to move the feet from hold to hold than in the low condition.

The number of foot movements and the number of hand movements were statistically the same in the low and high condition [paired *t*-tests, $t(8) = -1.71$, $p = .126$ and $t(8) = .766$, $p = .466$, respectively]. Analyzes of the periods of "rest" between traverse 1 and 2, 2 and 3, and 3 and 4 (using a two factor repeated measures ANOVA) revealed no significant effects (F-values < 1, period of rest varying between 1.54 and 1.98 s).

DISCUSSION AND CONCLUSION

The aim of this study was to investigate if and how a changing fit between actor and environment influences the actor's motor behavior. To manipulate that fit participants were exposed to a non-threatening (low condition) and a threatening situation (high condition). Evaluation of participants' nervousness indicated that the state variable 'nervousness' was successfully manipulated: participants were more nervous in the high than in the low condition.

Participants appeared to climb longer in the high condition compared to the low condition. The present results point out that the prolonged climbing time can partly be ascribed to a slowing down of movements: it took more time to move the feet from one hold to another. (Hence, a qualitative change in participants' motor behavior emerges.) It is worth noting that the prolonged climbing time cannot be attributed to simply making more movements, or taking longer periods of "rest" between the traverses. Future research should elucidate the contribution to prolonging the total climbing time of (a) the contact time between feet and holds, (b) the contact time between hand and hold, and (c) the displacement time of the hands between holds.

In sum, a state variable such as nervousness appears to change the perception of affordances (e.g., Pijpers & Bakker, 1995), hence changing the fit between actor and environment. The present findings suggest that the changing fit 'manifests itself' in participants' motor behavior.

This study forms part of a growing body of research that is exploring the challenges posed by the presence of multiple affordances (Mark et al., 1997) by which actors are confronted with choices about what to do and when. Additional research is needed to clarify the role of state variables in how people choose particular actions in realizing a particular goals from the many actions that are afforded by the environment.

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POSSIBILITIES FOR IMPROVING DRIVING SKILL ACQUISITION

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KEY WORDS

Motor learning, motor skills, sports training, the transfer of sensorimotor reactions and skills, the transfer of sensorimotor abilities and skills, training unit.

INTRODUCTION

Motor learning is one of the basic interactions between a man and his surroudings. Among many human activities including sports activities, its results are gross motor skills culminating in fine motor skills. It also concerns driving which is considered to be a demanding operative activity.

Driving not only a racing machine, but any engine, requires coordination of many systems of human organism (sensuous, nervous, psychological) and makes heavy demands on precise coordination regarding strength or the sequence of particular muscular contractions. This demanding psycho-motor performance represents a high physical and psychological load. Physical exercises complementing the acqusition of operating skills should have accelerated the adaptation to new conditions and they should have developed sensorimotor skills. Their quality, quantity and speed influenced significantly the course of the following activities. Generally, some relationship between the motor skills and motor learning was anticipated. There was generally anticipated some relationship between motor skills and condition and also the impact of the transfer of special physical excercises into the expected activities. The subject of the research was the military drivers` preparation. The aim of the experiment was to contribute to a faster and more durable adaptation to specific surroundings and carried activity. We hypothesize that by using selected physical excercises, it is possible to affect the course and acquiring driving skills through the transfer.

METHOD AND PROCEDURE

In framing the experiment there was expected some influence of motor abilities on the effectiveness of motor skills and some impact of the transfer relationships between the paralelly proceeding drivers` training and motor activity. The experiment was practised with military tank drivers. In the beginning check-in measurments of physical efficiency with a five issue heterogenous testing battery were taken, BMI index was found out, and the testing on the determining instrument was carried out. The pedagogical experiment was to verify effectiveness of the chosen programme of special excercises which were aimed to increase the physical condition, and the speed, correctness and adequacy of reactions and skills. This programme reassumed on the analysis of drivers` activities and was realized by an experimental group in the extend of 60 training units. The check group passed the same number of training units but with the traditional content. The efficiency of the experimental interference within the structure of drivers` preparation was reviewed regarding the evaluation of driving skills, which were tested on the tank grounds. The following tests were considered:
- getting on and establishing contact (speed was evaluated),

- skilled driving in the marked sector (quantity and speed were evaluated),
- driving on the circle with overcoming obstacles (speed and quality were evaluated).

To pass judgement there was used the comparison of the graphic records of the motor of driving in the skilled driving. This test together with the test of getting on and establishing contact was confronted with the course of heart frequency. Both the physical efficiency testing and the testing on the tank grounds were incorporated into the final drivers` evaluation.

RESULTS AND DISCUSSION

The experimental interference within the content of drivers` physical preparation led to qualitative changes of their activities. In the watched criteria it showed the following:

a) The experimental group (EG) achieved better results in all tests on the tank grounds than the check group (CHG).

Table 1. Testing on the Tank Training Ground

Testing battery issues	EG		CHG		F test	t
	- x	2 s x	- x	2 s x	$F_{(16,28)}=2,317$ $F_{(28.16)}=2,584$	$t_{0,95}=1,680$
G	23,941	4,527	26,534	6,691	1,478	-3,494
SD	35,424	2,184	35,883	3,329	1,524	-0,881
CD	897,941	99,821	961,586	106,997	1,072	-20,393

Key: G - getting on and establishing contact, SD - skilled driving, CD - circle driving

From the comparison of the quality evaluation by the professionals and driving instructors significant differencies result in favor of the experimental group.

b) The higher effectiveness of the experimental drivers` group could have been the result of the applied programme of physical excercises which increased the physical efficiency (better results of motor tests) and the improvement of the determinig processes (testing on the determining instrument which finds out and develops the more complicated reactive abilities, reactive speed, the discrimination in receiving optical and sonic signals and the hand-leg coordination in answering reactions, the stabilization of concentration and its devision and transfer).

Table 2. Check-in and final measurments on determining instrument

Test	Testing battery issues	EG		CHG		F test	t
		- x	2 s x	- x	2 s x	$F_{(16.28)}=2,317$ $F_{(28.16)}=2,584$	$t_{0,95}=1,680$
check-in	DI	102,765	9,774	101,097	12,410	1,270	1,614
	DI+	90,647	8,139	91,690	5,795	1,405	-1,324
final	DI	91,912	8,138	96,124	11,753	1,444	-4,268
	DI+	96,235	4,116	95,759	3,356	1,227	0,819

Key: DI - test on determining instrument for 100 impulses, DI+ - righ answers

c) The evaluation of the graphic records of drivers` movements has proved the less number of redundant movements and their fluency. These characteristics are important not only for the fluency and speed of driving but also for the reasons of the limiting overloading of the technology and the resistance against fatigue.

d) In the analysis of the case studies of the 10 best and 10 worst drivers the highest succes was within the experimental group. In the skilled driving there were 5 drivers among the best, in the circle driving 7. In the group of the worst drivers there were 2 drivers in the skilled driving and 3 drivers in the circle driving.

e) The measured numbers of heart frequency have indicated the positive impact of the experimental programme of physical excercises on the organism`s adaptability and readiness to load expressed mainly by the lower numbers within the experimental group, especially during the driving.

CONCLUSION

The results of the experimental group have demonstrated the effectiveness of the methodology of special physical excercises. The dependance of the performance in driving on fast and correct reactions is evident and corresponds with the character of the practised activity. The driving tests for longer distances or within the extent of several hours would probably demonstrate even more conclusive results. By extending the activity the quality of the motor of driving would probably be most influenced by fatigue and physical qualities of the driver`s personality.

The experiment has indicated the possbilities of shortening and improving the quality of the preparatory process for one of the military professions. This method can be analogically used in motor learning of the other skills not only in the army but also in common civilian life. The important effects of the transfer between mobile abilities and mobile skills support the idea of going on the way of attractiveness (looking for and using new, especially adrenalin sports) and achieving the higher intensity of mobile activities.

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A STUDY OF THE RELATIONSHIPS AMONG SPORT-CONFIDENCE, COMPETITIVE ANXIETY, COMPETITIVE WORRIES AND PERFORMANCE OF YOUNG ATHLETES

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KEY WORDS: Trait-state sport-confidence, trait competitive anxiety, state competitive worries, performance, young athletes

INTRODUCTION

A number of researchers have investigated the relationship between individual characteristics and sport performance. However, most scientific research has involved older athletes (Martin & Gill, 1991; Vealey, 1986). The purpose of this study was to investigate the relationships of trait sport-confidence and trait anxiety to state sport-confidence and state competitive worries, as well as the relationship of these state measurements to performance of young athletes. It was hypothesized that trait sport-confidence is positively related to state sport-confidence and negatively related to state competitive worries, whereas trait competitive anxiety is positively related to state competitive worries and negatively related to state sport-confidence; and further that state sport-confidence is positively related to performance, while state competitive worries are negatively related to performance.

METHOD AND PROCEDURE

The sample consisted of 143 young swimmers (boys=77, girls=66), aged 11-12 years, (M=11.17, SD=0.06), with a competitive experience ranging from 1 to 3 years. The athletes completed (a) trait questionnaires in non-competitive conditions, 10-12 days before the competition: (i) the *Trait Sport-confidence Questionnaire for Children* (Psychountaki & Zervas, 1998), which consisted of three factors: "general self-confidence", "unfavorable situations", and "positive thinking", and (ii) the *Sport Competition Anxiety Test for Children* (Martens, 1977; Zervas & Kakkos, 1990); and (b) state questionnaires immediately prior to two different races performed on the same day or on two consecutive days, 30-45 min before entering the competition: (i) the *State Sport-confidence Questionnaire for Children* (Psychountaki & Zervas, 1998), which consisted of three factors: "general self-confidence", "self-confidence in unfavorable situations", and "positive thinking", and (ii) the *State Competitive Worries Inventory for Children* (Kakkos, Psychountaki, Stavrou, & Zervas, 1996), which consisted of two factors: "performance worries" and "social evaluation worries". In addition, coaches were asked to provide ratings for their athletes, using a five-point Likert scale with 5 being high performance and 1 being poor performance compared with previous performance.

RESULTS

Pearson correlations were computed to determine the relation between trait and state variables, and between state variables and performance, in the two different races. In addition, for each race a separate stepwise multiple-regression analysis was made. The results indicated significant relationships among state and trait variables in both races (Table 1). Significant relationships were observed among state variables and performance only in the second race. Specifically, state general self-confidence, state unfavorable situation, and state positive thinking revealed significant relationships with performance. Moreover, performance in the first race showed a significant relationship with performance in the second race.

Table 2 indicates the predictors of performance in both races. It will be seen that state characteristics were predicted by trait characteristics. Also, the stepwise multiple-regression analysis indicated that no variable predicted the performance in the 1st race. In the 2nd race, the stepwise muliple-regression analysis revealed that state general self-confidence was the only significant predictor of performance (Multiple R=.27; $F(1,109)$=8.76, p<.01) and accounted for 7% of the variance.

DISCUSSION AND CONCLUSIONS

The results of the present study support the contention that there exists a relationship between trait and state individual characteristics. It is possible that young athletes who usually are anxious or worried may express high levels of anxiety and worries when they compete in a stressful environment. On the other hand, athletes who display high trait confidence usually tend to display also high state confidence. The results showed that the level of trait sport-confidence factors is negative in relation to state competitive worries. It appears that young athletes who doubt their abilities tend to be anxious and worried and show low trait sport-confidence, high state competitive worries, and low state sport-confidence.

The results also showed that there is a significant relationship between performance and general state self-confidence, state unfavorable situation, and state positive thinking. Additionally, the most important predictor of performance was the general state self-confidence. Further, a strong relationship was found to exist between performance in the first and in the second race. This finding helps the coach prepare the young athlete by exploiting a successful performance in the earlier race to ensure a similar or better success in the later. Likewise, if the earlier performance were unsuccessful, then the coach can help the performer cope with his failure. However, the results of this study seem of limited significance. A possible explanation is that the scale on which performance was evaluated was too restricted.

These results may be useful in competitive sports for young athletes. They may help in psychodiagnostic procedures, and may be used for both the direction and the content of individual psychological preparation programs for young athletes. However, it is important to point out that performance must be assessed on a more sensitive scale (e.g., ranging from 0-100).

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TABLE 1. Correlations Between Trait-State Individual Characteristics and Performance

Trait variables / *State variables*		Trait Sport-confidence: General self-confidence	Trait Sport-confidence: Unfavorable situation	Trait Sport-confidence: Positive thinking	Trait Competitive anxiety	Performance
1st race	General self-confidence	.74**	.60**	.60**	-.29**	.14
	Unfavorable situation	.66**	.66**	.64**	-.18	.16
	Positive thinking	.61**	.46**	.68**	-.45**	.12
	Performance worries	-.43**	-.35**	-.49**	.57**	-.11
	Social evaluation worries	-.34**	-.29**	-.29**	.40**	-.12
2nd race	General self-confidence	.70**	.42**	.43**	-.26*	.27*
	Unfavorable situation	.63**	.49**	.48**	-.11	.24*
	Positive thinking	.58**	.39**	.52**	-.26*	.25*
	Performance worries	-.42**	-.30**	-.42**	.44	-.11
	Social evaluation worries	-.25*	-.18	-.21	.38**	-.10
Performance in the 1st race						.73**

* p<.01 ** p<.001

TABLE 2. Stepwise Multiple-Regression Analysis: Predicted Variables are the State Variables in the Two Races and Predictors are the Trait Variables

Predicted State Variable	1st race: Predictors Trait variables	Multiple *R*	R^2	T	Beta	2nd race: Predictors Trait variables	Multiple *R*	R^2	T	Beta
General Self-confidence	General self-confidence	.74	.54	8.58 *p*<.0001	.59	General self-confidence	.70	.49	10.09 *p*<.0001	.69
	Positive thinking	.76	.58	3.42 *p*<.001	.24					
	F (2,138)=95.42 *p*<.0001 (α =8.41)					*F* (1,108)=101.84 *p*<.0001 (α =8.26)				
Unfavorable situation	General self-confidence	.66	.44	3.65 *p*<001	.30	General self-confidence	.63	.39	8.39 *p*<.0001	.63
	Positive thinking	.73	.53	3.90 *p*<.001	.29					
	Unfavorable situation	.75	.57	3.35 *p* <.01	.28					
	F (3,137)=59.93 *p*<.0001 (α = 1.13)					*F* (1,108)=70.44 *p*<.0001 (α =1.46)				
Positive thinking	Positive thinking	.68	.46	6.41 *p*<.0001	.45	General self-confidence	.58	.34	4.34 *p*<.0001	.42
	Trait Competitive anxiety	.73	.53	-3.82 *p*<.001	-.23	Positive thinking	.62	.38	2.66 *p*<.01	.26
	General self-confidence	.76	.57	3.60 *p*<.001	.26					
	F (3,137)=60.74 *p*<.0001 (α =5.06)					*F* (2,107)=33.03 *p*<.0001 (α =-.65)				
Performance worries	Trait Competitive anxiety	.57	.32	6.88 *p*<.0001	.46	Trait Competitive anxiety	.44	.19	4.21 *p*<.001	.35
	Positive thinking	.66	.44	-5.32 *p*<.0001	-.36	Positive thinking	.54	.30	-3.95 *p*<.001	-.33
	F (2,138)=53.60 *p*<.0001 (α =9.24)					*F* (2,107)=22.47 *p*<.0001 (α =11.07)				
Social evaluation worries	Trait Competitive anxiety	.40	.16	3.99 *p*<.001	.32	Trait Competitive anxiety	.38	.14	4.24 *p*<.0001	.38
	General self-confidence	.46	.21	-2.85 *p*<.01	-.23					
	F (2,138)=18.02 *p*<.0001 (α =10.91)					*F* (1,108)=17.99 *p*<.0001 (α =3.17)				

MOTIVATION CIRCUMSTANCES OF ANABOLIC STEROID USE BY ADOLESCENTS

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KEY WORDS: doping, anabolic steroids, motivations for use, prevention.

INTRODUCTION

Many studies analyze the use of steroids by professional athletes. (Knopp et al., 1997). Their findings are observed with extraordinary interest by the media, sport organizations and by the public. This interest will very probably continue also in the future especially with the further increase in the commercialization of sport (Slepička et al., 1997).
Unfortunately, in recent years steroids are abused by high performance athletes as well as by non-athletes (Evans, 1997) who want to accelerate their body-building programes. In the Czech Republic after year 1989 a number of studies described the prevalence of anabolic abuse. The results of these studies warn of the increasing risk of steroid abuse among young non-athletes (Pyšný, 1998, Slepička et al., 1997).
The aim of this study is to identify basic motivations and demotivations in the group of youngsters who abuse anabolic steroids to improve their body image. Knowledge and analysis of their motivations should help to coaches, trainers, teachers, and physicians to understand the behavior of adolescent population at risk and to improve quality and timing of prevention programs.

METHOD AND PROCEDURE

The primary research methods were a pre-arranged one-on-one interviews and questionnaires.. The interviews were tape-recorded. The research instruments, selective observations and the collection of data were piloted before the beginning of the study. From 36 selected adolescent users of anabolic steroids, 19 boys trained in a fitness center. Mean age in the sample was 18 years. These selected individuals were from different social environment, they attended high schools or apprentice training centers.

RESULTS

MOTIVATIONS TO USE ANABOLIC STEROIDS

The respondents reported the following principal internal motives :

Admiration and sexual attraction.

Among the main reasons for using steroids was a desire to have an athletic physique. Desire to gain admiration is closely connected with sexual attraction, was voiced in these terms: *„I wanted to turn girls heads at the swimming-pool"*, *„I wanted to be more attractive to my girlfriend."*
Some individuals named as the main motivation the dissatisfaction with their own image, which was connected to an exaggerated physical defect. *„I started to train because I was too thin"*, *„I started to train because I wanted to go out with girls and to have success with them.*

Respect.

One of the motives was to gain respect. They believed that a more developed body would win them the respect they sought: *„Although I am small I wanted to have big muscles."*

Success.

This is particularly prevalent among younger users who were dissatisfied with their bod-building progress and who do not want to wait to see the results: *„Why should I wait a year*

when I could have muscles in two months", or *„I still bench -press the same weight, I need to improve". „The beginning is difficult and with help of steroids it's easier, was respondent's answer"*. These ideas would enable the young body-builders to better manage the beginning of the bodybuilding program. Some answers described a situation, where friends train together and one does not achieve the same progress in body development like the others. This caused a concern, possible loss of self-esteem and a possibility of ridicule lead to abuse of steroids.

Need for a new experience.

Behavioral revolt of adolescents changes their attitudes and behaviors. To experience something „different" is very interesting and exciting. We met with answers like: *„To experience excitement from the use is interesting, different"*. The youngster, who said this, already had a self-styled image, clothes, earrings and tattoos.

External factors reflected a social microclimate and macroclimate. The microclimate represents influences of the fitness center environment.

The influence of the fitness center environment with its personnel, atmosphere and bodybuilders is considered an essential factor leading to the use of anabolic steroids. A relatively isolated group of „good looking" individuals often a long-term training bodybuilders usually develops very specific goals, attitudes and behaviors. The respondents meet accomplished bodybuilders at every training session and want to imitate them: *„They are the guys I want to be like "*, *„After training I'm sitting, drinking, reading magazines and at the same time watching other bodybuilders, I want to look like them so the others will look at me"*. At the same time, they know that these model bodybuilders must use steroids for their muscle growth. Some respondents were informed in fitness centers that: *„Big muscles can't be developed without steroids"* and at the same time they were supplied with the drugs.

Among the most important influences of the macroclimate are the role models presented in the media. Most young people know popular actors mainly from action movies and TV serials. They are well-known, popular and rich, sex symbols. They represent what some of today's youth want to achieve. *„Schwarzeneger used steroids to develop muscles and got money"*, *„I'd like to look like actor when he undresses, that attracts women."* It is interesting that some individuals named also heroes from comic movies and animated films.

Some respondents consider as an object of their admiration excellent, popular athletes. They admire the image, which is connected with popularity and the riches: *„That sprinter had a perfect build that's a fantasy to look like him."*

Most respondents know many very good professional bodybuilders who influence their attitudes and behavior. *„Did you see these wings and triceps?"* They have seen them on billboards in fitness centers, magazines, TV and in advertising of health products. In the magazines, muscled bodies are often presented as a model of physical beauty, health and sexuality. Specialized muscle and fitness magazines often simplify the negative consequences of the use of anabolic steroids and have highly commercial presentation of body building supplements and drugs.

DEMOTIVATIONS

Factors which discourage the use of steroids:

Fear of parents.

The fear of parents was a main reason for the discontinuation of the drug abuse. *„If my father would know about it, he would be very angry."* The users are afraid of detection and hide steroids in their rooms.

Detection by girlfriends.

Another demotivation was fear from detection by their girlfriends. They fear the end of their love relationship. They think that their girlfriend could be concerned with prospective health consequences of the steroid use: *„She will be afraid of hair loss or that I will get ill."*

Expense.

A frequent reason for the use interruption or discontinuation is considerable expense for anabolic steroids: *„Now steroids cost very big money"*, *„I would taken more steroids if I'd had money for it."*

Health concern.

Most commonly cited negative health effects were cosmetic problems like acne, hair loss, eventually liver and kidney damage and the isolated knowledge of gynaecomastia. Unfortunately, about one third of the respondents was not able to determine the health risks of abuse and they answered like this: *„It may be harmful but I don't know about any health risks." A few* individuals expected some health consequences after the first cycle of steroid use: *„Every morning and after the training I still check myself"*. When they did not find any health consequences their fear was reduced.

The sources of health information are other visitors to fitness centers, specialized magazines and friends. Nobody from the respondents received information from parents, a medical doctor or a teacher.

DISCUSSION AND CONCLUSIONS

Among the inner motivations, which influence training with use of anabolic steroids seeking admiration, a need of success, self-esteem and new experiences rank especially high. The external motivations include the environment of fitness centers, actors in action movies and TV serials and also professional bodybuilders.

Among the demotivations are a fear of parents, partner and expenses for the purchase of steroids. Health concern is not a reason for the interruption or discontinuation of drug use.

From a prevention point of view, the first necessary step is the incorporation of drug education into physical activity and promotion of preventive antidrug activities in schools at all levels. At the same time, the essential factor is the role of the physical education teacher, coach, trainer and fitness center staff.

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MODELING OF DECISION MAKING IN BALL GAMES

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KEYWORDS

Decision making, implicit learning, explicit learning, computer simulation, constraints satisfaction

INTRODUCTION

The emphasis on model building of decision making in sports science so far has primarily been focused on the diagnostics of competition. The goal of this article is to explain the mechanisms of how tested subjects learn to make tactical decisions implicitly (bottom-up) and explicitly (top-down). The theoretical support is based on the BDI-architecture (beliefs, desires, intentions; cf. BRATMAN, 1987). A tactical situation in Basketball was simulated where subjective perception contexts (beliefs), goals developed by learning (desires), and the outcome of the decision process (intentions) were modeled. The simulation was realized in a local neural network (ECHO; THAGARD, 1989) and was specified by a decision model T-ECHO (Tactical decision – Explanatory coherence by harmonic optimization).

MODELING DECISION MAKING/METHOD

OPWIS & SPADA (1994) describe a three-step modeling procedure for cognitive processes including conceptualization, formalization, and implementation. In a defined game situation (e.g. basketball) the objects are the players, the ball, and the goals, etc. Objects, such as the playmaker (PM), have attributes that are described in tuples {(PlayerPM,Ball_possession)...}. Formalization, the second step of cognitive modeling, occurs through rules that permit general statements about hierarchies of different levels of abstraction. The third step, the implementation describes two independent ways of learning. Firstly, T-ECHO learns implicitly without goal oriented knowledge through perception. Secondly, it displays effects of mental training without perception. Of course, the normal case is an interaction of these two procedures.
The implementation was done in a local neural network. The local neural network has symbolic knots (e.g. ball or defensive player x2), which are connected through promoting or blocking relations. They learn through a Hebb-algorithm, which calculates activation of every knot and every weight of a connection in considering a decay-parameter. ECHO (Explanatory Coherence for Harmonic Optimization; THAGARD, 1989) is based on "parallel-constraint-satisfaction" which ensures a decision that enables the most possible coherence. Activation is calculated after each iteration with the following algorithm:

$$a_j(t+1) = a_j(t)(1-\theta) + \begin{cases} net_j(\max - a_j(t) & \text{if net}_j > 0 \text{ otherwise} \\ \text{net}_j(a_j - \min) & \end{cases}$$

a_j is the activity from knot j at time t. Learning is adjusted by the decay-parameter θ and optimized with net_j as the sum of w_{ij} a_j (t). To install the assumptions in the local neural network the following sequence of steps is used: *First*, beliefs and desires are implemented in different neural networks. Each network contains specific knots with a starting activation

between –1 and +1. Weights on the connections are used by change in a small portion around zero. The decay-parameter is set on 0.2 through an empiric diagnostic average decay from subjects in experiments who learn such rules for tactical decisions (c.f. ROTH & RAAB, 1998). A vector is used as a prompt for each rule (desires) or pattern of perception (beliefs) and then cross-multiplied in the matrix of weights. The definition of vectors depends upon the situation (rule-structured or perception-based) in which relevant knots get high activation and irrelevant knots get low activation. The implemented T-ECHO tries to reach coherence until a breaking down criterion (chance from Iteration $I_{(t)}$ to $I_{(t+1)}$ <0.001), thus at the end the system can give the output of all final activities. Obviously high activities of decision knots mean that they have a priority compared to the others who have low activities.

Second, the outcome of the decision knots from belief and desire networks deliver the new starting activation for the possible decisions (such as for the rotation of center, the shot to the basket or the pass to the center, post, or playmaker). Now the decision knots from the desire and the belief net are combined in a common net including the final decision knots. Therefore, the assumption is that knowledge and perception evolve their own preference and then compete against each other for the final decision.

RESULTS

The model T-ECHO combines the nets of beliefs and desires with the intentions (see fig. 1).

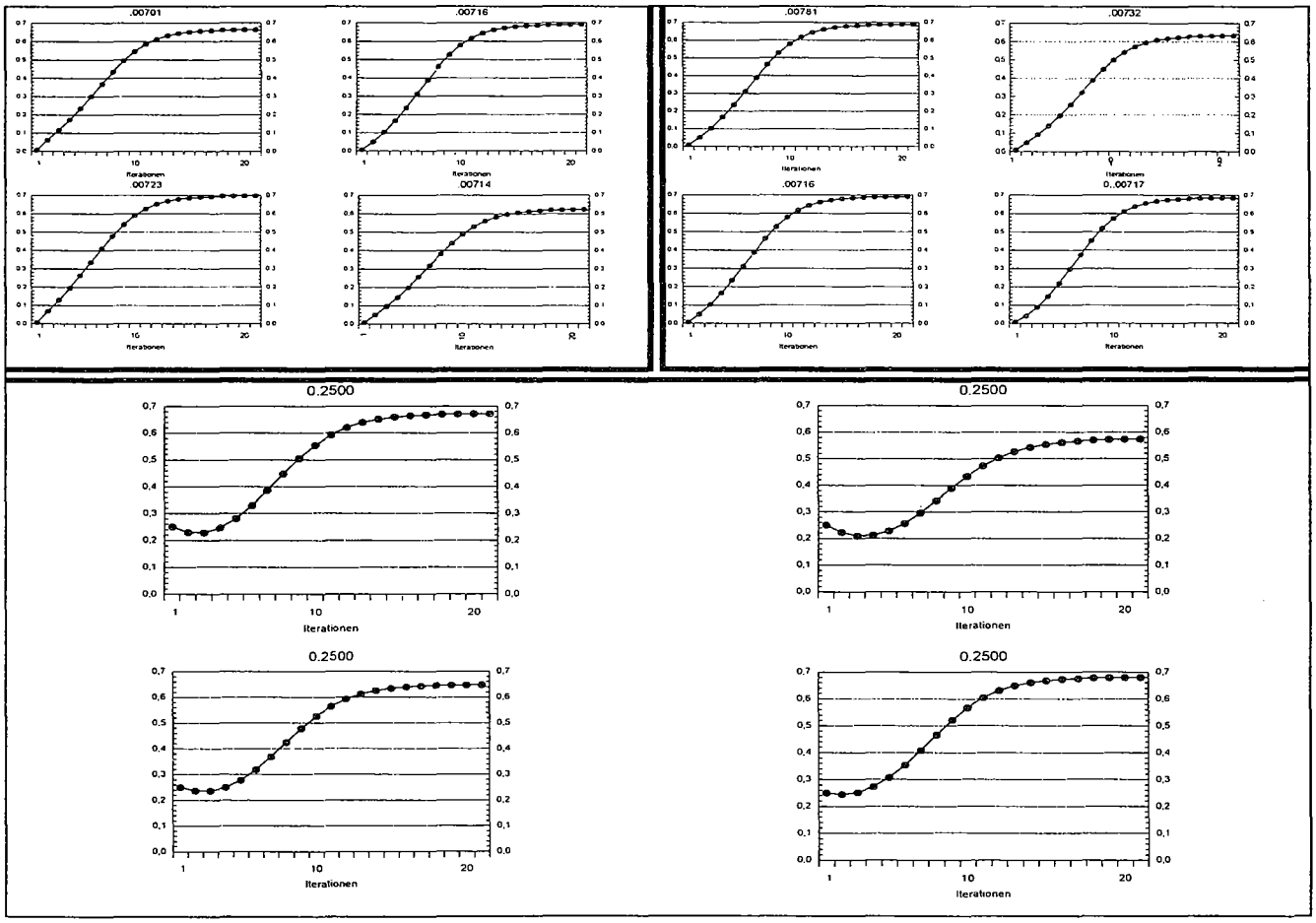

Figure 1: Activation of Decision Knots Model T-ECHO (upper left: percept 1 to 4; upper right: rules 1 to 4; down: Intentions basket, and pass to post, center, playmaker)

The final activation of the nets from beliefs and desires serve as a start activation for the decision knots in the total net. Therefore, model T-ECHO consists of three nets, of which each possesses the four decision knots (see figure 1). The simulation T-ECHO shows for shooting at the basket (0.68), passing to the playmaker (0.67) as the highest activations; passing to the center (0.64) and passing to the post (0.57) with less activation. Hence, the first mentioned are chosen by the total net by priority.

General discussion

While evaluating the realized modeling of T-ECHO it can be observed that the three steps - conceptualization, formalization, and implementation - can project tactical processes of learning and decision making in ball games. However, the simulation shows the following critical points: First, T-ECHO is still static. A realistic dynamic modeling has to be implemented in real-time neural networks (Grossberg & Gutowski, 1987). and also has to respect the dynamics within a decision (e.g. Townsend & Busemeyer, 1995). Second, T-ECHO lacks other behavior relevant factors, e.g. emotions. Third, T-ECHO simulation of perception is oversimplified. Therefore, one could argue that simulation and experiments show differences in total. In future space-time relations should be added by velocity of moving objects which are already implemented by real simulations in Robo-Cup (e.g. Burkhard, Hannebauer & Wendler, 1998). Finally, in order to explain different behavior of subjects in the same decision making situations, we must modify our models by testing hypotheses through simulations. Then experiments should be made, which could lead to a fruitful way to understand the decision making process in ball games.

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THE RELATIONSHIP BETWEEN ANXIETY AND SOMATOTYPE

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KEY WORDS

Anxiety, Somatotype, Mesomorph , Ectomorph, Endomorph.

INTRODUCTION

In recent years sport psychologists became interested in personality issues. Morgan concluded that there is a relationship between personality domains and athletic fields (*4,5,6*) and other investigators also stated that there is a relationship between especially mesomorphic body type and personality (*3,7*).

Anxiety is an important aspect of personality that has significant effects on athletic performance. Some sport psychologists have found that anxiety impair performance and it's necessary to undrestand more about anxiety and to find out effective methods for anxiety management in competitions (*2,3*).

Therefore, by considering the personality theories, especially Sheldon model, we decided to investigate wethere there is relationships between athletes' trait anxiety and their somatotypes?

METHOD AND PROCEDURE

After receiving permission from research committe of university of Gilan, 162 subjects were sampled non - randomly from members of different athletic teams in city of Rasht. Subjects were only males and their mean age was 22 ± 4 years and they have been members of athletic teams for 2 years and at least once attended the national championships in the country. Fifty two percent belonged to team sports and 48% to individual sports.

To determine the subjects' somatotypes the Heath - Carter method was used. In this method 10 body characteristics are measured by caliper, goniameter, measuring tape and weighing scale. The caliper and goniameter were from laffayete instrumental co. In this method 3 numbers is assigned to each subject. The number on the left represents the endomorphy component, the one on the middle mesomorphy component, and the one on the right ectomorphy component. The highest represents the individual's body type. To determine the trait anxiety levels the STAI (State - Trait Anxiety Inventory) questionaire by Spielberger was used (*8*).

At the end of experiment subjects were divided into 3 groups. Our statistical data were

analyzed by ANOVA one - way method and pierson correlation - coeffcient.

RESULTS

According to the objectives, our results were divided into two major sections:

1. Results of degree trait anxiety among different body types indicated that mesomorphic subjects had lowest trait anxiety and the highest degree of trait anxiety were belonged to ectomorphic subjects (Mean and standard deviation of trait anxiety accordingly in mesomorphic, ectomorphic and endomorphic subjects were 21.6 ± 4.2 , 32.4 ± 5.3 and 29.5 ± 3.8).

Statistical analysis by using ANOVA indicated that there is significant differences between the degree of trait anxiety among mesomorphic body - type comparing to other body - types ($P \leq 0.05$).

2. Statistical analysis of correlation indicated that there is no - relationship between body - type and trait anxiety.

DISCUSSION AND CONCLUSIONS

The first section of results indicated that the lowest degree of trait anxiety exists among mesomorphic body type and it is significantly different from other body - types. This agrees with the findings of other investigators in sport psychology (*1, 6, 7*). However, some theorists concluded that endomorphic body - type are more relaxed and calm comparing to other types, which this conclusion does not agree with our results.

The results in section 2 concluded that there was no relationship between body - type and trait anxiety. This result agrees with the results by slaughter (1970) and kane (1969). According to this results, we conclude mental health in mesomorphic athletes probably is better than other body - types and the difference in levels of anxiety among body - types could be as a result of stereotype.

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ADOLESCENT ACHIEVEMENT GOALS AND SPORT PARTICIPATION

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KEY WORDS: adolescent, goal profiles, sport participation

INTRODUCTION

Several social cognitive theories of educational achievement have focused on personal goals (AMES, 1984, NICHOLLS, 1989). A central theme in goal perspective theory is that an individual uses task- and/or ego-oriented criteria to evaluate success (NICHOLLS, 1989). The relationship between an individual's goals and correlates of motivated behavior has been demonstrated consistently in both the classroom and athletics (NICHOLLS, 1989; DUDA, 1992).
Although a dominant predisposition to be either task- and/or ego-oriented has been identified, due to the orthogonal nature of goal orientations, it may be possible to be high or low in both (Fox et al., 1994). Several earlier studies (DUDA and NICHOLLS, 1992; WHITE and DUDA, 1994) have demonstrated the association between task-orientation and sport participation and enjoyment of sport in children. However, few studies have been conducted to examine the relationship between achievement goals and physical activity among ordinary schoolchildren. The purpose of this study, therefore, was to examine the relationship between achievement goals and physical activity in adolescents.

METHODS

Data were collected from a 342 13-15 year old adolescents, of whom 164 were males (M = 14.2 years) and 178 were females (M = 14.4 years). Subjects were administered the 13-item TEOSQ developed by DUDA and NICHOLLS (1992). Measures of adolescents orientation and work avoidance (three items) and focus on cooperation (two items) were also included. These subscales had been previously adapted from the sports setting (DUDA and NICHOLLS, 1992) from the Motivational Orientation Scales which have been used extensively in classroom settings (DUDA and NICHOLLS, 1992).
Physical activity and sport participation were measured using 7-day physical activity recall (SALLIS et al., 1985)

RESULTS

Table 1 contains the means and standard deviations of the task and ego orientation for the males and females.

TABLE 1. Items Means and Standard Deviations

	Total Sample		Males		Females	
	M	SD	M	SD	M	SD
Task Orientation	3.56	.36	3.82	.43	3.27	.53
Ego Orientation	3.32	.54	3.45	.51	3.22	.60
Work Avoidance	2.35	.49	2.27	.47	2.44	.55
Cooperation	4.23	.62	4.46	.67	4.06	.59

Boys and girls were found to differ significantly in their task orientations and cooperation ($p<0.01$).

Table 2 shows a correlation coefficients for the goal orientations, work avoidance, cooperation and physical activity and sport participation in adolescents.

TABLE 2. Correlations between physical activity and achievement goals.

	Task orientation		Ego orientation		Work avoidance		Cooperation	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
TWPA	0.12	0.19	0.08	0.13	-0.09	0.07	0.15	0.29*
MVPA	0.23*	0.32*	0.28*	0.38*	0.04	-0.04	0.12	0.29*

TWPA-total weekly physical activity; MVPA- moderate to vigorous physical activity
* $p<0.01$

Task and ego orientation were significantly related with moderate to vigorous physical activity in both sexes. Cooperation was significantly related with physical activity of girls.

DISCUSSION AND CONCLUSIONS

The present results suggested that achievement goals were associated with physical activity and sport participation in adolescents. Although correlation coefficients between physical activity and task and ego orientation were only moderate, our result indicated the importance of achievement goals of adolescnets in physical domain. The results of present study are in agreement with previous research (DUDA and NICHOLLS, 1992; WHITE and DUDA, 1994). However, few studies have been conducted to examine the association between achievement goals and physical activity in adolescents not participating regularly in sports. In conclusion, we have

found that adolescents' achievement goals were associated with their weekly moderate to vigorous physical activity.

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GENDER DIFFERENCES IN PRECOMPETITION TEMPORAL PATTERNS OF ANXIETY WITH GAELIC FOOTBALLERS

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Key Words: CSAI-2, time to event paradigm, gender

INTRODUCTION

While the multifaceted perception of anxiety within sporting contexts has been well researched (Hall, Kerr & Matthews 1998; Burton 1988; Jones & Hardy 1990), little empirical data exists on the temporal patterns between gender competing at the same skill level in the same sport. Martens et al. (1990) and Jones and Cale (1989) have reported 'typical' differences on Competitive State Anxiety Inventory-2 (CSAI-2) subscales between males and females. Males have consistently demonstrated higher self-confidence scores than their counterparts in a number of different sports with males also reporting lower somatic anxiety means than females (Sewell and Edmonson 1996; Krane and Williams 1994). Gender effects have been demonstrated for trait and state anxiety and as an important interpersonal factor in competitive sport but the time to event paradigm between males and females has illustrated little stable patterns or relationships between the two variables (Slaughter et al.1994; Jones et al.1991; Gill 1988).

Therefore, this study was designed to examine gender differences in cognitive and somatic anxiety, as well as self-confidence prior to respective semi-finals at four times during Sigerson and O'Connor championship Gaelic football matches.

METHOD

40 Senior Gaelic footballers (20 male, 20 female) who were competing in the final stages of their respective university championships were given the CSAI-2 during the pre-competition period at four pre-determined times (1 week, 2 days, 2 hours, <30 mins). The CSAI-2 is a 27 item self-report inventory measuring the intensity of cognitive, somatic and self-confidence that takes <5 minutes to complete. A directional scale (Swain and Jones 1993) was omitted due to results of a pilot study with both teams and their dissatisfaction with the second scale during league fixtures prior to the championships.

RESULTS

Cognitive anxiety, somatic anxiety and self-confidence were compared between gender over the 4 time periods using separate 2 way analyses of variances (gender x time to competition) with repeated measures on the final factor. Follow up Tukey tests were employed to determine which means significantly differed. The means and standard deviations are presented below in Figure 1. There were no significant differences between males and females in any of the three intensity subscales of the CSAI-2. The temporal patterns of cognitive anxiety, ($F(2,119) = 60.5$, $p<0.001$),

somatic anxiety, ($F(2,119) = 26.1$, $p<0.01$) and self-confidence, ($F(2,119) = 39.9$, $p<0.01$) were significant while significant interaction effects were found between time to event and gender in the self-confidence subscale, ($F(2,119) = 8.05$, $p<0.01$) and the cognitive subscale, ($F(2,119) = 5.64$, $p<0.01$).

FIGURE 1. Means and Standard Deviations

		1 week	2 days	2 hours	<30mins
Cognitive Anxiety					
Male	*M*	***17.8***	***19.75***	***19.75***	***25.95***
	SD	5.64	4.35	4.64	3.57
Female	*M*	***15.05***	***17.7***	***21.9***	***29.28***
	SD	1.87	3.09	4.01	2.54
Somatic Anxiety					
Male	*M*	***15.15***	***16.2***	***17.35***	***20.2***
	SD	1.87	3.09	4.01	2.54
Female	*M*	***12.65***	***15.1***	***19.05***	***22.8***
	SD	1.69	1.91	2.09	3.27
Self-Confidence					
Male	*M*	***27.55***	***26.95***	***25.15***	***22.6***
	SD	5.95	4.38	4.67	4.34
Female	*M*	***30.78***	***30.84***	***24.94***	***19.63***
	SD	2.09	1.83	3.9	3.3

DISCUSSION AND CONCLUSION

The insignificant main gender effect over all three subscales of the CSAI-2 is contrary to previous finding in the literature. In the cognitive anxiety and somatic subscales both genders illustrate a linear increase over the time frame, though males exhibit a sharp increase just prior to the competition. The interaction effects in these two components are between the 2 days and 2 hour time frame where females bypass the male mean scores. In the self-confidence scale females exhibit a sharp decrease while males portray a flatter profile over the four time dimensions. The results appear to suggest a negative relationship between cognitive levels and self-confidence and a positive trend between somatic and cognitive scores with both sexes. The results offer support that there are important gender differences in the temporal patterns of CSAI-2 and that the relationships between the three subcomponents appear to be consistent for both sexes in this Gaelic sample.

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Brief Dynamics Psychotherapy: an alternative intervention on the psychological preparing of Brazilian adolescent tennis players.

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Key words: Tennis players, adolescents, Brief Dynamics Psychotherapy, psychological intervention.

Introduction

The current project has as its main objective to report and discuss the diagnosis and psychological intervention processes of Brazilian adolescent tennis players of a training center beginning with the Brief Dynamics Psychotherapy.
According to Lemgruber (1997), the roots of the Brief Psychotherapy of psychodynamic orientation are found in Freud's first studies that together with its followers in the first years of development of the Psychoanalysis, performed short and efficient treatments.

The characteristics of applying this technique have made viable an alternative manner of orientating the adolescent athletes allowing that they should learn how to deal with emotional difficulties and as a consequence improve their performance. The athlete starts recognizing the importance of a psychologist through establishing a link and trust and feels free to request help when he feels the need to talk about his problems or even about his good performance and victories. Apart from establishing a good relationship, other three elements contribute in order for the appliance of this technique to have good results: elect the focus to be worked on, E.E.C. (corrective emotional experience) and the face to face position with the athlete (Castro appud Rodrigues, 1998).
These four elements differ in the situation between the consultation room and the sport environment establishing a time of intervention with the athlete not extended as to the traditional analysis in relation to the constant presence of a psychologist and the training and competitions allows that the work performed become more dynamic and directive.

Thus, the Brief Dynamics Psychotherapy applied to the sport focuses on giving help, self-knowledge and a possible performance improvement. It is not enough only to change the behavior in favor of an objective of high efficiency. The athlete must recognize his limits, difficulties, unconscious feelings such as, anger, embarrassment, sadness and mainly the capability of recognizing and conquering its objectives.

Methods and Procedures

The research developed in this project is participatory and exploratory with an intervention proposal. The P.D.B. (Brief Dynamics Psychotherapy) was the base for the diagnosis, evaluation and psychological orientation procedures.
The following were used as instruments for obtaining information of the individuals: a psychological test (POMS) for evaluating emotional conditions (Brandão, 1996), observations made during training and competitions, individual interviews. A P.D.B. together with an athlete, a focus to be worked on. "This focus is determined through an initial interview allowing it to be characterized in a conflict derived from a crisis, symptoms that require readapting or reorganizing the life of the individual" (Szajnbok, 1997, page 47), anxiety problems during competitions, lack of motivation or conflicts with parents. Once the focus is chosen according to Szajnbok (1997)a psychodynamic hypothesis should be searched with the aim of interpreting the unconscious conflict related to the individual.
Another relevant aspect of the Brief Dynamics Psychotherapy is the fact that in case of elaboration, the client should objectively elaborate his conflicts in a more knowledgeable than affective process, more rational and deeply linked to the essence of unknown conflicts of the client (Knobel, 1997, page 76).

It is worth pointing out that within this methodology is the insertion of the constant attendance of the psychologist with the athletes in training that occur daily, as well as championships in which they participate. The referred attendance significantly contributes to the data collecting in the establishing of the linked location with the players and the feedback results with respect to the psychological interventions. In addition to this work, there is a weekly orientation performed with the interdisciplinary team, as well as meetings with the athletes parents. This is necessary since parents and professionals are directly involved in the adolescents development process and contribute for its physical-affective maturing.
The interviews with athletes were always individual with exception to the meetings where the work focus was as a group. Thus, parents were always requested as the adolescent revealed pressure feelings provoked by them or mentioning some kind of misunderstanding occurred at home. Many times the psychologist's perception related to the athlete was necessary to call the parents for a meeting.
As to the POMS test, it served as a complementation in the results of the interviews and observations performed. The test provided quantitative data concerning the emotional situation of the athlete as once integrated to the psychological orientation process which serve as basis to the data of interviews and observations of athletes.

Results

The results obtained show evidences of evolution on the emotional structure of athletes through a psychological work resulting in emotional development and maturing, as well as a possible performance improvement in training and competitions. The focus chosen during

the diagnosis phase together with Brazilian adolescent tennis players that were analyzed using the Brief Dynamics Psychotherapy technique were the following: anxiety/tension, depression, low self-esteem, insecurity, fear of failing, fear of loneliness, feelings of abandonment and rejection, self-affirmation needs, conflicts inside the family dynamics. Furthermore, in this research during the intervention period the following feelings were observed: motivation for change and internal availability as these feelings were decisive to help clarify and resolve the difficulties mentioned above.

Discussion and Conclusion

To describe and analyze behavior of adolescents in a tennis court required not only the capacity of a more detailed observation, but also an understanding where the behavior was the proper manifestation of the unconscious itself, for them at that moment so unknown, but so alive. To understand its evidence through the conscience seemed so strange and incomprehensible at a first instant. Therefore, through the utilization of some elements of the Psychoanalysis theory named as defense mechanisms (projective identification, projection, refusal, repair), transferring relation and interpretation it was possible to analyze and comprehend this behavior and intervention work. The focus involved offering adolescents conditions of learning in a more adequate manner to deal with emotional difficulties.
In this sense, the Brief Dynamics Psychotherapy has contributed for a more complete analysis of the athlete's emotional condition allowing that the psychological intervention process determine its focus not only on a better performance through interpreting behavior that compromises his performance, but also aim for emotional development and maturing.

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THE USE OF NON-TRADITIONAL POLYTHLONS TO INCREASE THE FEELING OF SUCCESSFULNESS IN SCHOOL YOUTH

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KEY WORDS

The Feeling of Successfulness, Motorically Weaker Students, Non-Traditional Polythlons, Performance Motivation

INTRODUCTION

Theoretical Outcomes

Pedagogical psychology does not agree for quite a long time with absolutization of relationship between sport performance at school and the level of intellectual or motorical abilities of a student (HRABAL, MAN, PAVELKOVÁ).

New research of determinants of a school performance show that abilities represent only 25% of final performance, 50% is motivation for the given activity and 25% is motivation for similar or related activities (VANEK, HOŠEK, MAN).

That is why motivation sphere of the student with actualisation of general principles of motivational processes is being highlighted. The conclusions of researchers from the field of performance motivation show importance of the performance motivation for the area of pedagogical practice. The theory of the performance motivation can be successfully used in practical educational process for effective guiding of students in their learning activities. This guiding or control can be specified as a tendency to avoid failure (DOCHEFF).

General definition of a failure is very difficult. The decision that labels a particular sport performance of the student as successful or unsuccessful can be very subjective. One of the most important factors that makes the decision on the particular performance is aspiration level.

The success or the failure is determined by three basic aspects - by abilities, by the difficultines of the task and by the effort used to overcome the difficulties and to fulfil the task. To ascribe results to stabile factors as for example to abilities increases expectations of the success after success and lowers expectations of the failure. This is not true for unstable factors (i.e. effort). That is why from the point of view of success orientation it is advantageous to ascribe failures for example rather to the lack of effort, which can be always increased, than to insufficient abilities (WEINER). We have a chance in physical training to create such situations that will eliminate differences in motorical abilities.

We believe that in reality of school PE such situations can be created also with the help of non-traditional polythlons.

Aim: To use non-traditional polythlons as means enabling to achieve the feeling of success even for motorically weaker students.

Hypothesis: We suppose that motorically weaker students (not successful in classical polythlon) are negatively influenced by performance concept of school PE. Non-traditional polythlon should enable them to experience the feeling of success. As the proof of this statement we consider the change in positioning of students in discussed school motorical activities in favour of weaker students (either low coefficient or negative positioning coefficient). This change was observed and repeatedly proved three times in overall final result as well as in particular tests.

METHOD AND PROCEDURE

TABLE 1. Characteristics of observed classes in „gymnasium„ (secondary school)

Class	1A	1E	1C
Age	12	12	12
n	31	29	29

All students underwent pre-testing (performance testing), classical polythlon and non-traditional polythlon

Pre-testing of motoric performance:
Throwing the medicine ball with both hands
The jump from the spot
12min run
30m flying sprint

Classical athletic polythlon:
60m sprint
1500m run
long jump
throwing a little ball

Non-traditional polythlon:
Throwing the ball at the target - the student is standing behind a line and is trying to hit a circle which is 2m in diameter and is 20m far from the line. Each student has five attempts. Number of hits counts.

The time limit run - the students run in groups of three given distance - usually 400m. The winner is the student that finishes the given distance in the time that is closest to the limit of 85s.

Task race - the start is on the starting line and after 6meters the competitor makes a somersault forward and backward. Than he dribbles 10meters with a basketball ball. Then he puts the ball aside, takes a floor-ball hockey stick and a ball and tries to shoot at floor-ball goal, which is 6m from him. If he fails to do this, he is penalised by 5seconds. The winner is the student with the best time.

Orientation race - we mark on the ground two parallel lines 30cm from each other and 10m long. The student who has a band on his eyes so that he can't see is trying to run along the corridor that is marked by the lines with the help of a „navigator„ as fast as possible and not to step out of the corridor. Each misstep on the line is penalised by 3 seconds. The winner is the student with the best time.

Balance competition - the student stands on both feet and from this position lifts one leg backward and holds it with one hand. At the same time he holds in his free had a Ping-Pong rocket with a Ping-Pong ball on it. He is trying to stay in this position as long as possible. The winner is the student with the best time.

With regard to the fact that we evaluate emotionally motivating processes in a school class the research plan counts on repeated proving again only in the school class.

RESULTS

TABLE 2. Correlation Coefficient between KVB and NVB
Notes: KVB – Classical Polythlon, NVB - Non-Traditional Polythlon, P – PreTests

KVB x P	KVB x NVB		
1. m.	1. m.	2. m.	3. m
0,943	0,171	-0,432	-0,543

In the first measurements we found nearly identical positioning of students in pre-tests which were focused on basic motoric performance and disciplines of the athletic polythlon. From this fact we can infer that the level of skills in tests will not affect differences caused by motorical abilities. That is why we did not observe this fact in repeated experiment.

TABLE 3. Correlation Coefficien Of Alternative Disciplins

Alternative Disciplins	1. m.	2. m.
60 m – the time limit run	-0,280	-0,230
Throwing a little ball - throwing a little ball at the target	-0,293	0,044
1500 m run – the time limit run	-0,405	-0,080

We support final results of traditional and non-traditional polythlon by several proofs from the disciplines that are logically alternative to the traditional ones. Movement structures of these disciplines are nearly identical but the movement tasks are shifted towards exact fulfilment (60m sprint x time limit run, max. throw x throw at a target and so on.)

DISCUSSION AND CONCLUSIONS

Results shown above fully confirm our hypothesis. We in concordance with Weiner pointed out more unstable factors in experiencing the success. It is possible to predict according to VANÌK, HOŠEK, MAN the influence of general mechanisms of motivational processes as a result of success. But in today's students we can also expect other intellectual arguments and reasons supporting non-traditional motorical activities. In the set of activities in the non-traditional polythlon we found out that in younger students we successfully used such activities in which the motoric structure was similar or the same but the aim was different.

Recommendations for practical usage
We submit for the wide public the proof that it is possible to eliminate the differences in motorical abilities in younger students with the use of non-traditional polythlon. Such polythlons can also significantly increase the feeling of success in the school PE in motorically weaker students.

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MOTIVATION OF YOUTH WITH LOW AND HIGH PARTICIPATION IN PHYSICAL ACTIVITIES AND SPORT

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KEY WORDS: Motivation toward sport, Physical activity, Participation in sport, Youth sport.

INTRODUCTION

The past research documents the important role of motivation in physical activity and sport. Motivation can be consider the key process that influences:

- the operating principle which modifies participation in sport children and in adults.(Telama et all, 1994)
- the decision making behavior of subject in a specific sport activity: persistency, intensity of volitional effort competitiveness and self-determination.
- -sport adherence.

Internal motivation (namely the need of achievement and competition, high performance) stimulates subjects to search and to find the optimal challenge (drive, the contributing stimuli) in his/her environment. (Deci & Ryan, 1985). The past research identified the main reasons which lead to sport participation. And also clarified motivational differences in age, gender, kind of sport and others. (Gould & Horn, 1984, 1990; Luke & Sinclair, 1991). Previous factor studies identified these common factors in motivation: *physical fitness and appearance; good feeling of the own physical activity; competitive aspects (challenge, the improvement of skills, social facilitation, the mass effects and others); the social cognition and self concept; social contacts, meets of new friends; the groups' atmosphere; the joy, play and the feeling of the victory* (Pieron & Ledent 1996).

METHOD AND PROCEDURE

The present study was a part of the Czech contribution to the International research project: *"Sporting Lifestyle, Motor Performance and Olympic Ideals of European Youth"** The subjects in the study were 440 Czech students, 12 to 15 years old. The three following topics were measured:: Physical fitness, Sport lifestyle and Olympic ideals.

Sport lifestyle was estimated by the *Lifestyle-questionnaire (23 questions)*, with the focus only on motivation towards physical and sport activities. Data about motivation were gathered by asking the following question: *"Here are some different reasons for participating in sport. Please state how much do you agree or disagree. I participate in sport because"*. Subjects had to discriminate among the 16 propounded items (see table 1.) and mark the intensity of their attitudes towards them. The answer scale had four points: 1 - very important; 2 – important; 3 – unimportant; 4 – very unimportant.

RESULTS AND DISCUSSION

The coincidence and the differences in motivational preferences are marked in the next two tables. Only positive scores, that is answers 1 and 2 on the scale 1 to 4 were used in calculating the results in this study.

* Supported by the ICSSPE. In the Czech Republic by the Grant Agency of Charles University

Table 1. Motivation toward Physical and Sport Activities

Samples	Boys 12 years		Girls 12 years		Boys 15 years		Girls 15 years	
Items/∑ of 1+2 answers- %, / rank of priority in items	∑1,2 (%)	rank of priority	∑1,2 (%)	rank of priority	∑1,2 (%)	rank of priority	∑1,2 (%)	rank of priority
My friends do	40,5	14	30,5	13	21,0	13	19,1	13
I want to make a career of it	66,6	8	44,2	10	17,5	14	13,3	14
I meet new people	56,7	11	46,3	8,5	38,6	10	53,4	5,5
I can do something good for me	84,7	2	75,8	1,5	78,1	1	73,3	1
I enjoy competition	82,9	3	66,3	5	54,4	4	50,0	7
I want to be physically fit	88,3	1	73,7	3	77,2	2	63,3	2
It relaxes me	54,0	12	42,1	11	44,7	7	49,1	8
I enjoy exercise	71,1	6	75,8	1,5	40,0	9	61,7	3
I like being on the team	76,6	4	46,3	8,5	46,4	6	53,4	5,5
my family wants me to participate	37,8	15	24,2	15	11,4	15	8,4	15
I can get my body in shape	72,0	5	71,6	4	61,4	3	48,3	9
I can make money on it	28,8	16	21,0	16	7,9	16	4,2	16
It is exciting	60,3	9	25,3	14	36,8	11	35,0	11
It makes me physically attractive	50,4	13	31,6	12	27,2	12	29,1	12
I can meet friends	69,3	7	56,9	6	51,8	5	61,6	4
It gives me the opportunity for self expression	59,4	10	49,5	7	43,9	8	45,0	10

Table 2. The Relationship among the Rank of Priorities of Motivational Preferences in the Monitored Samples

Monitored samples	Boys 12 years	Girls 12 years	Boys 15 years	Girls 15 years
Boys 12 years	-	**0,855**	**0,858**	**0,790**
Girls 12 years		-	**0,836**	**0,856**
Boys 15 years			-	**0,841**
Girls 15 years				-

Legend: Critical value: $p< 0,05 = 497$; $p < 0,01 = 0,622$

In the structure of motivational preferences the following motives were emphasized in all observed groups: *make something for him/herself: fitness, the competitions, good feeling in physical and sport activity* etc.

Results in both tables indicate a significant agreement among the respondents of all ages and gender in assessments of their motivational needs. The similarity among the groups is rather obvious in those motives and incentives which subjects evaluated as very important. On the hand, the differences found among less preferred motives and incentives are large in all groups.. For instance, a career in sport is more appreciated by the younger respondents. Rationalization of attitudes is typical for the older subjects. Meeting new friends is more motivating for girls than for boys.

The reasons of these assessments lie probably in similar influences of families, schools and also P.E. environment. In the given context of these results we have to keep in mind that motivation (needs and incentives) was evaluated also by those respondents who are not yet involved in sport and physical activities. Their answers are motivated more by imagination than their own experiences. Their views are influenced by media, advertisement and, by limited own experience with sport. Great portions of youngsters that begin to participate in P.E. and sport usually quit in a relatively short time.

Table 3. The Differences in Motivational Preferences between Respondents more and less Involved in Physical and Sport Activity (P.A.) and Respondents with Higher and Lower Fitness (P.F.)

Samples:	Boys 12 years		Girls 12 years		Boys 15 years		Girls 15 years	
Assorted by $\sum$ of P.A. and points of Physical Fitness.	P.A.	P.F.	P.A.	P.F.	P.A.	P.F.	P.A.	P.F.
Items:								
my friends do	0.01 +		0.01 -		0.01 +			
I want to make a career of it	0.05 +		0.01 +		0.01 +			
I meet new people	0.05 +							
I can do something good for me					0.01 +		0.05 +	
I enjoy competition			0.01 +		0.05 +		0.01 +	
I want to be physically fit	0.05 +		0.01 +				0.05 +	
It relaxes me					0.01 +		0.01 +	
I enjoy exercise	0.05 +				0.01 +		0.01 +	
I like being on the team								
my family wants me to participate								
I can get my body in shape								
I can make money on it					0.01 +			
It is exciting					0.05 +			
It makes me physically attractive			0.05 +		0.05 +		0.01 +	
I can meet friends	0.01 +	0.01 +	0.05 +		0.05 +		0.01 +	
it gives me the opportunity for self expression			0.05 +					

The legend:
+, the significantly higher preferences for respondents more involved in sport and physical activity and for subjects with higher fitness;
- the significantly higher preferences for the respondents less involved in sport and physical activity and for subjects with lower fitness

CONCLUSIONS

1. Results in the monitored groups show the shift in motivational preferences toward more emotional motives and away from competition as the leading motive for youth participation in sport.

2. The competition motives are more typical for youth with experience in organized sport. The differences between youth in organized and unorganized forms of sport participation are deeper from the viewpoint of their motivational preferences. (De Knop 1998).

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THE COACH - AN IMPORTANT SOCIAL AGENT IN THE ATHLETE'S SOCIAL ENVIRONMENT DURING A SPORTS CAREER[1]

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KEY WORDS

sports career, motivational climate, leadership behaviour, goal orientation

The career development of young athletes is influenced by a variety of factors. Besides the athletes the parents and the coaches play an important role. The most important social agents in youth sport can be located within this athletic triangle (Smith & Smoll, 1996; Wylleman, 1995). In this paper we want to focus on the coaches' role in career development. We expect that with increasing age and level of performance the coach-athlete interaction should change. The sports career can be described as a sequence of phases. In the transition model of Salmela (1994) three phases are differentiated: initiation, development and mastery. Whereas the initiation phase is characterized by playful activity and an emphasis on fun and enjoyment the athletes of the developmental phase and even more so of the mastery phase get more and more committed to their career which includes an increasingly tight timetable due to an increasing amount of practice sessions and of competitions. Thus not only skill acquisition but also success in competitions plays an important role. Similar to the athletes who undergo a series of transitions during their career development it is assumed that coaches' behaviour should fit to the needs of the athletes in these phases.

TABLE 1. The transition model with description of the coaches' behaviour by Salmela (1994) and the performance stages in sport

career phases	initiation	development			mastery
training stages	initiation sports	coaching young-talented children			elite sports
content	general basic training, searching for talents	practising of typical basic elements	practising to improve the performance	practising to reach the elite level	competitive training to reach elite performance
descript. of the coach	kind, cheerful, caring, process-centred		demanding, respected, skilled		successful, feared, bonded, emotionally

The coaches' behaviour is depending on the career and training stages of „their" athletes as it's shown in table 1. In the initiation phase the coach is a person who supports the children's activities and their participation motivations to play, have fun and initiates excitement towards new tasks and skills to reach active participation and maximum learning. In the developmental phase the coach must be goal-directed and optimize the skills at the highest level with a more directive leadership style including specifics instructions. This behaviour is different from the supporting style in the initiation phase but still task-centred. In the highest stage of sports career, the mastery phase, coaches will be respected and feared, because performance in training was directed towards specific goals that have to be achieved in high level competitions.

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Coaches in youth sport have a great responsibility towards the athletes and their parents. On the one hand the coach should develop performance and success but on the other hand she or he is also bind to a pedagogical leadership behaviour. The social influence of the coach contains a good leadership behaviour and the skill to support a warm and social oriented climate in sport. Especially the organization of the motivational climate in training sessions is important to the career development of young athletes. How the athlete's social environment will be perceived depends on two factors. The main factor is situational, reflecting the perceived leadership behaviour of the coach and the perceived motivational climate in training sessions. The second factor is rather a personal factor. This factor reflects individual attitudes and goals in the goalorientation in sport.
Considering these assumptions about the coaches' role in the different career phases we investigated the coaches' leadership behaviour in a follow-up study. The main research questions were: Can the coach's behaviour and the motivational climate during the different career phases be characterized like it's described by Salmela (1994)? Are there differences between athletes' and coach's perceptions? Are there differences between the coaches' behaviour or the motivational climate in individual sports and team sports? How do the athletes' dispositions influence the perception of the situational factors in sport?

METHOD

The participants in our study are 347 athletes (206 female and 141 male) and 42 coaches (18 female and 24 male). The athletes are between eight and 21 years old (M = 13.34, SD = 2.44). representing different kinds of sport. 209 athletes are doing individual sports (IS), i.e. swimming, track and field, tennis and 138 athletes team sports (TS), i.e. handball, basketball and hockey. The athletes can be divided into the different career stages initiation (IS: 72, TS: 32), development (IS: 105, TS: 81) and mastery (IS: 33, TS: 24). This classification depends on the age, the competition level and the national performance status of the athletes. The coaches participating in the study are between 18 and 62 years old (M = 35.14, SD = 11.48). Twenty-four coaches working in IS and 18 coaches in TS. After the classification into the career phases 8 coaches engaged in the initiation phase, 24 in the development phase and 7 in the mastery phase. Three coaches couldn't be categorized into one of the career phases, because they coached athletes from different career stages in one group.
The coaches' behaviour was assessed from both the coaches' and the athletes' viewpoint. The German version of the Perceived Motivational Climate in Sport Questionnaire (PMCSQ) was used to measure the situational factor of mastery and performance climate in sport. The Leadership Scale in Sports (LSS) was adapted for young athletes from Lee, Williams, Cox and Terry (1993). We developed a German version to assess the leadership behaviour with the dimensions democratic behaviour, instruction, rewarding behaviour, and social support. Assuming that the participants' dispositional goal orientation influences the perception of the situational motivational climate, the coaches' as well as the athletes' goal orientation was assessed. The athletes filled in a German version of the Task and Ego Orientation Scales (Rethorst & Wehrmann, 1998) and of the Social Approval Scale measuring the dispositional goal orientations in sport. To assess the coaches' goal orientations they filled in a German version of the Task, Ego and Social Approval Scales (modified for adults) at the second time of measurement.
The follow-up measurement took place one year after the first data assessment.

RESULTS FOR TIME 1

With athletes' data (n = 347) a multivariate 3 x 2-analysis of variance with the four LSS scales as dependent variables and career phase as well as sports (individual/team) as between subjects

factors revealed a significant main effect of career phase ($mF_{(2,328)} = 2.50$, $p < .05$) and of sport ($mF_{(1,328)} = 2.49$, $p < .05$). The univariate analysis of variance shows a significant main effect of career phase for the subscale social support only: $F_{(2,328)} = 3.32$, $p < .05$, $eta^2 = .02$, that athletes within mastery phase perceive a higher amount of social support than athletes in development or initiation phase. No significant effects could be found with the PMCSQ scales as dependent variables. The same multivariate analysis was calculated with coaches' data (n = 42) with the four LSS scales and the two PMCSQ scales as dependent variables and career phase and sports as single subjects factors, because of the small sample. The analysis revealed only one marginally significant main effect of career phase for the PMCSQ scales ($mF_{(2,36)} = 2.44$, $p = .055$). The univariate analysis of variance shows a significant main effect of career phase for the subscale performance climate ($F_{(2,36)} = 3.34$, $p < .05$, $eta^2 = .16$). Coaches engaging in mastery phase perceive or initiate a higher amount of performance climate than coaches engaging in development or initiation phase. Differences between the athletes' and coach's view also occurred. The coaches think they give more instruction, reward and social support than the athletes perceive ($p < .01$) and they also perceive a higher amount both of mastery and of performance climate ($p < .001$). But the differences are decreasing during the sports career and disappear for the perception of leader behaviour in the mastery phase. Concluding the stepwise multiple regression indicates following predictors of motivational climate perceived by athletes: A mastery climate is best predicted by dispositional task orientation (*beta* = .22) and a leader behaviour of explanation (*beta* = .27) and social support (*beta* = .22), $R^2 = .2472$, $F = 36.68$, $p < .001$. A performance climate is best predicted by dispositional ego orientation (*beta* = .39) and a consultation behaviour in negative way (*beta* = -.16), $R^2 = .1835$, $F = 37.62$, $p < .001$.

These first results show, that the career phase and the kind of sport (individual or team) influence the perception of perceived leader behaviour of coaches in the athletes social environment. The higher the career phase the higher the athletes perceive social support and also the coaches perceive performance climate. This results support the assumption, that the coach's influence gains in importance during the sports career. That athletes' perception adapted to coach's perception of the leader behaviour during the sports career, supporting this statement additionally. With regard to the influence of athletes' dispositions could be shown, that the individual disposition combined with a specific perceived behaviour of the coach seems to be a good predictor of perceived motivational climate in training sessions. An individual task orientation predicts a perceived mastery climate and a dispositional ego orientation predicts a perceived performance climate in sport.

The follow up data are not yet fully analyzed and will be presented on the conference.

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EXERTED EFFORT IN CLIMBING AS A FUNCTION OF ACHIEVEMENT GOALS, PERCEIVED ABILITY, AND TASK DIFFICULTY

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KEY WORDS : effort - achievement goals - perceived ability - task difficulty

INTRODUCTION

In the field of sport, effort is considered a major factor in performance. Consequently, studying personal and contextual variables which might regulate exerted effort is important. It is the purpose of this experiment to investigate variables that regulate effort by using a contemporary social-cognitive model of achievement motivation: the achievement goal approach (e.g., Duda, 1992; Nicholls, 1989; Roberts, Treasure & Kavussanu, 1997; Sarrazin & Famose, 1998).

This approach assumes that the goal of individuals is to strive to demonstrate competence in achievement contexts. Two independent goals are now acknowledged. In the first case, the goal of the individual is to master tasks, solve problems, or make progress.The perception of ability lies in self-referenced criteria and a process of temporal comparison, and is termed *task involvement* (Duda, 1992; Nicholls, 1989; Roberts, et al, 1997). In the second case, task involvement is not sufficient to feel competent. The individual must do better than others, or as well as them but with less effort. Here, the feeling of ability is dependent on external criteria (the performance and effort of others) and on a process of normative comparison to others and is termed *ego involvement* (Duda, 1992; Nicholls, 1989; Roberts, et al, 1997).

Whether one is task or ego involved is dependent on the situation at hand and/or dispositional factors. Situational factors induce states of ego or task involvement. Ego involvement is likely when the tasks are tests, interpersonally competitive, or when public self awareness is caused (Nicholls, 1989). On the other hand, task involvement is likely when contexts enhance the learning process, the mastery of tasks, investment and progress (Nicholls, 1989). However, there is a certain individual proneness to these two goals (Nicholls, 1989) and are termed individual "orientations". Individuals are assumed to be predisposed to be task and/or ego involved. The orientations are thought to be relatively stable and have typically been assessed through the use of questionnaires.

When a person is task involved, the amount of effort exhibited depends on the belief of being able to make progress on the task. People are assumed to commit themselves more in a task if it seems to require effort to succeed and when neither success nor failure is certain. Effort is exerted when task difficulty is perceived to be at an intermediate level for the person. This is where personal challenge is maximized. Perceived ability is hypothesized to affect the perceived difficulty of the task which itself affects exerted effort (Nicholls, 1989). Therfore, greatest effort is hypothesised to be exerted at the moderate and difficult task levels for high perceived ability task involved people, and at the easy and moderate task difficulty levels for low perceived ability task involved people.

When a person is ego involved, assessments are more complex. His or her goal is to appear better than the norm and avoid demonstrating low relative ability. Effort is all the more

important as it is necessary to show superiority over others. But effort may be a "double edged sword" : one needs it to succeed, but failure with high effort clearly demonstrates incompetence (Covington & Omelich, 1979). If the person is convinced that an investment in effort will not enable him or her to reach the goal, or worse, that it will demonstrate a lack of ability, then an ego involved person is hypothesized to not exert effort. People who believe they have high ability expect to demonstrate superiority. To achieve this goal, they try hard on tasks where success demonstrates high ability: ie, tasks perceived to be average or above average in difficulty. Those persons who regard themselves as below the norm in ability expect to fail when the difficulty of the task is perceived to be average. These people exert great effort when a task is seen as easy and when they think they can succeed.

METHOD AND PROCEDURE

PARTICIPANTS

Boys (N=500) from a suburban school in France, volunteered to answer two questionnaires. Seventy eight of them were selected to take part in the experiment according the procedures explained below. They were 12 to 16 years old (mean = 13.6, SD = 1.6).

TASK

The task was to climb each of five 8 meter high climbing courses: a "very easy", an "easy", a "moderate", a "difficult" and a "very difficult" course. The normative difficulties had been established beforehand with a group of 100 boys of the same age.

PROCEDURE

Questionnaires assessing goal orientations and perceived ability in climbing were used. The percentile distribution for each questionnaire enabled the creation of 4 groups: A high task, low ego orientation group with high perceived ability (Task+; n = 20); a high task, low ego orientation group with low perceived ability (Task-; n = 18); a high ego, low task orientation group with high perceived ability (Ego+; n = 20); and a high ego, low task orientation group with low perceived ability (Ego-; n = 20). The boys were placed into a context conforming to their motivational profile to reinforce the dispositional orientation.

MEASURES

Dispositional goal orientations. To assess ego and task goal orientations in sport of the boys, the French version of the Perception Of Success Questionnaire (POSQ) developed by Roberts and associates and validated in France by Durand et al. (1996), was employed.

Perceived ability in climbing. To assess perceived climbing ability, a 4-item questionnaire similar to the one developed by Nicholls and collegues (Duda & Nicholls, 1992) was used.

Effort. In this study, effort was conceptualized as the amount of energy resources exerted by the participant. The maximum heart rate (MHR) reached in each climb was estimated through a physiological index, based on the linear relation between the intensity of work and heart rate. The latter was recorded continuously with an ambulatory device.

RESULTS AND DISCUSSION

On the five courses as a whole, the task involved participants achieved more success (60%) than the ego involved participants (42%). The percentage of success of each group is 73, 46, 60 and 24, respectively for the Task+, Task-, Ego+, Ego- groups.

A 2 (Ego and Task goal involvement) x 2 (high and low perceived ability) x 5 (difficulty of the course) ANOVA with repeated measures on the difficulty variable was performed on the effort data. Results revealed main effects for goal [F (1, 74) = 4.66, $p < .05$] and for task difficulty [F (4, 296) = 3.45, $p < .01$]. However, these were seperceded by 2-way interactions between goal and course difficulty [F (4, 296) = 8.17, $p < .001$] and between perceived ability and course difficulty [F (4, 296) = 16.98, $p < .001$]; and a 3-way interaction between goal, perceived ability and course difficulty [F (4, 296) = 3.17, $p < .01$]. As expected, contrast analyses showed that less effort was exerted by the Ego- group compared to the other three groups, on the moderate and very difficult courses. The Task+ group had high effort on the very difficult course, compared to the other groups, and on the difficult course when compared with the two low perceived ability groups. The effort exerted according to the difficulty of the course varied depending on group membership. The Task+ group exerted more effort as difficulty increased. The Task- group exerted the most effort on the moderate course. The Ego+ group also exerted the most effort on the moderate difficulty course. Lastly, compared to the other four courses, the Ego- group exerted least effort on the very difficult course. They exerted their highest effort on the very easy and easy courses, these two being significantly different from the other three.

In conclusion, overall the results fit the theory. The task-involved participants exerted most effort in the 'challenging' task condition, that is the moderate course for boys with low perceived ability, and the very difficult course for boys with high ability. The ego-involved boys with high perceived ability exerted most effort in the average and difficult level climbing courses, whereas those with low perceived ability exerted most effort on the easiest courses, and little on the average and very difficult courses.

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MOTOR SKILL ACQUISITION AND MOTOR COMPETENCE

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The notion of motor skill is of central importance in P.E.. It is obviously an indispensable prerequisite for participation in basically any physical exercise or sports activity, even though some of the motor skills are highly overlearned, e.g. walking or running. New trend sports like inline skating or mountain biking permanently require the acquisition of new skills. In addition, motor skills are often learned wrongly at an earlier age and limit performance at a higher level. But also when trying to reduce the dependency of older and less physically fit persons, or of populations with handicaps, adapting basic motor skills becomes an important task.

Motor skill acquisition therefore is one of the central tasks of physical educators, whether the establishment of new skills, the correction of wrongly automated skills or the stabilisation of already known skills, and there is a clear need for physical educators to know more about this field.

The purpose of this section is to provide physical educators with information about the acquisition of skills from a holistic and humanistic perspective. This perspective includes setting the learner in the centre of the considerations and avoiding mechanistic approaches. The focus is clearly on sports-like gross-motor skills under real-world conditions in a physical education setting.

If we look at the motor behaviour of any P.E.-class, we can easily make some interesting observations:

- Independent of the age or performance level, we see quite obvious differences between the more and the less skilled participants. Especially in less experienced groups, we can see a high variability between different executions of a single movement by the same person.
- A given goal, e.g. to jump as high as possible or to perform on the horizontal bar, may be attained by quite different motor behaviour.
- In addition, some participants are better able to react to corrections and instructions of the physical educator than others.
-

These examples demonstrate that a motor skill, especially on a premature level, is not something fixed or stable, but depends on many different aspects.

This section attempts to look at skill acquisition by highlighting some important relations between the subjectively perceived and the existing situation, the attempts to find a movement solution, and the ways physical educators can support this.

If this section appears to be not completely homogenous in terms of theoretical conceptions nor terminology used - it isn't, indeed. This, however, reflects the controversy and ambiguity in the theoretical development in the field of motor skill learning, but should not be an argument not to consider the important messages transmitted in each of the following chapters.

Chapter one focuses on the notion of ability. At first glance one might argue that abilities, seen as personal dispositions, are indispensable prerequisites for every motor skill. The general ability notion, however, did not prove to be successful, and the empirical approaches left many unanswered questions, therefore not being helpful for physical educators. In his chapter, Heinz Mechling (Germany) points out that different tasks require different abilities, and that the co-ordination has to be seen under different time and precision constraints.
The way in which a child appraises his or her motor competence has a strong impact not only on the level of sport engagement, but also on the development of motor skills. In chapter two, Jacques H.A. van Rossum (The Netherlands), Eliane Musch (Belgium) and Adri Vermeer (The Netherlands) point out the relevance of the topic in the domain of physical education. Physical educators learn about the importance of reference groups, changes with age, and possible measures to be taken in class.

One of the aspects a teacher may directly manipulate in physical education is the level of task difficulty. In chapter three, Didier Delignières (France) demonstrates that subjectively perceived task difficulty is decisive for the amount of resources invested and hence the motor performance achieved. The importance of the subjective goals, the dependency of perceived difficulty from individual variables and the possibilities for the physical educator to adapt the task difficulty in order to promote effort and learning are outlined. This also highlights the close relationship between skill acquisition and motivational aspects.

Chapter four takes a more comprehensive view of the acquisition of complex motor skills from the viewpoint of behaviour pattern changes. Beatrix Vereijken and Rob Bongaardt (Norway) describe the theoretical model of dynamic systems theory and use it to outline the route to skilled behaviour. On this basis, they draw important conclusions about how to approach and facilitate the acquisition of skills in physical education, as seen as the solving of a motor problem.

One more traditional way of helping learners to improve their motor behaviour consists of providing augmented information or feedback. In chapter five, Klaus Blischke, Franz Marschall, Hermann Müller and Reinhard Daugs (Germany), clearly base their ideas on an information processing approach. They point out the relation between augmented information and different task categories, the amount and type of information, and their role in attention strategies and imagery. They give important and helpful recommendations for physical educators for the improvement of skill learning in their physical education class.

DIFFERENCES IN COGNITIVE REPRESENTATION AND ANXIETY BETWEEN EXPERTS AND BEGINNERS IN EXTREME-SURFING

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As we know from numerous studies, coaches (as experts) and beginners often do not use the same information at a certain stage of motor learning of an athlete. E. g. the athlete develops an „intuitive" feeling for the water, a „feeling for movement" etc. and the originally applied instructions are no longer valid for the cognitive structure of the learning athlete. Such divergences within the coach-athlete-interaction represent a specific reason to get a closer insight into the construction and change of cognitive structures in motor learning. By using an expert-beginner paradigm, differences in the quality of the structure and organisation of knowledge between experts and beginners in motor behaviour were found (Zani & Rossi, 1991). Further scientific research endeavoured to define these differences concerning the central concepts and concept interrelations in network representation of special movements (Huber, 1997; Schack, in press). Thus it seems obvious that central components of movement coordination are organized conceptually and that not only experts' and beginners' cognitive representations concerning the conceptual (network-) structure, but also concerning the quality of the conceptions used (modal, functional etc.) differ. Conceptions according to this approach are cognitive tools to reduce the degree of freedom of the action and essential elements of movement coordination.

This paper aimed to show specific differences in cognitive representation of movement between experts and beginners. Moreover, statements will be made about emotional processes. The question will be answered whether experts and beginners differ in their cognitive or somatic anxiety.

METHOD AND PROCEDURE

The sailing-surfer's frontal loop was chosen for the empirical study concerning differences in cognitive structures. When motorically carrying out this forward rotation, a number of problems (generating of energy, leap, orientation, static fixation of sailing system, introduction of impulse, etc.) have to be solved. Thus this movement action is particularly suited for empirical tests for the cognitive architecture of motoric learning. As far as those movement tasks are concernd, they consist of very complex conceptual structures which seem to escape immediate empiric or experimental access. Besides, the paper mainly deals with the means by which such structures can be satisfactorily represented and shown.

In former studies concerning cognitive representation in sport, self-reports were carried out either orally or in written form (interviews, questionnaires, thinking aloud, card sorting tests etc.). These methods, however, represent a number of problems, particularly concerning objectivity and reliability. For this reason, we chose a method which was established more and more during the past years in the field of cognitive psychology. This procedure (structural dimensional analysis-motoric, SDA-M) was further developed for the analysis of cognitive structures in motor memory (Schack & Lander, 1998) and also provides the possibility to register individual changes in learning by means of an invariance - measure. Also observations concerning interindividual differences and statements concerning group-related differences (experts/novices) can be made. The tested subjects are confronted with a sum of concepts determined in advance, which are functionally relevant for the execution of the

movement. By means of a computer programme (SDA-S2), the so-called split technique is used in order to achieve the data of proximity during experimental conditions. This successive splitting procedure requires a multiple decision in a reciprocal association of N-elements (concepts). The distance scale thus determined becomes the basis for further data analysis: the individual partitioning of a conceptual quantity is carried out by means of a hierarchical cluster analysis, the dimensioning of the cluster solutions received is done via factor analysis and by means of a specific cluster-orientated rotation process. The result is a factor matrix, classified by clusters. The intra- and interindividual comparison of the cluster solutions received is done via a mathematical defined invariance measure (η_{crit}).

Prodedure

Athletes who want to learn the frontal loop in surfing, get registered in courses that usually consist of 10-member groups. As a rule, at the end of a course, 2 - 4 persons only are in a position to carry out the frontal loop. As novices, persons were chosen who were able to carry out this loop at the end of such courses (N=21). The expert group (N=19) consisted of athletes who had mastered the frontal loop since more than 3 years, and also included athletes who compete in international competitions.

Observations on the cognitive structures of the athletes were achieved in an experimental setting by means of the above mentioned method (SDA-M). Data concerning anxiety were obtained by means of the sport competition anxiety test (SCAT; Martens, Vealey, Burton, 1990).

RESULTS

The differences in cognitive structures of experts and beginners can be made obvious e.g. by means of the results of the hierarchical cluster analysis.

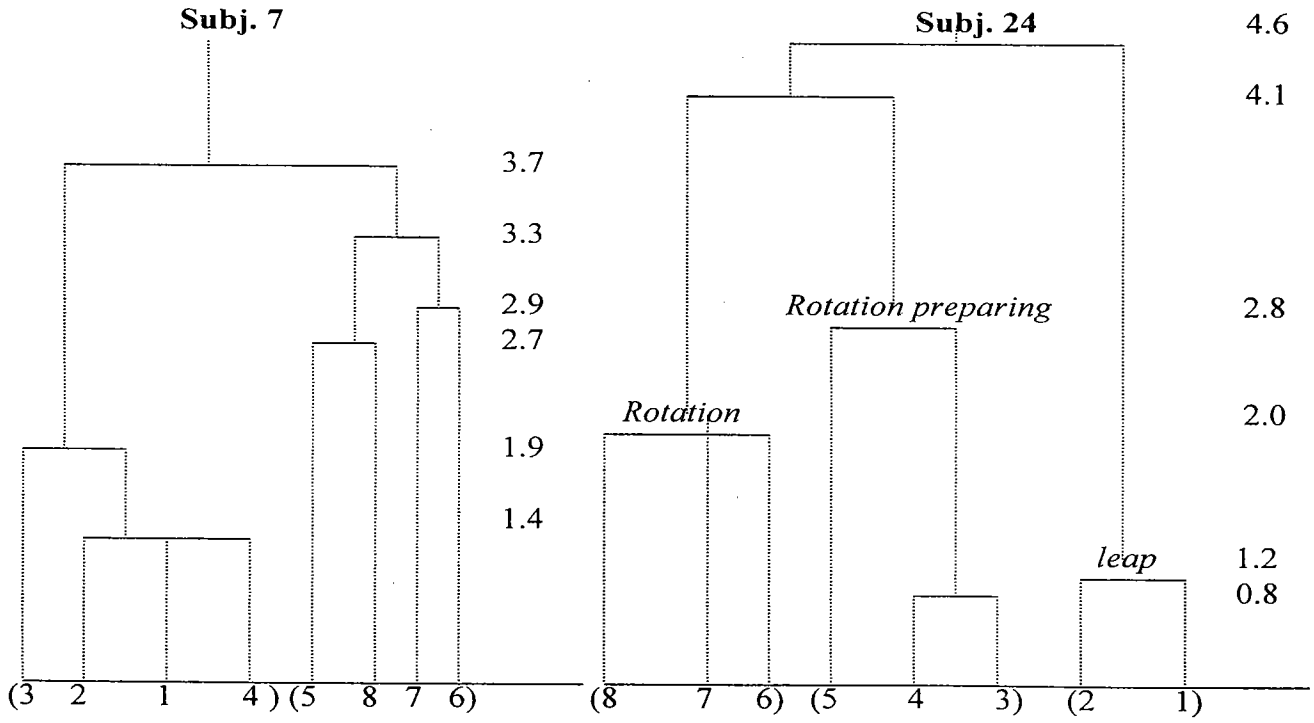

Fig. 1. Dendrogram on conceptual sum: object distances on the Euclidian distance scale.

N=8 conception was used for the analysis. The 8 conception (mental structure points the movement) for solving the movement problems (frontal loop) are: 1) High-low-high 2) take off 3) open the sail 4) body main weight to the front 5) rotation push 6) becoming compact 7) shift sail 8) head turning. The beginner's procedure (subject 7) is representative for the first learning phase (rough coordination), while the expert (subject 24) shows a cognitive structure which is characteristic for this learning phase: fine coordination. The cognitive structure of the expert shows that it comes close to the biomechanic functional structure of the movement. The head definitions (leap, preparing rotation, rotation) are locally and chronologically separated from each other and are used to solve specific side problems (energizing, introducing impulse, rotation), whereas the beginner procedes in a noticeably disadvantageous manner. Test person 7 e.g. combines the opening rotation thrust with the turning of the head. The turning of the head terminates the forward rotation, has, however, no functional relation to the rotation thrust which begins sooner and from outside. In the further stage of learning process, such structures become more precise as far as the chronological movement control is concerned and furthermore, remarkable qualitative changes take place (Schack, in press).
By means of the invariance measure (η_{crit}), a significant difference between cognitive structures of experts and novices were found. The similarity test of the structures within the expert group revealed an invariance of the expert structure with athletes who carry out the frontal loop since more than 5 years. Within the group of up to 5 years (N=9), the invariance could not be proofed statistically. Differences in sport anxiety were shown between both groups in the dimension of cognitive anxiety ($z = 2{,}2; p < .05$). It became obvious that the cognitive anxiety of the beginner is higher than the one of the expert.

DISCUSSION AND CONCLUSION

In this study, we were able to prove as in the study of Huber (1997) the differences in the cognitive representation of experts and beginners. Furthermore, statements concerning cognitive structures are given, which are of immediate relevance for training processes. Based on these statements the coach is more able to decide the cognitive context which athletes can understand and work on. The observations on cognitive parameters as well as the observations on emotional aspects (anxiety) prove the necessity of overall well developed training (intervention) methodes (Schack, 1997). In order to make general statements concerning the development of expertise in sport, further studies concerning other sports are necessary.

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FROM SPORT PSYCHOLOGY IN THE SIXTIES TO EXERCISE AND HEALTH PSYCHOLOGY 2000

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KEY WORDS

History, Sport Psychology, Exercise and Health Psychology

INTRODUCTION

During the World Congress for Sport Psychology held in 1997 at the Wingate Institute in Netanya the idea to document the state-of-the-art of Sport Psychology was born. A good occasion to do so would be the 10th European Congress for Sport Psychology, which takes place in Prague in 1999 at the threshold for the next millennium.

SPORT PSYCHOLOGY: THE LOOK BACK

At the World Congress in Israel John Salmela (Canada) presented a paper on the Antonellis years of ISSP (Lidor & Bar-Eli, part II p. 596/97, 1997). During the congress two interviews with Emma Gueron (Israel) and Miroslav Vanek (Czech Republic) were realised by Guido Schilling (Switzerland) and Hermann Rieder (Germany). They were videotaped by the Wingate Audio-Visual Centre. Those three documents give us a chance to look to the beginning of Sport Psychology through the eyes of former leading officers. We can review the state-of-the-art of Sport Psychology by:

Ferruccio Antonelli (Founding President ISSP)
Emma Gueron (Founding President FEPSAC)
Miroslav Vanek (President ISSP)
Hermann Rieder (General Secretary ISSP)
Guido Schilling (President FEPSAC, Editor of Sport Science Review on Sport Psychology)
John Salmela (Treasurer ISSP and Editor of the World Sport Psychology Sourcebook 1st and 2nd Edition).

At the 1999 Congress in Prague statements of Ferruccio Antonelli (written), Miroslav Vanek and Emma Gueron (videotaped) will be given and commented. Based an these comments a discussion on the following markers will take place:

Where are the roots of the Sport Psychology?
What purpose did Sport Psychology serve in the sixties?
Sport Psychology and the iron curtain
Sport Psychology between Sport Science and Psychology

The above mentioned officers will be asked to take the floor. Hermann Rieder and Guido Schilling will lead the discussion.

EXERCISE AND HEALTH PSYCHOLOGY IN THE NEXT MILLENNIUM

Representatives of FEPSAC (Fédération Européenne de Psychologie des Sports et des Activités Corporelles) and ISSP (International Society of Sport Psychology) will be invited to discuss with young scientists (students in Psychology, Physical Education teachers etc.) in which direction and in what mainstream Exercise and Health Psychology will and should be developed. Hermann Rieder and Guido Schilling will lead the discussion.

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A PSYCHOMETRIC EVALUATION OF A GERMAN VERSION OF THE LOEHR TEST AND THE SPORTS EMOTIONAL-REACTION PROFILE

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Key Words: Measurement, psychological skills, Loehr Test, Sports Emotional-Reaction Profile, reliability, validity.

INTRODUCTION

For many sport psychology consultants the assessment of psychological skills that are thought to be relevant to enhance athletic performance and coping in competitive and stressful situations is a key element in the counseling process of athletes. As this line of work expands, in Switzerland and also elsewhere, there is a need for such measures. After a German version of the Loehr Test (Loehr, 1982) and the Sports Emotional-Reaction Profile (SERP; Tutko & Tosi, 1976) has been published (Loehr, 1988; Sonnenschein, 1989), these instruments have been used now and then. However, no information on their psychometric qualities have been reported.

This investigation examined the reliability and the factorial and concurrent validity of the German version of the Loehr Test and the SERP. The Loehr Test is a 42-item test containing 7 subscales (and items per subscale), namely Self-Confidence, Negative Energy, Attention, Visualization, Motivation, Positive Energy, Control of Attitudes. Similarly, the SERP contains 4 items and six subscales: Will to Win, Self-Assertion, Distractibility, Control of Arousal, Self-Confidence, Attribution of Responsibility, Competition Planning.

METHOD

Additional Measures

To examine the concurrent validity of the Loehr Test and the SERP, a translated version of the Ottawa Mental Skill Assessment Tool (OMSAT-4; Durand-Bush & Salmela, 1995) was used. It includes 11 mental skills scales: Goal-Setting, Belief/Confidence, Commitment, Stress Reactions, Relaxation, Activation, Focusing, Imagery, Competition Planning, Mental Practice, Refocusing. Moreover, self-reported athletic performance was measured with a 7-point Likert scale.

Sample and Procedure

Questionnaires were distributed among four cohorts of physical education students in their first semester (N=450). The Loehr Test and the SERP were administered to all cohorts. The OMSAT-4, however, was completed by one cohort only (n=128). The study sample, representing varied sports and levels of performance, was 52% female, and averaged about 22 years of age. The participants practiced 4 times a week on the average which amounted to about 7 hours of physical activity.

RESULTS

Reliability. Internal consistency values for the Loehr Test and the SERP are presented in Table 1 and range from α=.30 (Attribution of Responsibility) to α =.74 (Self-Confidence).

TABLE 1. Internal Consistency Values (Cronbach Alpha), Means, and Standard Deviations for the Loehr Test, SERP, OMSAT-4 Subscales, Pearson Correlation Coefficients among the Loehr Test, SERP, and OMSAT-4 Subscales and (Self-Reported) Athletic Performance

		Men		Women			Correlations (r) with OMSAT-4 subscales...											
Scale	α	M	SD	M	SD	p[a]	GOAL	CONF	COM	STRE	RELA	ACTI	FOC	IMAG	PLAN	MENT	RFOC	PERF
Loehr Test																		
Self-Confidence	.74	22.72	3.39	20.59	3.72	<.001	.37**	.73**	.38**	.48**	.33**	.25*	.42**	.35**	.10	.24*	.51**	.36**
Negative energy	.61	20.62	3.02	19.64	3.34	<.001	.09	.50**	.03	.43**	.22	-.01	.34**	.07	-.10	.06	.57**	.15*
Attention	.61	21.22	3.04	21.04	3.28	n. s.	.17	.40**	.16	.37**	.34**	.17	.54**	.22	-.01	.10	.42**	.14*
Visualization	.63	18.58	3.84	18.69	3.73	n. s.	.40**	.28*	.28*	.16	.41**	.17	.08	.49**	.33**	.55**	.00	.22**
Motivation	.65	23.32	2.84	22.45	3.13	<.01	.35**	.45**	.50**	.23*	.18	.47**	.42**	.30**	.15	.21	.23*	.23**
Positive Energy	.67	23.96	3.21	23.79	3.11	n. s.	.29*	.63**	.26*	.52**	.30**	.45**	.47**	.27*	.05	.23*	.48**	.24**
Control of Attitudes	.70	22.52	3.10	21.76	3.28	<.01	.39**	.71**	.35**	.42**	.39**	.41**	.45**	.25*	.15	.27*	.55**	.28**
SERP																		
Will to Win	.46	18.22	3.11	16.79	3.19	<.001	.27*	-.06	.34**	-.09	.08	.07	-.03	.09	.07	.20	-.17	.27**
Self-Assertion	.53	21.87	2.77	20.42	3.09	<.001	.16	.50**	.21	.33**	.24*	.30**	.32**	.17	.05	.13	.34**	.22**
Distractibility	.63	14.90	3.03	15.73	3.08	<.01	-.14	-.56**	-.18	-.47**	-.26*	-.32**	-.41**	-.23*	.01	-.09	-.34**	-.21**
Control of Arousal	.72	21.07	3.32	20.37	3.72	n. s.	.14	.52**	.22	.56**	.22	.31**	.52**	.18	-.07	-.01	.48**	.23**
Self-Confidence	.69	23.52	3.13	21.20	3.70	<.001	.16	.55**	.23*	.41**	.15	.21	.28*	.11	-.15	-.01	.36**	.31**
Attribution of Responsibility	.30	17.98	2.63	18.62	2.69	n. s.	-.10	-.21	.02	-.18	-.01	-.08	-.04	.01	-.04	-.07	-.20	-.09
Competition Planning	.51	19.76	3.14	19.71	3.18	n. s.	.35**	.37**	.23*	.20	.27*	.20	.21	.41**	.30**	.38**	-.02	.25**

Note. For analyses involving the OMSAT-4, sample size was n=128, in all other cases n=447 (215 men, 232 women).

[a] Gender differences were analyzed by means of t-Tests.

** p<.001. * p<.01.

Legend. GOAL: Goal-Setting, CONF: Belief/Confidence, COM: Commitment, STRE: Stress Reactions, RELA: Relaxation, ACTI: Activation, FOC: Focusing, IMAG: Imagery, PLAN: Competition Planning, MENT: Mental Practice, RFOC: Refocusing, PERF: Self-Reported Athletic Performance.

Validity. Exploratory principal components factor analyses (varimax rotation) among 437 participants could not verify the seven dimensions that are supposed to underlie the Loehr Test and the SERP, but rather resulted in the retention of four factors accounting for 38% (Loehr Test) and six factors accounting for 42% of the variance (SERP), respectively. In the case of the Loehr Test, only the dimensions Negative Energy and Visualization were readily recognizable in the factor structure, and in the case of the SERP, the dimensions Control of Arousal, Attribution of Responsibility, and Competition Planning. Additionally, intercorrelations among both the Loehr Test and the SERP subscales revealed strong and significant associations: disregarding sign, the median correlation for the Loehr subscales was $r = .45$ (range = .01 to .71, and for the SERP subscales $r = .21$ (range = .04 to .74).

In order to examine the construct validity, Pearson correlation coefficients between the Loehr Test, the SERP, and the OMSAT subscales were calculated (see Table 1). Several strong and significant relationships were found. Furthermore, concurrent validity of the Loehr Test and the SERP was supported in that participants' responses correlated significantly with their scores on self-reported athletic performance (see Table 1). And inspection of the subscale means of the two instruments (see Table 1) reveals some expected gender differences regarding the self-related and emotion-related variables cluster.

Discussion and Conclusion

Judged by the usual psychometric standards for individual assessment (cf. Lienert & Raatz, 1994) and by the standards set by similar tests (see Ostrow, 1996), Cronbach alpha reliability coefficients for the German version of the Loehr Test and the SERP were generally rather low and in some instances unacceptably low. With respect to factorial validity and the interdependence of subscales, the two instruments are not quite satisfactory. By virtue of their face validity, they may be useful tools for the athletes, their coaches and the sports psychologist at various points in the counseling process. However, until the German version of the Loehr Test and the SERP, and maybe also their original versions, is modified or until the reliability and validity are well-documented, caution is recommend in using the two instruments, particularly when employed as an instrument to measure change in an individual counseling setting.

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A COMPARISON BETWEEN THE CAREER TRANSITIONS OF FORMER CHINESE AND GERMAN TOP CLASS ATHLETES – THEORETICAL AND METHODOLOGICAL CONSIDERATION

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KEY WORDS

Career transition, postathletic career, top class athletes, cross-cultural study, action theory, methodology

INTRODUCTION

For many, the transition from one important life-passage to the next is a major challenge, often requiring support from others. This is no different for those in organised sport. Top class athletes in particular have problems with transitions not only during the different phases of their active time, but experience even more difficulties after their retirement from sport in adjusting to a new and much changed situation (see Schmidt & Martensmeier, 1997). Why some former top athletes succeed in having a successful postathletic career after a successful athletic career while others fail in their reintegration back into a "normal" life has not been examined in any depth in the sport literature.

In this binational cross-cultural study, based on the methodological approach and latest results of a study done with former German top class athletes (Hackfort, Emrich & Papathanassiou, 1997), former male and female Chinese top athletes were asked in a qualitative and quantitative "Athletic and Postathletic Questionnaire" (APAQ) about their experiences, problems and difficulties with transitions.

The study focuses on three main goals:

1. Development of an action theory based sport specific transition concept
   Predominant transition theories and models from related sciences will be evaluated with respect to their applicability to the area of competitive sports. A sport specific action theory based transition concept shall be developed.
2. Cross-cultural comparison
   In the first phase of the study, questionnaire results from former Chinese top class athletes will be presented and discussed. In the second phase of the study, these results will then be compared with the German findings in order to compare commonalities and differences between athlete experiences in the two countries.
3. Development of an educational and counselling programme
   The results of both phases of the study will be used to develop a future education and counselling programme for top class athletes (see Hackfort & Schlattmann, 1992; Petitpas, Champagne, Chartrand, Danish & Murphy, 1997). The advantages and disadvantages of different socio-cultural systems will be taken into account in the creation of a programme.

THEORETICAL BACKGROUND

As elaborated theories considering the circumstances in sports sufficiently are not yet available, theoretical approaches and models from closely linked problem areas have to be used as the conceptual framework for the study. The following three theoretical approaches acted as the main reference points.

1. Developmental-psychology concepts

Transitions can be defined as critical life-experiences (Montada, Filipp & Lerner 1992). This idea of transition links with the theoretical concept of social determinedness. Whether in a socially accepted time with sufficient strategies a problem is solved by a person or not, we differentiate between critical situations or phases. If a basic problem cannot be solved fundamentally over a longer period, we speak of a critical phase. With regard to our study, an athlete who has not been reintegrated into "normal" life after several years is considered to be in a critical phase.

2. Transition concepts

Schlossberg's (1981, 1984) transition-model is useful for explaining problems associated with transitions from one important period in life to another. The model differentiates between the three interacting dimensions: character of transition, character of the individual and character of environment. All dimensions may, depending on the subjective perception of the person, inhibit or foster the transition process. Empirical studies with former international top athletes (for a summary see Ogilvie & Taylor, 1993) support Schlossberg's transition model.

3. Social-scientific action theory

The in German sport science often used action theory (see Hackfort, 1986, Hackfort et al. 1997; Nitsch, 1986), which focuses on the person-environment-task-constellation, integrates and extends the above mentioned concepts and has been chosen as the main theoretical framework for this study.

The social-scientific action theory emphasises the self-driven activities of human beings. Thus in the context of this study, it is important to know whether a specialisation in a certain area (e.g. top level sport competition) leaves enough space for personal development or whether the system restricts the use of the athlete's own resources and potential. If the last assumption is true, it would mean that a top class athlete cannot acquire enough skills during his or her active time to enable him or her to have a smooth reintegration.

METHOD AND PROCEDURE

Questionnaire

In order to acquire a more holistic impression of the athlete, the questionnaire developed for the study not only asks about problems that occurred after the athletic career was over, it also includes questions concerning the time before and during the high performance period. The "Athletic and Postathletic Questionnaire" (APAQ) is divided into five different parts: Basic questions, Before top level, During top level, Career end and Postathletic career. It integrates all quantitative and qualitative questions of the study done by Hackfort et al. (1997).

The first part of the questionnaire focuses on basic biographical data. The remainder emphasise on psychological, pedagogical and sociological areas of the life as a top class athlete. It also focuses on the experience and the management of conflicts or critical and important life-events as well as transitions from one passage to the next. In this context the athlete is asked about support from and satisfaction with the sport system with respect to the transition. Athletes were also asked whether they expected assistance or employment from the society or from the government because they sacrificed and worked hard for the honour of the country. Finally, athletes were asked whether they had acquired some key-qualifications such as teamspirit or high achievement motivation during their active time, which could be used to their advantage in postathletic life.

Participants

To assure the comparability of the results of the two studies, the sample had to be equally matched. Therefore, only male and female former Chinese top class athletes, who had participated as amateurs, semi-professionals or professionals at international competitions, Olympic Games or at Asian (Europe) or World Championships were selected. To get a quite representative cross-section, 250 athletes from nine different sports (judo, track & field, wrestling, rowing, shooting, swimming, ski, tennis and gymnastics) were questioned via mail. The German athletes chosen for this study were those who competed from the beginning to the middle of the 1980's. Because of the later opening to professional sports in communist countries, Chinese athletes chosen for this study competed from the end of the 1980's to the beginning of the 1990's. To give all athletes a sufficient time for their reintegration back into a "normal" life, all athletes were asked at least five years after their retirement from top performance.

Procedure

During an academic stay of the head of the research department of the Wuhan Institute of Physical Education at the Institute of Sport Science and Sport at the University Bw Munich in Germany, the design of the study and the questionnaire were developed. The "Athletic and Postathletic Questionnaire" (APAQ) was then translated by three independent working translators into Chinese and later re-translated into German.

Several Chinese sport organisations were contacted in order to elicit their support in contacting former top athletes. Questionnaires were then mailed to the participating Chinese athletes. Once the final questionnaires are received, the first evaluation of the data will performed. Some Results of the first phase of the study will be presented at the FEPSAC Congress.

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AN ACTION PSYCHOLOGY BASED TEACHING CONCEPT

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KEY WORDS

Teaching, coaching, action theory, teaching concept

INTRODUCTION

Many teachers in physical education and coaches who work with children and teenagers in particular, often lack sufficient social skills, concerning pedagogical or psychological competencies. Practical experiences made obvious a high demand for instruction and improvement. An improvement of the current situation could be achieved by special seminars at universities, schools, and national sports organisations. One way of diminishing those deficits could be through an application of an action psychology (see Hackfort, 1984, 1986; Nitsch & Hackfort, 1981; Nitsch 1986) based teaching concept.

This action theory oriented teaching concept considers the components of the action situation as a person–environment–task constellation, the triadic structure of action (that is the anticipation phase of action, the realisation phase of action, and the interpretation phase of action), subjective action determinants, the dimensions of teaching, as well as dimensions of sportive burdens and strains.

THEORY

Action situation

Team members, teams, and coaches act in a given environmental frame by focussing to solve, master, or accomplish a task set and are influenced by three burdens and strains (physical, psychological, social. Thus every sportive action is strictly connected with an action situation. The realised sportive action is an intentional organised behaviour. The situation of the action (action situation) reflects the current constellation of the acting person (e.g. the coach), the actual environmental condition (e.g. gym or court) and the specific task set (e.g. dribbling or running).

With respect to the person, substantial psychological components differentiate into motivational and emotional aspects of regulation of action and movement. The motivational component is primarily defined as the basic incentive of a given task or an extrinsically or intrinsically required goal. Athletes often reveal their emotional condition, for example, when reacting to points won or lost in competition.

The environment can be subdivided in material and social aspects. The material aspect of the environment may comprise, for example, the playing-field or the player's equipment. The social level is characterized by the interaction with persons from immediate environment (such as partners/team-mates).

The third component of the action situation is the task. The task can be differentiated into motor and mental aspects. An example of a motor demand is a sudden change of running speed or acceleration during technical exercise. An example of the mental aspect would be a requirement of concentration while fulfilling a specific role in a tactical situation during training.

Sequence model of action phases

Every action whether sportive or otherwise can be labelled with regard to time and processes in the different phases of action. Each phase of the triadic structure of the sequence model of action (Nitsch & Hackfort, 1981) is subdivided into two processes. In the anticipation phase of action, the circle of action regulation begins with cognitions in advance of action by an individual or team. These cognitions primarily enter the calculation and planning processes and relate to the basic components of the action situation. The components, person, environment, and task are divided into values competence and valence. A person values competence concerning his/her abilities and skills, the environment concerning its possibilities, and the ability to solve the task. Cognitions related to the valence are thoughts about the importance of the personal interests, the level of environmental stimulation, and the attraction of the task.

By completion of the anticipation phase, the second phase of the sequence model of action commences. In the realisation phase of action, the individual aims to fulfil the expectations and concrete intentions of the plans developed in the anticipation phase and transforms plans into manifest behaviour. This phase is subdivided into two processes, namely tuning and processing. The tuning process regulates the prerequisites of the action whereas the processing process focuses on the person during the intentional organised psychomotorical activity.

The final phase is the interpretation phase of action. Whether or not the results are considered positive or negative by the individual, they require controling and evaluation. The person must consider whether he/she was able to fullfil initial expectations and predictions regarding to the plans laid in the anticipation phase and executed in the realisation phase.

Dimensions of teaching

The dimensions of teaching can be subdivided into three fundamental competencies (Hackfort, 1985): subject-competence (competence in the specific subject area), mediation competence (competence with regard to the organization and regulation of the teaching/learning process), and social competence. Each competence inter- and intra-individually varies with regard to a given specific situation. As a result the scope of action and the degrees of freedom in acting are concerned with hightening the subject competence, growing mediation competence, and differentiation of social competence of the person.

ACTION PSYCHOLOGY BASED TEACHING CONCEPT

In the following table, the theoretical backround is outlined, combined and comprised. The action psychology concept will be explained in more detail as a poster at the congress.

TABLE 1. Action Psychology based Teaching Concept.

Structure of Action	Strain	Dimensions of Teaching
Anticipation phase Analysis of the training Development of a concept Alternative action concepts	**Physical, e.g.** Strength, velocity, perseverance, co-ordination, flexibility	**Subject Competence** General and specific knowledge of training preparation and realisation
Realisation phase Preparation of sufficient internal (psycho-physiological) and external (psycho-social) preconditions.	**Psychological, e.g.** Stress "negative" emotions "positive" emotions	**Mediation Competence** Methodological- didactical realisation of specific knowledge
Interpretation phase Analysis of competitions Declarations, consequences	**Social, e.g.** Parents, friends, club, coach, media, sponsors	**Social competence** Exchange of information Motivation

CONCLUSION AND PERSPECTIVE

Unlike the classical perspective of the teaching person, this action theoretical teaching concept includes in it's analysis the objective and subjective situation, and the perspective of the player as well as the perspective of the coach. It subdivides the teaching dimensions into subject-competence, mediation-competence and emphasises the often neglected social competence (Hackfort, 1984). As a result, specific situations and conditions can be treated in a more differentiated manner when based upon this conceptual framework. The action psychology based teaching concept suggests numerous connections for a more comprehensive preparation and realisation of physical education lessons and training courses. The evaluation of the practical use of this concept at present largely relies upon the procedure of video-based self-commentary (see Hackfort & Schlattmann, 1991). This procedure has already successfully been evaluated at a coaching instruction seminar in soccer (Schmidt, Jera, Beyer & Roschinsky, in press).

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THE USE OF MENTAL SKILLS BY TWO DUTCH NATIONAL TEAMS: SPEEDSKATING AND BOWLING.

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KEY WORDS

Mental skills, speedskating, bowling, descriptive research, effect of mental training.

INTRODUCTION

In 1996 the Dutch Skating Association requested mental training for their national teams. The mental training program was offered to the womens allround team, the mens allround team, the sprint team and the youth team. The aim was the Olympic Games of Nagano, 1998. The season of 96-97 was used to get to know each other and to teach the basics of the mental training. In 1991 the mental training program started for the Dutch Bowling Federation. All national teams, men, women, girls and boys, were offered a program. During these years in preparation of a tournament the intensity increased, that is there were more sessions and these sessions became an essential part of the training. In 1997 the men and women bowled for the European Championship in Nottingham, Great Britain.

The aim of this study was to get an insight of which mental skills are actually used by elite athletes.

METHOD AND PROCEDURE

To investigate the use of different mental skills the speedskaters and the female bowlers completed a questionnaire at an evaluation session after the tournament. Only the allround mens team of the Dutch Skating Association and the womens team of the Dutch Bowling Federation completed the questionnaires. The other teams did not have an evaluation session. .

The skills are breathing, relaxation, imagery of techniques, imagery of emotions, focusing, positive thinking, self-talk on techniques, and self-talk on emotions. The list differentiated between skills used in training and in competition. A Likert-scale (7) was used ranging from 'never' to 'always'. The 5 men of the allround mens team in speedskating completed the questionnaire, and 9 women of the female bowling team. For the speedskaters, a t-test was conducted, as well as correlations between the mental skills (see tables 1 and 2). To be able to make a comparison, this was also done for the members of the Dutch national womens bowling team (see tables 3 and 4).

To get a clear picture of the mental skills some examples of actions or statements for every skill are given. 1. Breathing is to consciously inhale and exhale to either become more calm or psyched up. 2. Relaxation is to tense and let go certain muscles in the body (Jacobson, 1938). 3. Imagery of techniques is the seeing and feeling of the technique of the sport inside the head (mind's eye). 4. Imagery of emotions is the visualisation of the feelings that accompany big matches or important moments in matches (Murphy & Jowdy, 1992). 5. Focusing is choosing one point of attention (Nideffer, 1986). 6. Positive thinking are general positive thoughts, like 'you can do it, trust yourself'. 7. Self-talk on techniques is accompanying the movements with statements about the movement, like in skating 'keep your knee above your ankle, your hip above your knee, ok it is going fine'. 8. Self-talk on emotions is making statements about the anticipated or actual feelings experienced, like 'you know you are gonna feel pressure, welcome it, not hate it' (Ellis, 1962).

RESULTS

TABLE 1. Mental Skills used by the Dutch Speedskaters in the Preparation of the Olympic Games in Nagano.

Mental skills in training and competition (1= never, 7= always, n = 5)	M	SD		M	SD
breathing in training	4.2	2.28	focusing in training	4.6	1.34
breathing in competition	4.6	1.82	focusing in competition	5.8	1.09
relaxation in training	3.6	2.07	positive thinking in training	3.8	.84
relaxation in competition	4.6	.55	positive thinking in competition	5.0	.71
imagery of techniques in training	4.6	1.95	self-talk on techniques in training	5.0	1.58
imagery of techniques in competition	5.8	1.09	self-talk techniques in competition	5.0	1.41
imagery of emotions in training	3.6	2.07	self-talk on emotions in training	4.4	1.14
imagery of emotions in competition	4.6	.55	self-talk emotions in competition	4.4	1.14

In table 1, mental skills used by speedskaters, no significant differences were found between training and competition. Only for imagery of techniques and focusing, there was a trend towards more use in competition than in training.

TABLE 2. Correlations between the Mental Skills used by the Dutch Speedskaters in the Preparation of the Olympic Games in Nagano.

Correlations between skills	r	correlations between skills	r
breathing in training self-talk on techniques in competition	.85	relaxation in competition self-talk on techniques in training	-.87
imagery of techniques in training imagery of techniques in competition	.89	relaxation in training imagery of emotions in competition	-.84
imagery of emotions in competition positive thinking in training	.81	imagery of emotions in competition self-talk on techniques in training	.87
imagery of techniques in competition focusing in training	.92	imagery of techniques in training self-talk on techniques in competition	.91

There was no significance (n=5), but every correlation above .80 is mentioned.

Table 2 shows the correlation between the different mental skills. The idea was that perhaps some skills correlated, especially in training and competition. For the speedskaters no significant correlations were found. What is worth mentioning is the trend for negative correlations. Between relaxation in training and imagery of emotions in competition a trend for a negative correlation can be seen, that is the more relaxation is used in training, the less imagery of emotions in competition is used. The same is the case for relaxation in competition and self-talk on techniques in training, that is the more relaxation is used in competition, the less self-talk on techniques in used in training.

TABLE 3. Mental Skills used by the Dutch Female Bowling Team in the Preparation of the European Championship in Nottingham.

Mental skills in training and competition	M	SD		M	SD
breathing in training	3.5*	1.13	focusing in training	4.6**	1.67
breathing in competition	5.5*	.72	focusing in competition	5.6**	1.01
relaxation in training	3.9	2.14	positive thinking in training	3.6**	1.73
relaxation in competition	5.0	1.12	positive thinking in competition	5.9**	.78
imagery of techniques in training	4.1*	1.36	self-talk on techniques in training	5.2	1.85
imagery of techniques in competition	5.0*	1.12	self-talk techniques competition	6.4	.72
imagery of emotions in training	2.7*	.97	self-talk on emotions in training	3.5*	1.87
imagery of emotions in competition	4.2*	1.64	self-talk emotions in competition	5.6*	.86

* $\alpha = .01$; ** $\alpha = .05$ (1= never, 7= always, n = 9)

In table 3, mental skills used by female bowlers, 4 significant (.01) differences were found between the use in training and in competition. These four skills were breathing, imagery of techniques, imagery of emotions and self-talk on emotions. Two others were significant (.05), focusing and positive thinking. Although self-talk on techniques in competition was used very often, no significant difference was found with self-talk on techniques in training.

TABLE 4. Correlations between the Mental Skills used by the Dutch Female Bowling Team in the Preparation of the European Championship in Nottingham.

correlations between skills	r	correlations between skills	r
breathing in training self-talk on techniques in training	.77	breathing in training imagery of techniques in competition	.79
relaxation in training self-talk on emotions in training	.76	relaxation in training positive thinking in training	.76
relaxation in competition imagery of techniques in competition	.82	imagery of techniques in training self-talk on techniques in competition	.77

($\alpha = .01$)

Table 4 shows the correlations for the female bowlers. Here 6 significant correlations are found. They can be divided into correlations in training, in competition, and between training and competition. In training, there is a correlation between breathing and self-talk on techniques, relaxation and positive thinking, relaxation and self-talk on emotions. In competition, only between relaxation and self-talk on techniques. For breathing in training and imagery of techniques in competition, and imagery of techniques in training and competition there were also significant correlations.

DISCUSSION

In this descriptive study was investigated which mental skills are actually used by elite athletes. The skills used often by speedskaters in competition are imagery of techniques, focusing and positive thinking. The female bowlers used most in competition: positive thinking, focusing, self-talk on emotions, breathing, imagery of techniques and relaxation. Some of these skills correlate, but how they influence each other is not yet clear.

The elite athletes do not use the mental skills always in training and competition. Some of the skills are integrated in the behavior of the athletes, but mostly the athletes forget to use the skills. They just don't think of them. When asked they can recall some of the skills they use. In some cases they don't realize themselves that it is a mental skill they are using.

Another interesting question is how these skills influence performance. The results in competition for both teams were extremely well (at the Olympic Games and the European Championship), but to what extend can this be accounted for to the mental skills used by these athletes? The effect of mental training on performances needs further research.

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AGGRESSION AND VIOLENCE AMONG SPORTING AND NON-SPORTING YOUTH

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Key Words: Violence, Aggression, Education, Sport,

Introduction

Research studies concerned problems of violence in sport (Slepička, Slepičková 1995) give evidence documenting the growth of violence mainly in sport games. Analysing the causes they come to an agreement of importance of social environment and climate (surrounding people). Youth is there stressed as the most sensitive part of life and children are able to imitate sports idols easily and take over values and norms of their closest social surroundings. Everyone should obtain positive values, norms acting against usage of violence as the means of achievement goals from childhood.

But sports practise also brings examples of situations when coaches, parents and teachers in the effort to win either tolerate or support sports aggression. These given facts are leading to the followed questions: 1. What opinions do young athletes have on violence and aggression in sport? 2. Do adolescent athletes tolerate aggression if it brings success?

These and other similar questions were standing at the back ground of the intention to research problems of aggression in sport of adolescents, the results of the research we partially present bellow.

Method and Procedure

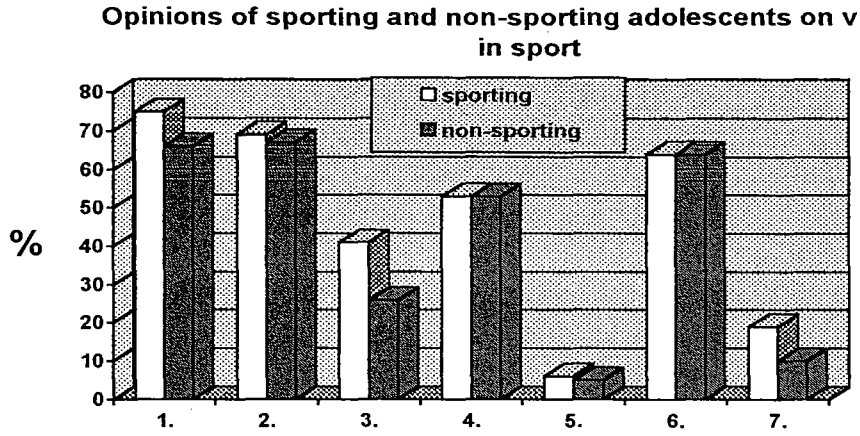
In accordance with research intentions we used questionnaire investigation as a basic method and results were expressed in EPINFO programme form using first and second degree of social analyses.

The sample was formed by 337 students from Prague and out of Prague secondary schools and apprentice schools (201 girls, 136 boys). Half of them were students of secondary schools (grammar schools). 160 respondents (47,5%) are regularly sporting (organised) students: 28% out of total number practise competitive sports, 19% attended regular non competitive forms of sport at least once a week. 177 students (52%) reported that they were engaged only in the school physical education lessons. The age of respondents ranged from 15 to 18 years.

Results

We would like to present just some results, which we believe are the most interesting. Results documenting opinions of respondents whether violence should be a part of sports at all performance levels. Vast majority of respondents (65%) thinks that sports without violence and aggressiveness would not lose attractivity neither for participants nor for spectators. More than three-quarters of the sample (78%) expressed opinion that it was possible to be successful in sport even without using aggression. We also consider as very interesting comparison between opinions of regularly sporting athletes (competitors) and students with minimum of sport activities (only with school physical education lessons)

Figure 1

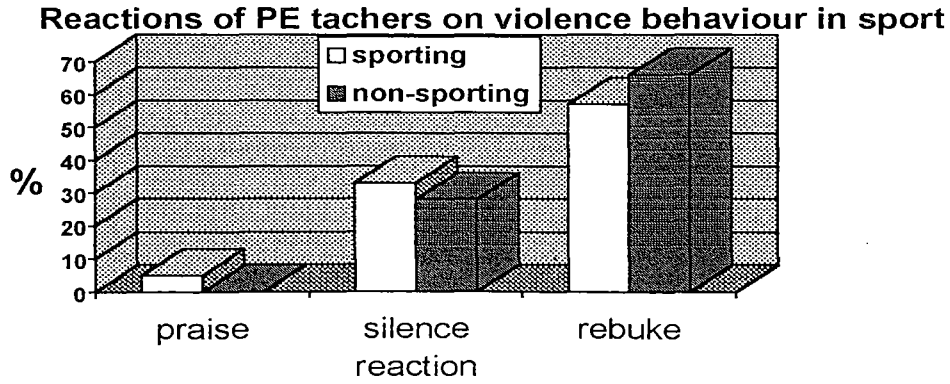


Legend
1. Violence is a current component of some sports
2. In some sports it is impossible to avoid sometimes impairments of opponents
3. Violence behaviour may appear as a revenge for the previous aggression of an opponent
4. Violence behaviour should be regarded as a component of sport
5. It is not possible to be successful in sport when keeping the rules
6. There should be more rules diminishing violence in sport
7. Sport would lose its attraction without violence and aggressiveness

It is evidently shown that there are not great differences in opinion on violence in sport between competing athletes and non-sporting ones. The most expressive difference is in understanding of violence as a component of sport.

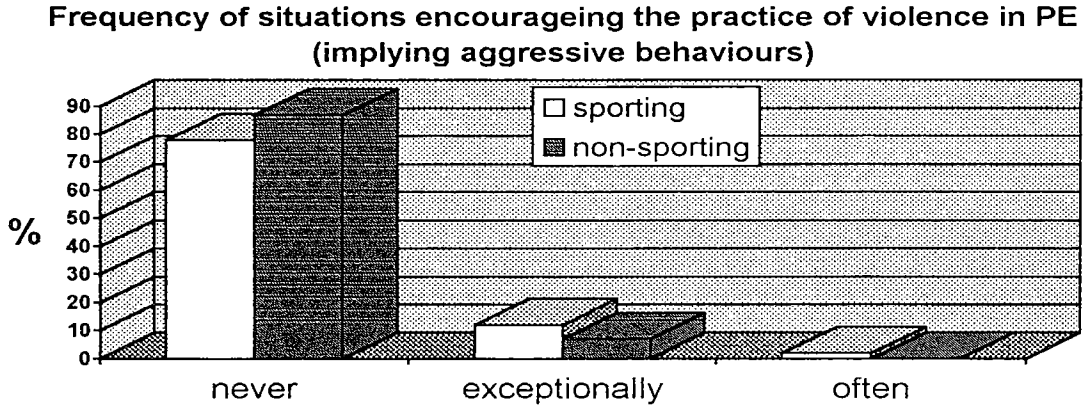
All watched students have passed through school physical education. What influence on aggression in sports have PE teachers? The results show that (fig.2). PE teachers mostly did not tolerate manifestation of violence in lessons of physical education. It is also interesting that only 6% of students would prefer harder regulation of violence by keeping the rules or making them stricter. Only 31% of the sample answered that the rules were always strictly kept and the teacher checked them. On the contrary 66% reported that rules are kept only sometimes, not always, according to circumstances. Such a situation is not very favourable, mainly if we realise that the rules exist as a system of external pressure of social surroundings.

Figure 2



Sporting students more often express opinion that teacher or coach may support manifestation of aggression if a foul brings an advantage and solve the problematic situation. Or that fouls are not so frequently watched and less often rebuked by PE teachers or coaches.

Figure 3



It is evident that sporting students more often faces situations where violence and aggression may be learnt to use intentionally. It is also caused by the fact that they take part in a training process where frequency of such situations is higher. That is why the number of those who mentioned frequent training of violence usage was higher.

Lets have look what is according to respondents the role played by parents, sport idols and mass media (mainly TV). The attitude of parents to manifestation of violence in sport could be presented by following results. 50% of parents are indifferent to such manifestations. 39% think it is possible to use violence and roughness as a revenge for the previous aggression of opponents. Comparatively small sample of parents (8,7%) seemed to our respondents as advocates of an opinion that aggression and violence should not be used in any situation. Indifference of parents to violence manifestations together with already mentioned tolerance of PE teachers to rules breaking do not present optimal social climate for prevention of these phenomena among young generation.

Conclusion

Violence problems are very often discussed on general level. It shows the enormous growth of aggression and violence manifestations in the whole society. The same situation appears in sport, where the growth of aggression is also evident. The influence of the nearest social surroundings - family and school should be considered the most important. Significance of family and school for forming attitudes to violence manifestations has also appeared as principal even in our study.

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VALUE ORIENTATION OF PHYSICAL ACTIVE AND NON ACTIVE CHILDREN AND YOUTH

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Key Words: Values, sport participation, youth.

INTRODUCTION

Values are considered as preferred ways of being or end state of existence, can be treated as integrated motivational types that form predictable relations with various behaviour. Values in some ways determine attitudes towards specific human behaviour. They influence socialisation process and determine value of different human activities. Value can be considered as a specific relationship of object toward subject, defined by meaning and purpose, which the object has for satisfaction of needs, attitudes and interests of subject in its individual and sociological context (Geist 1992).

Two distinct tendencies in value preferences have appeared in the society recently. Materialistic orientation represents preference of material values, values like individualism and hedonism are connected with high efficiency. Postmodern orientation is reaction on previously preferred values. Searching for alternatives, for new ways, for new values inclines to humanistic ideals, to understanding of self and to help to others (Diegel 1995).

In 1998, we realised large research on life style of youth (Slepička & al. 1998). Its sociologically oriented part was concentrated on values and value orientation. Our study is dealing with the question which values are preferred in the youngest part of Czech population, children and youth.

METHODS AND PROCEDURES

As a basic diagnostic method, we used the standardised questionnaire completed by interview. We present results of 737 respondents (442 boys and 295 girls). One quarter of respondents was from basic schools (age 11-14, average age 12,8 years). The rest were a secondary school student (age 15-20, average age 16,3 years), roughly 25% from grammar schools, technical schools and apprentice schools. Value system was analysed according the age, sex, and participation in sports. Percents, weigh means and Kruskal-Wallis test were used in the processing.

RESULTS

The order of values is shown in figure tab. No. 1. Respondents put health as the most important value in their system. But this positive opinion and attitude often does not mean agreement with their real behaviour. This was proved by other questions aimed to a care about own health. The following values represent the social relationships and close social environment. Education is evaluated quite highly and indicates changes of attitudes of young people towards this value. Material values (money, success, popularity and hedonistic values) were not much important for this age group. We found the alarming fact that the morality is for our respondents the least important value.

Table 1 Preference of values in groups of boys and girls

	girls		boys		total	
order	value	mean	value	mean	value	mean
1	health	1,86	health	1,88	health	1,87
2	family**	3,98	family **	3,26	family	3,69
3	friendship**	4,17	friendship **	3,37	friendship	3,85
4	education	4,78	education	4,95	education	4,85
5	love and sex	5,01	love and sex	5,34	love and sex	5,14
6	money**	5,99	certainty	5,64	certainty	6,09
7	certainty**	6,39	money **	7,04	money	6,42
8	success**	7,22	excitement	7,69	success	7,44
9	excitement	7,34	success**	7,75	excitement	7,48
10	morality	7,76	morality	7,85	morality	7,80

Note: In all tables - ** difference with p=1%
* difference with p=5%

Comparing values between sex groups (tab. No.1), non-materialistic values are more important for girls. Boys emphasised more material values, which could be connected with stronger tendency to succeed and to reach higher reputation. The value importance also differs according to age (table No.2). Younger respondents prefer family, older ones stress importance of sexual relationship. After consideration of mean of age of respondents approximately 16 we can assume that they understand family as their current family not family in the meaning of reproduction. Differences dependent on age also appeared inside the sex groups, where adolescents prefer value of love and sex. Younger boys evaluate morality more than the older ones. This declining importance of morality according the age was also found in other researches (e.g. Slepičková, Slepička 1991) and can be explained by negative examples from adults world, which are often accepted in a society.

Table 2 Order of values in relation with age of boys and girls

	boys				girls			
age	11-14		15-20		11-14		15-20	
order	value	mean	value	mean	value	mean	value	mean
1	health	2,13	health	1,77	health	1,63	health	2,00
2	family	3,70	family	4,06	family	3,01	friendship	3,35
3	friendship	4,28	friendship	4,14	friendship	3,42	family	3,37
4	education	4,66	love**	4,70	certainty	5,07	love**	4,50
5	money	6,05	education	4,82	love**	6,32	education	4,88
6	love**	6,10	money	5,98	education	5,11	certainty	5,91
7	certainty	6,12	certainty	6,47	money	7,27	money	6,94
8	success	6,99	success	7,29	success	7,55	excitement	7,75
9	excitement	7,09	excitement	7,42	excitement	7,57	morality	7,81
10	morality **	7,15	morality **	7,94	morality	7,93	success	7,85

Sport environment together with many other factors influence forming of value system. For that reason we focused on the relationship between values and participation of respondents in sports activities (table No. 3). Differences between groups were found in values: health, certainty, success and excitement or adventure. Sport participants consider health more important value than non-sporting respondents. From other results of our research, there was explained that good health enables the competitive athletes to do active sport however for the

non-competitive participants, sport activity presents the mean for achieving good health. Non competitive athletes did not emphasize success and popularity as much as competitors and no-sporting respondents. Surprisingly, success has the higher value for non-sporting. This can be caused by their need for success, which they do not reach enough in their lives. This argument is supported by fact that non-sporting youth were (was) less successful for example in studying results.

Table 3 Values and sport participation

participation	competitive		non competitive		none	
order	value	mean	value	mean	value	mean
1	health **	1,56	health **	1,98	health **	2,21
2	family	3,77	family	3,69	family	3,82
3	friendship	3,91	friendship	3,80	friendship	3,93
4	education	4,66	education	4,96	education	4,66
5	love and sex	5,23	love and sex	5,03	love and sex	5,59
6	money	6,26	certainty **	5,93	money	5,97
7	certainty **	6,44	money	6,55	certainty**	6,15
8	success *	7,19	excitement**	7,32	success *	6,87
9	excitement **	7,77	success *	7,64	excitement**	7,43
10	morality	7,79	morality	7,78	morality	7,86

Other differences were found in value certainty and excitement or adventure between groups of competitive and recreational athletes.

Surprisingly was not found any significant difference between respondents who participate in sports clubs and respondents who practise sports out of sport organisations. It can be caused by lack of trainers emphasise on values like morality, friendship and health or by negative effects of outside environment which suppress the influence of trainers.

CONCLUSION

Our results show that children and adolescents prefer more idealistic values, connected with post-modern age. We can not say if it is caused by reaction to the situation in society or if it is usual trend of young generation in every historical period. Girls incline to human relations, which is typical for female population, boys are more focused on achievement and success. Surprising is the low rate of morality among values. Differences according to relationship toward sports activities can be influenced by the meaning of values as goals or as a mean of individuals. Competitive athletes prefer health to be able to reach better results; they incline to risking more than the others do. Non competitive athletes prefer more experience of excitement but do not incline to risk. This reality should be respected in organising and creating of sports programs for children and youth.

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OBSERVATION OF PHYSICAL EDUCATION TEACHER FEEDBACK FROM THE MOTIVATIONAL CLIMATE PERSPECTIVE

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KEY WORDS: motivational climate, physical education, observation, feedback

INTRODUCTION

School physical education (PE) plays an important role in directing children to adopt physically active lifestyles, since PE is a compulsory subject in school curriculum. Positive early experiences in PE lessons are of major importance for children in adopting a physically active life-style. The motivational climate is defined as a situationally-induced psychological environment directing the goals of an action (Ames 1992), and is found to have an impact on cognitive, affective and behavioral outcomes relevant for motivation. If children are guided towards self-reference and are rewarded for trying, it indicates a task-involving climate. If the children are rewarded for better performances compared to those of others, winning is stressed and mistakes are treated negatively, it refers to an ego-involving climate (Ames 1992).

The motivational climate is defined as a situationally-induced environment directing the goals of an action (Ames 1992), and is assumed to have an impact on cognitive, affective and behavioral outcomes relevant for motivation of individuals who engage in achievement contexts. If children are guided towards self-reference and are rewarded for trying, it indicates a task-involving climate. If children are rewarded for better performances compared to those of others, winning is stressed and mistakes are threated negatively, it refers to an ego-involving climate (Ames 1992).

The role of PE teacher is influential, since the climate created mainly by her/him has a great impact on how children perceive their physical education class. Teacher feedback is one of the most influential ways to shape the motivational climate. The psychological meaning of feedback plays a substantial role in the perception of the motivational climate. Giving appropriate feedback plays an important role in enhancing students' self-perceptions and intrinsic motivation in physical education settings.

Observing and analyzing teacher feedback is of major importance to obtain data and information how to change the climate of the PE lessons effectively. Observation may give information about motivational climate in addition to assesment of the perceptions of the pupils. An observation instrument is of great value for teacher/coach education giving them insight in their own behaviour and the impact this can give to the students. Observation can also be used in analyzing the effects of motivational climate interventions. The use of a systematic observation instrument is therefore indispensable. Although several observation instruments are available to observe and analyze general teacher behaviours, none of them is specifically aimed at observing the salient motivational climate in physical education classes.

The aim of the present pilot study was to devise a teacher feedback observation scale. In order to contrive such an instrument, information is needed about what dimensions of teacher feedback are characteristic for both task and ego-involving climate.

METHOD AND PROCEDURE

Finnish nineth grade, 15-year-old male students (n=87) from four Jyväskylä region schools completed a modified version of the PMCSQ (Seifriz, Duda & Chi 1992). Additionally, a systematic observation scale was used for the analysis of teacher teacher behaviors and, more specifically the teacher feedback in PE classes from a motivational climate point of view. The observation of the twelve different PE lessons of four male teachers was done by means of videorecording. Several task and ego-involving teacher feedback categories (view of errors, social comparison, attribution, process/outcome orientation, behavior/personality related, and target group) were analyzed along with categories of the level of the estimated psychological importance to the pupils (private/public, specific/general, positive/neutral/negative, immediate/delayed). Thus, every feedback unit during the PE lessons was coded according to the feedback observation system (Table 1) and all observed units were given a task or ego climate label.

TABLE 1. Observation Scale for the Analysis of Teacher Feedback Behaviors in Physical Education Classes from the Viewpoint of Motivational Climate.

	"Value categories"																	
	Target				Precision				Affect						Timing			
	private		public		specific		general		positive		neutral		negative		immediate		delayed	
Task/ego categories	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E
View of errors																		
- accepted																		
- not accepted																		
Comparison																		
- self-referenced																		
- normative																		
Attribution																		
- effort																		
- ability																		
Content focus																		
- process																		
- outcome																		
Direction																		
- behavior																		
- personality																		
Target																		
- individual																		
- small group																		
- whole class																		

T= task-involving feedback unit
E= ego-involving feedback unit

RESULTS

The inter-observer reliability between two independent observers of the teacher feedback behaviors at sum level was 84 percent. According to the PMCSQ assessments, the 12

observed lessons were classified into perceived high task/high ego climate (n=2 lessons), high task/low ego climate (n=4) and low task/high ego climate groups (n=6) using median splits. No lessons were categorized into the low/low group. The concurrent validity of the feedback observation scale was analyzed by the associations of observed task and ego -involving feedback behaviors with the pupils' perceptions of the task and ego-involvement during the PE classes. An average of 14 percent (18.5%, 12.7%, and 10.4%, respectively in the three groups of task/ego climate lessons) of all observed teacher behaviors consisted of feedback. Specifically, task-involving observed feedback behaviors occurred more, and ego-involving feedback less during the high task/low ego climate lessons than in the other two groups (Table 2). The differences were not statistically significant, probably due to the low number of the observed lessons.

TABLE 2. The Percentage of Observed Task and Ego-involving Teacher Feedback Units in Different Motivational Climate Groups.

Motivational climate group	Observed teacher feedback units (%) Task-involving	Ego-involving	ratio (task/ego)
High task/high ego	72.3	27.7	2.6
High task/low ego	88.2	11.9	7.4
Low task/high ego	78.9	21.1	3.7

DISCUSSION AND CONCLUSIONS

Although the results of this pilot study can be regarded as preliminary, this study reinforced the possibility to analyze PE teacher feedback behaviors by the means of observation. The observation scale was found to be reliable, although the validity was not confirmed, probably due to the low number of analyzed PE lessons. The results can be regarded as promising for those interested in developing practical methods for teacher and coach education. The observation system may also be of great value in analyzing the effects of interventions aiming at altering the motivational climate of different sport contexts to be more task-involving, which line of research is of growing interest in sport and exercise psychology. In future, more data is needed in order to confirm the vague, but theoretically logical findings of this study. It is also a challenge in future to enlargen this systematic feedback observation approach into other dimensions of motivational climate, like those presented in the TARGET model of Epstein (1988).

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Round Table Discussion: Peer Relationships and Youth Physical Activity Involvement

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KEYWORDS: friendships, motivation, peer acceptance, physical activity, social influence

Physical activity yields numerous physical and psychological benefits to children and adolescents (see Horn & Claytor, 1993; U.S. Department of Health and Human Services, 1996). Unfortunately, as children age and move into the adolescent years there is a substantial decline in physical activity involvement. This is evidenced by diminishing participation in organized sport (Ewing & Seefeldt, 1996), lower physical education enrollments (U.S. Department of Health and Human Services, 1996), and overall physical activity reductions (Pate, Long, & Heath, 1994). Because of this trend, sport and exercise psychologists are interested in understanding what motivates youth to pursue an active lifestyle.

Descriptive research has been conducted to examine youth motives in the sport domain. Participation motives of particular salience to youth include the desire to learn and improve skills, have fun, be fit, and develop friendships and affiliations (e.g., Weiss & Petlichkoff, 1989). Youth leave sport because of other interests, work, time constraints, lack of fun, and lack of ability. Overall, this research suggests that competence issues, affiliation needs, affective states, and fitness concerns are of primary import to youth sport participants. These motives are represented in a number of theoretical perspectives on motivation in the physical domain.

Common to most of these theoretical perspectives is the critical role of social influence in motivated behavior. For example, research grounded within cognitive evaluation theory (Deci & Ryan, 1985), achievement goal theory (Ames 1992; Nicholls, 1989), Eccles' (Eccles (Parsons) et al., 1983; Eccles & Harold, 1991) expectancy-value model of motivation, and Harter's (1978, 1981) competence motivation theory suggest that significant others can influence physical activity motivation. Unfortunately, the bulk of this research has emphasized the role of significant adults (e.g., coaches and parents) while virtually ignoring the importance of a youngster's peers. This is surprising given evidence that peers are critical to the formation of competence perceptions (see Horn & Amorose, 1998), that elements of friendship relations contribute to physical activity-related affect (e.g., Duncan, 1993), and that the development of friendships and affiliations is consistently cited as an important participation motive.

Research conducted by developmental and educational psychologists has focused either upon acceptance within the peer group or friendship relations (Bukowski & Hoza, 1989). Peer acceptance research explores status or popularity within the peer group while friendship research explores the number, type, and quality of dyadic relations. Research in the physical activity setting has also followed these two paths. For example, Weiss and Duncan (1992) examined the relationship between physical competence and peer acceptance among seventh-graders. They found a significant relationship between sets of variables representing these constructs. Individuals higher in perceived and actual physical competence perceived themselves as more

accepted by peers and were rated higher by their teachers on peer acceptance. Research by Duncan (1993) in the physical education setting showed that higher perceptions of companionship and esteem support (i.e., friendship features) among seventh- and eighth-grade students are associated with more positive affect regarding physical activity. Weiss, Smith, and Theeboom (1996) uncovered numerous positive and negative dimensions of sport friendships in interviews of children and adolescents. Dimensions uncovered by these researchers include companionship, intimacy, loyalty, conflict, and conflict resolution, among others. Finally, Smith (1997) found that perceptions of peer acceptance and friendship in the physical activity domain among seventh- and eighth-grade youth predict affective, cognitive, and behavioral indices of physical activity motivation. In sum, initial efforts examining peer relationships in the physical activity setting suggest that friends and the larger peer group are important contributors to the physical activity experience.

The purpose of this round table session is to discuss the theoretical role of peers in physical activity involvement, research that has examined peer relationships in the physical activity setting, and future directions for research on this important topic. Special emphasis will be placed on methodological challenges in peer relationships research. Also, practical implications of peer relationship research will be discussed. The author will present his own ongoing research program that is designed to better understand how friends and the larger peer group are linked to physical activity motivation.

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THE RELATIONSHIP OF GOAL ORIENTATION AND COMPETITIVE CLIMATE TO SPORTSMANSHIP ATTITUDES AND THE PERCEIVED LEGITIMACY OF INTENTIONALLY INJURIOUS ACTS.

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KEY WORDS: Achievement goals, sportsmanship, injurious acts, competitive climate.

INTRODUCTION:

Recent research has explored social cognitive perspectives to further the understanding of sport related cognition, affect and behaviour (Roberts, 1992). The basic premise in these investigations is that personal meaning is the critical factor influencing achievement-related strivings. Nicholls (1989) suggests that people give meaning to an activity through different goal perspectives. Those endorsing a strong task orientation strive for personal mastery of the activity, maximise the amount of effort put forth, and remain unconcerned about social comparison. Conversely, those endorsing a strong ego orientation strive to demonstrate high ability by establishing superiority over opponents and winning (Roberts, 1992; Nicholls, 1989).

In addition to giving meaning to the activity, Nicholls (1989) suggests that dispositional goal orientations are consistent with perceptions of what is acceptable behaviour in that context. Nicholls contends that "...a preoccupation with winning may well be accompanied by a lack of concern about the justice, fairness, and the welfare of opponents in competitive situations...When winning is everything, it is worth doing anything to win" (p.133). Therefore, in order to reach their goal of demonstrating ability, athletes who are high in ego orientation are more likely to demonstrate unfair and aggressive acts. Conversely, because the goal of an athlete who is high in task orientation is to improve their own performance rather than demonstrate competence, the athlete is less likely to demonstrate unfair or aggressive behaviours.

Duda, Olson and Templin (1991) provided empirical support for Nicholls (1989) theoretical predictions. Canonical correlation analysis revealed that task orientation was negatively associated with the endorsement of cheating and positively related to approval of sportsmanship acts. Conversely, ego orientation was positively related to cheating, legitimacy of non-physical intimidation and injuring an opponent so they miss a game/entire season.

Previous research has also identified that the structure and demands of a learning environment can evoke different goal perspectives (Ames, 1992). For example, in an environment where social comparison is emphasised (i.e. competition), individuals will be more likely to adopt an ego orientation and subsequently, unsportsmanlike / aggressive behaviours may be exhibited. Research must therefore consider the context in which behaviour takes place.

The purpose of this study was to test Nicholl's (1989) assertions regarding the relationship of goal orientations and competitive climate to sportsmanship attitudes and perceptions of the legitimacy of injurious acts in training and competitive rugby union contexts. It is hypothesised that: (a) Task orientation will be positively associated with fair play and negatively associated with the endorsement of injurious acts, (b) Ego orientation will be negatively associated with fair play and positively associated with the endorsement of injurious acts and (c) Endorsement of intentionally injurious acts will be greater in competitive versus training contexts.

METHOD:

Subjects: Participants (N = 153) were male rugby union players from two teams in Southern England. Participants ages ranged from 13 to 26 years (M = 17.3, SD = 2.7) and all had been competing in rugby union for between 1 and 15 years (M = 4.9, SD = 2).

Instruments & Procedures:
The participants responded to a questionnaire comprising the following instruments:(a) Task and Ego in sport questionnaire (TEOSQ, Duda & Nicholls, 1992), (b) a rugby-specific version of Bredemeier's (1985) Continuum of Injurious Acts (CIA) for both training and competitive contexts, and (c) a rugby-specific revised version of the Competitive Attitude Scale (CAS; Lakie, 1964). After obtaining informed consent from all the subjects, the questionnaire was administered to the subjects during a training session at their respective clubs.

RESULTS:

Factor Analysis of Sportsmanship Questionnaire
A principle components analysis with an oblimin rotation was conducted on the responses to the sportsmanship attitude questionnaire. Two factors emerged with an Eigenvalue greater than one and accounted for 56.2% of the variance. However, after examination of factor interpretability, item loadings and cross-loadings, and a scree plot, a one factor solution was adopted. 8 items reflecting illegal and legal ploys performed by players loaded on Factor 1 and accounted for 45.5% of the variance. This factor was labelled 'unsportsmanlike play' (Alpha = .82).

Relationship Between Goal Orientation and Sportsmanship Attitudes
To test Nicholl's (1989) assertions, a multiple regression analysis was conducted. The goal orientations were entered as a block to predict sportsmanship attitudes. Collectively, task and ego orientations significantly predicted sportsmanship attitudes ($F=8.89$, $P<.001$) and accounted for 10% of the sportsmanship attitudes variance. Furthermore, an examination of the standardised regression coefficients indicates that ego orientation was negatively associated with sportsmanship attitudes, conversely, task orientation was positively associated with sportsmanship attitudes.

Relationship Between Goal Orientation and Legitimacy of Injurious Acts Judgements
Canonical Correlation analysis was used to determine the multivariate relationship between goal orientation and legitimacy judgements. The canonical analysis revealed two significant functions (Wilks' Lambda = .606; canonical correlations were .48 & .45 for functions 1 and 2, respectively). With respect to function 1, a strong positive emphasis on task orientation related to a moderate disapproval of; minor (.30) and physical (.30) intimidation in a competitive game, injuring an opponent in training so they miss the rest of the game (.31) and/or season (.45), and moderate approval of physical intimidation in training (-.36) and injuring an opponent in a competitive game so they miss the rest of the season (-.44). Additionally, an emphasis on task orientation related to a very strong approval of injuring an opponent in a competitive game so they miss the rest of the game (-.96). The canonical loadings that emerged for function 2, revealed that a strong, positive emphasis on ego orientation related to a moderate disapproval of injuring an opponent in training so they miss the rest of the season (.31), and a moderate approval of minor intimidation in a competitive game (-.41). Additionally, an emphasis on ego orientation relayed to a strong disapproval of injuring an opponent in training so they miss the rest of the game (.66), and a strong approval

of physical intimidation in training (-.57) and injuring an opponent in training so they miss a few minutes (-.98).

Competitive Climate Differences in Legitimacy Judgements

Related 't' tests were used to determine differences in legitimacy judgement scores in training versus competitive situations. The results highlighted significant differences between minor intimidation ($t = -4.15$, $p < .001$), injuring an opponent so they miss a few minutes ($t = -5.11$, $p < .001$), rest of the game ($t = -4.09$, $p = <.001$) and rest of the season ($t = -4.53$, $p < .001$) in a competitive situation compared to a training situation.

DISCUSSION AND CONCLUSIONS:

The purpose of this study was to test Nicholls (1989) notions regarding the role of dispositional goal orientations and competitive climate to sportsmanship attitudes and perceptions of the legitimacy of injurious acts in rugby union. Multiple regression analysis indicated that dispositional achievement goals were related, in the hypothesised direction, to sportsmanship attitudes. These results support the proposed hypothesis but as the variance accounted for was limited (10%) it is suggested that other dispositional factors influencing attitudes and values may account for additional portions of the sportsmanship variance and therefore warrant further investigation. Furthermore, situational factors that were not measured in the present study may also influence sportsmanship behaviour. Second, the results of the canonical correlation analysis suggest that dispositional achievement goals are orthogonal (-.21), and somewhat related in the hypothesised direction, to perceptions of the legitimacy of injurious acts in rugby. Finally, the related-t tests indicated that contextual factors play an important role in these legitimacy perceptions. More specifically, these results suggest that Bredemeier's (1985) notions of "contextual morality" and Ames's (1992) notions of the potency of situational goals may be an important direction for future research. The findings of this study suggest that situational goals rather than a particular disposition, may be more salient in determining "appropriate" behaviours in sport. In summary, these results render partial support for Nicholls (1989) proposed relationship between achievement motivation and sportsmanship attitudes and therefore, further investigation of this proposed relationship appears warranted.

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The Assistant Coach as Purveyor of Expectancy Information: Implications for Athlete Performance

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KEY WORDS

Expectancy Theory, Assistant Coaches, Intercollegiate Athletics

INTRODUCTION

The self-fulfilling prophecy, or expectancy theory, posits that a coach's expectation of athlete ability can serve as a prophecy that may influence athlete behavior (Solomon, Golden, Ciapponi, & Martin, 1998). Through personal (gender and age) and performance cues (past performance and effort) coaches develop expectations which directly impact coaching behavior (Horn, Lox, & Labrador, 1998). In the expectancy cycle, coaches' expectations and concomitant behaviors become predictive of athletes' future behavior. What is lacking in this conceptualization is the role of a third type of impression cue, that of personality. For example, how does coaches' expectations of athlete confidence influences subsequent behavior? Solomon (April, 1998) attempted to address this limitation by examining the predictive capabilities of performance and personality expectancies on athlete performance. Among a sample of eight head coaches and 115 athletes, coach's expectation of athlete personality, in this case confidence, predicted athlete performance.

Another major omission in the expectancy theory literature is the role of assistant coaches in the self-fulfilling prophecy cycle. Solomon and her colleagues (1996) determined that while head coaches offered differential feedback to high and low expectancy college athletes, assistant coaches were more equitable in their treatment of athletes. It was concluded that assistant coaches might be the conveyors of positive prophecies for all athletes, regardless of their perceived or actual athletic ability. Assuming that assistant coaches play important roles on college athletic teams, the purpose of this investigation served to identify what types of assistant coach impression cues (performance or personality) might best predict actual athlete performance. Specifically, are performance impression cues or personality impression cues more likely to predict athlete performance?

METHOD AND PROCEDURE

Subjects

Eight Division I intercollegiate athletic teams were invited to participate in this study. A total of 142 athletes and 19 assistant coaches from team, dual, and individual sports participated in this study.

Measures

Two measures were used to assess the performance and person expectancy variables. The Expectancy Rating Scale (Solomon, 1993) was utilized to assess coach expectations of athlete ability. The Trait Sport Confidence Inventory (Vealey, 1986) was used to measure athletes' confidence in their own abilities and assistant coaches' confidence in their athletes' abilities. The wording of the TSCI was modified slightly so that coaches' perceptions of each athlete's confidence level could be obtained. For each team, objective performance data were obtained for the regular season from the athletic department. The data was tabulated to express each athlete's performance contributions over the course of the season. Performance data were converted to z-scores to allow for logical comparisons.

Procedures

Support from the athletic director and coaches was obtained. Athletes were issued a consent form, demographic measure, and the Trait Sport Confidence Inventory (Vealey, 1986). All assistant coaches completed a consent form and two instruments: a modified version of the TSCI (Vealey, 1986) and the Expectancy Rating Scale (Solomon, 1993) for each athlete. Questionnaires were administered between the first third and half of the regular competitive season.

RESULTS

Assistant Coach Expectations and Athlete Performance

A multivariate regression analysis was conducted to determine which impression cues best predicted athlete performance. The overall regression indicated a significant source of performance explanation among the three variables, $R^2 = .25$, $p < .001$, explaining 25% of the variability in performance. The partial correlations shown in Table 1 represent the relationships between each predictor and the outcome while controlling for the effect of all remaining predictors (as a comparison, note the zero-order correlations). These results show that assistant coach evaluation of athlete performance ability was the only significant predictor of performance once other predictors were kept constant.

TABLE 1. Partial Correlation and Zero-Order Correlation Coefficients Among Predictor and Outcome Variables

	Performance	
	Partial Correlation	Zero-Order Correlation
Performance Cue		
Athlete Ability	.26**	.50**
Personality Cues		
Coach Confidence	.06	.40**
Athlete Confidence	-.02	.03

** $p < .01$

DISCUSSION AND CONCLUSIONS

Contrary to findings on head coaches, performance impression cues are more likely to predict athlete performance than personality impression cues. The implications raised from this study provide some preliminary points of application for the practitioner. Clearly assistant coaches strongly influence athlete performance, in more ways than what was previously known. It is no longer appropriate or acceptable to limit the conception of the assistant coaching role to the catering of head coach needs. Sport psychology consultants and many coaches worldwide have known the importance of psychological skill development for years. The information gleaned from this study could serve coaches, sport psychologists, and other physical activity practitioners by informing them of their influence and providing the impetus for interpersonal skill development so that they can successfully convey their beliefs to athletes. The major findings from this study generate more questions than are answered. What information do coaches use to predict athlete sport confidence and perceptions of ability? How do coaches convey this expectation to athletes? What other athlete personality impression cues do coaches utilize to inform expectations of performance?

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SPORT AND IDENTITY FORMATION FOR INDIVIDUALS WITH A DISABILITY

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Key Words: Individuals with disabilities, identity formation, sport

INTRODUCTION

Individuals with a disability are often thought to be less able to take care of themselves than others (Scott, 1981). Because help is needed for some practical details, it is often inferred that the person is generally helpless. Also stereotyping, that all individuals with the same type of disability are thought to exhibit the same characteristics, and generalisation, where characteristics of one type of disability are generalised to other groups of disabilities, happen frequently (Williams, 1994). Such phenomena may have important influence on the identity formation of individuals with disabilities. Grue (1998) demonstrated that for youth with disabilities a high degree of parental overprotection was associated both with a negative low self image and poor mental health and life quality.

The positive value of sport for people with disabilities has been advocated strongly. The arguements have often been founded in a rehabilitation framework, emphasising the possibilities for improved physical and psychological function. Such argumentation may well serve to reinforce the labelling of individuals with disabilities as someone in need to compensate for inferior function and help.

Many individuals with disabilities value sport highly, but for many other reasons than health considerations. An in depth interview with seven athletes with a disability (Skurdal, 1994) demostrated that they all experienced sport as important for their quality of life, but that it played various, and very different, roles in their lives. More knowledge is needed about the contribution of sport participation to the identity formation of individuals with disabilitites - whether sport experiences will counteract or reinforce the influence of stereotyping and overprotection. The aim for this study was therefore to explore how individuals with disabilities have experienced that the sport experience has influenced their identity formation.

METHOD AND PROCEDURE

An exploratory grounded theory approach was used in this study (Strauss & Corbin, 1990). An expert panel consisting o five athletes (four men and one woman) with considerable experience from both top level sport, other competitive sport and recreational exercise took part in the study. These particular athletes were included in the study because they exhibited substantial experiences in sport and represented different types of disabilities (one blind, one visually impaired, one with polio, one with cerebral palsy and one amputee); They also had experience from different degrees of integration into ordinary sport at various competitive levels.

In order to shed light over their experiences as to identity formation, they were first asked to describe themselves within the sport setting, before a discussion about what sport had meant in their identity formation was initiated. The interviews lasted from about 1hr – 2hrs. All interviews were transcribed by the second author and then returned to the informants for comments and corrections. No major changes were made in the content after the transcription had been read through by the respondents.

The transcribed interviews were analysed by both authors separately, and then compared and discussed.The first level of analysis was to identify to what extent the disability and their athletic role coloured the identity descriptions and what elements were prominent in the self descriptions. Then themes related to the role of sport for identity formation were identified, as well as what types of sport experience lead to these type of influences.

RESULTS AND DISCUSSION

The self descriptions were mainly of two types: Those who mentioned their disability in the first response, and those who focused on other aspects of their identity. One who mentioned the disability, also told that it had taken them a long time to accept himself as a person with a disability.

" Well, I think that earlier I would not look upon myself as a disability sport athlete, it actually took me more than twenty years before I accepted the fact that I was visually impaired - But we all change with time Eh... I really look upon myself as a swimmer. And then of course that I have a handicap, but when I now know that I can assert myself, I have proved that, I can assert myself among those who see normally, then I feel that there is no difference between me and one of the best seeing athletes. The only thing is that I have a visual impaiment"....

One of those who did not include the disability in the initial response , related that it had been a long process to stop thinking of himself as "disabled".

" I look upon myself as Tord - the person Tord - and I do not think about whether I have two arms or none. It it only when you meet the surrounding world that you are reminded of who you are,, or how you look..... From the beginning I was more the "unarmed" Tord, but that has changed..... Sport was a part of that process, in relation to the fact that you can be in an arena and accomplish something in a way where arms and legs are not counted -.....I have received a lot of focus on what I can perform with whatever I have got from the start".

The following themes were identified about what types of sport experiences that influenced a positive identity formation:

1) Focusing on goals and trying to reach them
2) Receive response on your actions
3) Strengthening the self confidence by mastery and achievements and coping with challenges.
4) Develop an identity as an athlete, identification with an accepted role
5) Develop what is functioning, get focus away from the weakness
6) Do something normal, feel even with "the normal" population
7) Become visible, gain respect

The themes that mentioned the negative influences on identity formation, were as follows:

1) Development of self centredness by focusing too much on your own development and results, limiting empatic social ability

2) Focus on being something special that may develop a demanding mentality and limit initiative
3) Not being taken seriously as athletes, patronising attitudes
4) Sometimes difficult to feel good enough, lack of attention and from media , lack of understanding for the achievements compared to a "normal"performance.
5) Difficulties in being accepted in the sports club, many drop out, feelings of not being good enough.
6) Low expectations, which prevents learning to work hard. One blind athlete remarked that it is too easy to impress people being blind, because nobody expects that you can do anything!

The self descriptions revealed that the identity as an athlete was more prominent than the identity as an individual with a disability in the whole sample. Stambulaova (1998) found similar results in Russian top level athletes with disabilities. Sport seems to be instrumental in learning that in spite of an impairment it is possible to improve skills and achieve results by training, and this seems to facilitate the acceptance of the impairment and counteract a feeling of being inferior .

The data demonstrated that sport experiences can play both positive and negative roles in the identity formation of athletes with a disability through several mechanisms. This is evident both for top level athletes, and for those who take part for recreational purposes in this sample. Many of the experiences are the same as we know from mainstream sport, but some elements seem to be unique for individuals with a disability in sport. The positive factors that seem to be pertinent, occur both on a personal and a social level, e.g. a shift of focus from impairment (or "weakness") to development of abilities and be seen as an athlete rather than a poor disabled. The negative factors that may be pertinent, include both patronising, low expectations and lack of understanding for the achievements of people with disabilities. Sport experiences thus seem to both counteract and sometimes reinforce the influence of stereotyping and overprotection on the identity formation of individuals with disabilities. More knowledge about disability sport may help reduce such negative influences in the world of sport.

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THE MOVEMENT REGIME AS A LIFESTYLE COMPONENT OF UNIVERSITY SHE-TEACHERS IN A PERIOD OF INVOLUTION. *

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KEY WORDS

Lifestyle, motives for fitness, period of involution, psychosocial stress, woman fitness.

INTRODUCTION

The women being in a period of advanced adulthood suffer from a decrease of physical and psychic potencies. This period can also be indicated as an involution. The period of climacteric comes. Psychic reaction produced by these changes is individual - it means, that these changes could either be well received lightening, or they could produce a psychic trauma and they could increase a psychic stress in this way.

University she-teachers belong to groups, that are very threatened by a high level of stress. They are very weighted in occupation and in contrast to their man colleagues, they have to take care of family and household. According to research, neuroendocrinal responses to psychic stress of women are different from the same responses of men (it means, that there is lower secretion of stress hormones in women.). In the last 2-3 decades differences between women and men have been becoming smaller. In women in the contrast to men there is a tendency to response to stress by higher occurrence of negative psychic states such as depression, anxiety, anger and affect unstableness. Women also show in more often psychosomatic inconveniences produced by high level of stress such as headache, sleep disorders and stomach-ache. Women threatened by a high level of stress are less partial to injurious figures of behaviour such as excessive consumption of alcohol, nicotinism; they set higher value to health and they are also more often ready to respect principles of healthy life style than men (5).

There is a leaving out menses in women - the most often in fifty-one. Several years ago have already decreased successive the production of oestrogen hormone, that is produced by ovaries. There are many vegetative inconveniences (heat rushes, sensations of suffocation and short breathe, insomnia, dizziness, inner oscillating, creepy feeling in limbs), pain states (pains of pan, breasts, pain of back and headache) and psychic inconveniences (affect, unstableness, irritation, anxiety, depression, feelings of emptiness).

A lifestyle is very important for successful managing of all these subjective and objective inconveniences.

THE PROBLEM

Women long for influencing their appearance and bringing down body weight. This longing is one of the most important motivational factors for performing movement activity. Women try to reach for an ideal of beauty (2). Owing to physical and psychic changes comes out a change of relation to own body in a period of climacteric. In the new relation to own body is put an emphasis on health (an attractiveness is not so important). In a psychic sphere are of use profits of movement such as well-being, antidepressive and anxiolytical effect, new experiences of own body and so on.

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We assume, that in women being saddled by high level of stress in a period of advanced adulthood (probably also in women generally) comes about change of motivational factors hierarchy for performing movement activity- in accordance with a predominance of healthy-conditional, experience reasons and abreaction of stress. Whereas earlier had predominated social and aesthetic reasons.

METHOD AND PROCEDURE

The research was performed with the group of university she-teachers in given age period (n=50). These women fill up anonymous questionnaire referring to work weighting, a movement regime and the support.
The average age of the group was 56,99(S.D. 6,03).
The asked women filled up mild modified movement questionnaire that was seated according to methodise of work of Teplý (6).

THE RESULTS

Women choose from the given series of concrete reasons, why they devote to movement activity. They should state the first three places.

TABLE 1. Motives for physical activity, the comparison with normal population.

	1.place	2.place	3.place	together*	Normal popul. 1.place	together*
Wish to keep health	34 %	10%	12%	56%	41%	69%
Fetch a sight of relief	26%	24%	14%	64%	12%	47%
Reaching good physical condition	12%	22%	18%	52%	17%	68%
For a joy of movement	12%	12%	8%	32%	15%	50%
Wish to reach good figure	2%	6%	16%	24%	9%	32%
Possibility to be in collective	0%	4%	6%	10%	4%	23%
Possibility to compete, to excel, to measure own abilities with others	0%	0%	0%	0%	2%	9%
Another reason	0%	0%	0%	0%	0,6%	2%
No answer a question	14%	22%	26%	52%	0%	0%

(* The sum stating % of women, which set this reason at the one of the first three places)
34% of women of the given group fix a wish to keep health at the first place, 10% of women fix this wish at the second place and 12% at the third place. 56% of women state this reason at the one of the first three places.
A wish to fetch a sight of relief state at the first place 26% of women, at the second place 24% of women and at the third place 14 % of women. 64% of women state this reason at the one of the first three places.
A wish to reach a good physical condition fix at the first place 12% of women, at the second place 22% of women and at the third place 18% of women.52% of women state this reason at the one of the first three places.
A joy of movement fix at the first place 12% of women, at the second place 12% of women and at the third place 8% of women. 32% of women state this reason at the one of the first three places.

A wish to reach good figure fix at the first place 2% of women, at the second place 6% and at the third place 16% of women. 24% of women state this reason at the one of the first three places.
A wish to be in collective doesn't state any woman at the first place, at the second place 4% of women and at the third place 6%. 10% of women fix this reason at the one of the first three places.
A possibility to compete, to excel doesn't fix any woman at the first three places.
This is only a comparison of orientation, because there are no facts only about women in normal population; facts on table are facts without a difference of sex.

DISCUSSION AND CONCLUSION

The introduced results validate the hypothesis, that in the given age period in women outweigh reasons to perform movement activities such as abreaction of stress; healthy, conditional and experience reasons and aesthetic and social reasons recede.
The found facts are not representative and generalizeable, they could accord us a „probe" into the problems of a woman motivation to movement activity in a period of involution.

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TRANSITIONS OF DISABLED ATHLETES

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KEY WORDS

Disabled athletes, post-traumatic crisis, transition, transitional problems, athletic identity, invalid's identity.

INTRODUCTION

A trauma that leads to disability is getting a turning point or a real transition in the individual's life. Schlossberg (1981) defines *a transition* as "an event or non-event which results in a change in assumptions about oneself and the world and thus requires a corresponding change in one's behavior and relationships" (p.5). Transition to disability influences the rest of the individual's life. Usually, it is unexpected and very hard transition that acquires a character of so called *post-traumatic crisis* (Cheremnyh, 1998). Very often a disability means more or less essential restrictions in professional career and social network. In Russian culture, social stereotypes impute to invalids the role of passive and completely dependent individuals, who just "get a pension and sit at home". But many disables are young people (especially, war invalids) who intend to search for a new sense in life. A part of them finds it in sports.

Starting sports career disables actually enter a new transition, connected with adjustment to sport in general and to concrete sport event in particular. Sports career transition studies of able-bodied athletes (Stambulova, 1994; Wylleman, Lavalee & Alfermann, in press) show that on the every stage of sports career athletes have to solve a set of *transitional problems* (or developmental tasks) in order to continue their careers successfully. Obviously, it is also true for disable athletes. But it is possible to hypothesize that career transitions of disabled athletes have some similar as well as some specific features compared with able-bodied athletes, especially at the initial sports career stages. Another hypothesis is that transition to sport generates a formation of *an athletic identity* that influences disabled athletes' coping with post-traumatic crisis.

This study aims at two points as follows: a) to consider peculiarities of the first sports career transition of disabled athletes compared with able-bodied athletes; b) to consider the role of sports career and athletic identity in disabled athletes' coping with post-traumatic crisis compared with invalids – non-athletes.

SUBJECTS AND METHODS

Subjects

Main sample of disabled athletes (n = 50) consisted of wheelchair athletes (n = 15), specialized in wheelchair basketball & races and athletes with amputations (n = 35), specialized in soccer, swimming, and table tennis. The mean age of this sample was 30,5 ± 8,9 years old; the mean length of post-traumatic period - 12,6 ± 8,67 years; the mean length of sports career - 5,7 ± 4,63 years. More than sixty percents of subjects participated in national and international competitions.

There were also two control groups of subjects: a) able-bodied athletes (n = 59), specialized in sport games, wrestling and swimming with the mean age of 21,6 ± 4 years old; b) invalids – non-athletes with amputations (n = 21) and spinal cord disorders (n = 9); the mean age was 30,5 ± 10,6 years old. In total 139 subjects took part in this study. All of them were males.

Methods

Retrospective as well as actual approaches were used in this study. Peculiarities of sports career transitions of both disabled and able-bodied athletes were studied by interviews and questionnaire forms "Sports career transitions" (Stambulova, 1995), "Motivation of coming into sports", "Motivation of continuation of sports career", "Difficulties, connected with the beginning of sports life" (Cheremnyh, 1998). An athletic identity of both groups of athletes was studied by Russian version (Hale, Stambulova & James, in press) of the Athletic Identity Measurement Scale (AIMS), originally created by Brewer, Van Raalte & Linder (1991). The Invalid's Identity Measurement Scale that was created on the basis of pilot studies and as an analog of the AIMS (Cheremnyh, 1998), as well as some well-known personality tests, were used in the groups of disabled athletes and invalids – non-athletes.

RESULTS

Comparison of Disabled and Able-bodied Athletes

- During the first sports career transition (i.e. *The beginning of sport specialization)* both disabled and able-bodied athletes have to solve some similar transitional problems, such as: "to master sport techniques", "to acquire a necessary level of physical fitness", "to show themselves favorably in competitions". But disabled athletes experience some additional transitional problems those they have to cope with. "To organize a transportation to training and competitions", "to adjust sport techniques to the specifics of disability", "to coordinate training process with therapeutic treatment and rehabilitation", "to resume training process after forced breaks, connected with medical investigations, treatment in hospitals, prosthesis, etc." are among them. Previous sports experience of disabled athletes facilitates the coping process.
- In both groups of athletes fitness-related motives, enjoyment, self-realization, self-improvement, communication-related motives are among dominant ones, whereas health-related motives and pressures of other people play a subdominant role in motivation of the beginning of sports career and motivation of its continuation. But disabled athletes show significantly higher ($p \leq 0,05$) communication-related motives than able-bodied athletes.
- No significant differences were found between athletic identities of experienced disabled and able-bodied athletes.

Comparison of Disabled Athletes and Invalids – non-athletes

- An invalid's identity of experienced disabled athletes is significantly ($p \leq 0,05$) lower than an invalid's identity of invalids – non-athletes. Besides, there is a negative significant correlation between these two identities in the group of disabled athletes that means: *the higher their athletic identity the lower their invalid's identity.* It allows concluding that athletic identity of disabled athletes forces out their invalid's identity.
- In the control group of invalids – non-athletes an invalid's identity has a positive correlation with an age ($r = 0,52$) and negative correlations with independence ($r = - 0,65$), activeness ($r = - 0,58$), and will power ($r = - 0,63$). The older invalid the higher his

invalid's identity. The higher invalids identity the lower one's independence, activeness and will power. This set of personality traits reflects a typical social stereotype of what invalids are.

- An athletic identity of experienced disabled athletes correlates with their invalid's identity (r = - 0,37) and has positive significant correlations with motivation (total indices) of the beginning and continuation of sports career. At the same time, correlations of an invalid's identity of disabled athletes show that *the lower their invalids identity the higher their independence* (r = - 0,47), *opening in communication* (r = - 0,57), *internal control in the sphere of achievements* (r = - 0,40) and *lower trait- anxiety and level of loneliness*.

DISCUSSION AND CONCLUSIONS

Coming to sports, disables meet some transitional problems they have to cope with. Some of them are similar to those in able-bodied athletes group, but some others are specific. Disabled athletes consider their sport activity as a sports career aimed at high sport achievements and self-realization. Athletic identity of disabled athletes forces out their invalid's identity and generates some positive personality reconstruction that helps disabled athletes to cope with post-traumatic crisis.

A post-traumatic crisis is caused by the following contradiction: *"I should accept the role of invalid, but I can not and do not want"*. A part of invalids perceives an acceptance of the role of invalid as inevitable and copes with this transitional problem by resigning themselves to the role of invalid: *"If I should accept the role of invalid, I can do it (being want or not)"*. Disabled athletes solve the contradiction, using another approach: *"If I can not and do not want to accept the role of invalid, I shouldn't."* In fact, their coping strategy is to search for and then firmly establish themselves in a new role in the life and society, which is different from the role of invalid. According to this study, *the role of athlete* (and athletic identity) which implies "an opposite" personality structure to the role of invalid, helps to disabled athletes to find a new sense in life and to cope with post-traumatic crisis more effectively than invalids – non-athletes.

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COMPETITIVE STATE ANXIETY AND FLOW STATE FROM THE PSYCHOLOGICAL REVERSALS PERSPECTIVE

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KEY WORDS: Reversal theory, excitement, boredom, tension, relaxation, flow, competitive state anxiety, facilitative, debilitative

INTRODUCTION

The reversal theory examines motivation, emotion, and personality characteristics from a structural phenomenology perspective (Apter, 1982; Kerr, 1997). According to this theory, individuals "reverse" between two metamotivational states, in a bistable nature. The telic-paratelic pair explains how reversal theory has been applied in sport settings (Kerr, 1985). Based on Apter's work (1982), Kerr (1985, 1990) adopts an orthogonal model where the two dimensions are the levels of arousal and stress (high and low, respectively). Kerr (1985), using stress dimension (high-low) and arousal dimension (high-low) found four conditions: (a) excitement (high arousal-low anxiety), (b) relaxation (low arousal-low anxiety), (c) boredom (low arousal-high anxiety), and (d) tension (high arousal-high anxiety). The reversal theory seems to share common characteristics with the flow theory, which approaches precompetitive emotional states from a different perspective. Arousal and stress, -dimensions of reversal theory- are replaced by challenge and skills in the flow theory. These two theories have four conditions with similar characteristics: (a) excitement-flow, (b) boredom-boredom, (c) tension-anxiety, and (d) relaxation-apathy. The purpose of this study is to examine: (a) whether there are significant differences between tension, relaxation, boredom, and excitement groups, and (b) whether the reversal theory might be applied to distinct flow experiences.

METHOD AND PROCEDURE

Subjects. The subjects were 327 athletes (134 males and 193 females, 169 involved in team sports and 158 in individual sports), ranging in age from 19 to 25 years (M=20.62, SD=1.28). The competitive experience of the subjects ranged from 2 to 15 years (M=6.87, SD=3.09).

Instrumentation. In order to assess the competitive state anxiety, a short form of the Competitive State Anxiety Inventory-2 (CSAI-2) was used, to measure the intensity and the direction (facilitative-debilitative) of cognitive and somatic state anxiety, and state confidence (Martens, Burton, Vealey, Bump, & Smith, 1990; Kakkos, 1994; Swain & Jones, 1996; Stavrou, Zervas, & Kakkos, 1998). The Flow State Scale (FSS; Jackson & Marsh, 1996; Stavrou, Zervas, Kakkos, Psychoudaki, & Georgiadis, 1996) was used, to measure the magnitude of flow experiences during the competition. In addition, two 9-point Likert scales were used to assess the level of arousal and stress of the game.

Procedure. Participants were asked to recall a specific competitive event experienced in the near past (hold during the last month). Retrospective measures consist an acceptable way of estimating the competitive emotional state (Hanin, 1986; Kakkos, 1994). Athletes responded to CSAI-2 and FSS, as well as to scales dealing with the level of arousal and the stress they experienced.

RESULTS

The results of the present study showed significant differences between the four conditions in the factors of CSAI-2 on the intensity scale (Wilks' λ=10.67, p<.001) and the direction scale

(Wilks' λ=2.60, p<.01) (Table 1). Also, significant differences (Wilks' λ=4.50, p<.001) were revealed between the four conditions in the FSS (Table 2). Flow experiences showed high positive correlations with the arousal scale (.17 to .38), whereas anxiety scale indicated negative correlations (-.19 to -.28). Additionally, arousal revealed a negative correlation with cognitive and somatic anxiety (-.17 and -.11), and a positive correlation with self-confidence (.35), whereas the stress scale revealed a positive relationship with cognitive and somatic anxiety (.44 and .48) and a negative relationship with self-confidence (-.29).

TABLE 1. Means, Standard Deviation, and Differences (MANOVA) of CSAI-2 Antecedents as a Function of Relaxation, Boredom, Excitement and Tension Groups (N=327)

Groups	Relaxation-**a**	Boredom-**b**	Excitement-**c**	Tension-**d**	
CSAI-2	(N=64)	(N=70)	(N=101)	(N=92)	
Intensity	*M(SD)*	*M(SD)*	*M(SD)*	*M(SD)*	*F*
Cognitive Anxiety	12.71 (3.80)	14.91 (3.01)	11.83 (3.62)	14.03 (3.40)	13.03*** (c-d,b) (a-b)
Somatic Anxiety	11.60 (4.35)	14.16 (4.12)	10.47 (4.15)	14.08 (3.80)	17.61*** (c-d,b) (a-d,b)
Self-Confidence	14.48 (3.29)	13.24 (3.02)	16.58 (2.88)	14.98 (3.13)	17.42*** (c-a,b,d) (b-d)
Direction					
Cognitive Anxiety	22.08 (7.03)	17.50 (4.35)	23.65 (4.61)	19.00 (3.76)	4.85** (b-c)
Somatic Anxiety	19.00 (5.44)	17.00 (5.31)	22.82 (5.36)	20.67 (6.32)	2.93* (b-c)
Self-Confidence	25.17 (6.26)	23.50 (6.36)	29.82 (4.03)	25.60 (3.81)	4.35** (b-c)

* p<.05 ** p<.01 *** p<.001

TABLE 2. Means, Standard Deviation, and Differences (MANOVA) of FSS Antecedents as a Function of Relaxation, Boredom, Excitement and Tension Groups (N=327)

Groups	Relaxation-**a**	Boredom-**b**	Excitement-**c**	Tension-**d**	
	(N=48)	(N=86)	(N=77)	(N=116)	
FSS	*M(SD)*	*M(SD)*	*M(SD)*	*M(SD)*	*F*
Challenge-skill Balance	14.69 (2.28)	13.36 (2.28)	16.35 (2.32)	15.66 (2.51)	25.15*** (b-a,d,c) (a-c)
Action-awareness Merging	14.11 (2.67)	13.21 (2.43)	15.36 (2.93)	14.17 (2.81)	8.43*** (c-b,d)
Clear Goals	16.29 (2.19)	15.22 (2.34)	17.27 (2.28)	16.84 (2.25)	12.84*** (b-d,c)
Unambiguous Feedback	14.47 (2.41)	13.40 (2.80)	15.92 (2.31)	14.76 (2.71)	12.80*** (b-d,c) (c-a,d)
Concentration on task at hand	15.09 (2.77)	14.36 (3.23)	17.09 (2.79)	16.21 (2.89)	13.36*** (b-d,c) (c-a)
Sense of control	14.87 (2.79)	13.92 (2.60)	16.67 (2.74)	15.48 (2.72)	14.36*** (b-d,c) (c-a,d)
Loss of self-Consciousness	13.52 (3.28)	12.83 (3.35)	14.88 (3.74)	13.11 (3.78)	5.21** (c-b,d)
Transformation of time	12.08 (3.31)	13.09 (2.80)	12.17 (3.70)	13.25 (3.39)	2.61
Autotelic Experience	16.79 (2.81)	15.13 (4.02)	18.37 (2.56)	17.27 (2.94)	14.77*** (b-a,c,d)

** p<.01 *** p<.001

DISCUSSION AND CONCLUSION

The results of the present study showed that athletes who felt "excitement" experienced the lowest levels in cognitive and somatic anxiety, and the highest levels in self-confidence. These athletes perceived the cognitive and somatic anxiety as more facilitative than the athletes in the other three conditions ("relaxation", "tension", and "boredom"). The athletes in the "boredom" condition indicated the lowest level in self-confidence, and the highest rates in cognitive and somatic anxiety. Further, the athletes who experienced "tension" interpreted the anxiety as more debilitative for their upcoming performance than those athletes who felt "excitement", "relaxation", and "boredom". Athletes in the "excitement" condition experienced the most optimal flow states, whereas the "boredom" condition showed the lowest levels for the variables of FSS. "Excitement" condition indicated higher rates in FSS factors than "relaxation", "tension", and "boredom" conditions. This could be attributed to the fact that "excitement" condition is a paratelic state, which shares common characteristics with a flow state such as concentration on task, spontaneous action, and autotelic experience. On the other hand, "relaxation" and "tension" conditions -as telic states- indicated high values in Flow State Scale. These findings show that the reversal theory may be useful and applicable in the interpretation of competitive state anxiety and flow experience.

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THE THEORY OF THE BODY, IMPLICIT KNOWLEDGE AND THE CONSEQUENCES FOR LEARNING

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KEY WORDS

Theory of the body, phenomenology, co-dependency between person and environment, enactive approach, experiential/implicit knowledge, experiential/implicit learning, observational learning, situated learning, metaphorical-episodic instruction

INTRODUCTION

The development of a psychological theory of the body and its consequences for a new understanding of learning is an attempt to overcome the lack of such a theory in relation to the following five aspects:

- (Sport) psychology does not focus on the body as the central basis for human experience.
- In sport science the body is only the subject matter in the natural science disciplines. It is important that human sport science puts the body on its agenda.
- Dualistic thinking is still part of our scientific discourse. We speak about the unity of body and psyche, but we do not put emphasis on theoretical and empirical work in relation to the body.
- (Sport) psychology does not sufficiently link together psychological and social-cultural aspects.
- Theoretical and empirical work in (sport) psychology is not sufficiently implemented by the work of practioners. There is a growing gap between academic and applied (sport) psychology.

It is the aim of this paper to present an outline of a psychological theory of the body - mainly inspired by phenomenological theory - which knits perception and action together in a circular model and which describes the relation of the subject and the environment as a form of co-dependency.

This theoretical approach has consequences for the understanding of knowledge and learning. Here, it is important to distinguish between body image as the reflective dimension of knowledge and body scheme as the experiential and action-oriented dimension of knowledge. It is a question of rationality and reflection on the one hand and intuition and experience on the other.

In the final section different learning approaches will be presented, approaches that focus on the implicit and experiential resources of the learner.

METHODS AND PROCEDURE

The presentation has a purely theoretical character (se also Stelter, 1998). The intention is to stimulate further work, both in research and teaching practice.

RESULTS

The body as the mediator to the world

The human body is the basis for our perception. According to the phenomenological tradition, the lived body (German: Leib) is defined as the fundamental mediator to the world. This bodily based mediation presupposes an *intentional* relation between subject and environment. That means: the lived body works as a "sensory organ". Functioning on the basis of *intentionality* or *perspectivity*, the lived body, by means of its sensory equipment, is the basis for making the situation *meaningful* to the subject. The specific meaning evolves from the interplay between situational conditions and personal pre-understanding.

Through *embodying* the world around us or by *interiorizing* the environment, things become *meaningful*. Arnold (1979, p. 117) describes this process in the following way:

> Our body is the ultimate instrument of all our external knowledge, whether intellectual or practical. When we learn to use a language or a tool for example, we make ourselves aware of these things as we are of our body; they become, as it were, extensions of our bodily equipment and indications of what it is to be intelligent.

The process of this evolvement of meaning can be conscious to a greater or lesser extent. Perception and cognition are part of the process of interpretation, a process where movement and action are always included. They work as an embodied unity where body and mind have been brought together and function together. To understand this unity, we have to extend the more traditional cognitive and action-oriented theories with an *enactive* approach. This term - beside others - has been suggested by Varela, Thomson, and Rosch (1993, p. 9):

> We propose as a name the term *enactive* to emphasize the growing conviction that cognition is not the representation of a pregiven world by a pregiven mind but is rather the enactment of a world and a mind on the basis of a history of the variety of actions that a being in the world performs.

Co-dependency between the subject and the environment

A possible "objective reality" of the outer world is therefore not accessible to the subject. The single subject is in a constant *dialogue* with the environment through perception, cognition, movement and action. The subject and the environment are in that sense *co-dependent*. The "outer" world becomes real for the subject - that means *meaningful* - through interpretation. The same dialogue is relevant when the agent wants to understand his/her own (movement) behavior and him- or herself in relation to the environment.

Body image versus body schema

Knowledge about body and movement can be represented on two different levels: 1. on the level of conscious knowledge and reflection and 2. on the level of pre-reflective, experiential or implicit knowledge. In that sense, two terms can be distinguished: *body image* as the person's reflective knowledge about his/her own body and its positions, and *body schema* as the person's implicit knowledge about both actual and possible dispositions of the body and the person's disposition to action (se Moss, 1989).

In movement learning, body image and body schema work together in an integrated way. The problem is that traditional instructions in teaching and training mainly focus on the body image. Experiential and situational factors are very seldom part of institutionalized learning strategies.

Movement learning

In a lot of (movement) situations, learning takes place on the basis of the learner's *body schema*, the body's habitual attitude to the situations and the learner's experiences and intentional orientation in similar situations. These resources are often ignored in traditional scholastic learning. In the following, several learning strategies will be presented, which take their starting point in the learner's body schema and the experiential and implicit knowledge of a given situation:

Learning through observation (Bandura, 1977). Although cognitive processing plays an important part in this learning strategy, the body's implicit and experiential knowledge is fundamental in making the movement example meaningful for the observer.

Situated learning (Lave & Wenger, 1991). Here learning is defined as part of a social practice, and sport, movement and exercise can be understood as such. The athletes or students, together with coaches or teachers, are part of this context. Learning occurs as a part of the negotiations in a specific sport situation (e.g. a game).

Metaphorical-episodic instruction. Traditional instruction is based on rules and clear movement descriptions, a mode of information which is sequential and digital, i.e. the teacher presents a movement pattern by a verbal description. In the metaphorical-episodic instruction, the teacher presents a situation (an episode) as a kind of intentional orientation for the learner. Here the mode of information is analogue and holistic.

DISCUSSION AND CONCLUSIONS

Movement learning has to build on strategies that focus on both explicit and implicit knowledge. Traditional movement learning is dominated by an explicit perspective. Implicit learning strategies are not very much developed in the field of sport practice. It would need cooperation between researchers and practioners to make progress in this matter.

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EGO AND TASK ORIENTATION AND ENTREPRENEURIAL TENDENCIES AS PREDICTORS OF SUCCESS IN THE SPECIAL TASK FORCE IN THE SOUTH AFRICAN POLICE

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KEY WORDS

Ego and task orientation, locus of control, feelings of independence, willingness to risk.

INTRODUCTION

Special task forces all over the world are professional and specialised people that are highly trained in handling specialised and delicate assignments. It is therefore imperative that only the best possible potential candidates will be selected for training. To train one special task force candidate in the South African Police costs the tax payer exactly R3000.00. It is therefore obvious that thousands of rands will be wasted if the candidate is unsuccessful or if he leaves out the intensive course just before the completion of his training. It is therefore very important to develop psycho-physical parameters (selection tools) that will predict success and failure. Traditional psychometric testing like the 16 PF and other traditional personality assessments have not delivered satisfactory results. Sport psychologists as well as Biokineticians were approach to provide new modern psychometric and physical selection tools (possible psycho-physical parameters) that may predict success or failure more accurately. The main focus of this research is to determine if ego and task orientation and entrepreneurial tendencies as well as physical characteristics and abilities can discriminate effectively between successful- and unsuccessful special task force candidates.

METHOD AND PROCEDURE

The standardised questionnaires employed in this study include the following: *Task and Ego Orientation Sport Questionnaire* (TEOSQ) (Duda, 1989); and *Entrepreneurial variables* (Hisrich & Peters, 1989; Levenson, 1974). TEOSQ consists of 13 items that are measured on a five-point Likert scale. Entrepreneurial questionnaires: *willingness to take risk* and *feelings of independence* consist both of 10 items that are answered by yes and no responses. *Locus of control* consists of 24 items that are measured by a five-point Likert scale that measures powerful others, chance control and individual control as separate dimensions of control. Thirty subjects were used and were tested in the pre-selection phase of the training in the psychological dimensions. The physical parameters were tested on 262 subjects. Tests like the VO^2-max (Coopertest), body and handgrip test, strength of the back, body suppleness, body length and mass, and fat percentage in the body were taken as possible physical predictors of success. Descriptive statistics was applied to calculate mean scores and the Spearman's correlation procedure to determine significant relationships between the selected variables. For meaningful and accurate interpretations, the 1% ($p<0.01$) and 5% ($p<0.05$) levels of significance were set as the critical levels.

The following hypotheses were set for this study:

1. Successful candidates correlate positively with high scores on task orientation, internal locus of control, feelings of independence and willingness to take risks.
2. Unsuccessful candidates correlate positively with high scores on ego orientation and external locus of control, feelings of dependence and unwillingness to take risks.
3. Task orientation correlates positively with high scores on internal locus of control, feelings of independence and willingness to take risks.
4. Ego orientation correlates positively with high scores on external locus of control, feelings of dependence and low scores on willingness to take risks.
5. Physical characteristics and abilities can also predict success and failure.

RESULTS

Highly significant relations were found between successful candidates, task orientation, high willingness to take risks, feelings of independence and internal locus of control. Highly significant relations were also found between unsuccessful candidates, ego orientation, feelings of dependence and external locus of control. This significant relations confirm hypotheses 1 and 2.

TABLE 1. Relationship between successful- and unsuccessful candidates and goal orientation and positive and negative entrepreneurial tendencies

	SUCCESSFUL CANDIDATES	UNSUCCESSFUL CANDIDATES
Task orientation	0,25389 **0,0001**	0,07004 0,1328
Ego orientation	0,02387 0,6092	0,38415 **0,0001**
High willingness to take risks	0,24327 **0,0001**	0,16974 **0,0002**
Low willingness to take risks	0,00546 0,9076	0,00672 0,8855
Feelings of dependence	0,02387 0,6092	0,40918 **0,0001**
Feelings of independence	0,21774 **0,0001**	0,11158 0,0164
Internal locus of control	0,30408 **0,0001**	0,10942 0,0190
External locus of control	0,00462 0,9211	0,30497 **0,0001**

Hypotheses 3 and 4 were confirmed by the results. A significant relationship on the 1% level ($p<0.01$) between task orientation and the constructive entrepreneurial tendencies (internal locus of control, feelings of independence and high willingness to take risks) as well as ego orientation and a negative entrepreneurial tendencies (external locus of control, feelings of dependence and low willingness to take risks). Hypothesis 5 was partially confirmed because only the Coopertest (VO^2-max) and the fat percentage test of the body were accurate predictors of success. The relationship between successful candidates and high scores on the VO^2-max test and low fat percentage of the body were respectively on the 1% ($p<0.01$) level and on the 5% ($p<0.05$) level of significance (Erasmus, 1998).

DISCUSSION

This research is in accordance with the ego and task orientation and goal perspective theory of meaning and motivation in sport recently developed by Duda (1993). This research can be seen as a contemporary cutting edge on developments of motivational research in sport. Ego orientation can be defined at the tendency to view success relative to the performance of others. The ego-orientated participant views sport participation as a means to an end, where the outcome (results) is over emphasised, and uses sport to enhance his/her own social reputation and fame. The task-orientated participant on the other hand perceives ability as a function of personal improvement and focuses primarily on personal development without comparing him- /herself to the opponent. The fundamental entrepreneurial qualities that have been developed and tested by Levenson (1974) and Hisrich & Peters (1989) also have an impressive scientifically validity record. This highly significant relationship between positive goal orientation and positive entrepreneurial tendencies were confirmed by the results and findings of research that was already done on international population consisting of Human Movement Science students from different countries (Steyn et al., 1995). According to the findings of this research it can be reasoned that the psycho-physical parameters that were selected for this research, are accurate predictors of success.

CONCLUSION

The chances for completing the intensive training of special task force may increase if the candidate has the following psycho-physical characteristics and abilities: task orientated, high willingness to take risks, feelings of independence, internal locus of control, high VO^2 capacity and low body fat percentage.

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THE VALUE OF THE PRINCIPLE OF TRANSCENDENCE IN REACHING THE "CONDUCTING STATUS" IN OPTIMAL TASK ORIENTATION IN SPORT

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KEYWORDS

Transcendence, to go beyond, bodiliness, movement, opponent, time, capacity building.

INTRODUCTION

The primary aim of this study is to classify the value of the principle of transcendence in reaching the conducting status where full control is experienced in peak performance. In this conducting status the participant's attention focus is freed not only from irrelevant task cues, but the participant is enabled to move from the relevant to the more relevant and go beyond to the most relevant of the sporting situation. In this conducting status the participant has a meta and holistic awareness of his/her performance where he/she can conduct his/her performance from a holistic (bird's eye view) view point. This high level of performance is dependent on the principle of transcendence, where the participant must be able to transcend his/her body, the movement technique, his/her opponent, apparatus as well as time to reach this precious but also evasive conducting status in sport.

METHOD AND PROCEDURE

This study consists of qualitive in depth interviews conducted on 30 elite South African athletes. The interview data was transcribed intensively and analysed according to the phenomenological method of Wertz. An interview literature study was also done on a principle of transcendence. This original research was already reported on a poster session in the World Congress in Sport Psychology in Lisbon (Steyn, 1993). This original research on transcendence has been modified by more intensive literature findings as well as refinement and verification of this model in practice.

RESULTS

The concept of transcendence

Transcendence comes from the Latin word "transcendere" which means "surmount; trans- across; beyond; on the other side of ; scandere - to climb: to rise above in excellence or degree; to overstep or exceed a limit; opposite of immanence (Steyn, 1991). In simplistic terms transcendence means to go beyond, to step over, to forget yourself and leave yourself behind. The effective metaphor of the eye that sees but does not see itself used by Frankl, describes the true essence of transcendence (Frankl, 1980). If the transparent eye should see itself because of an obstruction in or on the eye itself, the implication is that some pathologic issue has obstructed the "see through" ability of the eye. Transcendence of the eye is therefore blocked and in the same way transcendence can be blocked by conscious obstruction by the opponent or any distracter. Transcendence is therefore achieved by the

participant's ability to reach the most essential (important) task cues by transparent moving through and going beyond the participant's body, fellowman, world and time (Van den Berg, 1986).

Steps of transcendence to be established before the participant will be able to transcend himself and reach the conducting status

Lived body: The object and resistance body has to be transformed to the lived and subjective body. "I am my body" - intimate (merge with) contact with the body is necessary for the participant to transcend (forget) his body.
The sporting technique: All movement techniques must be executed automatically without any conscious thinking about the technique. This second nature level of technique execution is acquired by proper coaching and to 'groove' the technique by proper drills.
Sporting equipment and environment: The participant must be able to attract and merge with the equipment in such a way that he will succeed in transcending (forget) the specific sporting equipment and environment.
The opponent: The opponent must be transformed from an antagonistic opposition force to a constructive and necessary force that will assist the participant to achieve his best. The participant will be able to transcend (forget) the opponent if this neutral and impersonal approach can be established and maintained.
Spectators: The spectators must be seen as supportive and friendly and not as an opposition that can only criticise and distract all the participant's efforts (Steyn, 1993).

How to create favourable conditions that are conducive to transcendence

International world class sports performers know how easy favourable conditions can be transformed to adverse conditions by major attention distracters, performance blocks, emotional disturbances, logistical surprises and other attention dividers that generate opposing forces, neutralising all efforts to achieve excellent results (Potgieter, 1997). The primary goal of all preparations are to minimise the internal opposition and external opposition to the absolute minimum. This goal can be achieved by better alignment of psycho-physical capacities and forces. Capacity building can be achieved by giving special attention to capacity building factors. The constant maintenance of this special capacity factors of the participant, will enable the athlete to constructively build up, save and restore psycho-physical capacities (abilities). This constant building up and maintenance of capacity will enable the participant to have more control on when and where he/she wants to peak, because opposing performance forces are systematically and deliberately reduced to have the minimum impact on the athlete.

Capacity building factors

The following capacity building factors for the sport participants were identified:
Body; emotional; intrapersonal; interpersonal; technique and strategy; logistical and equipment and motivational capacities. It is impossible to give full descriptions of these capacity factors, because of the limited space of this publication. What is important here is to give a proper rational of the principles that are involved in capacity building. The goal of capacity building (loading) is to maximise these factors by exploring all possible means and techniques that may build capacity to the optimal level. This includes the normal

psychological training in effectiveness principles as well as extra ordinary psycho-physical life skills, for example special bodywork techniques that helps the body to recover more quickly and effectively and communication skills to improve interpersonal relations as well as defuse possible conflict situations. This will help to create favourable conditions with less opposing and counteracting forces. High levels of psycho-physical capacities will indicate favourable conditions that will be conducive for transcendence and the possibility to reach the conducting status.

Transcendence in adverse conditions with high resistance and strong opposing forces

Concentration camp experiences by Frankl (1980) as well as studies done on people in solitary ordeals (Logan, 1985), show clearly that people can endure adversity and hardships form beyond the normal treshholds of living and still function relatively effective. All this information indicated a kind of psycho-physical overdraft "facility" that can be tapped into in times of difficulty. Covey also clearly indicates that the pro-active individual with a high internal locus of control is the kind of individual that can transcend adversity where the circumstances and people cannot psych him out and as Roosevelt observed "no one can hurt you without your consent" (Covey, 1992).

CONCLUSION

The two major modes of transcendence (spontaneous transcendence in favourable conditions and deliberate transcendence in adverse conditions) may be the new frontiers in Sport Psychology as we all step into the excellence of the new millennium.

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SPECTATOR CHEERING: INFLUENCES ON PERFORMANCES IN TEAM SPORTS?

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Keywords: spectator cheering, social facilitation

Introduction

It is a popular belief that spectators exert some influence on performances in sports. This study focuses on the influence of spectator cheering on team sports.

First of all, why should such an influence exist at all? For example, it can be assumed that a social support process (Schlenker & Leary, 1982) would lead to an increase in performance. The dominant response theories of social facilitation (e.g., Zajonc, 1965) predict increases in performance only for simple tasks. In the cognitive motivational model of Paulus (1983), increases in performance could be anticipated, if cheering were to increase the positive consequences for athletes, and--for simple tasks--if negative consequences were expected.

However, decreases in performance can also occur despite social support. Paulus (1983) expected decreases in performance as a result of social support only for difficult tasks and when negative consequences were expected. According to the "choking under pressure" approach (Baumeister & Showers, 1986), decreases in performance can be predicted if the spectators' expectation of success exerts a social pressure.

Although there is a whole range of possible theories, only a few sport psychological field studies address the influence of spectators on performance in team sports. Greer (1983) investigated the effects of spectator booing. Results did not indicate any effects on performance. Thirer and Rampey (1979) studied the influence of aggressive behavior on athletes' aggressive behavior. Both studies used a quasi-experimental design. Salminen (1993) investigated the effects of spectator cheering and was unable to demonstrate any spectator effects. However, methodological limitations (e.g., a mixture of different sports, a correlational design) considerably weaken the results. The present study uses a quasi-experimental design to investigate the effects of cheering.

Method

Sports performance and spectator cheering were studied in the Kiel "Baltic Hurricans," a member of the American Football premier league in Germany. Data were taken from four home games in 1997. Two games were lost. On average, about 4,000 spectators were present.

Performances and behavior of spectators during the four home games were recorded on videotape and assessed later by two independent raters (Cohen's kappa was always >.85). Spectator behavior ("cheering": more than 50% of spectators exhibit support for their team vs. "no cheering": neutral) was observed before the begin of a carry (15 seconds before) as well as during a carry ("spectator behavior during Carry t"). Each carry was assessed once as positive versus negative (using a standardized list of items such as gaining space, completing a touchdown, etc.) by the coach and one other independent person ("assessment of Carry t"). Assessments were carried out independently from any referee decision (e.g., foul) and only for the Baltic Hurricans, in other words, the home team.

Results

There were 631 carries (Game 1: 129; Game 2: 176; Game 3: 178; Game 4: 148): 321 of them in offense; and 310, in defense. A hierarchical log-linear analysis was performed on the frequencies of four variables: A: "assessment of Carry t," B: "assessment of Carry t-1", C: "spectator behavior before Carry t," and D: "spectator behavior during Carry t". Table 1 reports these frequencies.

Table 1: Frequencies concerning the four variables

Spectator behavior		assessment of Carry t			
Before Carry t	during Carry t	Positive		Negative	
		assessment of Carry t-1		assessment of Carry t-1	
		positive	negative	positive	negative
Cheering	Cheering	49	36	27	48
	Neutral	33	8	18	9
Neutral	Cheering	15	17	13	36
	Neutral	67	35	38	58

In a hierarchical log-linear analysis (backward elimination with $p = .05$) with the four dichotomous variables A, B, C, D, the saturated model did not hold (LR^2 (1, $N = 507$) = 0.154; $p = .70$). The same was true for all possible triple associations (LR^2 (5, $N = 507$) = 2.002; $p = .85$).

The best model (the model with the least parameters and $p > .10$) was [B x A, B x C, B x D, C x D] with LR^{-2} (7, $N = 507$) = 4.4356; $p = .73$. It can be seen that performance in Carry t-1 was associated with the three other variables (with performance in Carry t: part. LR^{-2} (1, $N = 507$) = 25.71; $p < .0001$; with spectator behavior before Carry t: part. LR^{-2} (1, $N = 507$) = 10.1; $p = .0015$; with spectator behavior during Carry t: part. LR^{-2} (1, $N = 507$) = 18.92; $p < .0001$); in other words, as could be expected, it was associated not only with the following performance t but also with the spectator behavior (before and during Carry t). The association C x D (part. LR^{-2} (1, $N = 507$) = 98.3; $p < .0001$) indicated that spectator behavior before Carry t was associated with spectator behavior during Carry t. However, spectator behavior before or during Carry t was not associated with performance following it (with spectator behavior before Carry t: part. LR^{-2} (1, $N = 507$) = 2.32; $p = .13$; with spectator behavior during Carry t: part. LR^{-2} (1, $N = 507$) = 0.932; $p = .33$).

Conclusion

This field study examines whether spectator cheering before the beginning of a performance in team sports influences this performance. Care was taken to avoid any possible confound of performance with referee decisions. It reveals that previous performances are associated with the following spectator behavior, but that spectator behavior does not influence subsequent performance in the game. This study provides no hints that cheering before the action has any influence on performance. Instead, it seems that spectators react to performance.

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PSYCHOMOTOR ACTIVTY INTERWOREN WITH OLYMPIC JUDO REPRESENTATION SPORTS RESULTS

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I. Problem and Research Questions

It seems to be not grounded, as some psychomotor researchers state that almost everything has been said, written and devoted to the problem, and particularly to experimentation on, so called Alternative Reaction times (ART).

In such specific area like sport which is constantly changing we have got to refine our experimental tools and methods. Sport which is accompanied by high emotions and theater-like performance gives unlimited options to experiment. As it has been indicated by Geblewiczowa (1970, 1973) a good sportsman is characterized by „ a quick reflex", in other words an ability of undertaking fast actions in more or less composite situations. Individuals who achieve higher sport achievements may be characterized by a shorter Reaction time(TR) in comparison to sport beginners. The similar results have been achieved for the National Basketball Team players by Geblewiczowa and Hull (1960). They Found out that the National Basketball Team players manifested shorter Reaction time and small number mistakes(faults) which have been registered in differential reactions. Sankowski (1991) has indicated to the importance to the significance of Reaction time, stating that in those sports in which quick reflex decides about success, a selection to exclude the people with too long reaction time. The change of simple and differential reaction times which is influenced by training of basketball players has been indicated by Sutyło and Socha (1962) who showed a positive influence of training on shortening of reaction time. Amongst the researchers who study *reaction time* there is acceptance that sportsman who manifest high achievements react faster and more precise than sportsman achieving low sport results (Żukowski 1995). Considering it from the point of view of sport practice it is important whether or not reaction time and level of visual-motor coordination level are on a relatively fixed level or it changes together with way competitors are preapared to major competitions such as the Olympic Games. In other words we ask question here: Does *reaction time* (quikness of reacting) and visual-motor coordination (measured with the Piórkowski Machine) changes together with increasing the intensity of training of judo competitors. It may be assumed that the reaction time will be shorter and shorter, and the level of visual-motor coordination will be more precise and on a higher level, achieving the highest point at the moment of sport competition start. Sutyło and Socha (1962) have been indicated to a positive impact of training to the shortening of *reaction time.* Amongst the researchers of

reaction time and visual-motor coordination there is an acceptance that the sportsman being on a high level of sporting achievement react much faster and more precise than sportsman attaining low sport results (Żukowski, 1995). In psychology we define *reaction time* as a time passage from the moment of stimulation originating to the moment of reacting the subject to the stimulation which is to be done as quick as possible (Geblewiczowa 1973). The problem which has been described in this way permits to put forward the following experimenting questions. These are:

II. Research Questions

1. Is there a difference in psychomotor achievement of competitors of the Judo Olympic Team during preparatory and competition moments ?
2. Do the competitors of the Judo Olympic Team achieve significantly better results after being burdened with randori fighting than before training ?
3. In experimental conditions „ does the day of starting in Olympic Games mobilize to achieve significantly higher results in psychomotor achievements than in a period which proceeds the moment of „starting"?
4. Can we discern a tendency to shorten reaction time and the increase of visual-motor coordination level while coming closer to the moment of „starting

Summary

1.Together with the level of training achievements the level of psychomotor of competitors of Judo Olympic Team increases. In other words, the judo Olympic Game competitors achieve much better results in psychomotor starting phase than in preparatory phase.
2. Measurement done before and after training indicates that the results of judo Olympic Games competitors are not significantly different, if psychomotor reaction is to be considered.
3. During the „Olympic Games starting day" the judo Olympic Games competitors achieve much better results after fighting (randori) than before „warming up".
4.The judo Olympic Games competitors individual reaction times are differentiated in differential reaction and reaction with a choice than in visual-motor coordination.
5. Systematic measurement of psychomotor reactions of competitors, professional sportsmen, in preparatory, starting and transitory phases has practical meaning for professionals. It may serve as a tool to assess psycho-physical predisposition of sportsmen.

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DIFFERENCES IN EXERCISE-INDUCED AFFECT BETWEEN CO-ACTING AND INTERACTING EXERCISERS

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KEY WORDS

Acute exercise, Mood, Physical activity, Social setting, Team sports

INTRODUCTION

The affective beneficence of physical activity is virtually undisputed in the literature (LaFontaine et al., 1992; Leith & Taylor, 1990). The consensus is based on congruent results obtained from both laboratory and field studies. However, the majority of these studies tested people who were involved in individual or co-acting exercise activities, whereas participants in interactive activities were largely ignored. A few studies that examined exercise-induced affect in interactive physical activities did not reveal affective benefits (Abele & Brehm, 1993; Miller & Miller, 1985; Szabo & Bak, 1999). Furthermore, to date, direct comparison of the affective effects of co-acting and interactive physical activities was not performed.

The current study attempted to clarify whether people involved in interactive, or team sports, gain similar benefits from their exercise training as individuals participating in co-acting physical activities. The research question was addressed by contrasting exercise-induced affect in three co-acting forms of exercise to those in three interacting forms of physical activities.

METHOD AND PROCEDURE

Participants

Ninety-nine male students (mean age = 21.3, years SD = 2.2) were tested. They were recruited into a "*co-acting exercise group*" that consisted of 17 aerobics class attendants, 14 martial artists, and 11 swimmers and into an "*interacting exercise group*" that consisted of 17 basketball players, 20 rugby players, and 20 soccer players. There were no differences between the two groups in age and in duration and frequency of weekly exercises. All participants were involved in regular exercising for more than three years prior to their participation in the study.

Measurement Instruments

The Exercise-Induced Feeling Inventory (EFI - Gauvin & Rejeski, 1993) was the key instrument used in this study. The EFI is a 12-item tool that requires participants to rate on a

five-point scale, ranging from zero (*do not feel at all*) to four (*feel very strongly*), the degree to which they experience four affective states: revitalization (energetic, refreshed, revived), tranquillity (calm, peaceful, relaxed), positive engagement (enthusiastic, upbeat, happy), and physical exhaustion (fatigued, tired, worn-out). The internal consistencies of the four subscales range from .71 to .91 (Gauvin & Rejeski, 1993).

Procedure

With the help of the physical activity instructors, all exercise sessions were conducted at moderate intensity that is believed to be the most suitable for mood enhancement (Steptoe & Cox, 1988). The exercise sessions lasted for 90 minutes (±10 minutes) including the warm-up and the cool-down periods. Before the exercise sessions, all participants signed an informed consent form, completed an exercise behaviour questionnaire, and then completed the EFI. At the end of their physical activity session, participants completed the EFI again.

RESULTS

Data were analysed with a multivariate analysis of covariance (MANOCOVA) using the ratings on the four subscale of the EFI as the multivariate dependent measures and the pre-exercise scores as the covariates. This MANOCOVA was significant (Wilks' Lambda = 0.836, $F(4,90) = 4.43$, $p < 0.003$). The follow-up univariate tests revealed that the multivariate effect was due to significant differences in all four measures of affect between the groups (Table 1): physical exhaustion ($F(1,93) = 7.33$, $p < .008$); positive engagement ($F(1,93) = 4.11$, $p < .05$); revitalization ($F(1,93) = 5.15$, $p < .03$); tranquillity ($F(1,93) = 5.37$ $p < .02$).

TABLE 1. Exercise-Induced Affect in Co-acting (n=42) and Interacting (n=57) Exercisers. The Values Represent the Means and the Standard Deviations (Residualized) in Parenthesis.

Exercise-induced affect	Co-acting group	Interacting group
Physical Exhaustion	7.69 (0.71)	6.00 (0.70) [1]
Positive Engagement	8.60 (0.89)	7.63 (0.97) [1]
Revitalization	7.52 (0.66)	6.25 (0.43) [1]
Tranquillity	7.91 (1.07)	6.68 (0.88) [1]

[1] Significantly lower than the scores of the co-acting group ($p < .05$)