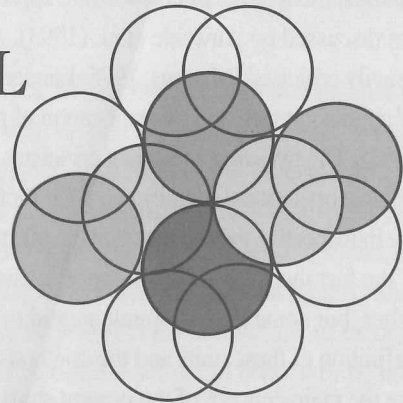


RECONSIDERATION OF MOTIVATIONAL THEORIES IN SPORT: AN INTEGRATED MODEL

重新考慮運動的動機理論：

一個完整的 的模式



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本文作者建議製訂一套可供運動上的依附，穩定和表現等行為的客觀預測程序。所用的程序及模式雖源自理論基礎，但評核程序是新的。使用此法的目的在於取代在運動界採用多年但嫌不足的內省測量法。縱使內省測量法的概念架構已由注重人格特質轉變為兼顧個人與工作和環境相互影響的關係模式，但其測量法本身存在的偏見卻被視為導致運動上的依附，穩定和表現等行為的預測不夠客觀的主要原因。透過有關成就與競賽行為方面的文獻的詳盡檢討和分析，作者提出一種更有效地評估運動行為的模式。

[1]Abstract

This article is proposed to develop an objective testing procedure which is believed to have predictive for measuring adherence, consistency, and performance in sport. The model and testing procedures are theoretically based, but the assessment procedures are new. They are aimed at replacing the introspective measures which have been in use for many years and found to be very insufficient in the sport milieu. Despite the conceptual development from trait personology to transactionism (person-task-environment) the introspective measures and their inherited biases were believed to be the main cause for failing to account for objective sport behaviours such as adherence, consistency, and performance (Auweele et al., 1993). In this article the authors extensively review the literature related to achievement and competitive behaviours and postulate an alternative model to better account for the development process of skilled athletic behaviours.

[2]Theoretical Background

2.1 Overview of previous approaches which related personality and performance in sport.

Sport personology is the oldest line of research in the domain of exercise psychology (Landers, 1983; Silva, 1984; Vealy, 1989). Recently, some innovative concepts, theories, and variables (achievement and intrinsic motivations, self-efficacy, goal orientation and others) have been suggested to more reliably account for peak performance (Auweele, Cuyper, Van Mele, & Rzewnicki, 1993).



The assumption that personality traits are consistent across a variety of situations, and that they elicit similar and stable behaviours in different situations has not been confirmed. A lack of cross-situational stability has led to the establishment of the interactionistic approach. The unique characteristics of the interactionistic and the trait approaches are discussed by Auweele et al. (1993). As in other domains, the trait approach applied to the sport domain has been heavily criticised (Martens, 1975; Landers, 1983; Morgan, 1987). A call for more ecologically valid measures, selection of approach traits, and the application of person - situation interactional approaches has been advocated (Auweele et al., 1993). The two most important criticisms have been: [a] a lack of a conceptual framework from which to generate more reliable operational definitions of the traits necessary for performing successfully motor activities, and [b] the failure of the introspective measure to elicit the true traits of athletes and overcome the social desirability barriers. Of vital importance is the fact that skilled performance is associated with many traits some of which may differ from one performer to the other, but some that are fundamental to the production of skilled and peak performance. However, the operational definition of these traits and the methods applied in order to detect them have been the main limitations in the past and are the main concern of the present study.

Rushall (1970), Martens (1975), and Morgan (1978) expressed scepticism in personality variables as predictors of athletic performance. In contrast, Nideffer (1990) and Rushall (1989) have argued that appropriate use of introspective measures can provide useful information for understanding athletic performance. However, this view has also been criticised (Dewey, Brawley, & Allard, 1989; Summers & Ford, 1990; Vallerand, 1983; Van Schoyck & Grasha, 1981; In Regnier et al., 1993).

It has been argued that the person-situation interactionist approach has not been able to satisfactorily replace the traditional trait approach, because it was applied as an overreaction to trait psychology (Martens, 1975) or as an antithesis of personologism (Horsfall, Fisher, & Morris, 1975 in Auweele et al., 1993). However, it may be that the situational approach mainly failed because, similarly to its trait predecessors it consistently used measures directed to a particular situation rather than using real-life assessment techniques. Thus, not only should the concept have been replaced, but also the method of measurement (i.e., assessment).

Auweele et al. (1993) applied a meta-analysis to examine differences in extraversion - introversion among elite athletes and other groups in the population and found an average effect-size not significantly different from zero. The effects of gender, sport-type (team vs individual, contact vs non-contact) and other demographical were all insignificant (Auweele et al., 1993). More complex multifactorial, multidimensional and interdisciplinary models to account for elite performance have been suggested by Deshaies et al. (1979), Landers et al. (1986), Morgan (1973), Silva et al. (1981), Singer (1988), and Williams (1982). However, these approaches have not stimulated much research, and in several studies substantial methodological shortcomings have been reported (Landers et al., 1986; Highlen & Bennett, 1983). The model suggested by Reeds (1985) in which several traits are predispositions for precompetitive anxiety state, and consequently both influence performance, may be a useful theoretical framework for researchers. However, the model may have difficulty in accounting for expert performance in sport because of the inconclusive relationship between anxiety state and competitive performance.

The lack of theoretical and conceptual frameworks has limited the research that has been carried out adapting the trait, interactional (person-situation), cognitive (perceived stress and coping strategies), and transaction (person-task-situation) approaches. The sport-specific instrumentation approach has also suffered similar shortcomings although it has been of more value than the classical trait approach. Pervin (1984, in Auweele et al., 1993) argued that personality research should strive to discover the similarities between people, the stable and changing aspects of functioning (cognitive, affective, and overt behaviours) and the processes which occur in relation to stimuli created by the environment. This approach requires shifting attention from introspective to projective techniques (Barlow & Hersen, 1984) in studying athletic behaviours. Appropriate paradigms should yield situations which



are similar in nature to the real world of sport. Behavioural consequences observed in such situations may be more suitable to study interactionism in the study of athletic behaviour.

2.2. Motivation: Past and updated perspectives

Motivation has referred to personality traits, social variables and/or cognitions that are assumed to affect a person who performs a task in which he/she is evaluated, is in competition with others, or attempts to achieve some standards of excellence (Roberts, 1982, 1992). Furthermore, Roberts (1992) argues that the determinants of achievement behaviours are approach and avoidance motives, expectancies, and incentive values of success and failure. Achievement behaviours have been identified as behavioural intensity (trying hard), persistence (continuing to try hard) and performance-outcome (Roberts, 1982). However, the circumstances under which such behaviours occur are not clear. For example, how does performance change when the competitor consistently fails to meet an expected criterion? How does performance or outcome change in a prolonged tied situation? In other words, how can we determine a winning type person on the basis of precise operational definitions of goals orientation and motivation? This issue has not been adequately addressed in the sport literature.

The study of motivation is the investigation of the construct that energises and directs behaviours (Roberts, 1993, p.406). Roberts, further asks why does performance deteriorate when goals are unattainable or too hard to reach? Relying on the Atkinson-McClelland need of achievement model, Roberts argues that research has shown that individuals driven by the motive to achieve success select challenging tasks, take intermediate risk, and demonstrate improved performance, but those individuals driven by the motive to avoid failure do not always avoid intermediate risk, or select either easy or extremely challenging tasks, or demonstrate low performance as predicted by the theory (Roberts, 1993, p.407).

The social learning theory (Crandall, 1963, 1969) assumed that behaviours are directed toward self-approval and the approval of others. However in recent years, the cognitive approach to motivational behaviours was most dominant (Roberts, 1989). Perceived competence, self-efficacy, and achievement goals became the dominant constructs of investigation into motivation. How does knowledge develop and how does it govern behaviours are the questions which concern most research in this domain. For example, it is believed that people who differ in their need of achievement think differently about success and failure (Weiner, Frieze, Kukla, Reed, Rest, & Rosenbaum, 1971). Expectancies and emotions are dependent on how outcomes are perceived and attributed. This in turn, develops different orientations, expectancies and motivation for future actions and behaviours (Roberts, 1982; Weiner, 1986).

The social-cognitive approach to understanding motivational behaviour has been extensively utilized in the sport domain during the past few years. The theory of self-efficacy (Bandura, 1977, 1986), in particular, has been investigated (Feltz, 1988, 1992; McAuley, 1992). The main concern has been in how perceived competency of an individual affects his/her performance. The findings show that the relationship between self-efficacy and physical performance was found to be a reliable, even if modest, predictor of sport performance. However, other mechanisms have been hypothesised to contribute to achievement behaviour (Bandura, 1986; Feltz, 1988; in Roberts, 1993, p.409). The authors propose that the failure to establish stronger relationship between self-efficacy and performance may be partially attributed to methodological inadequacy in the standardisation of performance. In other words, performance has not been controlled experimentally (i.e., standardised appropriately by taking into account the maximal ability of the subject in a particular task). Therefore, it is necessary to re-examine this relationship through a more sensitive design. This aspect is discussed by Roberts (1993) but suggestions to overcome this limitation have not been given.

2.3 Goal perspective approach to achievement motivation and performance



A theoretical framework of motivation is needed to understand the psychological mechanisms which elicit optimal and sustained performance as well as performance debilitation (Duda, 1993). Such a theoretical framework should incorporate practical operational definitions of the behaviours relating to such terms as sustained, optimal, and debilitation, and under which conditions and/or manipulations such behaviours can be measured (i.e., a sensitive paradigm).

The goal perspective approach to understanding achievement motivation behaviours was first introduced in educational setting (Ames, 1984a, 1994b, 1992; Dweck, 1986; Dweck & Elliot, 1983; Nicholls, 1984a, 1984b, 1989, 1992) and later applied extensively to the sport domain (see Duda, 1993 for review). This approach assumes that there are two predominant goal perspectives through which people perceive success and failure, and accordingly judge their level of competence. These two goal orientations are task and ego. Task oriented goals are associated with behaviours such as skill improvement based on individual capabilities, task mastery, working hard, and persistence. As Duda (1993) summarises ...it is assumed that a task involved goal perspective establishes the basis for maximal motivation and adaptive behaviours (p.422). Ego-type goal orientation consists of demonstrating ability in comparison to others thus, competence is achieved when superiority is exhibited. In situations in which superiority can not be demonstrated, effort will be reduced to minimal and drop of confidence will be evidenced (Jagacinski & Nicholls, 1990).

Goal orientation develops through the feedback one receives from significant others (Ames, 1992; Nicholls, 1989; Roberts, 1993). Competitive sports fosters participants to develop ego (i.e., ability) orientation and consequently to establish competitive goals within a competitive climate. Winning becomes the criterion, through which competence is evaluated (Roberts, 1993).

According to Maehr and Nicholls (1980) success and failure are related directly to the goal orientation held by the subject in achievement situations. These orientations are: ability, task, and social approval. Ability-oriented individuals strive to demonstrate ability. They avoid situations which have the potential of ego-threat. Competence in this type of individual is developed through comparison of ones abilities to others (Horn & Hasbrool, 1986). Winning and losing outcomes in sport are the ultimate criterion for success and failure in ability (ego) oriented individuals (Roberts, 1993). Task-oriented individuals concentrate on mastering the activities without a desire to exhibit ability or superiority over others. Improving skills is the main target of task-oriented individuals. Comparisons are made against self-determined or internal standards of performance (Harter, 1978; Veroff, 1969). Social approval oriented individuals seek to gain approval from significant others by exhibiting desirable behaviours. These three goal orientations were found to characterise subjects who engage in sport and physical activities (Duda, 1986a, 1986b; Ewing, 1981; Ewing, Roberts, & Pemberton, 1983). It was also indicated that drop-out from sport was associated with ability orientation and social comparison to achieve competence (Ewing, 1981; Duda, 1986b). Such individuals may develop feelings of stress, incompetence and unworth when their ego is threatened in situations where others seem to demonstrate superiority (Roberts, 1986). Roberts (1993) also argues that seek-oriented subjects who participate in sport are experiencing less stress and anxiety from social comparison since they enjoy their performance rather than compare themselves to others.

The two goal orientations (ability/ego - performance/task) were found to be independent each of the other (Dweck & Legget, 1988; Nicholls, 1989). That is, people can be high or low in both orientations as well as high in one and low in the other. However, this independence was reported in educational and academic, but not in competitive settings. In sport it may be assumed, that athletes who are used to regularly competing, as well as to improving their own skills, will be characterised as high on both goal orientations. It is, however, suggested that personal goals are fundamental elements of how people behave in any achievement situation (Duda 1993). Also, the degree to which personal goals match environmental climate (i.e. how much support or hostility one is exposed to by spectators, physical effort, feedback, etc.?) is an important determinant of self-commitment, motivation, and the amount of effort invested. Based on several studies, Duda (1993) concluded that individuals with both high ego



or high task orientation can be competitive, but that they may have different perceptions of the competitive experience. Which winning is important to both, the ego-oriented subjects are concerned more with the outcome and the task-oriented subjects are concerned more with the process. Losing on the other hand is more devastating to the ego-oriented than to the task-oriented subject. Furthermore, Duda argues that task goal orientation is positively associated with effort exertion, persistence and adherence in athletic settings, while ego-orientation is more associated with lack of persistence in the sport domain (Duda, 1988, 1989; Ewing, 1981; Weitzer, 1989; Whitehead, 1989).

Goal-orientation and effort exertion should be further studied under different environmental conditions (i.e., climate). In competitive sport, unlike recreational activity, the athlete is exposed frequently to unfavourable physical and environmental conditions which may impair performance. The implications of goal orientation and environmental conditions on action execution and perceptions should be further studied. Such studies may contribute to early talent identification in athletes, a field of inquiry which has recently gained much attention, but so far yielded disappointing results.

2.4 Competitiveness in sport.

Competitiveness is defined by Gill (1993) as an achievement orientation toward competitive sport, or a sport-specific form of achievement orientation. Competitive-orientation was introduced by Vealey (1986) and defined as the tendency for individuals to strive toward achieving a certain type of goal in sport (Vealey & Campbell, 1988, p.299). Relying on Murray (1938), Atkinson (1964, 1974) and McClelland, Atkinson, Clark, and Lowell (1953), Gill (1993) states that achievement motivation has been widely recognised as a capacity to experience pride in accomplishment to strive for across a wide range of achievement tasks and situations. (p.314).

Sport is viewed as a competitive, challenging, socially evaluative achievement environment in which success is important, yet uncertain (Vealey & Campbell, 1988, p.277). In reviewing all achievement aspects during adolescence, Vealey and Campbell concluded that sport is a salient achievement context at this age. Robert (1984, 1986) has argued that attrition from sport as well as stress and competence are dependent on the achievement goals held by adolescents who engage to be related to the degree that achievement goals have been attained (Burton & Martens, 1986; Klint & Weiss, 1986).

Winning and losing are considered by athletes as indicators of performance quality. Vealey (1988) has conceptualised the achievement orientation similarly to her colleagues: performance orientation and outcome orientation. She also states that athletes may pursue both of the goal orientation simultaneously (i.e., strive to perform well and win) however, one may be perceived as more important than the other and this importance affects feelings of competence.

Self confidence or efficacy (Bandura, 1977; Nicholls, 1984a, 1984b) is defined as the belief or degree of certainty that individuals possess about their ability to be successful in sport (Vealey & Campbell, 1988, p.230). As already mentioned, success is dependent on the goal orientation held by the individual (i.e., performing well or achieving favourable outcomes). Precompetitive self-confidence has been found to be positively associated with performance orientation and negatively with outcome orientation in high school students (Vealey, 1986).

Vealey and Campbell (1988) have found that extrinsic orientation is positively related to outcome orientation and negatively related performance orientation (0.19 and -0.20, respectively), and positively related to self-confidence (0.22) in adolescent figure skaters. In contrast to Vealey and Campbell's explanation, the magnitude of the correlations suggest that confidence is unrelated to any goal orientation and extrinsic motivation is unrelated either to outcome orientation or to performance orientation. Outcome and performance orientation were shown to correlate highly and negatively (-0.82)! This result may question the procedure of the study, in particular the tools that were used



to measure the constructs of achievement orientation.

In Atkinsons (1974) model there are two identified motives of achievement: the motive for success and the motive to avoid failure. Both motives are accelerators of motivation, however, Grill (1993) argues that in the sport milieu, competitive individuals are those who are high in motivation for success and low in fear of failure motivation. These motives, however, are specific and not generalisable across situations (Martens, 1976b). According to Spence and Helmreich (1978, 1983), achievement orientations consist of three main dimensions: mastery, work (effort), and competitiveness. One can be high, low, or variable on all these three dimensions. Although viewing these dimensions as universal, Grill (1993) argues that they vary across tasks or domains. In the sport domain, Scanlan (1978, 1988) suggested that competitiveness can be dependent merely on social comparisons (how good I am in comparison to others) or integrated (how good I am in comparison to others and how good I am in comparison to my own standards and expectations). Both general and sport psychology research suggest that competitive sport orientation is multidimensional. In exploring this multidimensionality, Grill and Deeter (1988) found three motivational orientations: Competitiveness (enjoyment of competition and the desire to enter and strive for success in sport competitive setting), win (focus on personal performance standards). Grill (1993) also notes that variations among athletes are largely due to the type of sport they are engaged in. In some sports winning is the ultimate goal, while in others performance quality has more weight.

The literature clearly suggests that achievement motivation is multidimensional. Some tasks are dependent more on win or ego orientations, while others on task and performance orientations. However, the distinction between competition and co-operation or independent achievement is still unclear, and similarly the achievement motivational orientations related to them is undefined, as yet. For example, Grill (1993), Martens (1987) and Orlick (1986) all who have worked with competitive athletes, emphasise that performance or goal orientations can be used to enhance performance and control anxiety. Similarly, Burton (1989, cited in Gill, 1993) reported that performance goals are of more value than outcome goals in swimmers. Outcome goals have a potential to reduce effort and motivation since they are inherently inflexible and uncontrollable (p.324).

2.5. Perceived competence, efficacy (confidence) and environmental climate as mediators between goal orientation and performance

Perceived competence related to sport performance was examined by Harter (1978, 1980). It was believed that perception of competence is related to specific tasks and domains. The relationship between perceived competence and adherence in sport, however, was found to be weak. Roberts (1993) suggested that the weak relationship was due to the lack of an adequate measurement tool to estimate competence in sport in relation to competitive orientation. Mainly the questionnaires used were dominated by :mastery oriented items.

Competence according to Harter (1978) is viewed as a multidimensional construct which initiates mastery attempts in various tasks, and consequently develops achievement behaviours and perception of control. The experience with the task in turn influences the perception of competence and control. Weiss and Chaumeton (1992) maintain that intrinsically oriented people use internal criterion and mastery goals to evaluate success and judge their competence and self-control. They experience positive affect when mastering challenges. Extrinsically oriented people in contrast, avoid mastery attempts to avoid possible failure. They usually adapt external standards or performance goals, possess low perceived competence and experience anxiety in mastery situations.

The psychological construct of achievement orientation, social and environmental conditions as determinants of motivation, effort exertion, consistency, and adherence in action execution should be integrated. Consequently performance and/or outcome perception, should consider the perceived ability of the subject as an important mediator between the personal and environmental properties and the performance and/or outcome characteristics (Duda,



1993; Hall 1990; Roberts. 1992, 1993). Subjects with similar goal orientations have been found to differ from each other on physical tasks performed under similar conditions as a result of their different perceived ability. Whether such differences will occur in athletes remains to be investigated. It should be kept in mind that athletes are expected to vary less among themselves in perceived physical ability than other subjects, however, it deserves more attention in further investigations. According to Jagacinski and Nicholls(1990) subjects with low perceived ability and ego-orientation will likely reduce their effort in order to protect themselves. Such a situation may also lead subjects to devalue the activity as a mechanism to protect the ego. Ego-orientation coupled with low perceived competence was linked also to higher level of competitive anxiety in football players (Boyd, Callaghan, & Yin, 1991).

In a summary of research Vealey (1986) has concluded that self-confidence in sport has been studied from three main approaches: Banduras (1977) self-efficacy theory (mainly efficacy expectations), Harters (1978) perceived competence model, and Nichollss (1980) model of performance expectancies. She concluded that self-confidence, when appropriately operationalised, has the potential to be a valuable predictor of sport behaviours across different sport situations. As a consequence of the state-trait distinction advocated in the research of personology, Vealey termed it sport-confidence. In line with the literature on self-efficacy, perceived competence, and performance expectancy, Vealey (1986) defined sport-confidence as the belief or degree of certainty individuals posses about their ability to be successful in sport (p.222). However, success is a relative term which depends on which goal-orientation one holds, namely task (performance) or outcome (ego) or both. It is argued by Vealey that the state sport confidence (a consequence of the interaction of trait sport confidence, competitive orientation and probably perceived ability) is an important mediator of sport behaviours.

Weiss and Chaumeton (1992) distinguish between participation and discontinuation motives, intrinsic and extrinsic motivation, and various goal achievement orientations. In their review, Weiss and Chaumeton examined the studies related to each of these constructs in the sport literature, with particular reference to motives for participation, adhering and ceasing physical activity programmes. However, how motivation orientation is related to immediate environmental (i.e., objective external) feedback (i.e., positive, negative, none) has not been addressed. Furthermore, how the outcomes were perceived and how competent were subjects with different goal orientations interacting with different environmental conditions need intensive examination.

Vallerand (1983) and Vallerand and Reid (1984) have supplied verbal positive, negative, and no feedback (FB) to subjects engaged in simplified hockey situations and a balance stabilometer task. Intrinsic motivation and performance were higher under the positive FB condition than under NO-FB and negative FB. However, perceived competence was found to mediate between FB conditions and intrinsic motivation. Also Whitehead and Corbin (1991) have reported that children in grade seven and eight assigned to an agility run and exposed to Positive FB had higher scores on perceived competence, effort-importance, and interest-enjoyment and lower on pressure-tension than children who received negative FB. These results indicate that positive FB (i.e., positive condition) enhances performance, competence and internal motivation while negative FB has reverse effects (Deci & Ryan, 1985), however, Weiss and Chaumeton (1992) and Horn (1986, 1987) argue that it is the quality and not necessarily the quantity of FB given to subjects which enhances or reduces intrinsic motivation, level of competence, and performance. In Horn's (1985, 1986, 1987) studies, as well as Vallerand (1983) and Vallerand and Reid (1984), the FB was given verbally by the coach in the form of praise or criticism. However, in competitive situations, athletes are receiving FB of the success or otherwise of their actions immediately and develop their own strategies as how to cope with positive and negative results. How performance is affected by continuous objective failure as opposed to success when performance is dependent on competition against ones self or other referenced criteria is still unknown. Also, how goal-orientation mediates between the environmental conditions (type of objective FB) and performance is unknown. It can be hypothesised that subjects who tolerate a negative environment and maintain performance when confronting consistent failure (self or referenced) are those who maintain high levels of intrinsic motivation and are emotionally and mentally more mature to tolerate competitive environments. Studies on this



topic are highly recommended by Weiss and Chaumeton (1992).

In reviewing the literature Weiss (1992) has concluded that when performance is evaluated against others there is a greater decrease in internal motivation than when the competition is against a standard in a non-competitive situation. However, in competitive situations Weinberg and Ragan (1979) reported that face to face competition or a competition against a standard increased intrinsic motivation in males, but not in females. In subsequent studies McAuley and Tammen (1989) argued that it is the subjective evaluation of success which affects intrinsic motivation rather than objective success. This however raises the issue of whether competitors adopt a more risk (mastery) or ability (outcome) oriented view of their competitive experience (Weiss, 1992, p.76).

Studies which investigate the relationship between goal-orientation and performance under different environmental conditions, should examine perceived ability, efficacy (confidence), arousal, and sense of control as potential mediators.

2.6 *An integrated model for achievement behaviours*

The reviewed literature suggests that motivational orientation is a dominant factor in determining behavioural consequences (i.e., effort, adherence, and consistence) and physical outcomes (i.e., performance). However, it is also the environmental conditions within which the individual is engaged which interacts with the individual goal orientations and affect behaviours and performance. Thus, it is the interaction between goal orientation and environmental conditions which determines how much effort will be invested in the task and how consistent will be the performer across time and/or trials. Within this conceptual framework, the sense of control, self-efficacy, commitment, arousal state, perceived ability and competence are considered to be mediators between the goal orientation interaction with environmental climate and performance. In cardiovascular endurance tasks, pain tolerance can be considered an important mediator as well. Perceptions of accomplishment are the end-product of the whole process. They depend on the personal-environmental variables, the mediators and behavioural consequences, and the outcomes.

The model can be used to design paradigms and studies which will examine its usefulness. Motivation orientation in relation to effort and adherence in performing task under manipulated favourable and unfavourable conditions may be examined. Also, the relationship between goal orientation and adherence in tasks which provoke pain can be examined. The mediators (perceived ability, control, arousal, efficacy, competence, commitment, and pain tolerance) should be examined, followed by the examination of perception of accomplishment.

References

Ames, C. (1984a). *conceptions of motivation within competitive and non-competitive goal structures*. In R. Schwarzer (Ed.), *Self-relate cognitions in anxiety and motivation* (pp. 205-241). Hillsdale, NJ: Erlbaum.

Ames, C. (1984b). *Competitive, co-operative, and individualistic goal structures: A motivational analysis*. In R. Ames & Ames (Eds.), *Research on motivation in education: Student motivation* (pp. 177-207). New York: Academic Press.

Ames, C. (1992). *Achievement goals, motivational climate, and motivational process*. In G. C. Roberts (Ed.), *Motivation in sport and exercise* (pp. 161-176). Champaign, IL: Human Kinetics.

Atkinson, J. W. (1964). *An introduction to motivation*. Princeton, NJ: Van Nostrand.

Atkinson, J. W. (1974). *The mainsprings of achievement-oriented activity*. In J. W. Atkinson & J. O. Raynor (Eds.), *Motivation and*



achievement (pp. 13-41). New York: Halstead.

Auweele, Y. V., Cuyper, B. D., Van Mele, V., and Rzewnicki, R. (1993). *Elite performance and personality: From description and prediction to diagnosis and intervention*. In R. N. Singer, M. Murphey, & L. K. Tennant (Eds.), *Handbook of Research on Sport Psychology*. (pp. 257-289). New York: Mcmillan.

Bandura, A. (1977). *Self-efficacy: Toward a unifying theory of behavioral change*. *Psychological Review*, 84, 191-215.

Bandura, A. (1986). *Social foundations of thoughts and actions: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.

Boyd, M., Callaghan, J., & Yin, Z. (1991, June). *Ego-involvement and low competence in sport as a source of competitive trait anxiety*. Paper presented at the North American Society for the Psychology of Sport and physical activity, Asilomar, CA.

Burton, D. (1989). *Winning isn't everything: Examining the impact of performance goals on collegiate swimmers' cognitions and performance*. *The Sport Psychologist*, 3, 105-132.

Burton, D., & Martens, R. (1986). *Pinned by their goals: An exploratory investigation into why kids drop out of wrestling*. *Journal of Sport Psychology*, 8, 183-197.

Crandall, V. C. (1963). *Achievement*. In H. W. Stevenson (Ed.), *Child Psychology* (pp. 416-459). Chicago, IL: University of Chicago Press.

Crandall, V. C. (1969). *Sex differences in expectancy of intellectual and academic reinforcement*. In C. P. Smith (Ed.), *Achievement-related motives in children* (pp. 11-45). New York, NY: Academic Press.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.

Deshaies, P., Pargman, D., & Thiffault, C. (1979). *A psychobiological profile of individual performance in junior hockey players*. In G. C. Roberts & K. M. Newell (Eds.), *Psychology of motor behavior and sport - 1978* (pp. 36-50). Champaign, IL: Human Kinetics.

Dewey, D., Brawley, L., & Allard, F. (1989). *Do the TAIS attentional style scales predict how information is processed?* *Journal of Sport and Exercise Psychology*, 11, 171-186.

Duda, J. L. (1986a). *Perceptions of sport success and failure among white, black, and Hispanic adolescents*. In J. Watkins, T. Reilly, & L. Burwitz (Eds.), *Sport science* (pp. 214-222). London: E. & F. N. Spon.

Duda, J. L. (1986b). *A cross-cultural analysis of achievement motivation in sport and the classroom*. In L. VanderVelden and J. Humphrey (Eds.), *Psychology and sociology in sport: Current selected research* (Vol. 1, pp. 115-134). New York: AMS Press.

Duda, J. L. (1988). *The relationship between goal perspectives and persistence and intensity among recreational sport participants*. *Leisure Sciences*, 10, 95-106.

Duda, J. L. (1989). *Relationship between task and ego orientation and the perceived purpose of sport among high school athletes*. *Journal of Sport and Exercise Psychology*, 11, 318-335.

Duda, J. L. (1989b). *Goal perspectives, participation and persistence in sport*. *International Journal of Sport Psychology*, 20, 42-56.

Duda, J. L. (1993). *Goals: A social-cognitive approach to the study of achievement motivation in sport*. In R. N. Singer, M. Murphey, & L. K. Tennant (Eds.), *Handbook of Research on Sport Psychology*. (pp. 421-436). New York: Macmillan.

Duda, J. L., Smart, A., & Tappe, M. (1989). *Personal investment in the rehabilitation of athletic injuries*. *Journal of Sport and Exercise Psychology*, 11, 367-381.

Dweck, C. S. (1986). *Motivational processes affecting learning*. *American Psychologist*, 41, 1040-1048.

Dweck, C. S., & Elliott, E. (1983). *Achievement motivation*. In E. M. Hetherington (Ed.), *Handbook of child psychology, 4th ed., Vol. 4: Socialisation, personality and social development* (pp. 643-691). New York: Wiley.



- Dweck, C. S., & Leggett, E. L. (1988). A social cognitive approach to motivation and personality. *Psychological Review*, 95, 1-18.
- Ewing, M. E. (1981). *Achievement orientations and sport behavior of males and females*. Unpublished doctoral dissertation, University of Illinois at Urbana-Champaign,
- Ewing, M. E., Roberts, G. C., & Pemberton, C. L. (1985). *A developmental look at children's goals for participation in sport*. Unpublished manuscript, University of Illinois.
- Feltz, D. (1988). Self-confidence and sports performance. In K. B. Pandoff (Ed.), *Exercise and sport science reviews* (pp. 423-457). New York: Macmillan.
- Gill, D. (1993). Competitiveness and competitive orientation in sport. In R. N. Singer, M. Murphey, & L. K. Tennant (Eds.), *Handbook of Research on Sport Psychology*. (pp. 314-327). New York: Macmillan.
- Gill, D. L. & Deeter, T. E. (1988). Development of the Sport Orientation Questionnaire. *Research Quarterly for Exercise and Sport*, 59, 191-202.
- Hall, H. (1990). *A social-cognitive approach to goal-setting: The mediating effects of achievement goals and perceived ability*. Unpublished doctoral dissertation. University of Illinois at Urbana-Champaign.
- Harter, S. (1978). Effectance motivation reconsidered: toward a developmental model. *Human Development*, 21, 34-64.
- Harter, S. (1980). The development of competence motivation in the mastery of cognitive and physical skills: Is there still a place for joy? In G. C. Roberts & D. M. Landers (Eds.), *Psychology of motor behavior and sport*. (pp. 3-29). Champaign, IL: Human Kinetics.
- Harter, S. (1981a). A model of intrinsic mastery motivation in children: Individual differences and developmental change. In W. A. Collins (Ed.), *Minnesota Symposium on Child Psychology* (Vol. 14, pp. 215-255). Hillsdale, NJ: Erlbaum.
- Highlen, P. S., & Bennett, B. B. (1983). Elite divers and wrestlers: A comparison between open- and closed-skill athletes. *Journal of Sport Psychology*, 5, 390-409.
- Horn, T. S. (1985). Coaches' feedback and changes in children's perceptions of their physical competence. *Journal of Educational Psychology*, 77, 174-186.
- Horn, T. S. (1986). The self-fulfilling prophecy theory: When coaches' expectations become reality. In J. M. Williams (Ed.), *Applied sport psychology: Personal growth to peak performance* (pp. 59-73). Palo Alto, CA: Mayfield.
- Horn, T. S. (1987). The influence of teacher-coach behavior on the psychological development of children. In D. Gould & M. E. Weiss (Eds.), *Advances in paediatric sport sciences: Vol. 2. Behavioral issues* (pp. 121-142). Champaign, IL: Human Kinetics.
- Horn, T. S., & Hasbrook, C. A. (1986). Information components influencing children's perception of their physical competence. In M. R. Weiss & D. Gould (Eds.), *Sport for children and youths* (pp. 81-88). Champaign, IL: Human Kinetics.
- Horsfall, J. S., Fisher, A. C., & Morris, H. H. (1975). Sport personality assessment: a methodological re-examination. In D. N. Landers (Ed.), *Psychology of sport and motor behavior* (pp. 61-69). College of HPER Pennsylvania.
- Jagacinski, C. W., & Nicholls, J. G. (1990). Reducing effort to protect perceived ability: "They'd do it but I wouldn't." *Journal of Educational Psychology*, 82, 15-21.
- Kang, I., Gill, D. L., Acevedo, E. O., & Deeter, T. E. (1990). Competitive orientations among athletes and nonathletes in Taiwan. *International Journal of Sport Psychology*, 21, 146-157.
- Klint, K., & Weiss, M. R. (1986). Dropping in and dropping out: Participation motives of current and former youth gymnasts. *Canadian Journal of Applied Sport Sciences*, 11, 106-114.

Landers, D. M. (1983). Whatever happened to theory testing in sport psychology? *Journal of Sport Psychology*, *5*, 135-151.

Landers, D. M., Boutcher, S. H., & Wang, M. Q. (1986). A psychobiological study of archery performance. *Research Quarterly for Exercise and Sport*, *57*, 236-244.

Maehr, M., & Braskamp, L. A. (1986). *The motivational factor. A theory of personal investment*. Lexington, MA: Lexington Books.

Maehr, M. L., & Nicholls, J. G. (1980). Culture and achievement motivation: A second look. In N. Warren (Ed.), *Studies in cross-cultural psychology* (pp. 221-267). New York: Academic Press.

Martens, R. (1975). The paradigmatic crisis in American sport personology. *Sportwissenschaft*, *5*, 9-24.

Martens, R. (1976b). Competitiveness in sports. In F. Landry & W. A. R. Orban (Eds.), *Physical activity and human well-being* (pp. 323-343). Miami, FL: Symposia Specialists.

Martens, R. (1987). *Coaches' guide to sport psychology*. Champaign, IL: Human Kinetics.

McAuley, E., & Tammen, V. V. (1989). The effects of subjective and objective competitive outcomes on intrinsic motivation. *Journal of Sport and Exercise Psychology*, *11*, 84-93.

McClelland, D. C., Atkinson, J. W., Clark, R. A., & Lowell, E. L. (1953). *The achievement motive*. New York: Appleton-Century-Crofts.

Morgan, W. P. (1973). Efficacy of psychobiologic inquiry in the exercise and sport sciences. *Quest*, *20*, 39-47.

Morgan, W. P. (1978). Sport personology: The credulous-sceptical argument in perspective. In W. F. Straub (Ed.), *Sport psychology: An analysis of athlete behavior* (pp. 330-339). Ithaca, NY: Movement Publications.

Murray, H. A. (1938). *Explorations in personality*. New York: Oxford University Press.

Nicholls, J. (1984a). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review*, *91*, 328-346.

Nicholls, J. G. (1984b). Conceptions of ability and achievement motivation. In R. Ames & C. Ames (Eds.), *Research on motivation in education: Student motivation* (Vol. 1, pp. 64-92). New York: Academic Press.

Nicholls, J. G. (1980, July). Striving to demonstrate and develop ability: A Theory of achievement motivation. In W. U. Meyer & B. Weiner (Chair), *Attributional approaches to human motivation*. Symposium conducted at the Center for Interdisciplinary Research, University of Bielefeld, West Germany.

Nicholls, J. G. (1989). *The competitive ethos and democratic education*. Cambridge, MA: Harvard University Press.

Nicholls, J. G. (1992). The general and the specific in the development and expression of achievement motivation. In G. Roberts (Ed.), *Motivation in sport and exercise* (pp. 31-56). Champaign, IL: Human Kinetics.

Nideffer, R. M. (1990). Use of the Test of Attentional and Interpersonal Style (TAIS) in sport. *The Sport Psychologist*, *4*, 285-300.

Orlick, T. (1986). *Psyching for sport*. Champaign, IL: Leisure Press.

Pervin, L. A. (1984). *Personality: Theory and research*. New York: Wiley.

Pezer, V., and Brown, M. (1980). Will to win and athletic performance. *International Journal of Sport Psychology*, *11*, 121-131.

Reeds, G. K. (1985). The relationship of personality and anxiety to performance among elite male and female gymnasts. *Canadian Association Health and Physical Education Record Journal*, *51*, 5-7.

Regnier, G., Salmela, J., and Russell, S. J. (1993). Talent detection and development in Sport. In R. N. Singer, M. Murphey, & L. K.

Tennant (Eds.). *Handbook of Research on Sport Psychology*. (pp. 290-313). New York: Macmillan.

Roberts, G. (1993). *Motivation in sport: Understanding and enhancing the motivation and achievement of children*. In R. N. Singer, M. Murphey, & L. K. Tennant (Eds.), *Handbook of Research on Sport Psychology*. (pp. 405-420). New York: Macmillan.

Roberts, G. C. (1982). *Achievement motivation in sport*. In R. Terjung (Ed.), *Exercise and sport science reviews (Vol. 10)* (pp. 237-269). Philadelphia, PA: Franklin Institute Press.

Roberts, G. C. (1984). *Achievement motivation in children's sport*. In J. G. Nicholls, (Ed.), *Advances in motivation and achievement: Vol. 3* (pp. 251-281). Greenwich, CT: JAI Press.

Roberts, G. C. (1986). *The perceptions of stress: A potential source and its development*. In M. R. Weiss & D. Gould (Eds.), *Sport for children and youths* (pp. 119-126). Champaign, IL: Human Kinetics.

Roberts, G. C. (1989). *When motivation matters: The need to expand the conceptual model*. In J. S. Skinner, C. B. Corbin, D. M. Landers, P. E. Martin, & C. L. Wells (Eds.), *Future directions in exercise/sport research* (pp. 77-84). Champaign, IL: Human Kinetics.

Roberts, G. C. (1992). *Motivation in sport and exercise: Conceptual constraints and convergence*. In G. C. Roberts (Ed.), *Motivation in sport and exercise*. Champaign, IL: Human Kinetics.

Rushall, B. S. (1970). *An evaluation of the relationship between personality and physical performance categories*. In G. S. Kenyon (Ed.), *Contemporary psychology of sport* (pp. 157-165). Chicago: Athletic Institute.

Rushall, B. S. (1978). *Environment specific behavior inventories: Developmental procedures*. *International Journal of Sport Psychology*, 9, 97-110.

Rushall, B. S. (1989). *Sport psychology: The key to sporting excellence*. *International Journal of Sport Psychology*, 20, 165-190.

Scanlan, T. K. (1978). *Antecedents of competitiveness*. In R. A. Magill, M. J. Ash, & F. L. Smoll (Eds.), *Children in sport: A contemporary anthology* (pp. 53-75). Champaign, IL: Human Kinetics.

Scanlan, T. K. (1988). *Social evaluation and the competition process: A developmental perspective*. In F. L. Smoll, R. A. Magill, & M. J. Ash (Eds.), *Children in sport (3rd. Ed.)* (pp. 135-148). Champaign, IL: Human Kinetics.

Silva, J. M. (1984). *Personality and sport performance: Controversy and challenge*. In J. M. Silva & R. S. Weinberg (Eds.), *Psychological foundations of sport* (pp. 59-69). Champaign, IL: Human Kinetics.

Silva, J. M., Schultz, B. B., Haslam, R. W., & Murray, D. (1981). *A psychophysiological assessment of elite wrestlers*. *Research Quarterly for Exercise and Sport*, 52, 348-358.

Singer, R. N. (1988). *Psychological testing: What value to coaches and athletes?* *International Journal of Sport Psychology*, 19, 87-106.

Spence, J. T., & Helmreich, R. L. (1983). *Achievement-related motives and behaviors*, In J. T. Spence (ED.), *Achievement and achievement motives* (pp. 7-74). San Francisco: W. H. Freeman.

Spence, J. T., & Helmreich, R. L. (1978). *Masculinity and femininity: Their psychological dimensions, correlates and antecedents*. Austin: University of Texas Press.

Summers, J. J., & Ford, S. K. (1990). *The test of attentional style: An evaluation*. *International Journal of Sport Psychology*, 21, 102-111.

Vallerand, R. J. (1983a). *Attention and decision making: A test of the Test of Attentional and interpersonal Style (TAIS) in a sport setting*. *Journal of Sport Psychology*, 5, 449-459.

Vallerand, R. J. (1983b). The effect of differential amounts of positive verbal feedback on the intrinsic motivation of male hockey players. *Journal of Sport Psychology*, *5*, 100-107.

Vallerand, R. J., & Reid, G. (1984). On the causal effects of perceived competence on intrinsic motivation: A test of cognitive evaluation theory. *Journal of Sport Psychology*, *6*, 94-102.

Van Schoyck, R. S., & Grasha, A. F. (1981). Attentional variations and athletic ability: The advantages of a sport specific test. *Journal of Sport Psychology*, *3*, 149-165.

Vealey, R. S. (1986). Conceptualisation of sport-confidence and competitive orientation: Preliminary investigation and instrument development. *Journal of Sport Psychology*, *8*, 221-246.

Vealey, R. S. (1988). Sport confidence and competitive orientation: An addendum on scoring procedures and gender differences. *Journal of Sport and Exercise Psychology*, *10*, 471-478.

Vealey, R. S. (1989). Sport personology: A paradigmatic and methodological analysis. *Journal of Sport and Exercise Psychology*, *11*, 216-235.

Vealey, R. S., and Campbell, J. L. (1988). Achievement goals of adolescents figure skaters: Impact on self-confidence, anxiety, and performance. *Journal of Adolescent Research*, *3*, 227-43.

Veroff, J. (1969). Social comparison and the development of achievement motivation. In C. P. Smith (Ed.), *Achievement related motives in children* (pp. 46-101). New York: Russell Sage Foundation.

Weinberg, R. S., & Ragan, J. (1979). Effects of competition, success/failure, and sex on intrinsic motivation. *Research Quarterly*, *50*, 503-510.

Weiner, B. (1986). *An attributional theory of motivation and emotion*. New York: Springer-Verlag.

Weiner, B., Frieze, I., Kukla, A., Reed, L., Rest, S., & Rosenbaum, R. M. (1971). Perceiving the causes of success and failure. In E. E. Jones, D. E. Kanose, H. H. Kelly, R. E. Nisbett, S. Valins, & B. Weiner (Eds.), *Attribution: Perceiving the causes of behavior* (pp. 95-120). Morristown, NJ: General Learning Process.

Weiss, M. R. and Chaumeton, N. (1992). Motivational Orientations in Sport. In T. S. Horn (Ed.) *Advances in Sport Psychology*, (pp. 61-99). Champaign, IL: Human Kinetics.

Weitzer, J. E. (1989). *Childhood socialisation into physical activity: Parental roles in perceptions of competence and goal orientation*. Unpublished master's thesis, University of Wisconsin at Milwaukee.

White, R. (1959). Motivation reconsidered: The concept of competence. *Psychological Review*, *66*, 297-333.

Whitehead, J. (1989, November). *Achievement motivation and persistence in adolescent sport*. Paper presented at the symposium on "Motivation in sport and Exercise," University of Illinois at Urbana-Champaign.

Whitehead, J. R., & Corbin, C. B. (1991). Youth fitness testing: The effect of percentile-based evaluation feedback on intrinsic motivation. *Research Quarterly for Exercise and Sport*, *62*, 225-231.

Williams, L. R. T. (1982). Innovations in behavioral research: Implications for elite performance. *New Zealand Journal of Health, Physical Education and Recreation*, *15*, 19-26.

Willis, J. D. (1982). Three scales to measure competition-related motives in sport. *Journal of Sport Psychology*, *4*, 338-353.