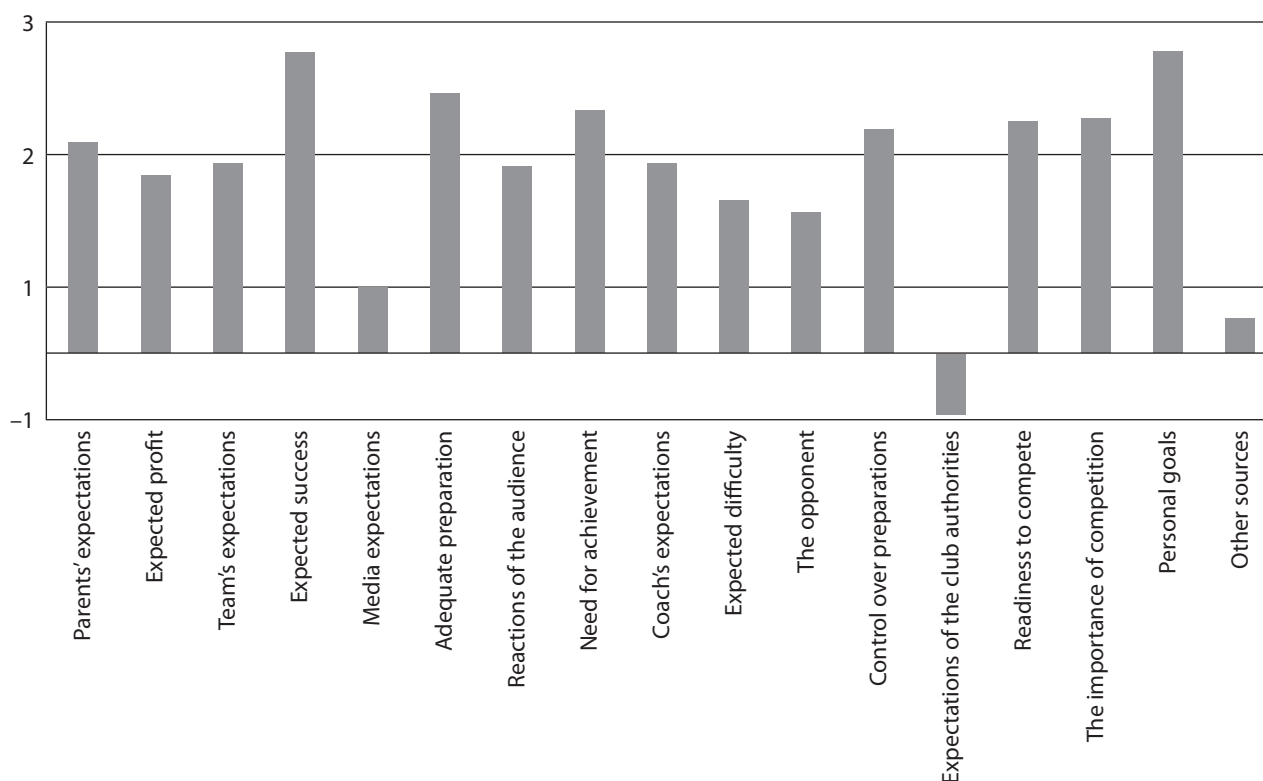
The sources of pressures were compared with the assessment of psychological skills using the Athletic Coping Skills Inventory developed by Smith, Schutz, Smoll and Ptacek [1995]. The scale consists of 27 statements. The respondent chooses the most suitable answer on a 4-point Likert scale ranging from “almost never” to “almost always”. The inventory consists of seven subscales, which relate to the following areas: CWA – Coping with Adversity: an athlete with a high score in this variable is in a positive mood despite the difficulties. They maintain control of the situation, and can quickly make up for any errors committed. The next subscale is PUP – Peaking under Pressure. A player with a high score in this variable

sees situations when they are under pressure as a challenge rather than a threat. Their performance is good under pressure. The subscale GSM – Goal Setting/Mental Preparation: the player sets themselves goals and works towards their implementation, they are able to plan and prepare mentally for the competition. Subscale CON – Concentration determines focus on the task during training and competition. An athlete with high marks in this variable can focus even if something unexpected happens, and is not easily distracted by irrelevant details. The subscale FFW – Freedom from Worry – characterizes the ability to minimize anxiety. The athlete does not worry “in advance” what others may think of them, or that they will make a mistake. The subscale CAM – Confidence and Achievement Motivation – describes self-confidence and motivation for achievements. An athlete who is confident and positively motivated works hard in training and can demonstrate their skills during competition. The subscale COA – Coachability – describes how receptive an athlete is to coaching techniques and feedback given. A player that is open to feedback has the potential to improve performance more effectively and uses more efficient coping strategies.

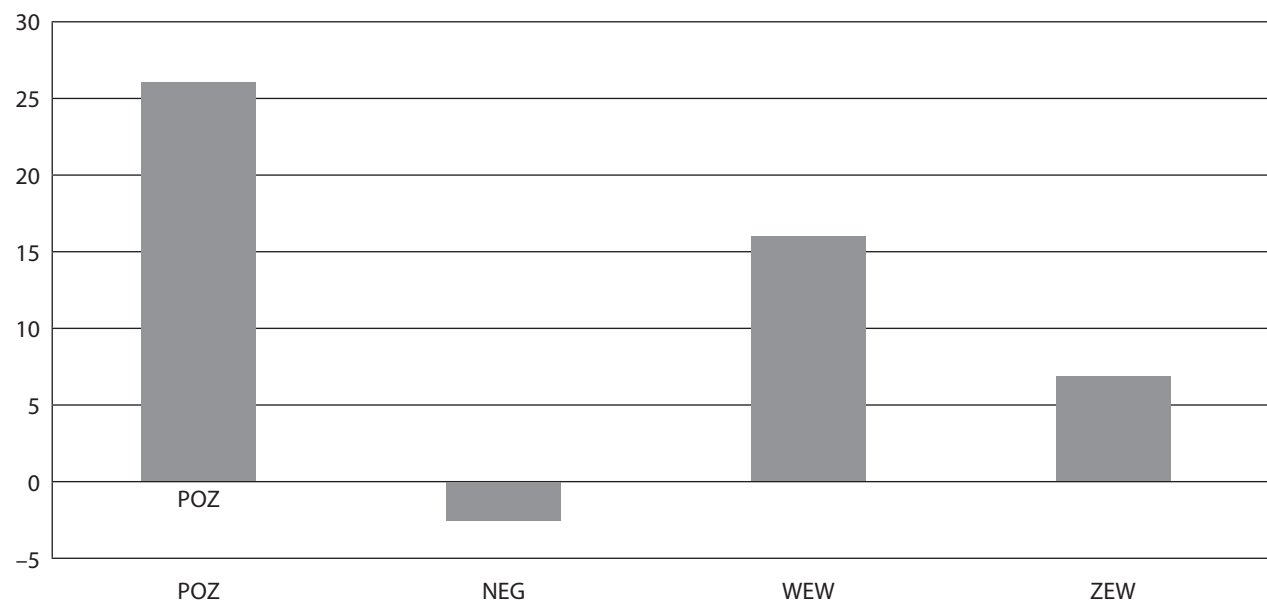
## Results

Analysis of the data obtained using the Sport Pressure Checklist (SPC), which indicates the sources of pressure in competitive sports, helped to determine the average re-

Chart 1. Average SPC results showing sources of pressure, as declared by the respondents (N = 44).



**Chart 2.** Average SPC scores by sources of pressure, as declared by the respondents ( $N = 44$ ).



sults and standard deviations for individual factors in the group of players. The highest average value among the sources of positive pressure was linked to expected success and personal goals. The average result of both factors was = 2.3 ( $SD = 0.9$ ). The second highest average value was observed for adequate preparation (= 2;  $SD = 1$ ). Further factors include: the need for achievement (= 1.8;  $SD = 1.3$ ), the importance of competition (= 1.8;  $SD = 1.4$ ), readiness to compete (= 1.8;  $SD = 1.1$ ), control over preparations (= 1.7;  $SD = 1.3$ ), parents' expectations (= 1.6;  $SD = 1.3$ ), reactions of the audience (= 1.4;  $SD = 1.7$ ), team's expectations (= 1.4;  $SD = 1.2$ ), coach's expectations (= 1.4;  $SD = 1.3$ ), expected profit (= 1.3;  $SD = 1.3$ ), expected difficulty (= 1.2;  $SD = 1.2$ ), the opponent (= 1.1;  $SD = 1.4$ ), media expectations (= 0.5;  $SD = 1.3$ ) and other sources (= 0.3,  $SD = 0.9$ ). Among the sources of negative pressure, most notable were the expectations of the club authorities (= 0.5;  $SD = 1.8$ ). Chart 1 shows the results.

Using the procedure proposed by Rushall and Sherman regarding the results obtained using the SPC, the sources of pressure were grouped as internal (WEW), which gave an average score = 16;  $SD = 2.1$ , external (ZEW) = 7;  $SD = 1.4$ , positive (POZ) = 26;  $SD = 0.7$

and negative (NEG) = -3;  $SD = 1.4$ . Chart 2 shows the average results as described.

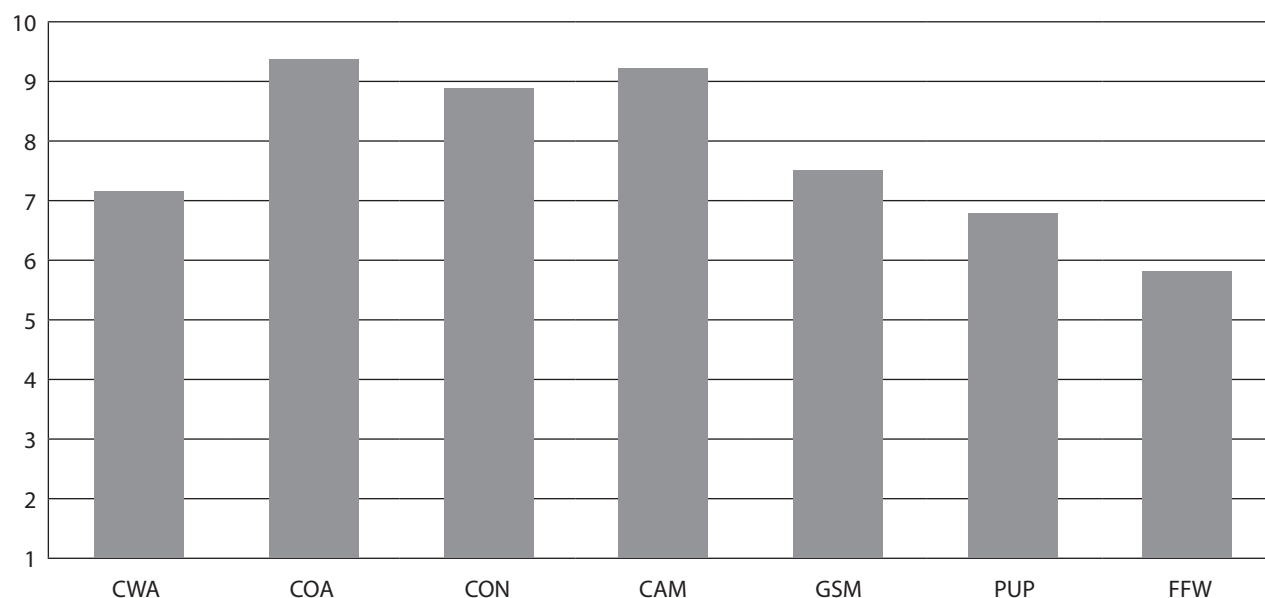
Analysis of the differences between the means for groups of novices (N) and experienced athletes (D) was carried out using a t-test. Statistically significant differences were observed for declared external pressure (ZEW) at a significance level of  $p < 0.05$ . The detailed analysis results are presented in Table 1.

Data analysis of the Athletic Coping Skills Inventory (ACSI-28) allowed the calculation of the average scores for individual subscales. The highest mean score was recorded in the subscale COA – Coachability (= 9.32;  $SD = 2.1$ ). Then came the CAM subscale score, describing self-confidence and achievement motivation (= 9.23;  $SD = 1.4$ ). The CON subscale, which describes focus on the task (= 8.89;  $SD = 0$ ), then the GSM subscale – clarity of goals and mental preparation (= 7.52;  $SD = 4.2$ ). The CWA subscale, characterized by coping with the difficulties (= 7.14;  $SD = 1.2$ ). The PUP subscale, describing peak performance under pressure (= 6.77;  $SD = 0.7$ ) and the FFW subscale, which is freedom from anxiety (= 5.84;  $SD = 2.1$ ). Chart 3 illustrates the average values obtained using the ACSI-28 scale.

**Table 1.** T test analysis of SPC results for novices (N) and experienced athletes (D).

SPC	N	D	<i>t</i>	<i>p</i>	<i>F</i>	<i>P</i>
POZ	25.773	26.000	-0.099	0.921	1.543	0.328
NEG	-3.273	-1.727	-1.482	0.146	4.689	0.001
WEW	17.136	14.955	1.218	0.230	1.568	0.311
ZEW	5.273	8.682	-2.349	0.024	1.050	0.913

**Chart 3.** Average results of ACSI-28 subscales (N = 44).



An analysis of the differences between the novices (N) and experienced athletes (D) was conducted using a t-test. Statistically significant differences were seen in the FFW subscale (Freedom from Worry) of the Athletic Coping Skills Inventory (ACSI-28). The level of significance was  $p < 0.05$ . The detailed analysis results are shown in Table 2.

A statistical analysis of the results was obtained by both the ACSI-28 and SPC interactive effects of the

CWA subscale (Coping with Anxiety), with all aspects of pressure (WEW, ZEW, POZ, NEG). The Coachability (COA), Concentration (CON), and Peaking under Pressure subscale (PUP) all positively correlate with aspects of internal (WEW) and positive (POZ) pressure. The PUP subscale is also correlated with negative pressure (NEG). The FFW subscale – Freedom from Worry, correlates positively with negative pressure (NEG). The results of the correlation analysis are shown in Table 3.

**Table 2.** The results of analysis of the ACSI-28 subscales for novices (N) and experienced athletes (D).

ACSI-28	N	D	<i>t</i>	<i>p</i>	<i>F</i>	<i>p</i>
CWA	6.955	7.318	-0.483	0.632	2.698	0.028
COA	9.273	9.364	-0.123	0.903	2.126	0.091
CON	8.909	8.864	0.086	0.932	1.442	0.409
CAM	9.000	9.455	-0.961	0.342	2.512	0.040
GSM	8.091	6.955	1.674	0.101	1.150	0.751
PUP	6.227	7.318	-1.672	0.102	1.778	0.195
FFW	4.773	6.909	-2.653	0.011	1.027	0.952

**Table 3.** The results of correlation analysis of the SPC and ACSI-28.

ACSI-28 \ SPC	WEW	ZEW	POZ	NEG
CWA	0.428	0.314	0.320	0.501
COA	0.456	0.127	0.413	0.128
CON	0.329	0.207	0.357	0.086
CAM	-0.086	-0.008	-0.023	-0.106
GSM	0.222	-0.123	0.211	-0.241
PUP	0.424	0.270	0.367	0.372
FFW	-0.023	0.187	-0.050	0.354

## Discussion

The data collected in this study and the results of the statistical analysis conducted will be discussed in relation to the subjective and situational factors described by Jarvis [2008] and Clark [2005], and an attempt will be made to compare them with the methods of coping with pressure. The situational factors are: expectations, uncertainty, and the importance of the event. In our study, the highest average value among the sources noted a positive pressure related to the factors described as the *expected success*, and *personal goals*. Expectations of the importance of competition are not always equivalent to the rank of the event [Jarvis 2008]. Expectations refer to the athlete directly involved in the competition, as well as the team that is being put under pressure of high expectations from coaches, parents or the authorities of the club, as well as the audience. The results obtained in this study present observations on the sources of negative pressure, with particular emphasis on the *impact of the club authorities*. Situational factors may increase the fear of the competition and the uncertainty of the outcome of the competition. Weinberg and Gould [1995] indicate that teachers and coaches could resolve player uncertainty by telling them in detail about the next stages of the procedure, rules and conditions of the competition. Other factors that generate situational pressures as distinguished by Clark [2005] are: presence of an audience, stereotype threat and public status. Wallace et al. [2005] indicate that the impact of the audience is ambiguous due to the athlete's subjective interpretation. Cottrell's [1968] evaluation apprehension model concludes that the situation of social exposure prior to execution and with awareness of being watched increases the likelihood of a deterioration in performance [Baumeister 1986, Showers as cited in: Łuszczynska 2011]. Competitions held in familiar surroundings are undoubtedly advantageous – because of the knowledge of the specific court, as well as the lack of fatigue associated with travelling [Nevil, Holder 1999 as cited in: Łuszczynska 2011]. Theoretical models also emphasize the role of pressure and anxiety associated with competitive sport in the context of alcohol consumption [Łuszczynska 2011]. The main reason of consumption of alcohol is coping with stress by avoiding it [Martens et al. 2006 as cited in: Łuszczynska 2011]. Beilock and McConnell [2004] argue that stereotypes associated with gender or race, when they are realized and conscious, can cause choking. Jordet [2009] argues that teams and individual athletes with high social status are more likely to choke in situations involving high pressure, while teams with low status in the same situation of high pressure will most likely not experience choking.

The factors that determine pressure, as distinguished by Jarvis [2008], include level of anxiety as a trait characterized by the individual, and its self-esteem and self-

efficacy. The results of the ACSI-28 analysis show the following strategies associated with susceptibility to influence, confidence and motivation of achievements and focusing on the task at hand. Internal aspects, both positive and negative, are positively correlated with the peaking under pressure subscale. This may mean that athletes who interpret situations under pressure more as a challenge rather than a threat perform better. Athletes with a tendency to experience anxiety, regardless of the situation they are in, can interpret competition as stressful. Baumeister et al. [1985] state that those who have high levels of trait anxiety and low self-confidence are more likely to experience choking. In contrast, self-esteem refers to an individual assessment, while self-efficacy refers to beliefs about their capabilities. Self-assessment is an emotional factor, whilst self-efficacy is cognitive. Both are related to the ability to cope with stress. Low levels of these factors contribute to experiencing strong fear in the event of pressure [Jarvis 2008]. Statistical analysis showed the importance of the interactive effect of different aspects of pressure (internal, external, positive, negative) experienced by players with their coping abilities. This may mean that the higher the perceived intensity of pressure, the better and more effective are the attempts to cope with the difficulties. Despite experiencing difficulties, the player is able to maintain a positive state of mind, keep their calm, and stay in control of the situation, even when they commit errors.

Clark [2005], when describing the processes of creation of pressure and choking, adds the following factors: self-consciousness, skill level and task properties, and coping styles. Baumeister [1984] states that an athlete with greater self-awareness will be less likely to be affected by negative pressure. Focusing on yourself causes less focus on external factors and lowers perceived pressure. There is no complete agreement as to the correctness of this thesis, since studies by Liao, Masters [2002] and Poolto, Maxwell and Masters [2004] reported an inverse effect. Analysis of the differences between groups of experienced athletes (sportspeople) and novices (amateurs) enabled a statistically significant difference in perceived external pressure to be observed. This relationship may be explained by the theory of monitoring, where Beilock et al. [2002] indicate that the deterioration of performance may be an increase of processes of adjusting and regulating their self-behaviour. The results of monitoring self-behaviour are different in novice athletes and experienced players. Performance deterioration in the situation of active monitoring of self-performance and social pressures relates primarily to athletes with a high level of skill. Analysis of differences in the Freedom from Worry subscale between the two groups experienced athletes (sportspeople) and novices (amateurs) enabled a statistically significant difference to be observed. Beilock and Carr [2001] indicate that inexperienced athletes are more prone to choking as a result of



distraction. Inexperienced athletes need to focus all of their working memory on the task, and any distraction causes their skills to decline. Wang et al. [2004] describe the coping styles based on a quest to solve a problem (approach coping styles), or the avoidance of negative emotions (self-regulatory escapist coping style). Both of these coping styles may increase susceptibility to choking. In our study, there was a positive correlation between the positive aspects of internal pressure and the focus on the task at hand. This may mean that the more the internal pressure is interpreted as positive, the higher the level of focus on the task at hand. B.S. Rushall [1999] describes the types of interventions affecting the high performance level: segmenting – a division of tasks into smaller components or also descaling long-term objectives; focus on the task (task-relevant thought content) – quality deteriorates due to distraction, but improves as a result of focus on the task. This study's analysis showed the importance of the interactive effect with respect to internal pressure and the positive aspect experienced by the athlete, which positively correlates with coachability. This may mean that the athletes are able to cut themselves off from external distractors and concentrate on their inner feelings. The higher their coachability, the more likely they are to interpret pressures as positive. B.S. Rushall [1999] also highlights coping based on positive affirmations (positive self-statements) and the power of positive thinking and attitude in respect of which the coach may play an important role. The last type of intervention, as described by Rushall, is mood words – words and phrases that carry an energy load. These words can be used as part of coping strategies.

## Conclusion

1. The source of a strong, positive internal pressure for the respondents are those factors associated with personal goals and expected success, whilst the source of a strong, negative external pressure is the impact of the club authorities.
2. Athletes showing a high level of concentration on the task usually see pressure more as a challenge than a threat. The increase in self-concentration is preceded by a focus on the potential reward (or assessment) in the event of winning, which is usually associated with a deterioration of performance.
3. Experienced players differ significantly from novices in terms of perceived external pressure and how they cope with anxiety. Athletes with high levels of trait anxiety and low self-confidence are more likely to choke under pressure.
4. Among the functional strategies of coping with heavy pressure in competition, there was a positive correlation observed with the following factors: coachability, self-confidence, and achievement motivation.

Athletes using these strategies were more likely to interpret pressure as positive.

5. The individual, learned, and stable coping strategies of a player can be most effective in reducing choking under pressure.

## Practical recommendations

1. Experienced athletes tend to feel external pressure, associated with “I have to” expectations (e.g. I have to win to fulfil the expectations of the club authorities), instead of “I can” (i.e. I'll do it), which depicts the execution of learned tasks automatism. Novices in similar situations usually feel an internal pressure. Difficult situations are associated with “I want” expectations (I want to win) instead of “I can” (to achieve their goals). Therefore, during the game players should perform tasks automatically without conscious control, and focus their conscious attention on those elements that require commitment.
2. Attackers, whose performance is based on the automation of motor skills, experience performance deterioration when they focus their conscious attention on these processes. Players in defence are often required to present endurance and commitment, which are less automated, and therefore less dependent on conditions and external pressure.
3. Coaches should alleviate the uncertainty of players in the competition by informing them of the consequences of their results and the ways to achieve their targets, and by giving them detailed feedback based on facts.
4. There are changes observed in the methods of mitigating choking under pressure, in terms of training procedures and increasing the share of automated processes during the game.

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# Schemes “Me and the world” and styles of coping with stress in youth practising sports

Joanna Basiaga-Pasternak

Faculty of Physical Education and Sport, Department of Psychology, University of Physical Education in Kraków

## Summary

The aim of the paper was to determine the relationship between self-image and the image of the surrounding world, and coping with stress in youth practising sports. The research was conducted on 222 students of both sexes in high schools with a sports profile in southern Poland. The following research methods were used: Endler's and Parker's CISS (Polish adaptation by Szczepaniak, Strelau, Wrześniewski), and Wysocka's Attitudes to Intrapersonal, Interpersonal and to the World Questionnaire. Therefore, there is a link between the dominant cognitive schemata “Me – the world” and the styles of coping with stress.

**Keywords:** cognitive schemata, coping with stress, youth, sport

## Introduction

An athlete is widely regarded as a mentally strong person who can effectively cope with stress, and think positively. Athletes are considered to be more optimistic than non-athletes [Mohan Singh, Dureja 2013]. However, continuous exposure to stress, failure or criticism from fans and coaches may contribute to the consolidation of negative self-perception and one's efficiency, and lead to problems in coping with difficult situations. This seems to be particularly evident among young athletes.

Based on Richard Lazarus' transactional model [Lazarus, R., Folkman S. 1984], an emphasis needs to be placed on the role of cognitive appraisal, that is, the process of “categorization of the event and its various aspects, because of its importance to welfare” [Łosiak 2008, p. 66]. It concerns the choice of the way stress is coped with. According to Lazarus, coping with stress is “a constantly changing cognitive and behavioural effort to face external and/or internal requirements which are regarded as endangering or beyond the capacity of an individual” [Łosiak 2008, p. 85].

Having analysed the activities which perform the functions of coping, Lazarus singled out activities aimed at solving the problem that causes stress, and aimed at regulating the emotions associated with it [Łosiak 2008, p. 86]. Coping with stress may be considered in the categories of style (that is, a lasting personality disposition towards dealing with stressful situations), strategy (cognitive and behavioural efforts that an individual makes in a particular stressful situation) and process (under-

stood as a series of strategies that change over time due to situational changes and changes in the psycho-physical state of an individual) [Gracz, Sankowski 2001, pp. 142–143]. According to Wrześniewski [2000, p. 61] “the style together with the strategy are complementary to the process”. Norman Endler and James Parker – relying on Lazarus' model and discriminated problem- or emotion-focused coping – suggested three basic coping styles. These are: task-oriented style (taking the tasks); emotion-oriented style (involves focusing on one's emotional experiences) and avoidance-oriented style (avoiding the experiencing of stressful situations) [Strelau 2002, 2006, p. 302].

There is a clear association between the style of thinking, cognitive appraisal and coping with stress. In the relational model of Richard Lazarus the concept of coping refers to both the thoughts and the behaviour of an individual in a given situation. They change together with the situation [Klonowicz, Cieślak 2004, p. 282]. The ways of coping also correlate with the types of stressors [Anshel 1996] which may be even more important than the individual factors [Anshel, Kaissidis 1997; Anshel, Williams, Williams 2000]. The fact that the appraisal of stress requires taking the situation's characteristics into account is also emphasized by Łuszczynska [2011]. The strategies of coping depend to some extent on how the individual assesses the stressful situation, which was shown by Anshel, Jamieson, and Raviv [2001] in their studies on athletes. The strategies are also associated with personality traits, and the way of perceiving oneself and the world. Numerous studies

have shown the relationship between personality and the coping strategies preferred by an individual [as cited in: Klonowicz, Cieślak 2004].

Psychology finds many definitions of personality. In this paper, personality is defined as the views and beliefs about reality and the ways of processing information and interpreting events [Pervin 2002, cited in: Wysocka 2011]. Cognitive elements of personality are schemata (categories organizing the knowledge about the world and self), attributions (causes assigned to events) and beliefs (convictions that something is true or false). They may concern the physical world, other people, or ourselves [Wysocka 2011]. Cognitive schemata about ourselves and the surrounding world play an important role in dealing with stress, including that connected with sports competitions. Accordingly, a positive way of thinking and optimism are considered to be predictors of effective coping [Peterson 2000; Scheier, Carver 1985 & 1987; Haskell 2008; Ben-Zur, Debi 2005; Ceran 2013]. Conversely, a state of learned helplessness, described by Seligman, may be considered to be a negative consequence of stress [Łosiak 2008, p. 64], which is connected with the negative perception of self. The research by Hatchett and Park [2004] shows that optimism (resulting from positive thinking) is positively correlated with task-oriented strategies and social support, but negatively – with emotion-oriented and avoidance-oriented strategies. The latter association was also confirmed by Taylor et al. [1992]. A positive way of thinking is also a predictor of effective adaptation to stressful events; optimism correlates positively with task-oriented strategies of coping with problems, searching for social support and emphasizing the positive aspects of a stressful situation. Moreover, pessimism and a negative style of interpretation of stressful events correlated with denial and distancing oneself, and with other maladaptive strategies [Scheier, Weintraub, Carver 1986; Mahmouds 2011, p. 8].

In athletes, the associations between strategies of coping with stress and positive representations were observed by Mohd. Sofian Omar-Fauzee et al. [2009], and between optimism and problem-oriented coping – by Grove & Heard [1997]. Schinke & Peterson [2002] also wrote about the role of positive thinking and optimism in sports activities. A relationship between self-esteem and the styles of coping was also observed. According to Nwankwo & Onyishi [2012] high self-esteem corresponds with more effective strategies of coping in sports situations. High self-esteem works also in favour of perceiving difficult situations as tasks to be solved. Furthermore, it facilitates choosing more effective strategies of coping in sports situations. In addition, a player with high self-esteem will try to control what happens to him or her; they will try to think optimistically about the tasks they decide to face.

## The aim of the study

The aim of the study was to determine the relationship between self-image and the image of the surrounding world, and coping with stress in youth practising sports.

### Research questions:

1. What is the relationship between cognitive schemata about self and the styles of coping with stress in the athletes surveyed?
2. What is the relationship between cognitive patterns concerning "others and the world" and the styles of coping with stress in the athletes surveyed?

## Participants

The research was conducted on 222 participants – 114 boys and 108 girls – pupils of secondary sports schools from southern Poland. They were students from seven Schools of Sports Championship (in Zakopane, Żywiec, Szczyrk, Sosnowiec, Zabrze and 2 schools in Kraków), as well as from sports classes in the 12th Secondary School in Kraków.

Participants represented both summer and winter disciplines; individual (126 participants) and team sport players (96 participants).

## Research method

### Two research methods were used:

The Coping Inventory of Stressful Situations (CISS) by Endler and Parker in the Polish adaptation by Szczepaniak, Strelau, Wrześniewski [Strelau, Jaworowska, Wrześniewski, Szczepaniak 2005]. The questionnaire consists of 48 statements determining behavioural style in stressful situations on three scales:

- SSZ – task-oriented style (determines the tendency for making an effort to solve a problem in a stressful situation by attempting to change the situation or by cognitive transformation) [Wrześniewski 2000, p. 58];
- SEZ – emotion-oriented style (determines the tendency for focusing on oneself in a stressful situation) [Wrześniewski 2000, p. 58];
- SSU – avoidance-oriented style (determines the tendency to avoid thinking and going through the situation in the face of stress), which takes two forms: ACZ – (Distraction) engaging in substitute activities (for example, thinking about something pleasant, not related to the problem) and the PKT – (Social Diversion) the search for social contacts [Wrześniewski 2000, p. 58; Strelau, 2002 & 2006, p. 302].

Attitudes to Intrapersonal, Interpersonal and To the World Questionnaire (Kwestionariusz Nastawień In-



trapersonalnych, Interpersonalnych i Nastawień wobec Świata – KNIIS) – Wysocka [2011]. The questionnaire examines the following attitudes:

- Intrapersonal (recognised as self-image, global self-esteem), that is the system of beliefs about one's "self", within which there can be distinguished: general self-esteem (non-specific), partial self-esteems (specific – cognitive-intellectual sphere, physical sphere, socio-moral sphere, and the characterological sphere, which depicts the image of global, specific self-esteem) [Wysocka 2011, p. 4];
- Interpersonal (reflecting the image of other people and relations with them, as well as beliefs about the functioning of interpersonal relations: "others towards me" – appreciation and support from others versus indifference and underestimation; the threat posed by others versus the sense of security in a relationship – and "Me towards others" – taking actions on behalf of others, pro-social behaviour, altruism, sociability versus egocentrism, isolating oneself; aggressiveness versus the lack of aggression) [Wysocka 2011, p. 4];
- Attitudes towards the world (image of the world, beliefs about its meaningfulness and being sympathetic to people) [Wysocka 2011, p. 4];
- Attitudes towards one's own life (image /vision/ of one's life and, consequently, the beliefs about self-efficacy and control versus learned helplessness) [Wysocka 2011, p. 4].

The paper discusses the following beliefs concerning: the level of global self-esteem, the sense of social approval, feelings of helplessness, the sense of meaningfulness and goodwill of the world, the sense of self-efficacy, the sense of support from the others, the sense of danger, aggressive attitudes, pro-social attitudes, the characterological sphere of self-esteem, the physical sphere of self-esteem, the cognitive-intellectual sphere of self-esteem and socio-moral self-esteem [Wysocka 2011].

The analyses were conducted with the use of the following data statistical packages: IBM SPSS Statistics 21 and Statistica 10. Spearman's rank correlation coefficient was also calculated.

## Results

Pearson's correlation analysis showed that with increasing levels of global self-esteem (meaning beliefs about one's value) as well as the physical sphere (which relates

to beliefs about the qualities of appearance and physical fitness) the level of task-oriented style of coping increased among the athletes surveyed. Together with increasing levels of global self-esteem and physical sphere, the usage of emotion-oriented style of coping and engaging in substitute activities decreased.

Similarly, together with increasing levels of socio-moral sphere (moral beliefs revealed during actions focused on ourselves and others) and characterological self-esteem (which consists of a set of mental characteristics that appear in the actions of the individual, in the behaviour towards others, in the way of being, and in dispositions), the usage of emotion-oriented style of coping and engaging in substitute activities decreased in the group surveyed. At the same time the levels of task-oriented style and the search for social contacts increased.

Similarly, the growth of the level of task-oriented style with a simultaneous decrease in the emotion-oriented style of coping were observed in the case of increased scores on the cognitive-intellectual sphere of self-esteem (beliefs about one's talents and intellectual abilities).

A high sense of support from other people (related to the expectation of the fulfilment of desires or help in their fulfilment from someone else) was positively correlated with task-oriented and avoidance-oriented styles of coping (especially that connected with the search for social contact). The sense of danger (i.e. beliefs about perceived or received/experienced danger), however, resulted in a more frequent use of emotion-oriented style of coping focused on the search for social contacts, and task-oriented coping.

With the rise in pro-social attitude (which means the individual's readiness to act on behalf of another person) the simultaneous growth of task-oriented and avoidance-oriented style of coping (especially that focused on searching for social contacts) was observed. An aggressive attitude towards others (i.e. a tendency to overcome the resistance with force, fight, attack, etc.; to diminish and ridicule, depreciate other people) increased

the intensity of emotion- and avoidance-oriented coping (especially that involving engaging in substitute activities). It was also observed that with the increase in the sense of efficacy (i.e. a subjective belief in the ability to act in a given situation, to cope with the task), the use of emotion-oriented style and engaging in substitute activities decreased, whereas the level of task-oriented style of coping and the search for social contacts increased.

It was also observed that in the case of feelings of helplessness (i.e. belief in the inability to control events) these relationships were reversed. This means that the increase in feelings of helplessness was related to the decrease in the use of emotion-oriented style and engaging in substitute activities. Interestingly, the level of task-oriented style of coping decreased, as well as the search for social contacts.

It was also shown that with the increase in the sense of social approval (the tendency to assign socially desirable statements to ourselves and to reject the socially undesirable ones) the use of emotion-oriented style of coping decreased, whereas the level of task-oriented style of coping increased.

The final analyses concern the relationship between the sense of meaningfulness and goodwill of the world (in the case of positive beliefs about the world – the so-called basic hope), and coping with stress. It was found that the sense of meaningfulness contributed to the increase in the levels of task-oriented style of coping. Moreover, the increase in the sense of meaningfulness of the world caused a decrease in the use of emotion-oriented and avoidance-oriented coping, especially that related to engaging in substitute actions. However, with an increasing sense of the goodwill of the world the use of emotion-oriented coping decreased, while the levels of task-oriented coping and the search for social contact increased.

These associations were presented as the results of Pearson's correlation analysis in chart 1. below.

## Discussion

The results obtained enabled the research questions that concerned the association between the style of thinking and ways of coping with stress in youth practising sports to be answered. According to the cognitive theory paradigm, the main components of human psychological functioning are cognitive schemata. These are the structures that are responsible for the subjective interpretation of the situational context and the relation individual – situation [Alford, Beck 2005]. The beliefs about oneself, the others and one's own worlds [Beck J.S. 2005] stand behind the thought patterns. These patterns will

also prove important in the case of preferred style of coping with stress. As is clear from the studies presented, positive thinking patterns that are related to self-image, beliefs about oneself, and self-efficacy work in favour of the task-oriented style of coping. This is consistent with the reports by Hatchett and Park [2004]. People who accept themselves can face difficulties directly. A positive self-image and an optimistic way of thinking are factors that help people to cope in stressful situations. These are also the factors that shield from the negative consequences of stress [Taylor, Stanton 2007].

Positive general self-esteem may also come from earlier experiences. According to Alford and Beck [2005, p. 11] "Cognition' is defined as that function that involves inferences about one's experiences and about the occurrence and control of future events". Prior positive experiences with oneself, as well as the effective coping with stress, build up one's self-efficacy. It results in a belief in one's ability to act in a particular – also difficult – situation; it lays the foundation for a positive appraisal of one's ability to deal with the task at hand. Hence, the task-oriented style of coping develops.

General self-esteem, beside the knowledge of previous experiences, consists of beliefs about one's intellectual and physical capabilities. Positive beliefs about one's talents and intellectual abilities in the case of the athletes surveyed enable them to cope with stress better. Positive thinking and belief system, social skills (communication skills, undertaking behaviours consistent with social norms and principles of cooperation) and social support

**Chart 1.** Analyses of the Paerson's correlation of I – others and the styles of coping with stress.

Schemes: I – OTHERS	Task-oriented coping	Emotion-oriented coping	Avoidance-oriented coping
General self-esteem	.33***	-.52***	-.10
The sphere of cognitive-intellectual self-esteem	.45***	-.38***	-.05
The sphere of the physical self-esteem	.30***	-.29***	-.08
The sphere of socio-moral self-esteem	.35***	-.24***	-.07
The sphere of characterological self-esteem	.51***	-.36***	-.05
"Others towards me" – Support	.23**	-.19**	.16 *
"Others towards me" – Danger	-.17*	.24***	-.05
"I towards the others" – Pro-social	.16*	-.11	.20**
"I towards the others" – Aggressiveness	-.04	.17*	.19**
The meaningfulness, orderliness of the world	.29***	-.31***	-.21**
Image of the world – Goodwill of the world	.31***	-.14*	-.01
The image of life – sense of efficacy	.57***	-.28***	-.07
The image of life – sense of helplessness	-.42***	.53***	.10
The scale of social approval	.30***	-.41***	-.04

are not the only fundamental resources which enable individuals to effectively cope with stress. They are on a par with the intellectual, problem-solving skills, like the ability to search for data, analyse the situation, identify the problem, generate alternative solutions and select the most appropriate one [Lazarus, Folkman 1984].

Similarly, a positive perception of one's own physical condition – which in the case of athletes is particularly important – helps in the task-oriented approach to stress. The surveyed group consisted of young people, teenagers. Adolescence is a time of concerns over such issues as physiognomy or adequacy in terms of physical prowess. These types of concerns are not unfamiliar to young athletes who compete every day in the realm of physicality, compare themselves with others and submit to evaluation from the environment. Their physical fitness and general beliefs about the physical sphere to a large extent determine their overall self-image. Perhaps this is why the results of global and physical self-esteem converged.

Moreover, the individuals who are characterized by high values in terms of socio-moral sphere in the face of difficulties are trying to focus directly on the task at hand. Perhaps the values they follow help to some extent in meeting the need for security and facilitate the struggle with difficulties. A positive attitude towards the environment and good relations with others can also contribute to the search for support in difficult moments of life. This type of relationship was also observed in the students surveyed. It is possible that these individuals are characterized by higher levels of socialization and high interpersonal skills, as well as a high level of sense of social approval, which is also associated with socialization. Similar associations were observed in students with a strong pro-social attitude. It is possible that they are able to show social support to others when needed. However, they expect the same behaviour from the environment. This confirms the correlation between a high sense of support among individuals and their tendency to choose a task-oriented style of coping and searching for social contacts.

As in the case of a positive image of oneself and others, a generally favourable picture of the world will affect how an individual will behave in the face of a difficult situation. Both the sense of meaningfulness and goodwill of the world – perception of the world as predictable, accepting – made it possible for the participants to attempt active coping with stress by applying a task-oriented style. In a safe, predictable world, it is easier for an individual to believe in the success of their activities and their own efficacy.

Among the young athletes surveyed, a group characterized by a negative, pessimistic way of thinking was also distinguished. Particularly among athletes this attitude is not beneficial. The topic of negative thinking in sport has already been addressed by Hatzigeorgiadis [1999], Hat-

zigeorgiadis & Biddle [1999, 2000], Lane, Harwood and Nevill [2005], as well as Wilson and Smith [2007]. It was observed (based upon the research results discussed) that young players who had developed a belief in their inability to control events, and a high sense of helplessness in the face of difficulties, tried to ignore the problem by engaging in the least effective substitute activities. Therefore, the dominant style of coping with stress among them is the avoidance-oriented style. These individuals are characterized by a lack of self-efficacy and negative beliefs about themselves and the world around them. The world is perceived as threatening, unsympathetic. Other people are perceived in a similar way, which evokes an aggressive attitude towards them. Such a view of oneself, others, and the world contributes to the rejection of the resource of social support. This may be associated with lower social competence. According to Heller [Silver R.L., Wortman C.B. 1984 p. 64], “deficits in social competence may ‘produce the poorer levels of adjustment reported for unsupported individuals, as well as accounting for the lower levels of support they receive.’”

Summing up the considerations on the basis of this study it is possible to distinguish the variables fostering the task-oriented style of coping with stress. These are: global, physical, cognitive-intellectual, socio-moral and characterological self-esteems, high self-efficacy, with a simultaneous sense of the meaningfulness and goodwill of the world, a sense of support from others, a pro-social attitude, and the need for social approval. In turn, the least efficient avoidance-oriented styles of coping correlate with an aggressive attitude towards others, insecurity and helplessness.

Conclusion: There is an association between the dominant cognitive schemas “Me – the world” and styles of coping with stress – a positive image of self and of others increase the frequency of the task-oriented coping style being used.

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# Group cohesion in soccer teams: a multi-cultural perspective

Marcin Sobczyk<sup>a, b</sup>, Joanna Janas<sup>a</sup>, Adam Sobolewski<sup>a</sup>, Dariusz Parzelski<sup>c</sup>

<sup>a</sup> University of Social Sciences and Humanities in Warsaw

<sup>b</sup> The Robert B. Zajonc Institute for Social Studies

<sup>c</sup> University of Social Sciences and Humanities in Warsaw, Institute of Psychology and Health

## Summary

This paper explores the concept of group cohesion in collegiate and professional soccer teams. The aim of the study was to look at team cohesion from a multicultural perspective, comparing Polish and British collegiate soccer players. What is more, the authors were interested whether the level of competition may differentiate collegiate athletes from professional athletes in terms of group cohesion. There were 108 male participants in the study. These included: 59 Polish collegiate soccer players from 6 different five-a-side teams, 24 British collegiate soccer players from 3 different five-a-side teams, and 25 Polish professional soccer players from one top division team. Each participant completed the Group Environment Questionnaire (GEQ; Widmeyer, Brawley & Carron 1985). The results have revealed that Polish collegiate soccer players show higher levels of task cohesion than their British colleagues. The results for social cohesion appeared to be the opposite. Further, there were no statistically significant differences between the Polish collegiate and professional soccer players in terms of general group cohesion.

**Key words:** group cohesion, team, soccer, culture, level of performance

## Introduction

When watching sporting events, such as soccer games one might think of the factors that influence success or failure of a given team. It is interesting to know whether physical, technical or tactical abilities of the players along with hard work and support of the coaching staff determine the outcome on their own, or perhaps other elements are also involved. There are numerous examples of teams that had great players, but did not achieve expected results (e.g., English National Team in soccer for the last several years). Further, this applies not only to sport, but also to other areas in which groups of people show underperformance (e.g., business). That is when the attention turns to group cohesion (or cohesiveness) – a concept that has been investigated for over 60 years by many groups of researchers [e.g., Krech & Crutchfield 1948; Tajfel & Wilkes 1963; Carron, Brawley & Widmeyer 1998]. They attempted to understand and explain why, in certain circumstances, a group of people is able to achieve more than the sum of individuals working separately (the synergy effect). Further, they tried to find the factor that would be responsible for such unique group performance. Consequently, many different names were proposed, such as: unity,

harmony, chemistry, or team spirit. At some point researchers decided that they will call this theoretical construct – group cohesion. However, despite the agreement on the name, particular researchers (or research groups) often defined this construct in accordance with their own research area. For instance, Back [1951] understood group cohesion as interpersonal attractiveness of the group members. By contrast, Hogg [1992] looked at this construct through the members' identification with the group's values and norms. However, in the last years Carron's [1982] approach has become very influential, especially in relation to sport environments. He defined group cohesion as a dynamical process which reveals the group's tendency to stay together and remain united in the pursuit of common goals. Carron is also one of the inventors of the Group Environment Questionnaire [GEQ; Widmeyer, Brawley & Carron 1985]. Currently, it seems to be the most commonly used tool measuring team cohesion in sport, and it was also utilized in this study. GEQ has shown high psychometric properties (reliability and validity) and consists of four scales that measure two different types of group cohesion: task cohesion and social cohesion. Task cohesion refers to the group members' common and shared aspirations to achieve the goals/tasks/"missions" that have

been set out, whereas social cohesion looks at the aspect of friendship and interpersonal relations that function within the group [Carron, Brawley & Widmeyer 1998].

Up to now, a large number of studies have investigated the relationship between group cohesion and performance in many different non-athlete groups, such as companies, organizations [e.g., Hogg & Moreland, 1993; Steiner, 1972], or even military [Manning & Fullerton, 1988]. In this study, however, the interest was focused on group cohesion in sport teams. Therefore, it is impossible to neglect the impressive contribution made in this area by Carron and his research group [Carron, Colman, Wheeler & Stevens, 2002]. These authors conducted a meta-analysis of 46 studies that investigated the relationship between team cohesion and sporting performance. Their conclusions have shown that in the majority of these studies there was a moderate or high positive correlation between these two variables. What is more, it appeared that this relationship was stronger within female teams in comparison to male teams. It has been shown that there was significant correlation between group cohesion and performance in teams consisting of women,  $r = .95$ , whereas in male teams the correlation was weaker,  $r = .56$  [Paskevich, Estabrooks, Brawley & Carron, 2001]. It is suggested that the very strong relationship in females is mainly due to social cohesion and less due to task cohesion. Therefore, if the team members within a women's team do not like each other it is very likely they will not achieve success. That, however, would be possible within teams consisting of men. For example, in the Chicago Bulls team of the nineties there were very few friendships and the team did not spend time together off the court, but, nevertheless, they were able to cooperate and concentrate on common goals which led them to success [Schmidt, McGuire, Humphrey, Williams & Grawer, 2005].

A different part of the research on group cohesion focused on its correlates, that is, the aspects that are very much related to team cohesion and may increase its levels. This area should be interesting to those who manage teams, as it might give them practical knowledge that can be used to their advantage. Some of the most important correlates include: physical closeness of team members, size of a team, its stability, personality traits and the coaching style (in relation to decision making). Way back in the previous century, Festinger, Schachter and Back [1950] found that people living together or close to each other tend to form friendships much easier and quicker than those living further away. In sports, Rainey and Schweikert [1988] have shown that baseball teams that travel together (to games, camps etc.) display higher levels of social cohesion than teams that do not travel together. Furthermore, Widmeyer, Brawley and Carron [1990] have suggested that the larger a team is (after reaching the threshold of 6 persons), the less cohesive it will most

likely be. This applies both to task and social cohesion. What is more, if the team remains stable (not many rotations in the squad), its cohesion tends to be higher [Silva & Stevens, 2002]. When it comes to group cohesion and personality traits of the team members [according to the so-called Big Five; Costa & McCrae, 1989], interesting results have been found. Task cohesion is positively correlated with conscientiousness ( $r = .30$ ) and agreeableness ( $r = .38$ ), whereas social cohesion is related to extraversion ( $r = .38$ ) and emotional stability ( $r = .43$ ) of the team members [Van Vianen & De Dreu, 2001]. It has also been argued that the coaches' democratic style in decision making is linked to higher group cohesion in general [both task and social cohesion; Westre & Weiss, 1991]. Further, links have been found between transformational leadership and group cohesion [Callow, Smith, Hardy, Arthur & Hardy 2009]. Some studies have also revealed differences in the levels of group cohesion between teams representing different sport disciplines. For example, Krawczyński [1995] has shown that soccer teams display higher group cohesion than handball teams. This, however, seems inconsistent with the idea that smaller groups should be more cohesive than larger groups [Widmeyer, Brawley & Carron, 1990], as handball teams require less players than soccer teams.

Nevertheless, there are many questions related to group cohesion that have not received adequate research attention. One of such areas is related to the level of competition (e.g., amateurs vs professionals). In a study conducted by Granito and Rainey [1988] it has been shown that high school football teams were characterized by higher task cohesion than collegiate football teams. This seems to be an interesting result, as teams that performed on a lower level of competition displayed higher results in one of the two types of group cohesion. Nonetheless, the link between group cohesion and the level of competition still remains unclear, and the current study attempts to shed more light on this area of research.

It is also uncertain whether teams from different cultures may display different levels of group cohesion. This issue is, however, very difficult to study and measure, as, in such circumstances, any differences might be due to the specific characteristics of a particular group and not due to the culture the team comes from. Nevertheless, it may be useful to compare teams from different countries, provided they represent the same sport discipline, level of competition etc. In such comparisons one might look at Hofstede's [2001] dimension of individualism-collectivism. As argued by the author, in individualistic cultures (e.g., USA, UK, Scandinavia) it is acceptable to put the individual's good beyond the good of the group. Moreover, every person is seen as an autonomous and unique part of the society. On the other hand, in collectivistic cultures (e.g., large parts of Latin America, Asia and Africa) the good of the group is most

important and the individuals' identity is often defined through the identity of the group to which they belong. Consequently, knowing that group cohesion (especially its social aspect) is very much based on the individual-group relationship, perhaps there are some links with the individualism-collectivism dimension. In this sense, one might think that sport teams from collectivistic cultures may be more cohesive (at least socially) than analogical teams from individualistic cultures. The problem arises when we attempt to find those "analogical teams" from different countries. Moving towards present study, it has been shown that Poland and Great Britain (where the compared teams come from) are differently located on the individualism-collectivism dimension [Spector, Cooper & Sparks, 2001]. The British are considered to be one of the most individualistic in the world, whereas the Poles are still located further (in relation to Brits) towards the collectivistic end of the dimension. Although these are not strong theoretical foundations, it was hypothesized that Polish collegiate five-a-side soccer players would show higher group cohesion than British collegiate five-a-side soccer players. Secondly, it was also hypothesized that collegiate soccer players would differ from professional soccer players in terms of group cohesion (due to unclear theoretical background no direction is suggested in this hypothesis).

## Method

### Participants

The participants consisted of 108 male soccer players from three major groups. The first group included 59 Polish collegiate soccer players from 6 different five-a-side teams (mean age in years:  $M = 21,33$ ;  $SD = 1,9$ ). Each of these 6 teams represented a different university. Moreover, 3 of these teams represented public universities, whereas 3 represented private universities. This data was obtained in the middle of the season during prestigious indoor-soccer championships for collegiate teams from the Warsaw area (Poland). The second group consisted of 24 British collegiate soccer players from 3 different five-a-side teams (mean age in years:  $M = 20,25$ ;  $SD = 1,6$ ). Each of these teams represented a different college within the University of Kent (UK). This data was collected at a friendly tournament which took place at the end of the season. The third and final group of participants included 25 Polish professional soccer players from one top division team (mean age in years:  $M = 25,72$ ;  $SD = 4,4$ ). These participants took part in the study during a pre-season preparation camp. All of the mentioned teams consisted of the first squad and reserve players, who participated voluntarily and signed informed consent forms prior to participation. Finally, no ethical contraindications were put forward in relation to the current study.

### Materials

*The Group Environment Questionnaire (GEQ)*. In order to assess group cohesion of the soccer players GEQ was used [Widmeyer, Brawley & Carron, 1985; Polish language version: Krawczyński, 1995]. This questionnaire consists of 18 items measuring two types of group cohesion: task and social. GEQ has good psychometric properties. In terms of reliability, the Cronbach's alpha coefficients for the original scale ( $\alpha = .71$ ) and for the Polish language version of the scale ( $\alpha = .65$ ) are satisfactory. The validity of GEQ was confirmed in comparative studies with other tools measuring group cohesion [e.g., The Sports Cohesiveness Questionnaire (SCQ); Martens & Peterson, 1971].

### Measures

All of the participants were asked to complete the GEQ. The answers to the questionnaire items were given on a 9-point Likert-type scale. The higher the number on the scale (the closer it was to number 9), the higher level of assessed group cohesion (i.e., 1 – Strongly Disagree to 9 – Strongly agree).

### Procedure

Even though the study took place at a different venue for each of the three groups (Polish collegiate, British collegiate and Polish professional soccer players), the procedure remained the same for all of them. At the beginning of the study all participants were informed that the purpose of the study is to understand how soccer players perceive their own teams. It was also mentioned that the participation in the study is voluntary and that one can withdraw at any moment. The players were also informed about the planned duration of the study (approximately 10 minutes) and that they can receive the results of the study by e-mail. Subsequently, the participants signed the informed consent forms, and, after that, they were asked to complete the GEQ. Once all of the participants have finished, additional questions about the details of the study were answered and full debriefing as to the nature of the study was provided.

## Results

In order to verify the first hypothesis, which looked at group cohesion from a multi-cultural perspective, a series of t-tests for independent means have been conducted. The results were different than it had been hypothesized. It appeared that on the level of general group cohesion, there were no significant differences between Polish ( $N = 59$ ) and British ( $N = 24$ ) five-a-side collegiate soccer players:  $t(81) = .50$ ;  $p > .05$ . However, when the analysis focused on task cohesion and social cohesion separately, statistically significant results have been observed. Particularly, Polish collegiate soccer players reported higher



**Table 1.** Mean levels (and standard deviations) of general, task and social cohesion in the group of Polish and British collegiate five-a-side soccer players.

Type of cohesion group	Polish players	British players
General cohesion	111,12 (20,5)	113,58 (19,2)
Task cohesion	60,37 (11,2)	53,04 (11,1)
Social cohesion	50,74 (12,1)	60,54 (12,0)

**Table 2.** Mean levels (and standard deviations) of general, task and social cohesion in the group of Polish collegiate five-a-side soccer players from public and private universities.

Type of cohesion group	Public university players	Private university players
General cohesion	114,67 (22,14)	106,62 (17,65)
Task cohesion	63,48 (11,23)	56,42 (9,98)
Social cohesion	51,18 (13,26)	50,19 (10,8)

**Table 3.** Mean levels (and standard deviations) of general, task and social cohesion in the group of Polish collegiate and professional soccer players.

Type of cohesion group	Collegiate players	Professional players
General cohesion	111,12 (20,05)	108,08 (17,8)
Task cohesion	60,37 (11,2)	57,72 (10,7)
Social cohesion	50,74 (12,1)	50,36 (10,0)

levels of task cohesion than British collegiate soccer players:  $t(81) = 2,71$ ;  $p < .01$ . On the contrary, British players obtained higher results in social cohesion than Polish players:  $t(81) = 3,34$ ;  $p < .01$ . The results for this comparison are shown in Table 1.

An additional analysis was conducted in relation to this data. Six Polish collegiate soccer teams were divided in two groups in order to separate the teams representing public and private universities. These two groups were compared (using t-tests for independent means) to check the uniformity of the entire Polish sample. The results of this comparison have shown that Polish collegiate soccer players from public universities ( $N = 33$ ) differ from the players from private universities ( $N = 26$ ) in terms of task cohesion:  $t(57) = 2,51$ ;  $p < .05$ . However, these two groups of Polish players did not differ in terms of general group cohesion ( $t(57) = 1,51$ ;  $p > .05$ ) and social cohesion ( $t(57) = 0,31$ ;  $p > .05$ ). More details for the results of this comparison can be seen in Table 2.

The results related to the second and last hypothesis of the current study were also different than predicted. A series of t-tests for independent means have revealed that Polish collegiate soccer players ( $N = 59$ ) do not differ from Polish professional players ( $N = 25$ ) in terms of general group cohesion:  $t(82) = .64$ ;  $p > .05$ . What is more, there were also no significant differences between these groups in relation to task cohesion ( $t(82) = 1,01$ ;  $p > .05$ ) and social cohesion ( $t(81) = .14$ ;  $p > .05$ ). The

means (and standard deviations) for these statistically insignificant results are presented in table 3.

Furthermore, even when the collegiate players were divided in two groups (those from public and private universities, as done before) and compared them separately with the professional players – there were still no statistically significant differences in group cohesion (general, task, nor social).

## Discussion

### Group cohesion and culture

There may be many reasons for which the first hypothesis, related to the multi-cultural comparison, could not be confirmed. There was, most likely, no or very little culture involved in these results. One of the drawbacks of this study is that we did not look at the individualism-collectivism characteristics of our Polish and British samples. We simply assumed, after Spector, Cooper and Sparks [2001], that these groups should differ on this dimension. This assumption may, however, be false, as, along with the economic development certain societies might move, over time, towards becoming more individualistic [Hofstede, 2004]. Besides, the sample of the current study consists of young people who often deviate from the results for the general population [Zechmeister, Zechmeister & Shaughnessy, 2000]. Finally, there are various other factors, apart from culture, that might have

had an effect on the obtained results. These may include: the specific characteristics of the Polish and British student environment; prestige of the competition (tournament) that the players took part in during the study; or the moment of the season when the study took place.

The Polish collegiate soccer players might have obtained higher results in task cohesion than British collegiate players, because they took part in the study during mid-season instead of at the end of the season. In the middle of the season, the team goals that have been set out at the beginning of the season are, most likely, still waiting to be accomplished and are present in the players' memory. This should foster players' concentration on common goals and "missions" for the current season, which is directly connected to task cohesion. Moreover, the indoor-soccer championships of the Warsaw area are a prestigious tournament for the collegiate teams. Therefore, this is an important moment of the season for the participating teams which might also focus them of task cohesion. Conversely, the British teams took part in this study at the end of the season during a friendly (not very competitive) tournament. The main aim of this event was to gather all of the collegiate teams for the last time, before they leave for holidays. Therefore, there was no pressure for success, instead, it was most important to have fun while playing soccer and have a good time with friends. Consequently, the goals that had been set out for these teams to accomplish were probably already forgotten. Clearly, the moment of the season and the nature of the tournament seem to have enhanced social cohesion, rather than task cohesion.

Another element that might have contributed to higher social cohesion in British teams, as compared to Polish teams, is the specific characteristic of each of these populations. This conclusion is based on the observations of student life at the University of Kent in comparison to general functioning of the students from the Warsaw area. University of Kent, as many other in the United Kingdom (e.g., Oxford, Cambridge), is located in a small urban centre and has a large, multi-functional campus. Therefore, most of the students live close to each other, which should provide them with many opportunities to meet and integrate. In addition, British students engaged in soccer teams often organize their own social meetings in the campus bars, apart from practices and games. All of this should help in the development of social cohesion. By contrast, most of the students from the Warsaw area, including those playing soccer, live far away from each other, in various distant parts of the city. Further, the players from collegiate teams often see their teammates only during practices and games. They do not go out together (as a team) as frequently as British collegiate students, as for those purpose they usually have other friends. This may lead to a practical hint regarding the development of social cohesion. In line with Festinger,

Schachter and Back [1950] it is very likely that people living close to each other tend to form friendships much easier and quicker than those living further away.

It is more difficult, however, to interpret the differences in task cohesion between Polish collegiate soccer players from public and private universities. It is important to note that these two groups of teams represented a similar level of performance. Therefore, it is possible that in Poland, the general population of students entering public universities is more determined in fulfilling their life-goals that the students entering private universities, as the latter were often not accepted to public higher education (of course, still, many students choose private universities on purpose and for a particular reason). This explanation of the results for public and private university teams is just an assumption. Nonetheless, if, in the future, this assumption appears to be true, it could also apply to the students engaged in collegiate soccer teams representing each university type.

#### **Group cohesion and the level of competition**

In the second hypothesis we assumed that Polish collegiate soccer players differ from Polish professional soccer players (from a top division team) in terms of group cohesion. Similarly to the first hypothesis, this one was also not confirmed. Consequently, for all of the group cohesion types (general, task, and social) there were no statistically significant differences. These results are quite unexpected. On one hand, they are not consistent with Granito and Rainey's [1988] results which have shown, that teams performing at a lower level of competition may be more cohesive (i.e., task cohesion) than those performing on a higher level of competition. On the other hand, one might assume that professionals should be more cohesive than collegiate players, for various different reasons. Firstly, players from professional soccer teams (including the one that took part in the current study) spend much more time together than students engaged in collegiate soccer teams in Poland. Each day professional players spend hours together: on training, briefings, medical treatments, wellness, press conferences, etc. Besides, they have special preparation camps and play games more often than collegiate teams, and thus, have to travel (together) by coach or plain across the country and abroad. Therefore, they have more opportunities to integrate and build social cohesion within their team. Further, in relation to task cohesion, professional soccer players should have precisely set individual and group goals that are constantly reminded and monitored by the coaching staff. What is more, for the professionals, soccer is a job, and they often treat it as a way to achieve success, prestige and earn money. They have to be strongly focused on every detail of their training and game, which should also enhance task cohesion. By contrast, in Poland, collegiate soccer players often perform for the pleasure and fun of it.

It is also important to note, that there were many reserve players (or those that have just joined the group) within the team of professionals that took part in the current study, which could have influenced the overall level of group cohesion in this team. Perhaps, if we had only taken the first squad players maybe the results would have been different. This was probably not that much of an issue among the Polish collegiate players, as even the reserve players were active members of the team and received a lot of playing time during the tournament (in five-a-side soccer there is an unlimited number of substitutions). It is also likely, that players from the particular professional soccer team that took part in this study were characterized by different levels of group cohesion than the general population of professional soccer teams. Consequently, one of the major drawbacks of this study is that we have obtained data from just one professional team. If we had gathered data from more professional clubs, perhaps the results would have brought more useful information. Therefore, it is important to continue this kind of research, as many questions in this area still need to be answered. Clearly, group cohesion is a fascinating characteristic of a team and plays a major role in its functioning and achieving success.

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# The effect of taekwondo training on the level of aggression

Krzysztof Wrześniewski

Faculty of Physical Education and Sport, Department of Psychology, University of Physical Education in Kraków

## Summary

The article focuses on the effect of taekwondo training on level of aggression.

The study took a longitudinal form – the research was conducted over three years (it started in December 2010, and it finished at the end of November 2013). At the time of the first measurement, the study was conducted on a group of 164 taekwondo students (from PUT – the Polish Taekwondo Union). After three years, the training had been continued by 63 people. For comparative purposes, the results of 25 Physical Education students of physiotherapy were used.

The study used a Buss-Perry Aggression Questionnaire (BPAQ). The results have shown the reducing impact of taekwondo training on level of aggression (statistically significant). This is a process only observable after prolonged training.

**Keywords:** taekwondo, aggression, martial arts, psychology

Currently, psychological knowledge is developing dynamically in different fields of sport [Dosił 2008]. Numerous studies have been carried out, with a focus on a wide variety of characteristics and qualities of the mental processes of athletes. This knowledge is relatively extensive as far as popular sports such as football or basketball are concerned (the number of records found in the database EBSCO entry “psychology” + “soccer” – 4908; football – 8141; “basketball” 5569, accessed 21.01.2016). However, there are sports which are less explored in this respect. That group includes the martial arts. In recent years, a number of studies have been carried out on the psychological aspects of training in martial arts [Sterkowicz, Blecharz 1996; Sterkowicz 2005; Rogowska, Kuśnierz 2010; VertonghenTheeboom 2010; Třebický, Havlicek, Roberts, Little, Kleisner 2013; Ziv, Lidor 2013; Rosario, Kerr, Rhodius 2014; VertonghenTheeboom, Pieter 2014]; however, these mainly focused on the most popular styles, such as karate, judo or kung fu. Not only were the results obtained from empirical studies generalized over other martial arts, but they also failed to take into consideration the diversity of styles, techniques used, or discrepancies in theoretical-ideological approaches. The primary objective of training in all combat sports is learning how to fight; however, it must be emphasized that other aspects – such as implementation of techniques, or attitude to the core of the training itself – vary considerably depending on the fighting style.

Apart from the differences outlined above, it should be assumed that each fighting style varies in terms of trainee’s personality traits as well. This assumption was confirmed in the pilot study<sup>1</sup>, which was a starting point for a further analysis. This study was designed to identify the differences in three fighting styles, which originated from diverse philosophical and ideological concepts: aikido, belonging to the group of martial arts; taekwondo considered as a representative of martial arts and krav-maga, being a combat system. The study focused on two personality traits: aggression and anxiety, verifying their presence in the sample groups. The results of the pilot study had revealed that participants of different fighting styles differed in personality traits. It can be speculated that these differences resulted from either training or self-selection (people with certain personality traits choose a specific style).

The study presented in this paper focuses on the combat style which in the author’s opinion yielded the most interesting results in the pilot study – namely taekwondo.

There has been a limited number of psychological studies focusing on this fighting style (63 records in EBSCO database for the entry: “taekwondo” + “psychology,” dated 14.02.2015). Even less frequent is interest in taekwondo when combined with the term ‘aggression’ (4 records in EBSCO database for the entry: “taekwon-

<sup>1</sup> The results of the research thesis K. Wrześniewski.



do” + “aggression” accessed 02/14/2015). Nevertheless, the data collected so far has indicated the positive effect of taekwondo training, measured by psychological parameters such as aggression and anxiety [Trulson 1986; Skelton, Glynn, Berta 1991; Chapman Lane, Brierly, Terry 1997; Kwiatkowski 2007]. Given the fact that these studies were transverse in nature, it is not obvious whether the observed differences resulted from the training itself or trainee self-selection. Therefore, a longitudinal study was designed in order to detect the impact of taekwondo training on the level of aggression.

## Methods

### Participants

189 adult males took part in the study and were classified into three groups: 1) those who practised taekwondo for the entire course of study (*T*;  $n = 63$ ); 2) those who abandoned the practice of taekwondo during the course of study (*TA*;  $n = 101$ ); 3) a control group – students of physiotherapy at the University of Physical Education in Kraków (USPE) (*C*;  $n = 25$ ).

The first and the second groups consisted of people who started training in taekwondo in 2010 (during the first measurement, their training experience accounted for no more than 6 months). The third group comprised students of physiotherapy at USPE, who were selected as a control group. They did not practise any sports and were tested three times throughout the study.

The size of each group and the age of the subjects are presented in Table 1.

### Research tools

The **BPAQ – Buss-Perry Aggression Questionnaire** – a Polish adaptation of the Aggression Questionnaire test developed by A. Buss and M. Perry [1992] was used to measure the level of aggression. The adaptation was carried out by the “Amity” institute [Siekierka 2005]. The questionnaire consisted of 29 questions which measure:

- **Physical Aggression (PA)** – comprising items related to physical harm and hurting others. This referred to the instrumental and motor components of behaviour.

- **Verbal Aggression (VA)** – comprising items related to verbal harm and hurting others. This referred to the instrumental and motor components of behaviour.
- **Anger (A)** – comprising items related to physiological arousal and preparation for aggression. This referred to the emotional/affective component of behaviour.
- **Hostility (H)** – comprising items related to a sense of hostility and injustice, and referred to the cognitive component of behaviour.
- **Total score (T)** – the result of the general aggression tests [Buss & Perry 1992, p. 457].

### Procedure

The longitudinal study commenced in December 2010 and was completed at the end of November 2013. The study consisted in three measurements: measurement 1 – pretest – December 2010, measurement 2 – June 2012, and measurement 3 – posttest – November/December 2013.

The participants were asked to complete the battery of tests before the training sessions/ classes at the university. The measurements in the first battery consisted of BPAQ and STAI, CISS and FCZ KT questionnaires. The results of the STAI, CISS and FCZ KT are not presented in this paper.

The single measurement time lasted between 30-45 minutes. Due to the fact that the study was anonymous each subject was asked to provide their date of birth and a password. This served as an identification code for further measurements.

### Statistical analyses

6 separate 2-way mixed factorial analyses of variance (group [training vs. control] × time [pretest vs. 2nd measurement vs. posttest]) were used to examine the effect of taekwondo training on levels of aggression. Dependent and independent sample *t*-tests with Bonferroni corrections were used for post hoc analysis where significant differences were detected for main effects. In addition, partial eta square statistics ( $\eta^2_p$ ) were calculated in which values of  $> .01$ ,  $.06$ , and  $0.14$  corresponded to

**Table 1.** The size of each group and the age of the subjects

Variable	Participants training taekwondo for the entire course of study ( $n = 63$ )		Participants who resigned from taekwondo training during the course of study ( $n = 101$ )		Control group ( $n = 24$ )	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age [years]	23.2	3.41	22.9	2.55	19.3	0.68
Training time [months]	4.7	1.6	3.6	1.8	–	–

small, medium, and large effect sizes, respectively [Miles, Shevlin 2001; Cohen 1988; Cohen, Cohen, West, Aiken 2003]. A one-way ANOVA followed by Sheffe's post hoc test was used to assess differences in pretest samples (including group of participants who gave up taekwondo training during the course of study).

The statistical package "R for Windows (version 3.1.0)" was used for all analyses. An alpha level of  $p \leq 0.05$  was considered statistically significant for all comparisons. All data are presented as mean  $\pm$  *SD* except in the figures where data are presented as mean (figure 1) or percent of change (figure 2) for clarity of presentation.

## Results

A One-way ANOVA showed statistically significant differences between groups in following BPAQ scales:

physical aggression ( $F(2, 185) = 4.861$ ;  $p = .009$ ), verbal aggression ( $F(2, 185) = 24.803$ ;  $p < .001$ ), hostility ( $F(2, 185) = 7.493$ ;  $p = .001$ ) and total score ( $F(2, 185) = 11.385$ ;  $p < .001$ ).

Post hoc analyses using the Sheffe test indicated that level of physical aggression was significantly lower ( $p > .05$ ) for the control group than for participants who practised taekwondo (those who practised taekwondo for the entire course of study and those who abandoned the practice of taekwondo during the course of study). In addition it indicated that participants who practised taekwondo for the entire course of study present a higher level of verbal aggression, hostility and result of the general aggression tests ( $p < .05$ ) compared to the other groups (the control group and the group of participants who abandoned the practice of taekwondo during the course of study).

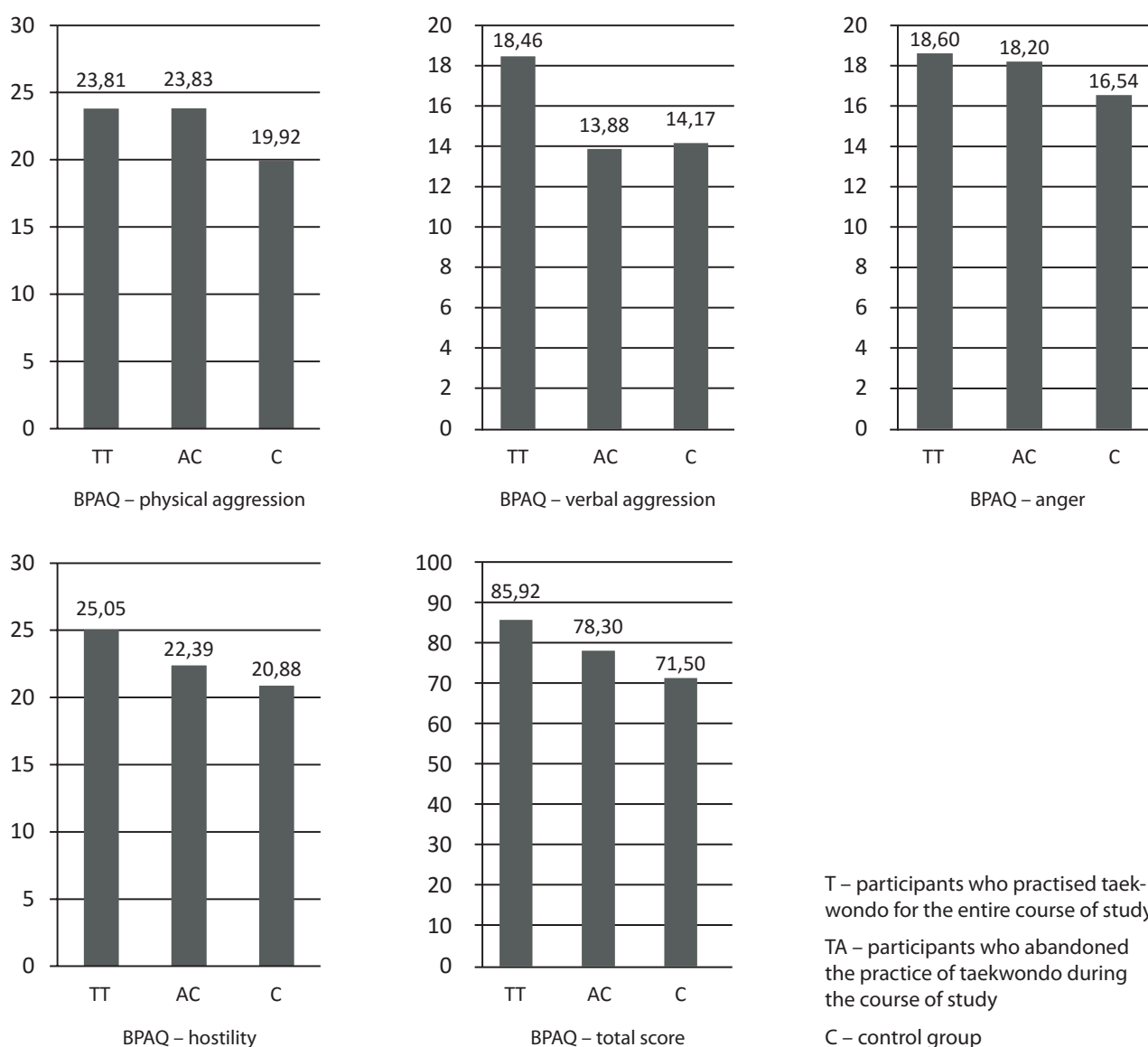


Figure 1. Mean results for BPAQ

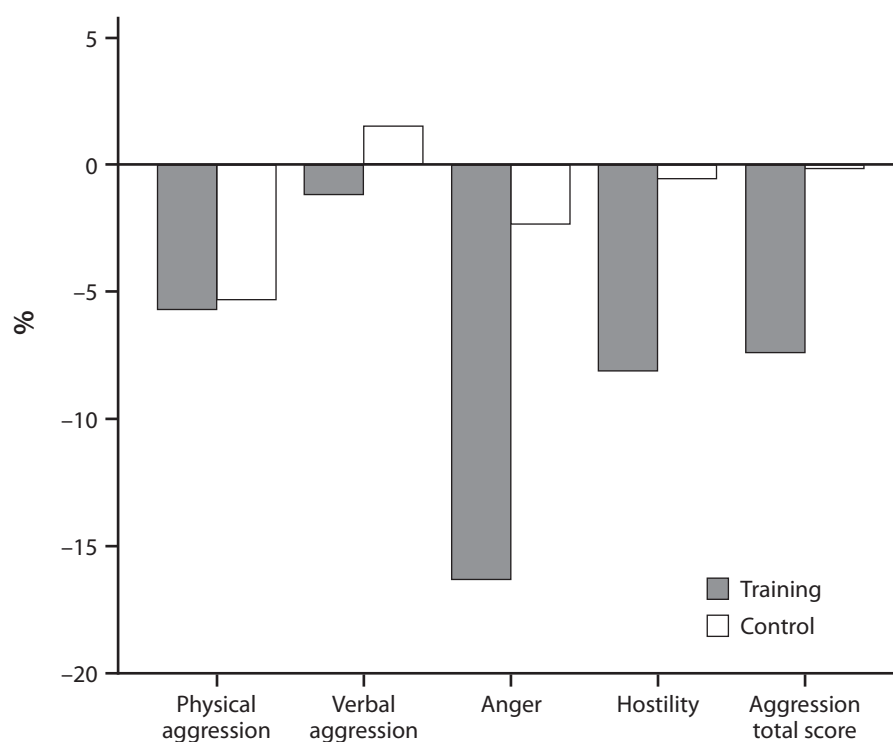


Figure 2. Pretest – posttest percentage changes in BPAQ scales for training and control group.

Mean (*SD*), % change, interaction (group [training vs. control] × time [pretest vs. 2nd measurement vs. posttest]) and Partial Eta Square are presented in table 2. Figure 2 illustrates the % of change in BPAQ scales for pre – post measurements.

For physical aggression, there was a significant interaction for time [pretest vs. 2nd measurement vs. posttest] ( $F(2, 84) = 9.496$ ;  $p > .001$ ;  $\eta^2_p = .184$ ). No significant interaction was observed for group [practising vs.

control] × time [pretest vs. posttest] ( $F(2, 84) = 1.867$ ;  $p = .161$ ;  $\eta^2_p = .043$ ). These results indicate that the observed decrease in the level of physical aggression occurred at a similar magnitude in both groups

For verbal aggression there was no significant interaction for time [pretest vs. 2nd measurement vs. posttest] ( $F(2, 84) = .047$ ;  $p < .05$ ;  $\eta^2_p = .001$ ) and group [training vs. control] × time [pretest vs. posttest] ( $F(2, 84) = 1.338$ ;  $p = .268$ ;  $\eta^2_p = .031$ ).

Table 2. Mean (*SD*), % change, interaction, Partial Eta Square for BPAQ scales.

Variable	Control group <i>n</i> = 63				Training group <i>n</i> = 24				Interaction ( <i>p</i> )	Partial Eta Square ( $\eta^2_p$ )
	Time 1 Pre-test	Time 2	Time 3 Post-test	% change	Time 1 Pre-test	Time 2	Time 3 Post-test	% change		
Physical aggression	19.92 ± 5.3	19.62 ± 5.3	18.92 ± 5.2 †	5.0	23.81 ± 4.4 §	22.76 ± 4.8 §	22.46 ± 4.7 § †	5.7	.161	.043
Verbal aggression	14.17 ± 4.0	14.46 ± 3.6	14.37 ± 3.8	-1.4	18.46 ± 4.0 §	18.21 ± 4.1 §	18.19 ± 4.3 §	1.5	.268	.031
Anger	16.54 ± 5.3	16.54 ± 5.7	16.41 ± 6.5	.8	18.60 ± 5.3	16.87 ± 5.5	15.57 ± 5.6 § †	16.3	.001	.147
Hostility	20.87 ± 7.1	20.71 ± 7.4	20.96 ± 8.3	-.4	25.05 ± 3.54 §	23.92 ± 3.99 §	23.08 ± 4.34 § †	7.9	.002	.133
Total score	71.50 ± 15.6	71.46 ± 15.4	71.42 ± 15.6	.1	85.92 ± 10.154 §	81.84 ± 10.3 §	79.52 ± 10.1 § †	7.4	<.001	.311

Interaction effects are reported as group[training vs. control] × time [pretest vs. posttest]

§ – Significant between-group differences (Time 1; Time 2; Time 3)  $p < 0.05$

† – Significant within-group differences pretest – posttest  $p < 0.05$

For anger, there was a significant interaction for time [pretest vs. 2nd measurement vs. posttest] ( $F(2, 84) = 8.539; p > .001; \eta^2_p = .169$ ) and group [training vs. control]  $\times$  time [pretest vs. posttest] ( $F(2, 84) = 7.266; p = .001; \eta^2_p = .147$ ). The follow-up post hoc analyses revealed that statistically significant reduction in anger occurred only in the practising group ( $p < .05$ ).

For hostility there was a significant interaction for time [pretest vs. 2nd measurement vs. posttest] ( $F(2, 84) = 6.451; p = .002; \eta^2_p = .133$ ) and group [training vs. control]  $\times$  time [pretest vs. posttest] ( $F(2, 84) = 6.464; p = .002; \eta^2_p = .133$ ). The follow-up post hoc analyses revealed that a statistically significant reduction in anger occurred only in the practising group ( $p < .05$ ).

For the total BPAQ score there was a significant interaction for time [pretest vs. 2nd measurement vs. posttest] ( $F(2, 84) = 19.947; p < .001; \eta^2_p = .322$ ) and group [training vs. control]  $\times$  time [pretest vs. posttest] ( $F(2, 84) = 18.987; p < .001; \eta^2_p = .311$ ). The follow-up post hoc analyses revealed that a statistically significant reduction in anger occurred only in the training group ( $p < .05$ ).

## Discussion

### Prolonged taekwondo training and the level of aggression

The results obtained from the research showed that, firstly, males with levels of aggression higher than average undertake taekwondo training. These results were confirmed by their higher scores on the scale of physical aggression, verbal aggression and hostility. Over the period of three years, the reducing impact of the taekwondo training on the levels: the overall level of aggression, hostility and in particular the intensity of anger were observed.

The results confirmed notions of the drive theory – the ethological concept [Lorenz 1975] and psychoanalysis [Freud 1976], as well as frustration-aggression hypothesis [Dollard, Miller et al. 1939; Berkowitz, LePage 1967]. These concepts assume that catharsis, or other manners of releasing negative emotions, reduces the need for aggression. In this light, taekwondo training can be considered a catharsis experience. Sparring and exercises, accompanied by training equipment (such as punchbags), allow instinctive drives towards aggressive behaviour to be expressed in a socially acceptable way. These elements of training also let athletes vent their accumulated frustration before it reaches a critical level, which in turn can potentially result in the outbreak of violent behaviour. The observable decrease in the level of anger (emotional and cognitive components) as a result of taekwondo training seems to favour the abovementioned notions. Moreover, it was found that the practice of this type of combat sport resulted in the reduction of aggression

associated with the instrumental/motor component of behaviour, and physical and verbal aggression. The fact of the stability of aggressive behaviour and reduction of physiological arousal at the same time suggests the need for a more comprehensive analysis and verification within the concept of social cognition. Social psychologists assume that this type of training might create new scenarios of aggressive behaviour. Note, however, that learning fighting skills takes place in a specific situational context, that is to say at the gym, accompanied by appropriate equipment and according to the specified sports rules. Furthermore, some other elements of traditional taekwondo are introduced into training sessions, such as TKD patterns (tul) or the principles of ethical behaviours in taekwondo. Thus, it is believed they might be actually mitigate aggressive behaviours outside the training halls. What is more, coaches often play a model role and their behaviour may have a significant impact on how the newly acquired skills will be used by athletes. Coaches, as observed by the researchers of this study, in the majority exhibited a pacifist attitude toward life.

The findings confirmed the results obtained by Skelton et al. [1991], in a group of 68 children aged 6–11 years old, randomly selected from ATA (American Taekwondo Association) schools. The study compared the level of aggression among children from different grades. Based on the results, Skelton and colleagues found that practising taekwondo reduced the level of aggression. The researchers speculated that learning traditional elements, such as formal arrangements, exercises focused on technology and meditative elements determined the decrease in aggression. It should be noted however, that in the case of taekwondo IT taught in Poland, the acquisition of traditional elements was minimized due to their low level of usability in competitions. Nevertheless, the meditation techniques, relaxation, or even imagination are taught in a preparatory process, and may be contributing to the reduction of aggression

The results obtained from the research carried out for the purpose of this paper, correspond with the results of Trulson's [1986] longitudinal research, who during a six-month training period, observed a change in level of aggression in three groups. The first group consisted of people who practised traditional taekwondo; the second group comprised people who trained 'modern' taekwondo, and which did not consider the psychological/philosophical aspects of the sport; and the third group consisted of students who trained at the gym with an instructor. The results showed that the level of aggression was reduced in the first group but increased significantly in the second group; while the third group showed no significant changes.

Combat sports other than taekwondo have also become the subject of scientific investigation. According to Budnik's [2004] research, the level of aggression in peo-

ple who practised karate remained lower than in a control group of students. Similarly, in Daniluk, Litwin-iuk and Błacha's [2004] study, a low level of aggressiveness among participants in the Judo Olympic team was found. Contrarily, the results of Daniels and Thornton's [1990] did not show that people who practised martial arts such as jujutsu and karate, differed in level of aggression from those who played rugby – an aggressive contact sport, or people involved in non-combat sports such as badminton which did not incorporate elements of direct aggression. It was observed, however, that beginners in martial arts training were characterized by a higher level of hostility which, in the course of the training process, was gradually reduced [Daniels, Thornton 1990]. Similar conclusions were drawn by Turkish researchers who did not find significant differences between people training martial arts (it should be noted that athletes who practised kick-boxing, judo and taekwondo were considered in the same group), and those training team sports such as handball, basketball or volleyball [Ali Emrah, Fahri, Necmettin, Gulcan 2010].

In other words, the research cited above indicated either an average level of aggression in people practising various martial arts, or a lower level as compared to the control group.

The current study documented a higher – as compared to the control group – level of aggression in people participating taekwondo. It would, therefore, be sensible to search for the cause of such discrepancies between the results of this study and the findings of other research. The discrepancy could have been caused by the fact participants practised fighting styles other than taekwondo, which contained more traditional elements. Perhaps time spent in training might have a significant effect on the results. Other studies took the form of transversal research, and the participants were characterized by long training experience. Thus, it can be speculated that a prolonged training process could gradually mitigate the level of aggression in athletes who practised various martial arts. In contrast, this study took a longitudinal form and concerned a three-year training period. Although, during the time of the study, a gradual decrease in the level of aggression in people practising taekwondo was observed, it is assumed that the period was not long enough to diminish the intensity of aggression to an average or less than average level. We can stipulate that if the time had been extended and further observations implemented, the level of aggression in the sample would probably have been reduced even more.

Such presumption was confirmed by cross-sectional studies (not described in this paper), which showed that people with a high level of taekwondo technical skills (average length of training – 6 years) did not differ in their level of aggression from the control group. Further confirmation was found in the analysis of the four stud-

ies on different styles of fighting (aikido, judo, karate, taekwondo, krav-maga), which synthesized and summarized several studies on aggressiveness [Kubacka-Jasiecka, Wrześniewski 2012]. The results of such analysis showed the average level of aggression in people practising martial arts and no significant differences in aggression level from people who did not engage in any sports. Thus, based on the studies it can be assumed that the reduction of the level of aggression due to taekwondo training takes place slowly. In addition, the effect of such reduction is so slight that the level of aggression in advanced athletes is about average (comparable to the control group – people who did not engage in any sport).

Other empirical studies in this context were carried out by Żyto-Sitkiewicz [1981]. The author analysed the level of aggression of people practising judo and wrestling. Given the result of the entire sample the average level of aggression was noticeable. However, when the top athletes were selected from the group, a level of aggression higher than average was found among them. Similar conclusions were reached by Karolczak-Biernacka [1998], who noticed that successful sports people were characterized by higher than average levels of aggression. It can be, therefore, concluded that the observable level of aggression did not only result from length of participation in training, but it was also associated with the achievements in sports. It can be assumed that the initial level of aggression in athletes is associated with sports competitiveness, and in turn contributes significantly to building athlete's own position as a competitor. Thus, it can be concluded that aggression in some ways may foster sports achievements.

## Summary and conclusions

The level of aggression in adult males training taekwondo is higher than average (as compared to males in control group).

Prolonged taekwondo training may reduce the level of aggression. The reduction can be affected by many factors. Based on reported studies, it can be noted that the two main reasons include: firstly, discharge of stored energy in an acceptable manner (on the punching bag, during sparring) and secondly introduction to sports training elements such as meditation, relaxation, imaginative training and the ethical principles of taekwondo. Taking this into account, it not advisable that highly aggressive individuals participate in combat sport as a means of reducing their aggression. Such individuals might use their technical skills as a potential tool of displaying aggressive behaviour towards other people. In the case of aggressive individuals, a modified training programme should be implemented, containing many relaxation and meditation elements. However, such a program would need to be verified in terms of its effectiveness in experimental conditions.



Further research should also focus on elaboration of aggression explorative tool taking into account the specificity of martial arts. It should differentiate between permissible manifestations of aggression in case of martial arts from unacceptable aggression in everyday situations.

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# Values and their role in competitive sport: In-depth interviews with highly accomplished athletes

Jarosław Szyrkarewicz, Artur Poczwardowski

University of Denver, USA

## Summary

This study explores values from the perspective of positive sport [Poczwardowski, Nowak, Parzelski and Klodecka-Różalska 2012]. Based on a qualitative research design, in-depth interviews [Silverman 2009] were conducted with 6 athletes representing highest sport success (such as Olympic, World Cup, European Cup, and Polish Cup medallists). Extraction of meaning method [Kvale 2004] was used in the data analysis and consisted of condensation, categorization, and the interpretation of meaning. The participants suggested that their values may have an influence on the quality of their development and their sport performance. Athletes found values as an important part of their professional and personal lives. It should be emphasized that these values are both developed through participating in sport and simultaneously enrich the sport experience. Further, values flow from sport lives to non-sport lives and it is the athletes themselves who integrated these values and catalyzed their flow between sport and non-sport realms.

**Keywords:** positive sport psychology, positive sports, high-performance sport, values, well-being, qualitative study

## Introduction

Nowadays, sport imposes great challenges on both its professional and amateur participants. Often, the individual goals of an athlete conflict with the goals of influential social groups, such as sport activists, fans, businesses, and mass media representatives. These social groups impose significant amounts of pressure on the athletes, creating an environment where competitors and teams are treated as a commodity, and winning is the ultimate, and essentially, only goal. Such outcome-focused situations cause considerable frustration to those involved in sports, and eventually may set a trap on an athlete of one-dimensional development, where the only “investment” made is in the skills directly contributing to highest athletic performance. In consequence, such an approach may negatively affect athletes’ quality of life throughout their career and after its end. Therefore, there is a need for a new, strongly accentuated positive perspective in sport. Positive sport comprises “all constructive activities which: (a) improve the functioning of an individual in terms of physical fitness, technical, tactical, teamwork, and psychological skills, that directly relate to competing for best possible results, (b) equally invest into “out-of-sport” goals associated with physical and mental growth,

as well as physical, mental, and social development of an individual and groups, (c) ensure the balanced and comprehensive development of all sport participants, including self-actualization and self-realization and (d) create, maintain, and promote positive models to follow within broadly defined social and cultural good” [1].

This definition reinforces the notion of the autonomy of an athlete as a person, hence a natural question emerges: how a person (an athlete) decides to set and pursue more and more difficult goals? In order to better understand the self-determined role of an athlete, this study was designed to explore the area of values. In psychological, philosophical, or theological literature, values are perceived and defined as the essence of person’s life and his or her endeavors, as well as the reference point in his or her life [2] [3]. However, it seems difficult to find one, complete definition of a value. Popielski [3] proposed a broad definition of value as: all that which is intellectually recognized as valuable, and enhances a person’s life and health; develops, bonds and leads to the fullness of bio-psycho-social and spiritual life. The fullness of the bio-psycho-social life is associated with self-realization and the multidimensional development of a person living in accordance with the values he or she deems paramount. This study aimed to explore the area

of values, that is which values the competitors hold, how they were guided by these values, and what is the relationship between the professional athletes' value systems and their development and achievement in sports.

On the one hand, the review of literature revealed a lack of systematic research in the field of broadly defined values within competitive population, with the exception of already deeply explored notions of moral convictions in relation to aggression, developmental issues, including task-oriented motivation, or comparison with others [4] [5]. On the other hand, it is widely believed notion, and supported by observational data, that sport is a realm which stimulates competitors' development not only in their particular athletic domain, but in their private life throughout adulthood [6] and childhood [7].

## Sport and values in athlete's life

In order to understand what success in sport is in terms of values, and inherent in the Olympic paradigm, is the idea of positive sport as a stimulator and as a means of multi-dimensional human development. Sport in its original positive purpose is a tool used to grow physically and mentally, and a tool to teach important character traits useful in and out of sport context. Additionally, a broad fulfillment of numerous needs may play a motivational role for athletes, and as assumed in this study, can have an indirect positive impact on sport success.

When the basic goal of an individual is their mental well-being, which is conceived as an action pursued in accordance with one's own values, the research suggests that well-being will increase if the following needs are met: security, competence and effectiveness, relatedness, and autonomy and authenticity. This needs satisfaction results in a higher level of performance and sport achievements [8], which is important in an assertion that achievement is a result of an ongoing engagement in training and improvement. Czajkowski suggested that when specific values such as, self-reliance, autonomy and responsibility, are important for both the coach and the player, they will enhance the motivation of athletes [9].

Seligman [10] proposed six universal virtues – paramount values that have been present and appreciated for over 3000 years in almost every philosophical and religious traditions. These virtues are: wisdom and knowledge, courage, love and humanity, justice, temperance, spirituality and transcendence. From available empirical research in sport, while keeping these virtues in mind, the most valued in family life for table tennis players are harmony and agreement, stability and security, love and understanding [6]. The analogy of broadly conceived values in the study of Kawa [6] and those listed as virtues by Seligman [10], raises the question why, despite the similarity of values held by competitors and individuals who do not compete in sports, does society perceive athletes

as machines to produce results, ignoring their inner life and believes?

Before going any further, it is worth inquiring about whether the values assigned to specific sports activities, and which are an inherent component of competitor's inner life (e.g., passion and hobby), support the balanced development of an individual as postulated in positive sport approach? If this is the case are such values associated with greater likelihood of athletic success? Thus, the aim of this present study was to explore the area of values and better understand how the study participants sampled from highly accomplished athletes were guided by these values. Secondly, this research attempted to determine whether participants believed their value system was correlated with the quality of sport performance (in training and competitions) and their subsequent achievements.

## Method

Sport psychology still needs preliminary (exploratory) research in the area of values in professional sports, and therefore a qualitative research model seemed most relevant in order to address the research problem outlined in this study [11]. In order to obtain a better insight into competitors' approach toward the paramount values in their athletic career, a semi-structured interview utilizing open-ended questions was implemented. The interview sought to explore the basic questions outlined by the research problem with a small group of participants.

## The subjects

The participants of the study were six athletes (track and field, fencing, sailing) performing at the highest professional level (i.e., competitors and medalists of Polish, European and World championships, or the Olympic Games), all of whom have been training since early childhood. Three women and three men with a mean age of 29.33 participated in the study. The number of participants meets the minimum requirements for internal validity for the exploratory qualitative research [12].

## Procedure

The participants were recruited from a group of elite athletes, for whom sport is a profession that they dedicate a significant amount of time to, often adapting other aspects of their life to fit their training and competition needs.

A semi-structured interview (based on general questions from the list of issues) was conducted. The interview was divided into three parts to: (a) introduction and familiarization (e.g., "What did you want to be when you were a child / an adolescent?", "What do you talk about

with other people?"); (b) open-ended questions (e.g., "What do you think about defeats?", "What do you think about winning?", "What is important for you in life?"); and (c) the questions concerning values (e.g., "What values do you find to be important in life?", "What values do you find to be important in the life of an athlete?", "What values have accompanied you throughout your entire career?"). The interview length ranged from 30 to 90 minutes. The participants were informed of the purpose of the research, and after the interview had the opportunity to comment and ask questions concerning the study.

### Data analysis

The participants' interviews, along with the researchers' statements were transcribed. The analysis was performed using the method of meaning extraction [13] by: condensation of meaning, categorization of meaning, and interpretation of meaning. Condensation of meaning is a technique used to "compact" longer speeches into so-called units of meaning. Thus, these are shorter statements, but have the same meaning as the original, longer fragment of speech. The categorization of the meaning assigns emerging analytical insights based on how they fit the research problem. It involves the division of the text into natural parts as they pertain to the phenomenon in question, followed by recording the occurrence of a certain meaning and the degree of its prevalence in the interview. Interpretation of meaning seeks for deeper meanings, a more complex sense in the participants' accounts, something the interviewee did not actually said, but expressed by the choices of topics or the way of narration. One limitation of the qualitative method is that coding is performed by the person who conducted the study and individual preferences (views) of interpretation may occur. To reduce such possibility, and to increase validity of the analysis, the auditor becomes a part of later analytical steps and is asked to question the results. In

the current study, the second author took the role of the auditor, in order to check the structure of the results and find alternative participants (six people), making certain values less represented or the potentially existing values undetectable. On the other hand, Morse [12] suggested that the interview of six people generally was a sufficient sample size to reach data saturation (i.e., the data from a consecutive interview does not cause changes to the structure of the results). These analytical techniques are complementary and together constitute a strategy used in qualitative data analysis to enhance the study internal validity, and had been successfully applied in past research with athletes.

### Results

The questions asked in the study aimed to identify the values guiding highly competitive athletes. To understand athletes' system of values, the classification proposed by Popielski [3] was used. As a result of categorization and interpretation of meanings, the authors were able to assign the values deemed important by professionally competing athletes, to the following areas:

1. The area of paramount values, integrating and developing individual's self-awareness and pursuit of excellence and growth in life.
2. The area of instrumental, utilitarian values related to setting and achieving goals.
3. The area of values shaping character.
4. Area of sport-related values.
5. Area of knowledge-related values.
6. The area of relatedness values.
7. Area of values securing well-being.
8. The area of universal values.

In the area of paramount values (see Table 1), all competitors indicated Self-improvement and Self-development as guiding values (6/6, where the first number represents the number of people indicating the val-

**Table 1.** The area of paramount values, integrating and developing individual's self-awareness and strive for excellence and growth in life.

Value	Quotation
Self-improvement (6/6)	I am an example myself that without any background, finance or other facilities of life, it is possible to achieve success.
Self-development (6/6)	Sport is an activity which develops and ennobles the person.
Be the best (5/6)	People, who aspire to achieve absolute success.
Self-awareness (4/6)	I am going through a period of personal journey, so I am not sure if I can answer this question.
Self-realization and self-fulfillment (4/6)	I am satisfied with what I do. I derive pleasure from it. Even if I have some worse moments, I think I do it for myself, and I do what I really like and have possibility for self-fulfillment.
Strive for excellence (4/6)	Because it allows the person to bring out her good, go to the top, and overcome her own limitations and barriers.

**Table 2.** The area of instrumental, utilitarian values related to setting and achieving goals.

Value	Quotation
Diligence (6/6)	I have to work hard. There is no sport in which you achieve results effortlessly, just because you were born to do it. It is only in the fairy tales about sports, or myths created about it later.
Organization (6/6)	I try to sleep a lot because I think sleep helps you fully recover. I find time for it. If I have time before the training session, a short break, let's say half an hour, a nap is great.
Commitment (6/6)	This, I work hardest for and want the most, I usually win.
Motivation (6/6)	And I also think that sport formed my character, because I am motivated.
Passion (5/6)	If I did not like something, I would find something different, I can always quit. No one forces me to stay. The fact I do this sport, is because I do like it, I love it.
Perfectionism (4/6)	I am a sort of perfectionist, which is also a problem. However, there is something in it because whenever I do my training, I like to do it the best, the fastest, and that's what I am.

**Table 3.** The area of values shaping character.

Value	Quotation
Independence (6/6)	Yes, and here my life is in my hands. Perhaps, not in 100%, but certainly more here than in other lines of work.
Regularity (6/6)	This level is really high, because they swim every day, and their regularity and every day work gives them advantage over us.
Belief in yourself (5/6)	I am now in top world's elite, so I have one day less of stress. I am only waiting for the list of matched competitors, and waiting for others to show me this list so I can see who I fight with first.
Humility(5/6)	You can only influence some things. You can do all you are able to do, and still something may go wrong. I can do my best, and out of blue something snaps and two days before the most important event all my work is to no avail, and I gain nothing from it.
Patience (4/6)	And patience. Being systematic and this patience. It is often the case that you fail one hundred times, and one hundred and first one you succeed, and that is why it is worth it.
Responsibility (4/6)	All you do in water is your own merit, or willingness. Because, when you make turns, it was you who performed them, wasn't it? It was you who thought first, thought it over and made a decision.
Perseverance (3/6)	But generally, it was a large group in my club when I started. And from all of them, I am the only one who stayed.
Mental toughness (3/6)	You can be prepared very well, but mentally you may simply not believe it. An athlete should show mental toughness.
Bravery (3/6)	Bravery and perseverance. These traits, somehow impress me and are important in my life.
Persistence and not giving up (3/6)	Generally, it applies to daily life, and it is all the same if I prepare for an exam or competition, even though I suffered some defeats, generally in life, I never give up.
Ambition (3/6)	I have sports dream, I would like to be the world champion, I would like to break my life record, and I would like to keep my title of the Olympic champion.

ue [the frequency of occurrence in the sample], and the second, the overall number of participants). The participants also pointed to Being the best (5/6) – presumably a critical element to achieve the highest level of development, both in and out of sports. Additionally, athletes appreciated Self-awareness (4/6), which gave them self-knowledge in the context of different situations they had already been in or might find themselves in the fu-

ture. Such self-awareness was well-illustrated by account of one of the participants: “If you passed through defeats in sport, where you had high aspirations, so then some professional failure is really a piece of cake.”

In the area of instrumental values (see Table 2), all participants (6/6) pointed to: Diligence, Organization and Commitment, and the majority indicated Passion (5/6), the combination of which probably enables indi-



**Table 4.** Area of sport-related values

Value	Quotation
Joy/pleasure/fun (6/6)	For example, at the weekend when I have training, and I have no other activities, so I treat my training as entertainment.
Talent (4/6)	Because, the person goes first, then talent, and afterwards hard work. You may not be talented, but make up for it with hard working, and I agree with it, however, you can do it only up to some point.
Beauty of sport (3/6)	I would first of all try to show them how beautiful the sport is, because actually those youngsters do not realize it sometimes.
Love for sport and one own discipline (3/6)	Sport is a quite specific job, activity, which has a lot in common with passion, and majority of athletes, even if they suffer defeats, they still love it and keep doing it.
Sports achievements (3/6)	There was a moment, for example, in 2002 when I won virtually everything it was possible to win. I felt, it was great, that I had excellent season, really, I remember it, it was incredible.
Fair play principles (3/6)	And in sport I think the principle of fair play is important, as I mentioned before about those supplements, which are really a shame.

**Table 5.** Area of knowledge-related values.

Value	Quotation
Learning – acquiring knowledge (6/6)	I have been training for almost 20 years and all the time, I can say I have been learning new things, say it is some training, attitude, all the time I must draw conclusions, I learn.
Experience (6/6)	Because I have gone through hard times, so I have already some notes on the fridge what I should stop doing.
Wisdom (4/6)	Sport is such a thing that you can apply it really broadly to any aspect of life. Sport teaches you the right attitude.
Knowledge (4/6)	Because I think when I finish sport career, I would like to do something completely different, and in general, I would like to “sell” fencing knowledge I have. I would like to share it most likely with those youngest ones.

viduals to use their full potential both in the pursuit and the attainment of their goals.

The area of values defined as shaping character (Table 3), contained data which should be considered in the context of the values (and not character traits) or as “what enhances life, motivation, development, health, mental maturation process” [3]. Independence and Regularity (6/6), as well as Self-confidence and Humility (5/6) were the values mentioned by the subjects most often. An individual who cherishes these values will more likely seek to act in accordance with those values. In addition, the independence was perceived, as a freedom of choice as well as the feeling of autonomy in one’s behavior and at the same time, one’s pursuit to reduce dependence on other people’s decisions.

In the area of sports-related values (Table 4) the athletes indicated significant advantages of participation in sport. The main value mentioned by subjects was Joy of participation in sport, also called pleasure or fun derived from sport (6/6). This area was described by competitors

as source of direct satisfaction, and therefore facilitating their participation in elite sport, because it was a gratifying activity itself.

Another area was called knowledge-related values (see Table 5). The subjects pointed to Learning – acquiring knowledge (6/6), Experience (6/6) as well as Knowledge and Talent (4/6). These values were found to positively affect the development of athletes in the sport, and broadly speaking, had a positive impact on the quest for knowledge and the desire to acquire it, for example, by going to college and investing in broadening knowledge in aspects outside sport context.

Table 6 shows the area of values associated with relatedness. The participants valued among others Subjectivity, Respect and Modesty (5/6). These values are appreciated and perceived primarily in others. People, who have these type of qualities are often described as attractive, with interesting personalities and therefore, other individuals want to get to know them better. Subjectivity (i.e., being an autonomous person), Respect and Modesty

**Table 6.** The area of relatedness values.

Value	Quotation
Subjectivity (5/6)	So, there is no individual approach. Only when they succeed, and get out of the group with everyone, and achieve a great result, they will treat you individually. These people would achieve success faster, if they trained individually. I mean, with the same coaches but working alone. So that the approach to an athlete is then individual.
Modesty (5/6)	And it is really funny, because many people ask me what has changed, and I reply: nothing has changed, I am the same person, and I do what I have been doing so far.
Respect (5/6)	Respect for yourself, others, and somebody's work.
Friendship (3/6)	I met true friends at collage and simply I cannot imagine, for example, they leave me, or I leave them.
Understanding other person, and interpersonal relationships (3/6)	I would like simply to try understand another person.

**Table 7.** Area of well-being securing values.

Value	Quotation
Success (6/6)	Success is what people train so hard for, work hard and aim at. It is all about it. This the biggest reward: any success.
Self-satisfaction (5/6)	For sure, self-satisfaction with what you do.
Own needs (4/6)	Yes, sometimes I like talking to people from fencing, and I like it then. It is me who makes arrangements when I need it.
Life in hamony with oneself (3/6)	Acting in accordance with one's own rules, not breaking them and finding the right way.
Self-esteem (3/6)	I am ideally prepared physically and mentally.
Desired emotion (3/6)	It is really pleasant, when you manage to do something, when you jump higher, you go on a longer approach, and there is that phase of a jump, that know you do it well, and you see yourself fly over that crossbar, and then you feel great, and when you're falling down, it is pride, joy, delight.

ty were often mentioned as inherent traits in sport, and observable in behavior towards other people (e.g., respect for the opponent). Therefore, an athlete adopting a self-reflective attitude may learn that Modesty is a value appreciated by many people.

Another area of values relates to securing well-being (Table 7). The participants appreciated Success (6/6), which was perceived as a value – an award sought by them, and treated as a culmination of the work, commitment and “putting one's heart and soul” in the sport. “Self-satisfaction, and satisfaction from what you do” also known as Pride of one's own achievements (5/6) was often noted by the interviewees. These values balanced with “Personal needs” – a value that prevents the individual from burn-out, and also allows for a balance between engagement in sports activities, and satisfying other, individual needs such as contact with the family, or pursuing a hobby.

The last area of values concerned universal values. Honesty (5/6), Family, Health, Happiness, God and

Faith (4/6) were cited most frequently (cf. Table 8) by the athletes. These values were perceived by the individuals as axiomatic, beyond any assessment, and recognized as objective values. They were nurtured by a person and often considered as sound, unchangeable foundations which accompanied individuals throughout their lives.

These eight tables contain only these values which were identified by at least three participants. It is therefore necessary to take into account the fact that this review has been narrowed down to the most commonly discussed values during the interviews. Some of the values which have not been included in the tables were: professionalism 2 (2/6) (where “2” stands for the second category [i.e., instrumental values] and “(2/6)” means the number of respondents out of six who indicated that value); dedication 3 (2/6); mental toughness 3 (2/6); comprehensive development 4 (2/6); healthy competition 4 (2/6); curiosity 5 (2/6); openness to others 6 (2/6); partnership/companionship 6 (2/6); confidence in person 6 (1/6); calmness

**Table 8.** The area of universal values.

Value	Quotation
Honesty (5/6)	First of all, do not cheat, let everyone have the same chances to compete, I do not know, with an opponent, with a height.
Family (4/6)	Simply, I would like to have a happy family, it is important to me. To have a complete family filled with love, warmth.
Health (4/6)	Health, apparently is more important than happiness.
Happiness (4/6)	I would like to be happy. Just like everyone.
God and Faith (4/6)	As I said: I have a Christian attitude to life and I am not ashamed to say God is first of all, truth and faith.
Joy of life (3/6)	It is, for example at that moment I really feel great, such joy of life.
Love (3/6)	To have someone you can trust, someone who loves you and you love.
Principles (3/6)	Way of living. Namely respecting principles.
Justice (3/6)	It has always annoyed me, because it is not fair, and we have little influence on it.

7 (2/6); healthy self-centeredness 7 (2/6); being good 8 (1/6); truth 8 (1/6); and being happy 8 (2/6).

In summary, the participants held numerous values, all of which guided them through life and athletic careers. In light of the results obtained from the study, a hypothesis can be posited, namely, that competitors, who have outstanding sport achievements are characterized by the so-called inner richness, which comprises an array of cherished values. As one participant put it:

“The richness of inner life? It primarily means a rich man, not in terms of money, but rich internally, so as I said, to have someone you can trust, someone who loves you and you love. To be happy, that is, to have friends around you, and not feel lonely. It means to have your interests, a hobby not related to your sport, it means to develop and I think this is such a richness.”

The data from the study as well as this quotation above suggest that an internally rich athlete is a person who benefits from sport, develops in and out-of-sport context, seeks to live according to his or her values, and in a sense becomes a complete person.

## Discussion

This project, which aimed to explore the area values, suggest that competitors, who achieve remarkable results in sport, have also rich inner life, which has been exemplified in detail by the gallery of values presented above. Sport is perceived by the participants in the sample as a source of values, a medium which co-shapes these values, and the area of activity in which these values play a facilitating as well as a supporting role.

According Popielski, [3] an individual “familiarizes with the values in the process of discovering and implementing them.” Such an approach can be confirmed by

findings of this study whereby individuals valued both Self-awareness (4/6) (which facilitates the recognition of values), and Self-improvement (6/6), which promotes value realization. These values can be classified as examples of pillars of positive sport [1] as compatible with striving for development of one’s potential and continuous improvement in the quality of functioning, including athletic achievements. In addition, all respondents appreciated Self-development (6/6), which, combined with Diligence (6/6), Organization (6/6) and Commitment (6/6), could contribute to Success (6/6). These values were important for participants of the study, which along with Perseverance (3/6), facilitated Self-realization (4/6) in and out-of-sport context (e.g., attending a college or pursuing a hobby). The participants underlined the fact that sport and participation in it through training and competitions, enabled them to discover and develop other values such as Belief in oneself (5/6) and Ambition (3/6). Athletes often derive Experience (6/6) from numerous situations they find themselves in throughout sports career. What is more, individuals perform a detailed analysis of their “being” in specific contexts, and by using Self-Awareness, (4/6) can form a “self-knowledge base.” In other words, the results obtained from the study suggest that the sample shared common values. Thus, we postulate that the direction of future research should aim at understanding the values held by elite athletes. The convergence of many of these values with the principles of the Olympic movement may not be coincidental due to features of the sample group (i.e., being Olympians). The summary of convergent Olympic principles listed by Duda [14] includes, for example, fair play, sport-life balance (sport does not outweigh other important matters of individual and social life), equality, truth, honesty, companionship, or systematic diligence.

In light of the data collected in this study, the idea that positive sport [1] as an alternative to a degenerated sport (derailed from its original purpose, which nowadays focuses on results at all costs) can be supported by high sports achievements of the study participants. The emerging relationship should be verified in future studies. Interpersonal relationships among sport participants, in particular from the perspective of positive sport, allow for interactive coexistence of systems of values and for flow of values among individuals, groups, and institutions. The results of our study indicate that at the individual level, this coexistence is realized, among other things, by contacts and forming relationships with other people through: Subjectivity (5/6), Respect (5/6) and "Understanding other people and interpersonal relationships (3/6)." Competitors meet other athletes and exchange their viewpoints and perceptions of the world. In addition to the relatedness values mentioned in the paragraph above, there were Friendship (3/6) and not included in Table 6, Team (2/6), Support (2/6) or Trust (2/6).

## Recommendations for future research

The next step in the exploration of values in competitive sport could consider the verification of a hypothesis that professional athletes, with outstanding achievements, are internally rich people. Another suggestion would be utilizing quantitative research designs based on larger populations of athletes and using existing psychometric tools or constructing new surveys in order to form an important and rich source of information concerning the values inherent in sport. For comparison purposes, it would also be possible to examine how the system of values varies across gender, age or different sports. From an individual point of view, it would be important to create a tool used to determine the individual system of values, including not only important values for an athlete, but also the gradation of these values in order to determine their hierarchy.

One major strength of this study dealt with the in-depth interviews. Researchers created an atmosphere of openness and trust, which in turn allowed the athletes to explore together the area of values in sport. The time attended to be spent on each interview was basically unlimited. Athletes spent as much time as was needed to provide all necessary answers. Furthermore, in providing answers, the participants chose the content they wanted to share with the researcher themselves, which reflected their (not the researchers') perceptions of sporting experience.

Regarding the names of values and performed classification, the proposal presented in this paper is arbitrary and also an invitation to discuss the creation of an optimal assignment of value labels and the classification of athletic values in the paradigm of positive sport. In the

future, the areas of values can also be determined by using competent judges, who would perform the appropriate allocation and assignment of values.

Finally, on the basis of the qualitative results, it can be hypothesized that professional athletes, with outstanding achievements, are internally rich and complex. This richness and complexity manifest themselves in the form of an extensive set of the values they hold that have a clear potential to turn into an important resource for them and be implemented in the sport as well as set productive directions in their personal life.

## Observations and Conclusions

The analysis of the in-depth interview data and highlights provided from the perspective of positive sport suggest that the flow and formation of values may occur as a result of a person's contact with sport activity and vice versa. This means that an individual can enrich sport, and sport can enrich the individual. Thus, the discourse of positive sport provides a broader picture of an athlete, not only as an individual who strives for achievements in sport (a modern gladiator), but also as a self-aware individual, constantly developing, and caring for their well-being and quality of life. It is advisable, therefore, to promote the sustainable development in athletes. As the findings suggest, the richness of the inner life can go along with great athletic achievements, thereby making an athlete a complete person, who realizes values through sport.

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# The relationships between personality and the system of values in the case of the National Team female field hockey players

Agnieszka Wojtowicz<sup>a</sup>, Joanna Basiaga-Pasternak<sup>a</sup>,  
Grażyna Kosiba<sup>b</sup>, Agnieszka Bogacz-Walancik<sup>b</sup>

<sup>a</sup> Department of Psychology, Faculty of Physical Education and Sport, University of Physical Education in Kraków

<sup>b</sup> Department of Theory and Methodology, Faculty of Physical Education and Sport, University of Physical Education in Kraków

## Summary

The aim of the study was to determine the predictors of female sports success by examining the relations between personality and the system of values in female field hockey players. The research was conducted among the members of Polish National Field Hockey Team. The average age was 21,42 ( $SD = 4,49$ ).

The study suggested that within the examined group the most important terminal values were Happiness and Family Security, and the least important – Salvation and A World of Beauty. Among instrumental values the most important were Love, Ambition, Responsibility and Honesty. The least important values in the group were Imagination and Obedience.

The personality type was related to the system of values. The study suggested that among the examined sports-women the dimension Neuroticism was connected with the importance of Freedom, A Comfortable Life and Wisdom. Openness was related to the importance of A World of Beauty, Self-Control, A Sense of Accomplishment, and Family Security. Extraversion was connected with the decrease in Obedience, A World at Peace and Equality values, but with the increase of the importance of Independence. Conscientiousness was connected with the increase of the importance of Responsibility and Self-Respect, but with the decrease of the importance of Helpfulness, Forgiveness and Imagination. Agreeableness was related to the increase in Forgiveness.

**Keywords:** field hockey, female athletes, values, personality

In contemporary competitive sports, a tendency is being observed to open the door of particular disciplines wide for everyone, regardless of the biological sex. As McCallister et al. report [2003], stereotypically women used to be associated with such sport disciplines as softball, cheerleading, dance, ballet or artistic gymnastics. Meanwhile, the sport disciplines regarded in the past as typically “masculine”, nowadays are being done also by women. Men are most frequently perceived as “strong”, dominant, competitive, independent, open to the external world, experimenting in the sexual sphere, with rigid beliefs, analytical, cheerful, easily falling into addictions, having a clout, and clever. In contrast, women are perceived as delicate (that is, at the same time “weaker”), emotionally sensitive, carrying, impulsive, using analytical intelligence, intuitive, having difficulties with synthetic and unifying vision of the whole, brave, patient, conscientious, persistent, vain, ready to provide help, with sense of aesthetics, reflective, delicate, timid, naive, gossiping, choosy, concerned about their appearance, more neurotic, anxious [McCallister et al. 2003, Fedeli

2003, Mroczkowska 2006, Mikołajczyk 1998]. The stereotypical view of feminine characteristics stand in contradiction to desirable characteristics of an athlete. An individual in sport activities is required to focus on the task and have such traits as aggressiveness, individualism, strength, i.e., characteristics generally assigned to men. The following study analyses the system of values and the type of personality of field hockey players – a discipline stereotypically considered as masculine.

There are different understandings of values. Gordon [1975] defined values as constructs representing behaviours and mental states significant from the point of view of an individual, and stated that despite the possibility of them being altered, values exhibit a tendency to remain unchanged in spite of the passage of time. According to Lachman, Nedd & Hinings [1994], major (unchangeable) values and peripheral (modifiable) values can be distinguished. At the same time, the moral values hierarchy determines the choice of decisions made. Values are not singular components of personality, but create hierarchical systems in various combinations. Thanks to this it

can be stated that certain values are more important to an individual than other and, as a consequence, influence psychological life of a person (perception, thinking, emotional-motivational processes, attitudes) as well as their behaviour to a greater extent than the less important values. Rokeach [1973, p. 5] defined a value system as an “enduring organization of beliefs concerning preferable modes of conduct or end-states of existence along a continuum of relative importance”. Two types of values may be distinguished: terminal and instrumental. The former point to the goals that people strive for, the latter refer to the behaviour and personality traits enabling the goals to be reached. What it means is that instrumental values are beliefs formulated as: “I believe that a given behaviour is preferred in all situations and towards every object”, while terminal values can be described as: “I believe a given final aim of existence is worth fighting for”.

Amongst terminal values Rokeach listed: National Security (e.g. protection against assault), Family Security (concern for the loved ones), Mature Love (sexual and spiritual closeness), A Comfortable Life (prosperity), Wisdom (mature understanding of life), A Sense of Accomplishment (bringing the lasting contribution), Self-Respect (self-esteem), A World at Peace (a world free of war and conflict), True Friendship (close companionship), Pleasure (pleasurable feelings, lack of haste), Inner Harmony (lack of internal conflicts), Equality (brotherhood, equal opportunities for all), Happiness (joy, contentment), A World of Beauty (the beauty of nature and art), Social Recognition (respectability, admiration), Freedom (personal independence, freedom of choice), Salvation (salvation of the soul, eternal life), An Exciting Life (active, stimulating) [Brzozowski 1989].

Amongst instrumental values Rokeach [1973] listed Ambition, Broad-Mindedness, Capability, Cleanliness, Courage, Forgiveness, Helpfulness, Honesty, Imagination, Independence, Intellect, Logic, Love, Cheerfulness, Obedience, Politeness, Responsibility, Self-Control.

Although there exists a great diversification between individual values and systems of goals, a plausible range of variability of value hierarchy within a given culture group can be predicted [Rokeach 1973]. This defined range results from socialization processes common for a particular culture. Feather [1977] stated that value systems evolve with age. Di Dio et al. [1996] claimed that it is possible to define typically female and male value systems. The research, in which participants were to assess which of the values listed by Rokeach are “masculine” and which “feminine”, showed that “male” values were mostly action-oriented, whereas “female” ones – community-oriented. It might confirm the specificity of gender socialization, in which each sex is to develop personally in one of the two selected, major directions. At the same time the authors [Di Dio et al. 1996] confirmed that both types of values are connected with a general concept of masculinity and

femininity, i.e., certain stereotypical personality traits and models of behaviour. What needs to be stressed is that differences between genders are more easily perceivable in Western cultures than in Asia [Guimont et al. 2007]; in collectivist cultures, to which Asian cultures belong, less attention is paid to social comparison, which in turn leads to inter-gender differences being less emphasized [White & Lehman 2005]. Mahoney, Heretick & Katz [1979] stated that men and women possess diversified profiles of terminal and instrumental values important to them. They concluded that for women three dimensions may be distinguished: “Creative Self-Determination versus Submissive Dependency”, “Personal Gratification versus Sociopolitical Consciousness” and “Existential Responsibility versus Traditionalism”. For men, on the other hand, the following dimensions were recognized: “Communal Idealism versus Entrepreneurial Pragmatism”, “Hedonism versus Egalitarianism” and “Sybaritic Bohemianism versus Traditional Sobriety”. The enumerated dimensions of significant values and a given direction of a solution were explained by the extent to which feminist outlook on life was absorbed by women and accepted by men. It means that, according to Mahoney, Heretick & Katz [1979], it is possible to distinguish certain more traditional systems of male and female values and systems based on feminist view of the world.

It has been suggested that a value system influences political views [e.g., Schwartz 1992], commitment [e.g., Celsi & Olson 1988], lifestyle [e.g., Kahle, Beatty & Homer 1986], goals [Nelson 2004], attitude [e.g., Hansen 2008] and behaviours [e.g., Krystallis, Vassallo, Chryssohoidis & Perrea 2008; Rokeach & Ball-Rokeach 1989]. Values contain an appraising element, which is not to be found in personality traits. They refer to what we think, while personality – to what we have a natural tendency to [Parks & Guay 2009]. Moreover, personality traits are relatively innate predispositions [Olver & Mooradian 2003], while values are learnt, socially accepted beliefs necessary to adjust one’s own needs to what is socially approved of [Rokeach 1972]. Values are also much more dynamic structures than personality traits, since they can be modified if an individual gets close to a different, new environment [Rokeach 1973], while personality traits are relatively stable through one’s life [Judge et al. 1999; McCrae et al. 2000].

In spite of these disparities, it can be observed that certain terms may be used referring to values as well as to personality traits [Roccas et al. 2002], e.g., “competence” might relate to the tendency of being competent (a trait) as well as to the belief in the significance of manifesting one’s competence (a value). Values may mitigate behaviour resulting from expressing one’s personality, since they refer to rules and principles regulating the functioning of a given society [Parks & Guay 2009]. It has been suggested that the evolution of values hierarchy is deter-

mined not only by socialization but also by personality traits [Olver & Mooradian 2003]. Parks [2007] conducted a meta-analysis of relationships between values and personality traits, it needs to be stressed though, that the sample he used was rather small (11 surveyees). In spite of this, it may be concluded that the two constructs are correlated. Openness to experiences and Agreeableness seem to have the strongest relatedness to values, Conscientiousness and Extraversion exhibit weaker relatedness, while the weakest relatedness is to be found between values and Neuroticism [Parks 2007]. Last from the above-mentioned studies refer to the Big Five model by Costa & McCrae. According to the authors, these five factors constitute the universal, inherited and common to all people substance of personality. The mere structure of personality has a universal character and, at the same time, has the status of temperamental traits [Strelau 2002, 2006]. The concept was based on six postulates: basic intentions, objective biography, self-image, external influences, and dynamic processes [McCrae & Costa 2005, p. 226]. The structure of personality consists of five factors: Neuroticism, Extraversion, Openness to experiences, Agreeableness, and Conscientiousness [Strelau 2002, 2006, p. 189]. As suggested by the research quoted by Schmitt et al. [2008], the personality variables distinguished by Costa & McCrae reach different values in the cases of women and men. Women turn out to be more neurotic, extravert, agreeable and conscientious than men. In order to formulate such unambiguous conclusions about personality and gender, however, cultural differences need to be taken into consideration [Schmitt et al. 2009]. Similar conclusions, concerning the impact socio-cultural factors may have on personality, were also reached by Smits et al. [2011]. For it is possible that in addition to the Big Five other factors might be distinguished, which could be specific to a particular culture. Therefore, the structure of personality exhibits certain correlations with the system of values.

## Aim of the research

The aim of the study was to determine the relations between personality and system of values, and to describe values hierarchy of female field hockey players.

## Method

### Participants

The research was conducted amongst 19 female national field hockey team members. The average age was 21,42 ( $OS = 4,49$ ).

### Tools

In the present study M. Rokeach's theory of values [1973] and his Value Survey were used in order to determine and

interpret the value systems of participants. The questionnaire allows to determine preferred structures of values: 18 terminal and 18 instrumental. Terminal values comprise: National Security, Family Security, Mature Love, A Comfortable Life, Wisdom, A Sense of Accomplishment, Self-Respect, A World at Peace, True Friendship, Pleasure, Inner Harmony, Equality, Happiness, A World of Beauty, Social Recognition, Freedom, Salvation, An Exciting Life. Instrumental values consist of: Ambition, Cleanliness, Intellect, Love, Logic, Independence, Imagination, Responsibility, Courage, Broad-Mindedness, Cheerfulness, Helpfulness, Obedience, Honesty, Politeness, Capability, Forgiveness. A participant lists the values giving them ranks from 1 to 18. The most important value for a given person was labelled 1, the least important – 18.

Personality was measured with Revised NEO Personality Inventory by Costa & MacCrae [1992].

## Procedure

The study was conducted within one day during the team assembly in Biskupin, Poland. Participants were to fill in the questionnaire at the same time and place. Having completed the first questionnaire, each group was given a subsequent one and so on. Prior to distributing each test, it was stressed that participants need to get well-acquainted with the instruction placed on the first page of every questionnaire. If a participant had any doubts concerning the way a test should be completed or any other questions, they were provided with thorough instructions and explanations. Instructions to all questionnaires also contained information concerning the time in which it was to be completed. Participants did not exceed the time limit.

Before the beginning of the procedure, the whole group of participants was informed that the answers were anonymous. The participants were only asked to fill in their year of birth on the first page of each test, while the questionnaires themselves were coded, i.e., each person was assigned one number which was to be put down on the first page of every questionnaire.

## Statistical analyses

Calculations were done using statistical packages IBM SPSS Statistics 21 and Statistica 10. Due to the character of variables, nonparametric analyses were used, including analysis of Spearman correlation and Friedman's ANOVA together with Wilcoxon test (with Bonferroni correction).

## Results

The statistically significant differences between the mean positions of values in the system of terminal values (ANOVA  $c^2$  ( $N = 19$ ,  $df = 17$ ) = 124.349;  $p < .001$ ) and the

**Table 1.** Terminal value hierarchy.

Terminal Values	<i>M</i>	<i>SD</i>
Family Security	3	5.43
Happiness	5	2.93
True Friendship	6	4.06
Mature Love	6	5.23
Wisdom	7	4.27
Freedom	8	3.50
Equality	9	4.80
Self-Respect	9	5.89
Inner Harmony	10	3.53
An Exciting Life	10	3.54
A World at Peace	11	4.66
National Security	11	4.28
A Comfortable Life	11	3.13
A Sense of Accomplishment	12	2.96
Pleasure	12	3.21
Social Recognition	13	3.6?
Salvation	14	4.36
A World of Beauty	15	4.26

**Table 2.** Instrumental values hierarchy.

Instrumental values	<i>M</i>	<i>SD</i>
Love	4	3.16
Ambition	5	3.96
Responsibility	5	4.05
Honesty	6	4.16
Helpfulness	6	4.48
Independence	8	4.49
Courage	9	4.38
Politeness	9	3.27
Forgiveness	9	4.96
Intellect	10	4.49
Cheerfulness	11	5.04
Logic	11	4.37
Broad-Mindedness	12	5.07
Self-Control	12	3.30
Cleanliness	12	5.15
Capability	12	4.05
Imagination	14	3.27
Obedience	15	3.58

**Table 3.** Relations between personality traits and terminal values.

Personality	Terminal Values	Spearman's <i>r</i>
Neuroticism	A Comfortable Life	.66
	Wisdom	.49
	Freedom	-.60
Extraversion	A World at Peace	.45
	Equality	.57
Openness to experiences	Family Security	.50
	A Sense of Accomplishment	-.52
	A World of Beauty	-.58
Conscientiousness	Self Respect	-.46

instrumental value system were observed. Tables 1 and 2 show results for the mean position for given value in the hierarchy – the lower the mean, the higher position in the value system.

In the group under the study the most important terminal values were Family Security and Happiness, whereas the least important were Salvation and A World of Beauty.

The most important instrumental values among the sportswomen surveyed were: Love, Ambition, Honesty,

and Responsibility, whereas the least important were Imagination and Obedience.

Consecutive analyses concerned the relations between personality traits and terminal values. Statistically significant results were showed in Table 3.

Regarding terminal value system it was observed that among the sportswomen surveyed the growth of the level of Neuroticism was correlated with reduction of importance of A Comfortable Life and Wisdom values, while the importance of Freedom value increased. With the

**Table 4.** Relations between personality traits and instrumental values.

Personality	Instrumental Values	Spearman's <i>r</i>
Extraversion	Independence	-.48
	Obedience	.70
Openness to experiences	Self-Control	-.52
Agreeableness	Forgiveness	-.51
Conscientiousness	Imagination	.49
	Responsibility	-.71
	Helpfulness	.55
	Forgiveness	.64

higher level of Extraversion, the importance of A World Peace and Equality values decreased. The growth of the level of Openness to experiences was correlated with reduction of importance of Family Security value, whereas the importance of A Sense of Accomplishment and A World of Beauty values increased. With the higher level of Conscientiousness, the importance of Self-Respect increased. Statistically significant relations between the level of Agreeableness and the terminal values scale were not observed.

Subsequently analysed were the relations between personality traits and instrumental values. Statistically significant results were presented in Table 4.

With regard to instrumental values it was observed that among participants of the survey with the growth of the level of Extraversion the importance of the Obedience value decreased, but the Independence value increased. With the higher level of Openness to experiences the importance of Self-Control value rose. The growth of the level of Agreeableness correlated with the increased importance of Forgiveness value. With the higher level of Conscientiousness the importance of Imagination, Helpfulness, and Forgiveness values decreased, but the importance of Responsibility value rose. No statistically significant relations between the level of Neuroticism and instrumental values were observed.

## Discussion

The obtained results indicate that among sportswomen surveyed, although doing a "male" sport which field hockey is recognised as, the stereotypically feminine terminal value hierarchy was preserved. Happiness, Mature Love, and Family Security are considered to be the most important terminal values for women, whereas for men these values have a lower location in the value hierarchy and the top value is Self-Respect [Di Dio et al. 1996]. Di Dio and associated researchers [1996] also observed that some values are more related with masculin-

ity than with femininity: An Exciting Life, A Comfortable Life, Social Recognition, National Security, Pleasure, and Freedom. All of these values had a lower position in the value hierarchy among surveyed sportswomen, which coincide with Schwartz's & Bilsky's [1987] division to individualistic values (e.g., A Sense of Accomplishment) and collectivist values (e.g. True Friendship), which, at the same time, correspond with motivational attitude. The stereotype of masculinity assumes focusing on accomplishments, which is a strongly individualistic mindset, whereas the femininity stereotype assumes a collectivist mindset. It might be correlated with the sportswomen's concentration on achieving championship and practicing cooperation skills, rather than on practicing prowess and increasing the status of life [Duda 1989, in: Mikołajczyk 1998]. The results obtained in the study is exceedingly interesting due to the contradiction with the common belief that sportswomen, compared to women who do not do competitive sports, are more capable in adjusting to men's norms of participating in sports [cf. Steinfeldt, Zakrajsek & Steinfeldt 2011].

Regarding the instrumental value hierarchy, among the surveyed sportswomen lower positions acquired the values, which play important role in adapting to new situations – Capability, Broad-Mindedness, Imagination, and the values related with intellect [Nęcka 2012]. Only Ambition, which might seem an obvious result in the case of athletes, was positioned very high. It might indicate that these traits are not required in women's sports, but were stressed during the players development. It might be worrisome inasmuch as the sports career tends to be brief and for some individuals even shorter than they expect (due to various random factors, e.g., injuries). It leads to necessary change of goals and the means of their achievement. In other words, there is a necessity to change the career path, which is never an easy thing to do. However, widely understood creativity helps to solve problems of this type. [cf. Nęcka 1994; Nęcka 2012].



As predicted, the study showed numerous relations between personality traits and the value hierarchy. In contrast to Parks's meta-analysis [2007], Agreeableness had the weakest correlations with values, whereas all the other personality traits were moderately or strongly correlated with values. Among surveyed sportswomen Neuroticism was correlated with value hierarchy, but only in terms of terminal values, namely, chosen goal. It might be observed that the rise of Neuroticism was associated with lower importance of A Comfortable Life value. It is possible that the decrease of emotional stability and the increase of anxiety as a trait caused the goal to be perceived as impossible to achieve, which led to lowering of its value. The study conducted by Kaiseler, Polman & Nicholls [2012] on 482 athletes of both sex showed that particular dimensions of the Big Five have an influence on perceiving the stress level, the ways of controlling stress, and the effectiveness of coping. The high level of Neuroticism is associated with stronger feeling of stress and lower control over stress, as well as with less adaptive, escape and emotional strategies of coping with stress.

Numerous relations between Conscientiousness and the value hierarchy were observed – particularly in the terms of instrumental values, especially Responsibility, which shows the importance of this trait for women doing competitive sports on high level. Interesting results were obtained regarding Extraversion. Among surveyed sportswomen Extraversion was more strongly associated with individualistic values, not with collectivist ones – the importance of Independence increased, whereas the importance of Obedience and Equality decreased, which indicates the correlation of this trait with competition. In his research Studenski [2004] observed, that correlation of Extraversion with willingness to risk and frequency of risky behaviours are stronger among women, than men. It was also confirmed by other researches on athletes [e.g., Tok 2011].

To summarize, it can be stated that personality, indeed, shows correlations with the value hierarchy, both in the terms of the importance of one's goals, and the means of achieving them. On the other hand, doing competitive sports, even recognized as male disciplines, does not prevent women from stereotypically feminine functioning. By reference to Mroczkowska's research [2010] which shows that stereotypically feminine women have lower self-esteem, lower confidence and trust in their own abilities (as compared with masculine women), and by reference to the values placed lower in the hierarchy (and connected with creativity), the following question arises: how will women who do well in sports competition cope with the necessity to profoundly change their life path? It also indicates that during the sportswomen's training, stronger stress should be laid on these traits, which will ease future self-reliant problem solving and adaptation to the changing environmental conditions.

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