The functional significance of action-state orientation in athletic performance

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The functional significance of action-state orientation
in athletic performance

by

Caroline Clare Douglas

A Doctoral Thesis
Submitted in Partial Fulfilment of the Requirements for the
Award of Doctor of Philosophy of the Loughborough University

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Abstract

This thesis investigated the functional significance of the personality construct of action-state orientation (Kuhl, 1981), which is suggested to mediate the efficiency of the volitional approach taken to overcome the difficulties associated with goal initiation, maintenance and completion under competitive pressure. The role of volition, defined as 'the act of deciding upon a course of action and initiating it' [Syn. Will] (German Dictionary of psychology, 1934, p.283) in sport has emerged from unequivocal findings taken from coaches and athletes regarding the effectiveness of goal setting as a performance enhancement strategy (Burton, Weinberg, Yukelson & Weigand, 1998; Weinberg, Burton, Yukelson & Weigand, 2000). Further research exploration of goal setting practices concluded that the most realistic explanation for the lack of goal attainment when utilising goal setting is the lack of an adequate 'action plan' (Burton, Naylor & Holliday, 2000). Whilst goal setting is a process of motivation that ends with a decision to act (Beckmann, 2002; Heckhausen, 1991; Kuhl, 1987), the processes of goal initiation and completion are related to action plans and goal striving, which are issues of volition (Kuhl, 1984; Latham 2000). Volitional competence is determined by the opposing personality dispositions of action- versus state-orientation. Action-orientation is characterised by an efficient present focus on action and making plans under pressure, whereas state-orientation is associated with an increased propensity to ruminate over real or imagined failure and the state the individual is in, rather than focus on the task at hand (Kuhl, 1994a).

Study 1 explores the performance strategies and coping skills utilised by action- and state-oriented athletes under competitive pressure. Scores on the Athlete Coping Skills Inventory (ACSI-28; Smith, Schultz, Smoll & Ptacek, 1995)
demonstrated a significantly higher usage of goal setting, relaxation and imagery as well as better emotional control and lower levels of negative thinking in the action-oriented group. Results from the Test of Performance Strategies (TOPS; Thomas, Murphy & Hardy, 1999) showed comparable scores between action- and state-oriented athletes in the areas of self-talk and coachability. A similarity which highlights an increased propensity in state-oriented athletes to submit to external control and the beliefs of others in preference to their own personal judgement.

Study 2 documents the impact of 5-month intervention with endurance athletes to enhance volitional functioning and self-access to their personal wants, needs and beliefs utilising Personality Systems Interaction theory (PSI; Kuhl, 2000a), which contends volition efficiency is facilitated by positive affect. Eight out of eleven baseline state-oriented athletes scores on the Volitional Components Inventory (VCI; version 6, US-1; Kuhl & Fuhrmann, 1998) showed significantly improved differences in 23 out of a total 35 areas of volitional functioning, including enhanced levels (p<0.05) of emotional control, initiating and self-determination. Significantly decreased scores (p<0.05) in areas including inhibition and fear of failure were also shown.

Study 3 presents follow-up interviews with intervention programme athletes to specifically investigate personal experiences and perceptions of behaviour change. Qualitative exploration indicated more pronounced use of avoidance coping strategies related to self-awareness and the adoption of mental skills in three athletes who showed no improved volitional competency. These athletes demonstrated inappropriate and performance impairing methods of enacting their intentions.

Overall, results suggest that volitional efficiency is related to the ease of access to personal beliefs, needs and wants as these self-related constructs provide
goals with the dynamic properties of being self-determined and intrinsically-motivated. Goal pursuit can be severely debilitating by intentions that lack energising and protective qualities because limited self-awareness and the use of denial create a situation where intentions are never actually associated with the constructs that govern motivational meaning and action initiation. It is necessary that athletes learn to trust their own judgements and function quickly and correctly when under competitive pressure. If athletes do not develop the ability to appropriately access the mechanisms that enable them to overcome the difficulty of goal enactment, their performance can be compromised. A key implication for professional practice is the need to develop easily adhered-to self-monitoring tools and functionally relevant affect regulation training programmes. Future research directions including the furthering of both the issues of theoretical understanding and the role played by volition in sport are presented.

**Key words:** Action-orientation, Action planning, Affect, Goal striving, State-orientation, Volition
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To Mum and Dad
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Glossary of terms

**Action control**: Action control is the mode of volition supporting the maintenance of an active goal (Kuhl, 1984) and encompasses the processes of goal initiation, enactment and completion. The purpose of action control is to shield the intention from competing actions (such as, other activities or dwelling on real or imagined failure/setback) and to ensure the goal is executed rather than replaced by an alternative action.

**Action control scale (ACS-90)**: (Kuhl, 1994). Forced choice questionnaire assessing individual differences (action vs. state orientation) in the ability to maintain and enact intentions under pressure.

**Action Control Theory**: (Kuhl, 1982, 1984, 1985) A two factor theory of volitional control built around the concept of goal striving. Suggests breakdowns in goal initiation or completion are due to individual inabilities to shield intentions from interference by competing action tendencies.

**Action-orientation**: A self-regulatory mode of control characterised by the ability to avoid distraction and focus on present goals when under pressure (Kuhl, 1981).

**Affect**: A pre-cognitive reaction to stimuli (Zajonc, 1980, 2000). Affect is an all encompassing concept that includes emotions (brief intense affect) and moods (lasting affective state) Forgas (2000).
Auxiliary functions assumptions: States that volitional support of an intention is aided by: A conscious representation of an intention (mindset for action and commitment) and; facilitating positive affect (Kuhl, 1994a).

Down-regulate: Refers to the capacity for self-relaxation (the ability to self-initiate processes that lessen negative moods).

Functional Helplessness: The performance effect incurred when state-oriented cognitions interfere with performance. Poor performance resulting from feelings of helplessness that occur because the individual is preoccupied with the state caused by thoughts of real or imagined failure experiences (Kuhl, 1981).

Goal maintenance: The act of attempting to achieve a goal at all costs, even at the price of short or long term suppression of personal beliefs, needs or feelings (Kuhl & Baumann, 2000).

Modulation assumptions: Central assumptions forming the basis of PSI-theory and describe the dynamic affective processes mediating goal-directed action: Positive affect facilitates intentions and; negative affect inhibits access to self-related constructs (beliefs, needs and wants), which are necessary for decision-making.

Loss-of-autonomy cycle: A detrimental performance cycle whereby the suppression of personal preferences (beliefs, wants and needs) in demanding conditions leads to internal conflict, which causes uncontrollable intrusive cognitions (this condition is
termed state-orientation). Negative cognitions cause rumination and negative affect resulting in behavioural inaction. In order to maintain action the individual further suppresses their personal beliefs (self-controlling behaviour) and inadvertently escalates the loss of autonomy cycle (Kuhl & Beckmann, 1994b).

**PSI-theory:** Personality Systems Interaction theory (Kuhl 2000a; 2000b). Specifies the role of affect as the underlying dynamic mechanism that mediates volitional action.

**Rumination:** Static contemplations (cognitions) that go around in circles and lack any inclination toward change. Fundamentally differentiated from problem solving or deliberation (Beckmann, 1998).

**Self-alien behaviour:** Self-controlling behaviour where the individual acts against their own personal preferences (beliefs, wants or goals). Any resultant internal conflict can increase feelings of alienation, hesitation and indecision (Kazén, Baumann & Kuhl, 2003) and inhibit behaviour in demanding conditions.

**Self-compatibility checking:** The process of checking goals and beliefs to see if they are compatible with personal preferences. Incompatible goals are rejected to ensure self-regulated action (Kazén, Baumann & Kuhl, 2003).

**Self-control:** Contrasting mode of volitional control to self-regulation. Self-controlling behaviours are characterised as a form of self-denial against where individual acts coercively according to a model of action requested or believed to be
desired by another person, without necessarily integrating this behaviour into their own system of beliefs, wants and needs (Kuhl & Beckmann, 1994b).

**Self-infiltration:** The act of taking on the goals and beliefs of others and adopting these ideas as one's own personal intentions, even if they are not compatible with actual personal beliefs (Kazén, Baumann & Kuhl, 2003).

**Self-maintenance:** The volitional task of self-regulation that involves harmonising external behaviours with internal beliefs and feelings (Kuhl, 1994b).

**Self-system:** Hypothetical intuitive system storing the holistic self-related constructs of beliefs, goals and personal preferences (Kuhl, 2000a; 2000b).

**State-orientation:** Personality disposition characterised by cognitions dissociated with here and now (Kuhl & Kazén, 1994a). Indicates a greater propensity in pressure situations to become negatively focussed on the *state* the individual is in, rather than on forming a plan of action to change the circumstances.

**Up-regulate:** The ability to self-initiate processes that create and sustain positive moods and emotions under pressure. The act of getting 'revved up'.

**Volition:** The act of deciding upon a course of action and initiating it [Syn. Will]. German dictionary of psychology (1934, p. 293).
Chapter 1: Introduction

1.1 Overview of research

Psychological theory has largely struggled to explain why an athlete with the motor and cognitive abilities to undertake and complete a task does not always accomplish their task intentions (Kuhl, 1984). Traditionally, cognitive theories of goal-directed action have sought to explain this discrepancy between intentions and actions as a motivational deficit (Herrman & Wortmann, 1985). However, extensive research shows that athletes and coaches value and make great use of action enhancing motivational tools, particularly goal setting (Burton, Weinberg, Yukelson & Weigand, 1998; Weinberg, Burton, Yukelson & Weigand, 2000). Investigations into the goal setting practices of athletes (Burton, Naylor & Holliday, 2000) have lead the authors to conclude that the only feasible explanation for the inconsistency between goals set and actions taken lies in the methodology by which the athlete creates an 'action plan' to achieve their goals. This new focus on action planning highlights a distinction between goal setting and goal pursuit and also, the factor of individual differences in planning.

Goal setting is considered to be a process of motivation that leads only to the decision to act (Beckmann, 2002; Heckhausen, 1991; Kuhl, 1987), yet the goal striving process of developing an active commitment to the initiation and completion of an intention, is considered a process of volition (Kuhl, 1984; Latham, 2000). In his theory of action control, Kuhl (1984) indicated that when goal striving breaks down it is due to individual inabilities to protect the intention from competing action alternatives (such as other tasks, or ruminating over real or imagined failure experiences), rather than maintaining a present focus on finishing the task at hand.
Volitional strategies for goal attainment can function in two contrasting approaches: self-regulation and self-control (Kuhl & Beckmann, 1994b). Self-regulation is considered a self-determined mode of volition that focuses on self-maintenance (Beckmann, 2002). This mode of action is related to the ability to access and trust personal thoughts and feelings (Kuhl & Fuhrman, 1998) and therefore, the ability to undertake decisions and actions in a more autonomous manner. The contrasting volitional mode of self-control is centred on the issue of goal-maintenance (Kuhl, 1994a) where the athlete strives to fulfil intentions that are not necessarily self-chosen, or even goals which they feel are incongruent with their own beliefs. The behaviour of self-infiltrating (Kazen, Baumann & Kuhl, 2003) the ideas and opinions of others as their own and directing energy toward attainment of those beliefs effectively means the athlete is not acting with autonomy. Moreover, self-controlling behaviour is acknowledged as a form of self-denial (Kuhl & Beckmann, 1994b). Kazén, et al. (2003) suggested that feeling obligated to goals that do not necessarily represent an athlete's own preferences can cause feelings of alienation, such internal conflicts are considered to promote excessive rumination, loss of focus and cause negative affect (Kuhl and Beckmann, 1994a), all of which are extremely detrimental to task performance. Self-regulatory ability is fundamentally linked to the ease of which an individual can access a hypothetical intuitive self-system that contains holistic representations of personal wants, needs, affects and beliefs (Kuhl, 2000a; 2000b). Accessing these constructs when making decisions and plans means the individual benefits from a powerful extra intrinsic motivation that comes from knowing they 'stand firm' behind their own decisions (Kuhl & Baumann, 2000). According to Personality Systems Interaction (PSI; Kuhl, 2000a; 2000b) theory access to the self-system is mediated by affect, as volitional functioning is enhanced.
by the ability to up-regulate (create) positive affect and to down-regulate (lessen) negative affect. In other words, positive moods facilitates self-regulatory behaviours under pressure because the individual is better able to form action plans based on their own personal beliefs and preferences. However, if the individual is experiencing negative affect, performance is debilitated because the individual becomes preoccupied with their negative mood and struggles to focus on the task at hand. As the individual is unable to access the self-system to make a decision, they tend to draw upon self-controlling measures, such as following the beliefs of others, with which they may not actually be reconciled, in order to maintain action towards a goal.

The use of volitional strategies and self-system access in demanding conditions is considered to be governed by the personality construct of action vs. state orientation (Kuhl, 1981), dispositions which exist at opposing ends of a continuum. Type of ‘orientation’ mediates the approach taken to overcome the difficulty of goal enactment, for example, action-orientation is characterised by a present focus on action and making plans under pressure. Whilst state-orientation is linked to cognitions dissociated with the ‘here and now’ (Kuhl & Kazén, 1994a), that is, attention is focussed on the state the individual is in, rather than making a plan of action. For example, a focus on the present state should involve ruminating over a current unfortunate situation and imagining failure, rather than considering how to alleviate the circumstances. Brooding over past states might involve thinking of failure experiences, whilst dwelling on a future state may be concerned with unrealistic goals. Research across a wide variety of contexts (including, educational populations, individuals with psychopathological disorders and in elite sport) has overwhelmingly demonstrated that in pressure circumstances, action-oriented individuals possess a superior ability to focus think of their feet and plan and execute
realistic action alternatives to manage the situation (e.g., Beckmann, 2002; Beckmann & Kazén, 1994; Brunstein, 1994; Heckhausen & Strang, 1998; Kuhl, 1981; Strang, 1994). It is also suggested that these control states are trainable (Beckmann, 2002; Beckmann & Kazén, 1994; Hartung & Schulte, 1994). Furthermore, research has demonstrated that volitional efficiency can be enhanced by assisting state-oriented individuals with their strategy building, so as to enable both the development of a plan and feelings of positive affect and self-efficacy toward undertaking the strategy.

In order to facilitate the development of action-oriented behaviours in state-oriented athletes as skills that are robust enough to be executed in the face of competitive pressure, it was first necessary to examine the differences in sport-specific performance strategies between the two groups. This was essential to establish specifically what activities action-oriented athletes applied successfully and also to conceptualise the needs of state-oriented athletes and clarify future intervention targets. Study 1 explores the functional significance of the action-state orientation personality construct in terms of the volitional skills of planning, enacting and completion of intentions within the context of competitive experiences, that is, the usage of mental skills and coping strategies. In stressful situations state-oriented individuals have a greater propensity to dwell on real or imagined setback and failure (Kuhl, 1994b) and experience performance inhibiting negative affect. In contrast, action-oriented individuals are more likely to maintain flexibility and direct attention appropriately when attempting to enact their plan of action. The strategising of state-oriented individuals is further compromised by a higher tendency to self-infiltrate the ideas and beliefs of others as their own goals (i.e., Kazén, et al, 2003; Kuhl & Kazén, 1994b). This is pertinent because it is only when strategies are developed in harmony
with self-related constructs (personal beliefs, needs and wants) that they provide the intrinsic motivation to be relevant and facilitative to action (Kuhl & Baumann, 2000).

A key target intervention target for Study 2 was to enhance athlete access to self-related constructs in order for the individual to be able to develop goals in line with personal preferences and thus, more volitionally efficient as self-regulated intentions. The concept of training the mediating control states for increased volitional efficiency has previously been demonstrated through both lab-based short-term experiments (Kuhl, 1981; Kuhl & Weiß, 1994), over the long-term through therapeutic programmes with patients with phobic disorders (Hartung & Schulte, 1994). The applicability of such training is suggested as relevant to athletic populations (Beckmann, 2002; Beckmann & Kazén, 1994). Increased levels of stress are shown to enhance negative affect in state-oriented individuals (Stiensmeier-Pelster & Schürmann, 1994), this negative affect impairs access to self-representations (Kuhl, 2000a) and thus, the derivatives of self-regulated action, which includes the ability to regulate affect. A focus of the intervention was training skills in affect regulation to combat the many detrimental issues associated with negative affect.

The role of awareness is greatly related to self-regulation skills, without awareness of personal emotional preferences and needs the individual cannot make reliable self-compatibility checks of ideas and will not perceive self-alien goals as incongruent with personal needs (Kuhl & Baumann, 2000) therefore attempting to enact the goals using self-controlling behaviours. Without self-awareness the athlete cannot gain control in pressure situations (Ravizza, 1998), thus, the intervention focussed on developing vigilant self- and performance-monitoring skills through daily diaries and performance evaluation logs. Similarly, affect regulation skills were trained through breathing control techniques (i.e., down-regulation of negative affect/
self-relaxation) whilst the generation of positive affect was applied through the auxiliary functions assumption (Kuhl & Beckmann, 1994b), that suggests developing an ability to constantly transition between difficulty awareness and positive outlook. By forming an understanding of the difficulty of the situation, the athlete can create a conscious representation of the goal, that is, specify the necessary mindset, action and commitment that will be required to meet the challenge. Furthermore, in looking for the challenge and being realistic about what needs to happen the athlete can create facilitating positive affect from this outlook, which means self-access can be gained and a self-determined action plan can be formulated.

Study 3 is conducted as a follow-up qualitative interview study for the purpose of exploring the efficacy of the intervention impact through an investigation of athlete experiences and perceptions at a more in-depth level. The development of the essential skill of self-awareness (for self-access) requires a long-term approach in order to ensure it provides state-oriented individuals with the necessary basis for developing subsequent mental skills (Kuhl, 2000a). Therefore, a detailed examination of the processes experienced during skills development is merited.

1.2 Purpose of the study

The purpose of this thesis is to examine the functional significance of the individual difference factor of action-state orientation in terms of how this influences volitional functioning (i.e., goal planning, initiation and completion) under competitive pressures. Specifically, the thesis examines 1). differences in cognitive functioning and sport-specific volitional strategies of action versus state orientated athletes under pressure, 2). the impact of a long-term intervention on debilitating
behaviours that impair volitional functioning and 3). athlete observed behaviour changes.

### 1.3 Structure of the thesis

The thesis comprises six chapters and addresses the three main research questions outlined in section 1.2. Chapter 2 and Chapter 4 provide separate reviews of relevant literature associated with the proceeding studies in Chapter 3 and Chapter 5. The specific outline of the thesis is as follows:

Chapter 2 reports a critical overview of the development of theories of goal directed behaviour and discusses the central issues of the key motivation based and volition based theories identified in the literature. This chapter also introduces the personality disposition of action vs. state orientation and the role of affect in promoting or debilitating action.

Chapter 3 (Study 1) explores the volitional factors of planning, initiation and completion of intentions with regard to sport specific performance strategies and coping skills of athletes under competitive pressure. The purpose of the study was to identify differences in self-regulatory ability, establish the impact of affect management on performance and highlight targets for intervention.

Chapter 4 establishes Kuhl's PSI theory (2000a) of volitional action that focuses on the role played by affect to connect personality and cognitive systems. This functional approach is used to develop an intervention programme to enhance self-regulatory efficiency.
Chapter 5 (Study 2) examines the efficacy of a five-month systems conditioning intervention to enhance volitional efficiency in distance athletes and reports on post-intervention skill levels tracked over a further 5-month period.

Chapter 6 (Study 3) reports on findings from a qualitative (interview) follow-up to the intervention and presents two case study accounts of athletes' personal experiences and perceptions of behaviour change. The purpose of this study was to further examine the facets of personality dispositions that enabled or hindered the enhancement of self-regulatory action.

Chapter 7 summarises the findings of the research programme and attempts to draw the findings together in a theoretical discussion. The chapter also addresses the practical implications of the research findings, limitations of the studies and suggests future directions for both research and applied practice.
Chapter 2: An overview of theories of goal-directed action

2.1 Research rationale

The rationale for this research is borne out of findings demonstrating that both athletes and coaches greatly value and extensively use goals (Burton, Weinberg, Yukelson & Weigand, 1998; Weinberg, Burton, Yukelson & Weigand, 2000), yet, paradoxically, the same studies show that these groups also report finding goal setting as only a moderately successful goal attainment strategy. Locke, Shaw, Saari and Latham (1981) provide a detailed account of how goals are believed to influence behaviour, yet it is apparent in high level sport that goals are not enabling the anticipated levels of achievement (Burton, Naylor & Holliday, 2000). Arguably, it would appear there may be flaws or inconsistencies amidst the processes of goal setting and goal striving causing this discrepancy. In order to explore any issues of strategy that might enable better goal achievement, it is first necessary to investigate the underlying theoretical principles that have been used to shape the in-the-field methodologies used by coaches and athletes. Key theories of goal directed behaviour will be introduced to examine understanding behind what moves a person and also, the motivational limitations of goals, in line with the proposition that goals alone do not determine whether intentions are accomplished (Elbe, Szymanski & Beckmann, 2005).

In addition, the empirical disputes between practitioners of sport psychology and Industrial / Organisational (I/O) psychology will be reviewed in a historical context to demonstrate how a mixed success rate when applying goal setting principles to sport settings has driven such a vast and contentious research area. It is arguable that this debate has fuelled so much output into one specific area that other potential concerns, such as how to make goal setting per se more effective for
individuals, appear to have received limited attention in the ensuing methodological and interpretive deliberations. In assessing the debate it will be shown how exhaustive broad-based goal setting research in sport has ultimately lead to an emphasis on pinpointing the key facets of behaviour that influence goal attainment. Moving beyond how goals mobilise action, researchers have been drawn to consider what might impact intention completion (Burton et al., 2000). This identification of specific issues for attention widens scope outside of motivation based theories into consideration of other factors in goal directed behaviour, such as the role played by the previously overlooked function of volition.

2.2 What moves a person?

Theories to explain goal directed behaviour have been the subject of much debate since the earliest days of psychology. In the early 1900’s German researchers (e.g., Ach, 1910; ‘German will psychology’, see section 2.5.1) distinguished goal achievement into separate elements of planning, enacting and completion. Goal setting was considered as a ‘battle of motives’ (Gollwitzer, 1990) dependent on needs or wants and deemed to be fundamentally distinct from the then key focus area of goal striving, which was believed to be responsible for initiation and action. As such, the area of motivation was not held to factor in whether goals were successfully attained, or whether they are even undertaken, as the processes of goal pursuit such as enacting and completing goals were established as issues of volition (Kuhl, 1985). Volition itself has been defined in the German dictionary of psychology as, ‘The act of deciding upon a course of action and initiating it; a complex experience in which kinaesthetic sensations and the idea of goal are prominent. [Syn. will].’(1934, p. 293).
In defining what moves action, some researchers (e.g., Atkinson, 1957; Lewin, 1952) have sought to conceptualise volition within larger psychological processes mediating decisions that is, hedonistic approaches based on various aspects of achieving satisfaction. In terms of actual behaviour within these approaches, volition is seen to represent whatever the individual deems the most appealing behavioural option, that is, the strongest action tendency (Kuhl, 1985). Kuhl considered that this stance effectively equated volition with motivation because it makes the assumption that the activity the individual initiates is the activity they most wanted to undertake. If an athlete has several competing options for action, volition, in these approaches, represents the action with the strongest motivation. For example, a distance athlete who chooses to go out for a training run, rather than go to the cinema with her housemates is explained as having a stronger drive to train.

By contrast, Ach (1910, as cited in Kuhl, 1985) conceptualised volition in terms of the psychological processes that mediate the maintenance and enactment of decisions. Here volition is seen to represent the drive that makes intentions happen, independent of any motivational tendencies (e.g. an athlete using her will to ensure she puts on her sports gear and goes training that evening, instead of succumbing to far stronger motivations to go and see a movie with her housemates). This chapter will explore key motivational theories of goal directed behaviour (Drive-based theory; Field theory, Self-Determination theory; Cognitive theory; Outcome-based theories; Social Learning theories; Achievement Goal theories and Goal Setting theories) with particular reference to Lewin’s (1926, 1952) cognitive depictions of the role of will as a chosen behaviour within motivated action. Lewin posited will as a factor of the processes of decision making, as opposed to a process in itself that mediates the initiation and maintenance of decisions (Kuhl, 1984; see section 2.5.1). The lasting
impression Lewin's stance has left on motivational theories, which were previously focussed on primal drives moving behaviour, will be scrutinised. The historical significance of Lewinian and goal setting based theories on the development of goal striving and volitional accounts are examined in-depth in section 2.5.

2.3 Motivational theories of goal directed behaviour

2.3.1 Drive Theories

From a historical context the origins of much motivational research has been based around examining what *drives* behaviour. Psychodynamic drive theory (Freud, 1909) identifies two key drives – sex and aggression. Giving prevalence to sexual drives, Freud posited that personality develops from the conflicts between sexual drive and the socialising environment. Freud suggested conflict occurs when wishful impulses emerge that are in sharp contrast to other personal wishes (i.e. moral and ethical standards). Conflict resolution in effect meant the repression of impulses by the ego to avoid any unpleasantness caused by the adoption of incompatible impulses. Freud viewed the ego as a regulator and director of energy that is generated by the id, the origin of drives. However, this still suggested ego and ego energy as a mere derivative of the id and its drives and as such psychodynamic theory was viewed as inadequate for explaining human behaviour, especially behavioural development where there is no conflict.

Several decades later empirical psychology began investigating animal learning based on Hull's (1943) drive theory which cited four drives – hunger, thirst, sex, and the avoidance of pain as the basis of all behaviour. Drive theory states that these drives activate behaviours that were previously successful in reducing drives, thus reduction further strengthens links between behaviour and drive stimuli. Hull
suggested the energy for behaviour comes from drives and the associative links made between drive stimuli and behaviours provide the direction for behaviour.

The inability of drive based theories to function more expansively in terms of goal directed behaviour stimulated research for theory that could explain non-drive based and non-reinforced motivation (Deci & Ryan, 1985). The psychological processes responsible for volitional and exploratory behaviours termed as ego energy in psychoanalytic theory were referred to as ‘effectance motivation’ by White (1959). Unlike the derivative nature of ego energy fuelled by the basic drives of the id, White suggested organisms have an innate motivation to deal with their environment effectively. That is, behaviour can be maintained (independent of drives) by the rewarding feeling of effectance that comes from functioning competently in one’s environment. In empirical psychology this innate organismic energy was termed as ‘intrinsic motivation’ following experimental research with monkeys (Harlow, 1950) who were shown not only to complete puzzles for no other reason than pleasure, but also that they would perform better on certain problem solving activities when intrinsically motivated than when extrinsically rewarded.

2.3.2 Field Theory

Field theory (Lewin, 1952) emphasises behaviour as ahistorical and motivated by current situation. Action is based upon all areas of a person’s life space or field (their personal and environmental issues) at that particular time, as opposed to the Freudian position that behaviour is dependant on past experience. The goal-directed system is depicted as being moved by habits that Lewin (1952) defined as ‘associations’. Two types of associations that caused action are identified: Need habits, such as thirst, hunger or even alcoholism; and Execution habits, such as
pulling a door rather than pushing. Whereas execution habits are depicted as mere actions Lewin posited that need habits were sources of energy that cause 'tension' in the goal-directed system. Thirst and hunger are needs that demand satisfaction, if the demand is not sated. Field theory suggests the behavioural system remains in tension and this tension can only be released when the need is met. In his key paper “Intention, Will and Need” Lewin (1926, as cited in Kuhl & Beckmann, 1985, p.91) posited that an individual's needs were counterpart to their intentions and described intention as a 'quasi-need', acknowledging it as an “induced” force rather than a force corresponding to ones' “own” need (Lewin, 1952, p.19). Even though it was clarified as a derived need, being attributed quasi-need status meant intentions were considered to possess the same dynamic qualities held by needs and could be driven by a goal-directed system, therefore will or volitional action could be explained as the effect of strongly directed motives. The rejection of intentions (goals) as part of a volitional process separate from motivation re-directed the course of goal directed behaviour and self-regulation research to the extent that the role of volition was largely ignored by researchers Kuhl, (1985). This section will introduce other theories of motivation that explain behaviour as driven by need for satisfaction.

The study of motivation focuses on the exploration of an organism’s needs (energy) and the processes that relate those needs to behaviour (direction; Deci & Ryan, 1985). Motivation theories can be broadly divided into two conceptual stances: Mechanistic (physiological) theories where the organism is viewed as passive, moved by physiological drives and environmental stimuli (e.g. Drive theories). In contrast Organismic theories (e.g. cognitive; self-determination; and outcome) depict the organism as active, volitional and possessing behavioural initiative (Deci & Ryan, 1985).
2.3.3 Self-determination Theory

Whilst the establishment of competence is seen to be a factor of intrinsic motivation (White, 1959), Deci and Ryan (1985) speculated that when action is experienced as autonomous, the individual must also feel free from pressure (i.e., rewards). Self-determination theory (Deci & Ryan, 1985) posits that the individual has a need to have a choice based on their own values and desires. Specifically, it is the individual’s ‘needs’, which are represented by an experience of freedom in initiating one’s own behaviour without feeling coerced or obligated, that is, deemed as the key impetus in intrinsic motivation. The theory conceptualises intrinsic motivation in terms of an innate organismic need for both competence and self-determination. The individual thus performs an action for the internal reward of mastery or interest, rather than for an extrinsic reward such as a prize, or an external constraint such as the demands of a coach. Such behaviour indicates the capacity and need to choose and to have choices based on awareness of one’s own needs and is characterised by being able to control their environment and outcomes, or being able to choose to give up control.

In contrast to the primary urges of drive based theories that push to be satisfied, Deci and Ryan (1985) viewed intrinsic drives as energizing behaviour by motivating a process of seeking and attempting to overcome challenges. Similar to the suggestion that intrinsic motivation is ‘motivated’ by the reward represented in the emotions of enjoyment and excitement that accompany experiences of competence and autonomy is the concept of flow (Csikszentmihalyi, 1988) and the autotelic personality. This personality type is characterised by efficient and effortless concentration skills accompanied by actual decreases in mental effort. Csikszentmihalyi (1988) reasoned that this lower psychological exertion was
indicative of a different type of information processing that allows the individual to turn boring or difficult activities into subjectively enjoyable challenges. It is speculated that the higher cortical activity caused by concentration in individuals who do not find subjective challenges in dull or demanding results in exhaustion and may explain the preference for and increased enjoyment in these individuals for less challenging tasks. Logan (1988) suggested that individuals able to find manageable challenges in difficult situations are able to avoid brooding and self-preoccupation as they recognise opportunities to define themselves through action as opposed to aligning or identifying themselves with misfortune.

2.3.4 Cognitive / Information-processing Theories

Although Lewin (1952) subsumed the concept of volition into that of motivation by terming volition a quasi-need, his efforts in stimulating cognitive theories (i.e. choice and decision rather than stimulus-response behavioural direction) for goal driven behaviours through the promotion of intention and will as motivational constructs were extremely influential. Lewin’s dynamic construct of a system in tension providing the energy source (p. 41) of a goal introduced the concept of valence, which refers to the psychological value of a particular goal. In the several theories of motivated behaviour which have followed a cognitive approach (i.e., Garland, 1985; Bandura, 1977; Vroom, 1964), rather than exploring the needs that give valence to outcomes, the focus has been placed on the valence of outcomes from a functional perspective (Deci & Ryan, 1985). Outcomes are said to be valent if peoples’ expectations about achieving them affect their behavioural decisions.
2.3.5 Outcome Theories

Extending the Lewinian concept of a directional “power force”, at its most basic empirical coordinates Vroom’s (1964) Expectancy-Value model states that the “force to perform” an act is dependent on the valence of a particular outcome, multiplied by the expectancy that this act will be followed by that particular outcome. In this model valence refers to affective orientations (i.e., strength of desire) towards certain outcomes, for example, to a footballer the outcome of receiving a tournament ‘golden boot’ award as top scorer would have positive valence if the player prefers attaining it to not attaining it. Vroom defined expectancy as a momentary belief concerning the likelihood of outcome, it is conceptualised in terms of strength and as a subjective probability that an act will or will not be followed by the outcome. The force to perform an act is understood to be dependent on the relative strength of that force, therefore the model presumes a hedonistic doctrine of striving for pleasure. In other words, if an athlete opts for a trip to the cinema with friends, rather than undertake a training run, Vroom’s model would ascribe this behaviour to the existence of stronger forces towards relaxing with friends.

Atkinson (1957) focussed attention specifically towards the incentive variable as a determinant of achievement behaviour. This took into account not only the attractiveness of the outcome of an act, but also the relative unattractiveness of the consequence of an action. Research at the time had generally concentrated on the achievement motive as a disposition to approach success, Atkinson devised a mathematical expectancy model that incorporated the motive to avoid failure. Differing from other cognitive models (e.g., Vroom, 1964; Lewin, 1951) Atkinson placed great emphasis on the concept of success. Valence in this model is defined as the direct probability of task success only and no other outcome. This focus is most
commonly evidenced in post-event evaluation where athletes and coaches fail to draw any positives from the performance, such as good team spirit under pressure, because they did not actually win the event. Deci and Ryan (1985) detached achievement motivation from intrinsic motivation by inferring that individuals with high or extreme levels of achievement motivation were unlikely to be either intrinsically motivated or self-determined because of the internal control and pressures utilised to regulate behaviour.

2.3.6 Social Learning Theory

Bandura’s (1977) social learning theory offers further breadth to the part of expectancy in cognitive behaviour. Rather than expectations that a given behaviour will lead to a given outcome alone, efficacy expectancy is based on the individual’s belief that they can successfully perform the action required to produce the outcome. A tennis player can hold the conviction that utilising a new service technique will produce harder and faster serves, yet question her own ability to successfully adapt to the new style. This belief in personal effectiveness determines how hard player tries to push herself when practicing her serve, or when she is struggling with the technique. If she does not believe that it is something she will ultimately master, it is likely she will become despondent and limits her efforts. The reverse would be true if the player felt the new serve was something she was capable of achieving, as she would more likely behave affirmatively and persist under challenging situations. Bandura posited that perceived self-efficacy is reinforced through persistence in subjectively threatening activities as the individual learns to lessen their fears and defensive attitudes through corrective experiences. In addition to performance accomplishments, vicarious experience, verbal persuasion and emotional arousal are also cited as major
sources of influence in efficacy expectations. Efficacy theory is critiqued by Deci and Ryan (1985) as an extrinsic concept that does not acknowledge the intrinsic satisfaction/motivation of efficacy, instead recognising efficacy expectations as vital because they are key generators of behavioural reinforcement. Expectations of external reinforcement are not considered to characterize self-determined behaviour, rather they are deemed to negatively effect intrinsic motivation and induce anxiety (Deci & Ryan, 1985).

2.3.7 Achievement goal theories

Individual expectancies such as failure avoidance and the need for achievement play key factors in the models of the achievement motivation approach (e.g., Vroom, 1964; Atkinson, 1957). However, in the achievement goal approach (Elliot and Dweck, 1988; Nicholls, 1984) it is considered that different types of goal are pursued in achievement circumstances. These achievement goals are viewed as concrete, mid-level cognitive representations directed at specific end goals (Elliot & McGregor, 1999), as opposed to the energising properties of higher order achievement motives directing effort, or lack of effort toward positive or negative outcomes. Nicholls (1984) postulated that the goal of achievement behaviour is competence or perception of competence that is, ability judged in terms of the task, or in terms of the individual's ego. Task involvement reflects a state where ability (competence) is conceived of as improving or gaining mastery of a task relative to the individual's prior ability. In contrast, Nicholls suggested ego involvement focuses on self validation through the demonstration of salient ability in comparison to others (perception of competence). Elliott and Dweck (1988) hypothesised that these two different goal types possess differing information processing properties. For example,
the sprinter focussed on performance goals would maybe be more concerned with the adequacy of his ability and needing to prove his worth in the training squad by only being focussed on beating team mates in training. Whereas, his squad-mate who is adept at a task focuses more on developing his performance or learning over time and concerning himself with activities that will improve his technique to make him a stronger athlete. In an experimental study investigating young children’s choices of card tasks based on a provided description of a performance or mastery activity (Elliot & Dweck, 1988), results demonstrated that when the value of a performance goal was fostered, children in a high ability belief condition responded in a mastery-oriented manner when met with challenges. However, children in this group refused opportunities to undertake tasks that would entail making mistakes in front of peers. In the performance goal – low ability belief condition, children responded to difficult situations with attributions inferring the mistakes meant low ability and negative affect.

More recently Elliot and McGregor (1999) sought to examine the notion of avoidance behaviour in achievement motion with a trichotomous achievement goal model that suggested in addition to a mastery approach there were two types of performance goal: Performance-approach, a focus on attaining normative competence and; Performance-avoidance, a focus on avoiding normative incompetence. Rather than an athlete trying to be better than her team mates, the focus is on not being worse than her team mates. For example, a distance runner with a performance-approach orientation might be unhappy if they in came in at second place on a training run, whilst her team mate with the performance-avoidance outlook might accept coming in second from last because at least she wasn’t in last place. Elliot and Covington (2001) cite the conceptualisation of positive and negative valences in Lewin’s field theory as
making the initial approach-avoidance distinction. Lewin (1952) identified a cognitive structure attached to the valence of an activity that would determine whether a stimuli was considered attractive or repellent.

Finally, moving beyond the these frameworks Elliot and Conroy (2005) have extended the approach-avoidance conception with a 2 x 2 achievement goal model to incorporate the approach-avoidance distinction within mastery goals as well as performance goals. Mastery goals were further expanded to include striving to improve skill or task mastery (mastery-approach goals) and striving to avoid losing skills or leaving a task unfinished (mastery-avoidance). This is suggested to be especially pertinent in developmental contexts (Elliot & Conroy, 2005), for example as skills diminish an athlete’s focus may switch toward not performing worse than previous performances, rather than seeking to improve skills.

Given the origins of goal directed behaviour research in goal striving and issues of the will it is apparent that field theory has had great impact on motivational research across a wide variety of theories, many of which appear to entangle motivational and volitional elements of action. However, despite the issues of volition being encompassed within many theories it is also apparent that several motivation based theories struggle to account for the initiation of behaviours that are not the most preferred activity of the individual, or conversely, inaction when motives, goals and ability are present. Before explanations of these behaviours are developed through volitional accounts and volition is explored as a separate entity, it is necessary to complete the overview of cognitive models with a consideration of how goal directed research undertaken in industrial psychology would later become the most influential model tested in sport psychology.
2.4 Goal Setting theory

Supplementary to the suggestion that cognitive representations of future outcomes serve as current motivators of behaviour Bandura (1977) suggested that the intervening effect of goals setting played a valuable role in motivating action. It is indicated that it is not the goal itself that motivates, but rather it is the individual’s evaluative response to their own behaviour that creates the incentive for action that is, “goals specify the conditional requirements for positive self-evaluation” (p. 161), self-satisfaction becomes contingent upon goal attainment. However, Bandura (1977) additionally reasoned that it was further necessary for a goal to possess properties that identify the effort level required and thus the level of accomplishment and self-satisfaction for the evaluation process to motivate behaviour. A general intention by contrast lacks such qualities for regulating effort and evaluating progress. The qualities of goal specificity, difficulty, proximity and other motivating factors will be expanded through an examination of goal theory.

The developmental work of Taylor (1911) into the practice of assigning specific tasks (goals) to individuals provided the forerunner for the modern business principle of management by objectives (Ordiome, 1978). Utilising these hypotheses within I/O psychology, Locke (1968) developed a goal-directed model of motivation for business settings, which has ultimately supplied the definitive classifications for both the fields of I/O and sport psychology. Defining a goal as “what an individual is trying to accomplish; it is the object or aim of an action”, Locke, Shaw, Saari and Latham, (1981, p.126) elaborated that a goal is therefore, “attaining a specific standard of proficiency on a task, usually within a specified time limit” (p. 145). Outlining the goal setting framework with a position that has provided the platform for countless studies, Locke (1968) specified that goals should be seen as a mental
representation of an action and as such they are an objective process. In providing a standard that motivates individuals to direct their attentions Locke and colleagues (1981) argued that although goals can influence behaviour; no simple correlation can be assumed because people make errors, lack ability, or subconsciously subvert their conscious goals.

2.4.1 The effectiveness of Goal Setting in sport

In their review of over 100 goal setting studies between 1969-1980 Locke et al., (1981) demonstrated conclusive support in both I/O field and lab settings for the premise that goals have a positive effect on performance. Locke and colleagues (1981) suggested that there were four underlying mechanisms by which goals appear to influence performance, and additionally proposed a theory for the more elusive issue of how exactly goals are effective: Goals direct action by focusing attention; Goals mobilise and regulate effort on a task; Enhance persistence; and Motivate development of problem solving strategies in attempts to reach goals. Whilst the mechanisms are explicit in their directional emphasis, Beggs (1990) challenged the tautological nature of this theory, reasoning that it actually fails to offer a breakdown of the way the process works, as proffered by some of the more cognitive theories (e.g. Elliot & Dweck, 1988; Maehr & Braskamp 1986; Nicholls, 1984).

Following the proposition of Locke’s decisive model of motivation (1968) a plethora of research quickly established overwhelming empirical support for the original premise of the model, that goals positively influence task performance. Evidence reported in the Locke et al., (1981) comprehensive review of goal setting studies that 90% of studies (in both field and laboratory settings) showed positive or partially positive effects, caused the researchers to conclude that ‘the beneficial effect
of goal setting on task performance is one of the most robust and replicable findings in the psychological literature' (p. 145). In addition, within his 1968 model Locke had asserted that specific, difficult, challenging goals lead to higher levels of performance than do easy goals, vague goals, do-your-best or no goals. A display of robustness and consistency in the goal setting findings in support of this stance is clearly evident in Locke and Latham's (1990) review of 201 studies, whereby results in 91% of cases verified their theory.

In comparison with nearly 100 years of I/O research, goal setting in sport is a relatively young topic. The explosion of research in an area of previous paucity was originally stimulated by Locke and Latham's (1985) tender of 10 hypotheses for application in sport, which was accompanied by their contention that goal setting should work more effectively in sport than business, as performance measurement is typically more objective in sport. In the 20 years following this proposition of transferability, findings from sports-specific overall goal effectiveness research (Burton, 1993; Hall & Kerr, 2001; Kyllo & Landers, 1995; Weinberg, 1994,) have overwhelmingly supported the notion that goal setting is an effective performance enhancement tool. This is supported by a major review examining only published literature (Burton et al., 2000), which identified 56 empirical investigations in sport and physical activity. Further analyses of these studies revealed a 78.6% effectiveness rate for moderate to strong goal setting effects. Although the researchers did note that in an earlier exhaustive review with comparable inclusion criteria (Burton, 1993), 14 studies had yielded a 66% goal effect rate. This suggests that an increase in studies will generate an increase in the consistency of goal setting effectiveness.

Despite the seemingly easy crossover and applicability of goal setting, it is also evident that inconsistent findings prevail in the sport literature. However, these low
effects were masked as initial emphasis lay in testing overall goal effectiveness alone. Weinberg’s (1994) comprehensive review of all sport-specific goal findings revealed that second to considerations of overall goal effectiveness studies had largely focused on the hypotheses in the four goal attribution areas (Locke & Latham, 1985): goal focus; goal specificity; goal difficulty; and goal proximity. To establish more clarity the findings in these areas will be reviewed individually. However, with regard to the overall effectiveness of goals in sport, research findings appear to have lead researchers to overwhelmingly conclude that effects have not been as powerful or consistent as those seen in the I/O literature (Burton et al., 2000; Weinberg, Burton, Yukelson & Weigand, 2000, 1993; Burton, Weinberg, Yukelson & Weigand, 1998; Burton, 1993; Kyllo & Landers, 1995, Weinberg, 1992). Research findings in the areas of goal attributions will be considered individually in order to establish reasons for unequivocal findings of goal setting success in the literature.

2.4.1.1 Goal focus:

Unlike other the parameters the terminology of goal focus has been fashioned by sport psychology researchers attempts to make the practice of goal setting more applicable to the sport environment (Burton et al., 2000; Gould, 1998; Kingston & Hardy, 1997). Hardy and Jones (1994) identified two different types of goals in the literature: Outcome, and performance. Outcome goals are end result goals (typically winning, or beating a certain opponent) and represent the most the goal type and commonly given the most emphasis by athletes (Weinberg, 1996). Performance goals focus on improving relative to one’s last performance, such as a percentage increase on race time. A third distinction was added by Hardy, Jones and Gould (1996) who introduced a specific goal type that focussed on enhancing a procedural element of
performance, called a *process* goal. Gould (1998) intimated this goal distinction was necessary as evidence suggested certain goal types were more effective than others in assisting behaviour change.

### 2.4.1.2 Goal Specificity:

In an early review of 53 studies across a wide range of tasks, 96% of findings showed specific goals to have a more positive effect on performance than either 'do-your-best' goals or no goal at all (Locke *et al.*, 1981). Later studies by Latham and Lee (1986) and meta-analyses by Tubbs (1986) and Mento, Steel and Karren (1987) reproduced these results to a similar effect and confirmed the theory that clear goals produce better performances. Tubbs (1986) in fact concluded that results demonstrated there was no need for further research in the area. However, research findings on the goal specificity-performance relationship in sport settings have been somewhat less emphatic in support. In a 3-minute sit-up task using randomly assigned goal conditions, Weinberg, Bruya and Jackson (1985) found no performance differences between 'do-your-best' goal groups and 'specific difficult goal' groups. These findings were replicated in two other studies using sit-ups (Gianini Weinberg & Jackson, 1988; Weinberg, Fowler, Jackson, Bagnall & Bruya, 1991). Additionally, no goal specificity effect differences were noted within studies using basketball (Weinberg, Burton, Yukelson & Weigand, 1993) and grip strength endurance tasks (Hall, Weinberg & Jackson, 1987; Weinberg, Bruya, Garland & Jackson, 1990). In direct contrast, Burton and colleagues (2000) review of 25 published sport-specific goal setting studies indicated a 60% significant support rate for the effectiveness of specific goals over general, do-your-best or no goal conditions.
Competition that can develop between participants in control groups is noted by Beggs (1990) as interfering with the effects of assigned goals. Similarly, in a study by Weinberg, Bruya, Jackson and Garland (1987) participants in no-goal groups who covertly set goals (revealed by questionnaire) were shown to account for between 70-80% of performance variance. Beggs (1990) suggested this indicated sports participants responded differently to challenges than I/O participants and arguably being more competitive individuals with higher levels of achievement motivation and self-management, athletes (as an essentially different population) would simply set their own task goals.

Despite overwhelming support for the specificity-performance relationship from the industrial/organisational field, Locke and Latham (1990) adapted their original premise to conclude that not only is goal specificity less relevant to performance than goal difficulty, but that it also has no direct performance enhancement effect. They suggested specific goals should have more bearing on performance in terms of consistency. In an organisational study Locke, Chah, Harrison and Lustgarten (1989) noted (after separating the effects of goal specificity & difficulty) that the more specific the goal, the lower the performance variance. Burton et al. (2000) suggested that when specific goals are combined with an element of difficulty it raises standards and thus consistency.

2.4.1.3 Goal difficulty:

Locke and Latham’s (1990) goal setting theory developed a ‘goal difficulty hypothesis’, whereby the more difficult the goal, the more performance will be enhanced. Indeed, 91% of 192 goal difficulty studies reviewed (Locke & Latham, 1990) indicated support for the hypothesis. Whilst results from meta-analyses of the
literature (Mento, *et al.*, 1987; Tubbs, 1986) have demonstrated performance increases of up to 16.4% when using difficult goals. Weinberg (1994) noted there was some confusion regarding the definition of a 'difficult goal' and highlighted that the sport psychology literature very clearly favours the use of realistic goals with athletes.

It is evident that goal setting research in sport offers absolutely no support for any positive linear relationship between performance and goal difficulty. In two studies, Weinberg *et al.*, (1987) tested the goal attainability assumption (Locke & Latham, 1985) using the 3-minute sit up task, participants were randomly assigned in one of 4 goal difficulty groups [easy (improve by 15) – moderately difficult (30) – very difficult (45) – virtually impossible (60)]. Results indicated no significant performance differences.

Returning to the definition of goal difficulty may offer an explanation for the dramatic difference in findings. Although there is limited evidence in the literature to suggest researchers have adhered to Locke's (1991) suggestion that a difficult goal should be set at a level that only 10% of participants can achieve. Burton, *et al.*, (2000) reasoned that contradictory findings between the disciplines could be due to overly difficult goals causing performers to set their more own realistic (and covert) goals. Research has shown athletes reporting that they still set their own goals despite being assigned other goals (Kyllo & Landers, 1995).

### 2.4.1.4 Goal Proximity:

Whilst Locke and Latham's (1990) goal setting theory draws no conclusions on the setting of short-term versus long-term goals, it was initially considered (Locke & Latham, 1985) that using short-term goals combined with long-term goals would have more performance enhancement effects than just using long-term goals. This
was in order to negate the sometimes vague or future oriented affect of long term planning. However, Bandura (1986) favoured short-term goals, suggesting the process of frequent appraisal/evaluation generated helps increase confidence and thus motivation. Burton (1989) also supported short-term goals, but for the reason that thinking in the short-term promotes the athlete's goal flexibility and helps maintain goals at the necessary challenging levels.

In contrast, use of long-term goals was advocated by Kirschenbaum (1985) who posited these were superior to regular assessment which may lead to over evaluation and make it difficult to maintain an overall focus. As such he viewed short-term goals as controlling, rather than providing motivational information (Deci & Ryan, 1985). Proximity studies in sport have largely investigated the short versus long term goal debate, however these are limited to a total of eight. Several findings (e.g. Hall & Byrne, 1988; Howe & Poole, 1992; Weinberg, Bruya & Jackson, 1985; Weinberg, Bruya, Longino & Jackson, 1988) have indicated no difference in effect between short and long term goals. Although Hall and Byrne (1988) did find significant performance effects when long term goals were used alongside sub goals. Support for this finding is provided by Kyillo and Lander's (1995) meta-analysis of the research and revealed a .48 effect size for combined short and long term goals. In addition, three of the eight studies reviewed by Burton and colleagues (2000) were seen to demonstrate stronger performance effects for a goal combination than either goal type individually.
2.5 The Goal Setting Debate

It is apparent that the application of goal setting to sporting contexts and its effectiveness in terms of Locke and colleague's (1981) four mechanisms has caused much argument and debate in the literature, largely between Locke (1991, 1994) and sport psychology researchers (e.g., Burton, 1992, 1993; Weinberg & Weigand, 1993, 1996). Without appearing to arrive at any definitive conclusions a series of comments on and reactions to in the literature has debated the use of appropriate methodology and the premise that "athletes and participants are simply differently motivated" (Weinberg, 1998, p. 7).

Locke and Latham's (1985) call for sport and exercise psychology to research goal setting subsequently returned a series of unequivocal findings from the discipline (e.g., Hall et al., 1987; Weinberg et al., 1985, 1987, 1990). Considering the conditions in which goal setting works to be well documented, Locke (1991) reacted by attributing early results to the existence of methodological flaws in the sport research and cited the following key issues, which became hotly contested: Participation motivation; Goal setting in do-your-best conditions; Feedback in do-your-best conditions; Personal goals; and Goal difficulty. These areas of debate are reviewed individually below.

Weinberg and Weigand (1993) rejected Locke's (1991) reasoning that null findings in sport could be ascribed to haphazard or disorderly testing as simplistic and suggested that motivation should be more of a factor. It was reasoned that individuals who were already involved in sports would likely have a higher level of motivation for performing physical tasks, than those of subjects performing work related tasks in industry. In turn, Locke (1994) dismissed any claims as to the uniqueness of sport, believing subjects in I/O studies to be just as motivated as sport playing individuals
because they were usually made up of student volunteers seeking extra course credits for participation.

Locke (1991, 1994) also suggested that the reason for a lesser number of significant differences between do-best goal conditions (and participants in the specific goal condition) was down to lack of precautions to prevent participants setting their own spontaneous goals, which rendered both conditions the same. In retort, Weinberg and Weigand (1993, 1996) pointed out that this negates the effect of mediating variables prevalent in sport, such as developmental differences, motivation or task type (simple vs. complex). Additionally, they argued that whilst goal setting can be controlled in lab-based testing this did not reflect real world experiences and therefore offered limited ecological validity. It was also reasoned that the original comment was a flawed one, as the supposed robustness of goal setting should see systematic goals work better than spontaneous ones in any case (Weinberg & Weigand, 1996).

The argument that feedback should not be given in do-best conditions (Locke, 1991, 1994) because it enables spontaneous goal setting was also disputed by Weinberg and Weigand (1993, 1996) who contend that firstly, in sport it is generally difficult to withhold feedback and secondly, that withholding creates an experimental design fault, as conditions would differ not only because of feedback, but also because of spontaneous goal setting. Locke’s (1994) rebuttal that feedback without goals doesn’t impinge on motivation was countered with the response that any feedback provides both information and motivation (Weinberg & Weigand, 1996).

On the issue of personal goals, Locke (1991, 1994) drew attention to the neglected rule of measuring personal goals (as well as assigned goals and making a comparison). Whilst in agreement Weinberg and Weigand (1991, 1994) noted in
terms of goal acceptance, that participant rejection of assigned goals in favour of their own is an important detail for applied sport psychology, especially for coach-athlete relationships. Lastly, Locke’s (1991, 1994) suggestion that goals should be specific and difficult to yield better performance results is contested by evidence from the sport setting that indicates it is goals of moderate difficulty that enhance performance the most.

Weinberg and Weigand (1993) make the point, which although inherently inconclusive, is a point that has continued to be made in the literature as the final statement in any discussion (e.g. Weinberg, 1998; Burton et al., 2000). In essence, it is implied that for goal setting to be truly explored and understood in the sporting context a different path is necessary. With regard to the controversies and debate in the application of goal setting, it would appear salient in these “early” days to consider Begg’s (1990) observation that in general psychology theoretical explanations of the success of goal techniques took another 50 years after their initial conceptualisation.

Taking up the case of individual differences, Weinberg and Weigand (1993) indicated sport psychology should move away from conducting rigid testing with limited validity and devote more attention to underlying theory (i.e., considering the effectiveness of different goal types on different individuals). Weinberg (1998) delved into this area with his suggestion that differences in findings could likely be attributed to the fact I/O research was directly transferred to sport without any real consideration of how, when or why athletes set goals. In agreement, Beggs (1990) posed the issue of not just differences, but fundamentally diverse attitudes and actions. Noting the opposing rationales in the fields he viewed the I/O approach to goals as collective, whereas in sport psychology the view is more often “what can we do to help
individuals, rather than productivity’ (p. 143). The implication being that in sport facilitation of the athlete’s personal skills (to induce increased productivity) is the primary objective.

Burton (1993) proposed four further issues that might explain the unequivocal findings appearing in the sports-specific research: Small sample size; Athletes operating closer to their performance potential; Task complexity; and Individual differences. Burton (1993) argued that with a minimum of 20 participants in all goal conditions in every one the 13 sport-specific goal setting research studies undertaken by that point, it was possible to negate small sample size as an explanation for goals being less effective in sport. Kyllo and Landers (1995) contested this suggestion by pointing out whereas sport research had on average 26 participants in each goal condition, I/O research had on average 43, therefore sample size was still a valid factor as there was reduced chance of an effect. By 2000 when Burton et al. conducted a further review, study numbers and sample sizes had increased greatly, with less than 25% of studies shown to have used samples of under 30 participants. As findings of effectiveness remained unequivocal it was concluded that sample size could be dismissed as a factor.

Locke and Latham’s (1990) suggestion that the goal effectiveness curve flattens out as individuals reach the limits of their ability (as ability restricts the amount of progress that can be made through goal setting) is particularly relevant to athletes, who are feasibly operating far closer to their performance potential, especially at the elite level. This factor has been accepted as valid reason for many of the non-significant findings in sport (Burton, 1993; Burton, et al., 2000). It is anticipated (Locke & Latham, 1990) that complex tasks involve a greater time lag in terms of seeing any performance effect of utilising goal setting, as new strategies may
have to be formulated to achieve subcomponents of task before the skill can be performed effectively. Despite a 5-week experimental period Miller and McAuley (1987) recorded non-significant effects of goal setting on a basketball free throw task. However, it is speculated that in such a skilled activity without an efficient task strategy the motivational power of goal setting on effort and persistence are limited (Burton, 1993, Locke, et al., 1981).

In order to aid understanding of how goals influence performance Burton (1993) developed a competitive goal-setting model which focuses exclusively on sport and exercise and also, individual differences in goal setting styles. Asserting with cognitive theories (e.g. Elliot & Dweck, 1988 & Nicholls, 1984), Burton (1993) viewed goals as mediated by confidence, anxiety, motivation and importantly individual differences. The model seeks to address two key problem areas in sport, those of stress and commitment. Evidently, if goals are the definition by which success and failure are measured, then flaws in the actual process of setting goals (i.e. setting inappropriate goals) can mean goals actually induce stress rather than increase motivation. Similarly, if attaining goals is not directly linked to competitive success, goals may seem irrelevant to athletes; reaching goals will have limited meaning and lead to lack of commitment to setting goals. Burton (1989, 1993) asserted that athletes who focus on outcomes or winning experience more cognitive anxiety, less confidence, decreased effort and poor performance as their goals are not necessarily under their control. Research with collegiate swimmers (Burton, 1989) indicated that athletes who set goals referenced against their own self improvement experienced less anxiety and performed better.

Cognitive explanations view every goal as generating its own set of concerns and framework for processing information (Elliot & Dweck, 1988), this serves to
reinforce not only the importance of setting appropriate goals, but that goal setting is a skill to be learned (Weinberg, 1998). Although these theories set out a pattern of historical development and provide many explanations for understanding goal directed behaviours, in sport and exercise psychology, cognitive theory could be considered an alternative approach. The majority of research examining the goal-performance relationship in psychology as a whole has adopted the terminology of; and attempted to test a mechanistic goal setting premise that originated out of I/O research.

Burton et al., (2000) further suggested the failure to employ appropriate goal implementation strategies as a fifth reason for the lesser effectiveness of goal setting in sport. It has been shown in studies using self-reported frequencies of action plans developed by collegiate and Olympic athletes (e.g. Burton et al., 1998; Weinberg et al., 2000) that more effective goal setters use implementation strategies with greater frequency and experiences of success than do less effective goal setters. It is important to note that research into athletes' strategizing has largely taken the form of Likert scale assessments into 'how effective' and 'how often' an athlete has found or used action planning, with little or no attention given to techniques utilised, or the extent to which any plan was adhered. Making a point that is potentially vital in the methodological considerations of future research, Burton and colleagues (2000) observed that in many of the non-significant goal setting studies in their sport based review there was limited or no use of goal implementation strategies when attempting to enhance performance. It is also true that the issue of action planning been "largely neglected" in goal setting research (Burton et al., 2000, p. 514).

The role of the implementation strategy was initially proffered as a facilitating factor in goal attainment by Locke and Latham (1985), who described plans for
developing athletic competence at subcomponents of the task. Action planning is also incorporated as the fourth step of a seven stage process (Locke & Latham, 1990; Set goals; Develop goal commitment; Evaluate barriers to goal attainment; Construct action plans; Obtain feedback; Evaluate goal attainment; and Reinforce goal achievement). It is arguable that in putting forward a process an underlying degree of emphasis is added that indicates simply having a goal alone is no a guarantee of success, nor should it be expected as one. In support of this, in one of the few studies that does address the influence of athletes’ goal strategizing (Heckhausen and Strang, 1988) showed a significant difference in performance and levels of exertion when undertaking a basketball drill, between athletes able to develop an action plan under pressure and those who did not formulate a strategy.

2.6 The goal setting paradox

It is apparent in this review of the sport-specific literature that the majority of goal research has been directed at testing Locke and Latham’s (1981) goal setting mechanisms. It is also clear, despite disputed findings and much procedural debate, that researchers have generally agreed that goal setting is an effective tool for aiding performance (Burton, 1993; Kyllo & Landers, 1994; Weinberg, 1994). This agreement is of some note in terms of the theoretical progression of goal setting in sport psychology. Over the last ten years the research literature has begun to emphasise taking a step away from the issue of whether or not goals work, and has suggested that research be directed to consider the potentially more revealing underlying mechanisms (Hardy & Jones, 1994; Weinberg, 1994), such as the individual facets of goal acceptance and goal commitment. Highlighting this theme,
Burton *et al.*, (2000) maintained that goal setting research should now be far beyond the point of merely testing the effectiveness of goal type.

In their exhaustive review Burton *et al.*, (2000) highlighted five plausible suggestions for why goal setting had not had such success in sport (i.e., small sample size, task complexity, athletes operating close to performance potential, individual differences and lack of goal implementation strategies) and indicated that it was only athletes’ apparently restricted use of goal implementation strategies that appeared to provide a truly feasible rationale for the mixed effectiveness of goal setting in sport. Research findings have demonstrated that the expected benefits of goal setting *per se* are extremely well entrenched amongst athletes and coaches (Gould, 1998). Yet in two major studies conducted in collegiate and Olympic athletic populations (Burton *et al.*, 1998; Weinberg *et al.*, 2000), results revealed athletes extensively practising goal setting, alongside contrasting data and personal testimonies which show goal setting was being experienced as a tool of merely moderate success. It is possible this paradox highlights degrees of inconsistency or flaws in the goal setting or planning procedure that limit success. Underlining this point Burton and colleagues (2000) stated in their review that no systematic goal planning appeared to be in evidence and called for research into the potentially pivotal area of action planning, and how best to develop a plan for goal achievement.

It is arguable that there is gap in the understanding of exactly how to increase the efficiency of an individual’s ability to enact goal intentions (Kuhl, 1994a). In the extensive literature it can be seen that not only are goals considered to be effective by researchers, but they are also valued and utilised by coaches and athletes at the highest levels (Burton, *et al.*, 1998; Gould, 1998; Weinberg *et al.*, 1993, 2000). To reiterate, it is apparent that merely having a goal is not good enough to achieve it. The
goal must be appropriate to both individual and task in order to be considered a good and useful goal (Gould, 1998). More vitally however, to turn a goal into successful action the individual must have in place an action plan or implementation strategy to enable them to push aside any factors or distractions that interfere with starting and completing the desired action in order to overcome the difficulty of enactment (Kuhl, 1985a). This suggests that the effectiveness of goal directed action is disabled by a lack of planning, initiation and commitment to completion, yet none of which are necessarily issues of motivation, but rather issues of the overlooked area of volition (Latham, 2000).

2.7 The mediating role of volitional processes

A key premise of Locke and Latham’s (1985) much examined goal setting theory is the assertion that goals motivate the search for appropriate task (achievement) strategies. Research into goal directed behaviour has therefore largely focussed on exploring the notion that, an individual’s failure to perform an action, despite possessing the cognitive abilities and motor skills to undertake the given task, is indicative of a motivational deficit (Kuhl, 1984). Despite establishing a rationale for why goals should stimulate action, goal setting theory (Locke & Latham, 1985) can be critiqued for failing to establish any underlying processes that explain how exactly goals influence (motivate) action (Beggs, 1990). Additionally, neither do cognitive/content based theories (e.g., Atkinson, 1957; Vroom 1964) appear to provide adequate explanation of why people do not accomplish their goals if both motivation and high ability are present (Hermann & Wortmann, 1985; Kuhl, 1984). For example, if an athlete has set a goal of completing a training diary on a daily basis, but gives up writing after a few days, expectancy-value theory (Vroom, 1964)
would ascribe this behaviour to a lack of motivation to write, or alternatively, the theory might assume that a competing motivation, such as the need to make some relaxation time is stronger than the motivation to monitor performance (i.e., presumes the subjective costs of relaxing are greater than the value of monitoring).

It is argued that motivation leads only to the decision to act (Beckmann, 2002; Heckhausen, 1991, 1986; Kuhl, 1987), whereas commitment to the goal, goal initiation and goal completion are deemed to be processes of volition (Latham, 2000; Kuhl, 1984). Therefore, the proposition that motivational deficiencies are responsible for failure to perform a task overlooks the mediating role of volition (Kuhl, 1984) in goal directed behaviour. Volition has been defined as the act of deciding upon a course of action and initiating it; a complex experience in which kinaesthetic sensations and the idea of a goal are prominent'. [Syn. Will] (German Dictionary of Psychology, 1934, p. 293). Rather than consider only the properties of set goals Gollwitzer and Brandstätter (1997) regarded setting a goal as merely a first step, suggesting that goal achievement is dependant on how individuals regulate their goal-directed actions, that is, the self-regulation strategies used to overcome the problems of just getting started, or other issues of goal maintenance. The success of the athlete in completing their daily training diary would be ascribed in self-regulatory theory as being down to the athlete’s ability in combating the desire to relax after training and find a time and place to write. The exclusion of volitional processes in the goal directed action research is considered to have been detrimental to any understanding of achievement oriented behaviour (Kuhl, 1984), as resultant theories (e.g., expected values, Atkinson, 1957; self-efficacy beliefs, Bandura, 1977) have conceptualised the separate issues of goal setting and goal striving into a singular motivation-performance model.
As a self-regulation based theory of goal-striving, the theory of Action Control (Kuhl, 1982, 1984, 1985) suggests that when an individual fails to enact an intention it is unlikely to be due to a weighing up of beliefs or knowledge (cf. Atkinson, 1957) and motivating factors. Action Control theory specifies that breakdowns in goal enaction or completion are due to an inability to shield the intended action from the interference of competing action tendencies (such as, dwelling on previous failures), until the action has been initiated and executed. Kuhl (1984) postulated that in order to effectively perform an action a protective control system is necessary to overcome the difficulty of enactment. To support this volitional act of guarding the intention from competing intentions/actions and implement it, action control theory identifies several action control strategies including, emotional control, and environment control. In contrast to content based theories, Action Control theory is built around goal-striving and considers that goal achievement is not dependant on the motivators that determined the choice of goal. Goal-achievement is instead related to the level of success in protecting the actions that lead to their realisation (Gollwitzer, 1990). It is first necessary to explore the historical and research contexts behind the neglect of such a key facet of behaviour as volitional processes. After establishing a theoretical grounding, the volition based theory of action control (Kuhl, 1984) will be further expanded as a rationale for goal directed action.

2.7.1 Historical reasons for the neglect of volition

The concept of volition has raised such seemingly troublesome questions, both in terms of definition and of philosophy, that rather than simply overlooking the factor of volitional processes, psychologists are viewed to have entirely ‘shunned’ the area (Gregory & Perlmutter, 1970, p. 362; Kuhl, 1984, p. 102). This unpopularity may in
part be due to problems associated with less specific definitions of volition that emerged as volition became subsumed within motivation. As a voluntary behaviour, that is ‘from the will’, volition can be considered conscious and intentional. However, from a scientific standpoint it is apparent that definitions of volition such as, ‘from the will’ or ‘exercise of the will’, are no more objective or definite than the term volition itself (Gregory & Perlmuter, 1970). In addition, when exploring the term ‘will’, any suggestion of a freedom of the will, implied something else was controlling behaviour (Kuhl, 1984). Any attribution of behaviour to psychic entities (Kuhl, 1984) or a homunculus (‘little man in the head’) was rejected by researchers because it risked an unhelpful and endless philosophical regression to elaborate on what then controls this entity and so on (Kuhl, 1987). Within this remit any phenomena described in terms of will power or self-regulation has also been considered equally problematic (Kuhl & Baumann, 2000).

Karoly (1993, p. 233) referred to the ‘problem of volition’ emerging as the central issue in the psychological appraisal of consciousness in the 1900’s. Researchers such as James (1890), Lewin (1926, as cited in Kuhl, 1985) and more recently Atkinson (1964) have defined volition in terms of the psychological process mediating decisions, whereas Ach (1910, as cited in Kuhl, 1984) conceptualised volition in terms of processes that mediate the maintenance and enaction of decisions (Kuhl, 1984). A further complication hinges on the contention of volition as a heterogenetic (derived) or as a homogenetic (separate) phenomenon (Kuhl & Beckmann, 1985). The heterogenetic view remains prevalent in contemporary cognitive psychology where both motivation and volition are considered as derived phenomena (Norman, 1980). Ach (1910) defined volition as a post-decisional, self regulatory process that energized the maintenance and enactment of actions (Kuhl &
Beckmann, 1985). The debate between the opposing theories of volition is of some historical significance in the development of theories of goal-directed action. In the 1900’s goal-oriented research in Germany was dominated by the examination of goal-striving (which was considered distinct from goal-setting) involving testing the initiation and execution of actions based goals set by others (Gollwitzer, 1990). Lead by the pre-eminent researcher in the field, Naziss Ach the area was known as the “German will psychology”. Research in the traditions of German will psychology largely disappeared amid the consequences at the end of the Second World War, however, during this time Kurt Lewin emigrated to the United States and published his key papers on Field Theory (1952). Lewin’s influence in I/O literature is suggested to be a key reason why there is great focus on motivation issues (i.e., motivational books and motivational speakers abound), yet most business managers actually struggle with the problems of volition (Bruch & Ghoshal, 2004).

A pivotal reason for the proliferation of heterogenetic driven research and the neglect of self-regulatory research may centre on Lewin’s (1926/1940) reduction of the problem of volition to the problem of motivation. In his seminal paper “Intention, Will and Need” Lewin (1926, cited in Kuhl & Beckmann, 1985, p. 91) posited intention as coordinate with need, describing intention as a quasi-need. This served the purpose of emphasising that intention held the same dynamic qualities he attributed to need; suggesting that both were driven by an underlying goal-directed tension system that maintains the ‘tension’ until the goal is achieved. As such, an individual with strong will was explained as having strong motives in a particular direction and the issue of volition could be consumed into motivational theory. Kuhl, (1984) argued that the specific act of equating intention with need created enough conceptual disorder for motivational psychologists to fully divert their attention away
from volition. Moreover, in contemporary psychology where the concept of volition or self-regulatory action essentially translates as ‘getting a grip’ or ‘pulling oneself together’, volition has yet to achieve any uniform paradigmatic embodiment (Karoly, 1993, p. 45).

Drawing the properties of motivation and volition together in a more modular manner, Heckhausen and Kuhl (1985) reasoned that these processes act in two separate and successive psychological states which differ in principle. A motivational process can be distinguished from a volitional process, as the motivational process involves a consideration of alternatives and ends with an intention to act (Schwarzer, 1996). A volitional process has a planning and initiation stage, followed by an action stage. Fundamentally, motivation represents a pre-decisional state whilst volition represents a post-decisional one (Heckhausen & Gollwitzer, 1987). Heckhausen and Gollwitzer drew the processes into a functional framework and concluded that “pre-decisional processes essentially embrace the issues that psychology of ‘human motivation’ has been investigating for the last half century, and post-decisional processes generally encompass the abandoned problems of a pre-Lewinian ‘psychology of the will’. However, it is now time to put the two halves, ‘motivation and volition’, together and regard both as one sequence within an overarching unit of the behavioural stream” (p.119).

Based on Ach’s (1910) research demonstrating that for intention to become a deep personal commitment, it is considered that an individual must cross some kind of threshold. Heckhausen and Gollwitzer (1987) described a ‘Rubicon model’ of action phases to demonstrate the behavioural action process. The term is taken from Julius Cesar’s 49BC crossing of the river Rubicon, an act which committed his troops to battle. Prior to forming an intention the individual is depicted as being in a
motivational *pre-decision* state of wishing and deliberating (Gollwitzer, 1990). Once an intention is formed, a rubicon is seen to have been crossed as the individual enters two volitional phases of *pre-action* and *action*, which are separated by the actual initiation of the intention. Beckmann (2002, p. 273) characterised this time as "biased", as the commitment to action means information processing now works in the favour of the chosen intention and the accomplishment of that intention (as opposed to the more objective pre-decisional information processing). Once an outcome (success or failure) has occurred, the process should move on to a *post-actional* phase with the purpose of disengaging attention ready to focus on new intentions, or on plans to achieve the unsuccessful goals (Beckmann, 2002). The ability to disengage from a poor previous performance or an unrealistic goal is vital for an athlete to be able to concentrate on their present performance (Beckman & Kazen, 1994; Kuhl, 1994a). If an individual does not deactivate from their intention, then problems can be experienced with the individual becoming preoccupied with their goal as thoughts related to the intention can intrude into conscious thinking in an uncontrollable manner (Beckmann, 1994b; Kuhl & Baumann, 2000) and interfere with efforts towards different tasks. Kuhl (1981) indicated incomplete intentions provide the foundation of ruminations (Beckmann, 1994b; Kuhl, 1981) that is, "the static contemplations (thoughts) that go around in circles and lack any inclination toward change" (Beckmann, 1998, p. 261) and can be fundamentally differentiated from problem solving or deliberation. It is this homogenetic approach of separating cognitive, motivational and volitional process into modular concepts forms the basis of action control theory (Kuhl, 1984). This two factor model of volitional control will be introduced (section 2.8.2) to focus on individual differences with regard to volitional control.
2.8 Action Control Theory: A model of volitional control

In terms of human action the question of what goals or intentions individuals generate in a given environment has been comprehensively examined within psychology through expectancy-value based models (e.g., Atkinson, 1957; Vroom, 1964). However, Kuhl (1984) indicated that the more pressing concern with regard to goal attainment is the question of whether an individual will actually be able to execute the intention (in the face of distracting forces promoting alternative actions) and secondly, that this issue has been neglected in theories of motivational behaviour. Labelling the entire process of initiation and enactment as action control, Kuhl (1984, p. 101) proposed that the purpose of action control is to shield the intention against competing motivational tendencies, and to ensure that it will be executed rather than replaced by one of the competing tendencies. Once a goal is formed the role of action control is to ‘make it happen’. As evidenced from the exploration of theories of goal direction, motivation and ability are no guarantee of either driven task initiation or goal attainment. In his theory of action control, Kuhl (1984) made the presumption that the initiation of even the most simple activity, such as, making a phone call, or leaving the house to go training require a control process that overcomes the difficulty of enactment (i.e., the difficulty of shielding a chosen action against competing action alternatives) for example going out for dinner with housemates rather than attend a training session.

In order to develop a theory around the factors that affect the controlling function that holds sway over the enactment of goal-oriented intentions, Kuhl (1984) sought to resolve a conceptual issue of motivation that exists not only in current motivation theory, but also in the work of pre-Lewinian volitional theory. For example, Ach’s “law of difficulty” (1935; as cited in Kuhl, 1984), which describes
motivation in two fundamentally different senses. Firstly, motivation as a function of perceived task difficulty, which denotes the amount of effort intended to achieve enactment of an intention. Additionally, motivation was also used to indicate the determinants of choice among competing action alternatives. Kuhl (1984) observed that motivation was also given two meanings in expectancy-value achievement motivation models (Atkinson, 1974) as it assumes the model predicts both choice and effort. To make the distinction, (Kuhl, 1984) proposed that the strength of motivation to choose an intention from amongst competing action alternatives is not necessarily equal to the motivational strength required to exert enough effort to initiate and execute the action. Kuhl (1984) used the terms ‘choice motivation’ and ‘control motivation’ to differentiate between two types of motivation. An athlete may have very low motivation to get up early for an extra running session whilst he is lying in bed making up his mind whether to go running or to get some more sleep. However, once he is out running, his (control) motivation to exert the necessary effort may become considerably stronger than the (choice) motivation underlying the original decision to go running, especially during difficult stages of the run. It is important to note that factors of control and choice motivation do interplay – the strength of control motivation should increase as the intensity of choice motivation increases. For example, the athlete who cannot think of anything better than doing extra training in the morning should be more ready to exert a high amount of effort when necessary than an athlete with weaker choice motivation.

Action control theory (Kuhl, 1984) states that the inclination to generate appropriate levels of motivation to control enactment of an intention should be a function of variables that do not affect choice motivation. The two most important variables being: the perceived difficulty of controlling the enactment of the current
intention and also, the perceived personal ability to control the enactment of the current intention. Kuhl (1984) did not regard action control as any form of overlap with expectancy concepts used in motivation theory (e.g., the subjective probability to achieve the desired outcome provided a given action is performed). Instead he suggested that the expectancy value posited is 'virtually identical' to the concept of Self-efficacy (Bandura, 1977). However, Kuhl's (1984) model specifies processes mediating actual control, rather than the perceived control of Bandura's (1977) social learning model. That is, perceived self-efficacy is considered one of the determinants affecting the motivational basis of the actual control processes.

As a systems-oriented model of interactions between (choice) motivation, action control and performance control (execution), action control theory (Kuhl, 1984, p. 119) outlines the dynamic properties of the decision making processes, whereby choice motivation is a continual information processing of material relevant to the assessment of personal utility. For example, emphasizing the time-based aspects of decision making whereas more content based theories specify expectancy-value determinants without temporal characteristics. This is especially relevant in competitive settings where real time to weigh up probability and value is extremely limited. The systems-oriented model assumes that the time allowed for decision making is under volitional control. In the actual model this control process is depicted by a feedback relationship from action control to choice motivation.

Traditional expectancy-value theories (Atkinson & Birch, 1957; Vroom, 1964) are seen to conform to the dominance principle of choice motivation (Kuhl, 1984), an assumption where it is only the action supported by the strongest of all the competing action tendencies that will be enacted. Kuhl critiqued this principle because it fails to explain individual commitment to weaker action tendencies. It is arguable that
initiation difficulties tend to occur when the individual is committed to enacting an intention that is not the most dominant action tendency. For example, when dieting presumably individuals struggle to maintain a diet because eating less food is actually a weaker action tendency. Lewin's (1952) conflict theory specified that whenever there are two competing tendencies and one is only slightly stronger, the dominance principle means that it is a clear-cut process that the strongest that will be enacted. As well as impeding progress in research on human motivation, Kuhl (1984) cited this hedonistic drive approach as responsible for a near total neglect not only of the concepts of difficulty and effort in enactment, but also a neglect of the volitional process utilised to overcome the difficulty of enactment.

The dominance principle of choice motivation implied in expectancy-value theory assumes hedonistic behaviour as the dominant intention is always enacted. Action control theory (Kuhl, 1984) supports commitment to non-dominant intentions and therefore is able to make a vital distinction between motivation (i.e., wanting to get fit) and intention (i.e. being committed to going to the gym and exercising). Indeed, it is not the selection of an activity that requires motivational support, but its actual performance that requires a dominant motivational tendency. Kuhl (1987) termed the action control processes in support of the current dominant intention as passive action control, whereas subordinate action tendencies are supported by active action control. Six active processes are assumed that may be utilised to enable accomplishment of an intention by shielding it against competing action tendencies (Beckmann & Kuhl, 1994; Kuhl, 1984). These are further distinguished in terms of their purpose: Selective attention; Encoding control and Parsimonious information processing are considered to be used in the cognitive management of goal directed action. Emotional Control and Motivation control can be used to manage troublesome
emotions and reinforce motivation, whilst Environmental control represents the management of personal environment. These processes are further explored below.

### 2.8.1 The Processes of Action Control

Elbe, Szymanski and Beckmann (2005) considered the self-regulatory (volitional) processes of action control as meta-motivational processes that encompass cognitive, motivational and emotional control strategies necessary to realise an intention, for example: **Selective attention** refers to the processes that selectively strengthen the activation of 'biased' (Beckmann, 2002) information that supports the current intention, then the volitional role of protecting an intention can be fulfilled. **Encoding control** refers to the tuning of perceptual schemata so that stimuli are encoded in terms of their relevance for an intended action (Kuhl & Goschke, 1994). For example, an athlete looking to start practicing mental skills might encode a free hour in their schedule in terms of opportunity and usefulness to practice. **Emotion control** is represented by the feedback loop from the process of action control to choice motivation. By influencing their own emotions the individual can facilitate initiation and enactment. However, this is dependant on the individual being able to draw upon meta-cognitive knowledge about the facilitating / debilitating effects of various control states on the efficiency of action (Kuhl, 1984).

**Motivation control** refers to the process of finding incentives to do a task to which an individual is committed to strengthen the action tendency. It can be especially useful if an individual is committed to a non-dominant tendency to consider the consequences of not performing the intention. For example, the athlete considering the advantage her competitors will have over her if she fails to attend certain training sessions, or alternately, the advantage she may gain by doing an extra...
session when she knows her competitors are still in bed. Environment control can be used to alter the environment and boost motivation and positive emotions towards an intention. An athlete who posts up her goals for the season on a locker room notice board helps create the necessary social pressure to drive her goal achievement. Or an athlete who finds a gym based training session a chore to attend alone and so seeks out a training buddy, to provide himself with a commitment to meet someone and also, to have some company for a more enjoyable atmosphere during the session. This action relies on meta-cognitive knowledge about the motivational effect of certain environmental conditions. Parsimonious information processing involves the individual creating 'stop' rules (Kuhl, 1984) to prevent the process of further information regarding more action alternatives being generated. For example, if an athlete makes a decision for a particular day of the week to be his rest day, then it requires a protective volitional effort to stop the weighing up of pros and cons of other days once the decision has been made. The process of further appraisal may cause the current intention to be pushed aside before it has even been initiated.

2.8.2 Volitional Strategies

The application of volitional strategies towards goal attainment can manifest in two distinct modes with differing levels of refinement: self-control and self-regulation (Kuhl & Beckmann, 1994b). Self-regulation represents an autonomous, self-determined mode of volition. It is considered a sophisticated volitional strategy (Beckmann, 2002), whereby the personality subsystems of motivations, emotions and intentions are organised in a congruent manner. In contrast to self-control where intentions are maintained through the inhibitions of other subsystems, in self-regulated behaviour volitional processes, information, motivation and emotions are
brought into line accordingly to create new incentives, or the intention is deactivated if it is unfeasible to bring the other systems into line. As such, the volitional task of self-regulation is that of self-maintenance (Kuhl, 1994b), a process of harmonising external behaviours with internal beliefs and feelings (Kuhl & Baumann, 2000). When using the components of self-regulation (e.g., self-determination, positive self-motivation, emotional control, self-relaxation, initiative, and volitional self-efficacy) the individual is better able to recognise what they want to do and to trust their feelings enough to act decisively (Kuhl & Baumann, 1998). In practical terms self-regulation is built upon the ability to access ones feelings and representations of personal needs and beliefs (Kuhl & Fuhrmann, 1998). Enhanced ability to access their emotional preferences enables individuals with a more autonomous style to form cognitive representations of their preferences/intentions and facilitates better checking for self-compatibility Kuhl and Kazén, (1994b) between personal preferences and the preferences of others. This self-determined activity lead Fuhrmann and Kuhl (1998) to term the self-regulatory mode as an “inner democracy”, as the individual is striving to involve all parties such as needs, beliefs and feelings and using them to create a firm agenda or goal. Thereby the individual can avoid excessive external influences when generating their personal ideas and goals (Kazén, Baumann & Kuhl, 2003). Furthermore, when an action is viewed as self-compatible action control processes, such as emotion control or motivation control can be swiftly mobilised to aid goal attainment (Kuhl & Baumann, 2000).

The self-control mode of volition is characterised as a form of self-denial (self-discipline against one’s own needs) where an individual acts coercively according to a behaviour desired (or believed to desired) by another person, without necessarily integrating this model into their own system of beliefs, needs and values (Kuhl &
Beckmann, 1994b). For example the practical implications of this behaviour could be evidenced in athletes who might over-strive to maintain a certain physique and develop an eating disorder or body image issues because their coach frequently holds this physique up as the perfect body type. This act of self-infiltrating (Kazén, Baumann & Kuhl, 2003) the goals of others as one’s own personal intentions is a process of alienation (i.e., the tendency not to behave according to one’s own needs or preferences, even when means and opportunity are present; Kuhl & Kazén, 1994b; Kuhl & Baumann, 1998), that is, alienation is a behavioural consequence of self-control, as self-alien goals are internalised. When an individual forces themselves to maintain a task with which they do not necessarily feel compatible this can cause further alienation. If they are unable to disengage from the intention the individual can end up trying too hard and thus increasing the sense of alienation. The volitional task of self-control is merely goal-maintenance (Kuhl, 1994a), that is effectively achieving the goal at all costs through the use of action control processes such as emotion and motivation control to focus attention on the goal, even at the personal price of short or long term suppression of distracting beliefs, needs or feelings (Kuhl & Baumann, 2000). Self-control essentially encompasses actions in accordance with an “inner dictatorship” (Fuhrmann & Kuhl, 1998) because the individual is compelled to undertake actions with which they are not necessarily reconciled, which by definition involves a loss of personal autonomy. With the loss of autonomy comes internal conflict which promotes procrastination and a susceptibility to mental intrusion and ruminations, which in turn can induce proliferating stressful conditions (Kuhl & Beckmann, 1994a). With such differing support roles is it perhaps unsurprising that the two modes of goal- and self-maintenance are rarely attuned (Kuhl & Baumann, 2000). For example, for an athlete pursing an achievement goal many self-related
issues must be suppressed. In order to attain his Olympic dreams the athlete may believe he has to keep in check some of his needs and preferences, such as spending more time with his family, so as to focus on his training regime.

It is recognised that self-controlling behaviours can actually be beneficial in the short term (Beckmann & Kazén; 1994 Kuhl & Beckmann, 1994a). It may of particular benefit for example, to a cyclist battling lactic acid build-up and fading motivation during the final laps of her race to utilise an external mode of control to support performance. Furthermore, following traumatic life events, such as bereavement or a serious personal injury/illness, self-control cognitions may be more facilitative to the coping process by helping the individual comprehend their situation and adjust to their new conditions (Kuhl, 1981). At this time, immediate decisions and efficient actions may be maladaptive to recovery if the individual has not had the time to formulate their own appropriate goals and plans (Herrmann & Wortman, 1985). It may be unhelpful to the general recuperation of a premiership footballer who suffers a serious leg break and is told he may never fully recover, if he makes an instant decision to retire from football immediately.

Over the long term however, problems can occur when a control mode becomes overly dominant (Beckmann & Kuhl, 1994b). A loss of autonomy, that is, chronic exposure to external control (characterised by suppression of self-representation and self-motivation through anticipation of the negative consequences of insufficient self-discipline) can trigger a four stage loss-of autonomy cycle (Beckmann & Kuhl, 1994b). In this negative cycle chronic external control stabilizes a tendency toward self-control (suppression of personal needs), which accumulates conflicts (e.g. between suppressed personal needs and compliance to personal control). Uncontrollable intrusive thoughts can results from this conflict and these
intrusions impair self-regulatory efficiency. By way of compensation the individual resorts utilising to more self-control mechanisms and further promotes a loss of autonomy. Continued suppression of the self leads to an accumulation of conflicts between what an individual would actually like to do, what they feel obliged to do and what they actually end up doing. To maintain action in these situations the individual resorts to more self-control and further suppression of the self (Beckmann & Kuhl, 1994b).

2.9 Individual differences and modes of control: Action versus State Orientation

Action control is assumed to mediate all processes that mediate the maintenance and enactment of intention (Kuhl, 1984). An individual approach (mode of action control) to dealing with the difficulty of enactment (demanding conditions), is determined by fundamental individual differences (Kuhl, 1985). Two modes of control are proposed that determine the difficulty of initiating an attempt to perform an intended action (Kuhl, 1984). The personality construct of action versus state orientation (Kuhl, 1981) was introduced to bridge the gap between choice and action. These two modes of control are posited to exist on a continuum which indicates individual action control disposition under pressure. Action-orientation is characterised by internal or external operations that promote the execution of a realistic, context-adequate intentions (Dibbelt & Kuhl, 1994), that is attentions are focused on a fully developed plan (Kuhl, 1987). Having a realistic action plan on which to focus greatly facilitates the maintenance and execution of intentions. At the opposing end of the continuum is the mode of state-orientation, which is characterised by an inability to focus attention completely on information associated to the task at
hand (Kuhl, 1984). Kuhl indicated that in a state-oriented mode attention focuses on the present state (i.e. current misfortune), a past state (i.e. a previous failure experience), or a future state (i.e. unrealistic goals), instead of a complete focus on information associated with action. In this mode of control the enactment of intentions is greatly hampered by ruminative cognitions and preoccupation with states that do not assist action (Kuhl, 1985). Beckmann (2002) suggested that a focus on the task at hand is specifically prevented by uncontrollable and dysfunctional mental intrusions about these unhelpful states. In an overlap with Burton and colleagues (2000) highlighting of a lack of goal implementation strategies as a rationale for limited goal achievement, rumination about goal attainment is considered (Kuhl, 1994b) to occur because the action plan for intention has been poorly specified. Kuhl noted the experience of failure (whether real or imagined) as the greatest exponent of intrusive preoccupation. Given the debilitating effect of preoccupation with past, present or future states this has many serious implications in sport, as most high level athletes exist in win-lose environments that are only ever assessed in terms of success or failure.

The debilitating effects of state-orientation, that is, volitional inhibition are posited to manifest only under conditions of stress (Kuhl 1994a). Kuhl and Baumann (2000) differentiated two types of stressful conditions: Situations where there is a high demand on cognitive resources (i.e., pursuit of difficult goals; and threatening situations (i.e., competition or pressure conditions). It is reasoned that state-orientation may harm self-regulatory functions in two ways, 'preoccupation' and 'hesitation' (Kuhl, 1994a). Hesitation or passive goal awareness (Fuhrmann & Kuhl, 1998) is a type of volitional inhibition associated with reduced positive affect under conditions of frustration during goal striving, that is, an inhibition that causes an
athlete to miss opportunities to act. For example, a hockey player who realises an opponent is effectively marking her out of the game ends up spending so much time dwelling on her misfortunate situation, she doesn’t actually initiate the necessary actions, such as moving to deliberately draw her opponent out of position to influence the game in a different way. Preoccupation or attentive self-neglect (Fuhrmann & Kuhl, 1998) represents self-regulatory inhibition caused by increased negative affect under stressors, this is seen in the mode of state-orientation whereby the individual acts according to self-infiltrated beliefs or ideas of others. Fuhrmann and Kuhl suggested negative affect limits holistic processing, in other words the individual struggles to recognise their own thoughts or feelings because they are preoccupied (giving attention to) by and ruminate over perceived goals and beliefs. In a series of studies Kuhl and Goschke (1994) demonstrated state-oriented participants held superior recall of words related to uncompleted intentions based on instructions to complete two tasks such as setting a table and tidying a messy desk. Instructions for both tasks contained a set criteria of actions (e.g., light the candles) to be memorised. Task execution was then ‘postponed’ through experimentally manipulated distracting word recognition activities before the participant was finally instructed to complete the tasks. In a later recall task state-oriented participants were shown to recognise words from a to-be-executed script faster significantly faster than neutral words Kuhl and Goschke speculated that action-oriented individuals deactivate cognitive representations of intentions if the goal must be postponed. However, state-oriented individuals retain an intention-superiority effect (Kuhl & Goschke, 1994) for uncompleted intentions, as the speed of recognition indicates cognitive representations of the goal remain in a state of high activation, even when action must be deferred. These findings which appear closely related to the Zeigarnik effect,
which is the superior recall of uncompleted tasks compared to completed tasks (Kuhl, 2000a). This effect can be proffered as further explanation behind the ruminative processes that can block access to personal beliefs. Significantly, when an individual loses access to their personal desires and beliefs they lose access to the great power of intrinsic motivation (Kuhl & Baumann, 2000; Fuhrmann & Kuhl, 1998) that comes from the feeling and knowledge of acting on a personally sanctioned goal. Deci and Ryan (1985) considered personally held beliefs represented the most motivationally functional goals in autonomous behaviour.

In terms of trait versus state constructs affecting volitional ability it is important to clarify that whilst action- and state-orientation are deemed as relatively stable predispositions (Ajzen, 1985), the theory of action control does not make any strict assumptions concerning the stability or globality of any individual’s propensity (Kuhl, 1994a, p.11) towards either disposition. As such, orientation is considered to be a mode of control dependant on situational factors (e.g., an experience of failure). Furthermore, rather than a disposition towards anxiety, state-orientation is posited (Kuhl & Weiß, 1994) as a method of coping with (anxiety) and other emotionality. Empirical evidence will be introduced throughout this section that supports the notion (Beckmann, 2002) that orientation can be induced through both training (e.g., Hartung & Schulte, 1994; Stiensmeister-Pelster & Schürmann, 1994) and also, environmental manipulations (e.g., Kazén, Baumman & Kuhl, 2003; Kuhl, 1981; Kuhl & Weiß, 1994; Strang, 1994).

When state-oriented cognitions interfere with performance Kuhl (1981) termed the resultant poor performance ‘functional helplessness’. This is differentiated from the ‘motivational helplessness’ typified in Seligman’s (1975) theory of learned helplessness, which infers a transfer of feelings of helplessness based on expected
values and a belief of uncontrollability. For example, a tennis player who becomes frustrated and stops trying during a match when she realises that despite her full efforts she is still losing and her opponent seems to have an answer to every shot she tries. This resultant helplessness would be explained under motivational helplessness as a reduced motivation because expectancy of success has fallen. However, if after the match the athlete is uncommunicative towards her coach, argues with her boyfriend and behaves awkwardly at her press conference. Kuhl (1981, 1984) maintained these types of post-match behaviours could not be ascribed to motivational helplessness (deficits) because the tasks (playing tennis and interpersonal communication skills) are not similar and do require the same abilities. Therefore the athlete should not infer from losing a tennis match that she is incapable of dealing with other people, instead functional helplessness is posited (Kuhl, 1981, 1984) to possess properties of generalisation that mean feelings of helplessness can be transferred to different situations based on preoccupation. The tennis player was still preoccupied by the state created in losing her match; therefore she had difficulties dealing with her coach, boyfriend and the media. In a helplessness study by Kuhl and Weiss (1994) state-oriented participants (in comparison with action-oriented participants) reported significantly higher levels of frequent thoughts about the causes of their failure to complete an (unsolvable) initial anagram task. Negative thoughts were reported to occur despite participants spending considerable time undertaking (and experiencing some success with) ten further (solvable) anagrams tasks.

The impact of failure experiences on state-orientation is depicted through an empirically tested chronological model of psychological processes based on causal attributions of failure. Steinsmeier-Pelster and Schürmann (1994) devised a model based on the assumption that state-orientation is generated by failure especially when
the failure is considered uncontrollable and of high personal importance (Kuhl, 1981). This assumption has great relevance to athletic contexts where uncontrollable causes such as bad luck, tough refereeing calls, chance, fate, low ability or task difficulty are all commonly cited as reasons for poor performance. Likewise, many athletes’ notions of self-concept are highly related to their athletic performance (Brewer, 1993), so it should be speculated that failure experiences will bring about the onset of state orientation in athletes, if failure is deemed as an uncontrollable factor. This model can be elaborated using the earlier example of tennis player becoming functionally helpless. If she attributes being badly beaten to her terrible ability or sheer bad luck (e.g., poor seeding / bad line calls / rain) then in addition to negative emotionality cognitions such as, ‘Why me?’ or ‘I’m useless whatever I try to do’, can be anticipated. Because of these attributions the athlete is more likely to brood about her misfortune and as such, fails to learn what to do should a similar situation arise as she has not admitted the reality of what actually happened in the match. It is feasible she will go into her next match with the last one still on her mind, if she has another failure experience the cycle of rumination will likely continue. However, should she be successful, she may attribute success to a bit of good luck and what is more, she may have only have a limited idea of what went right, how to replicate it and even, thoughts as to whether she deserved a “lucky” win. Consequently, she may go into the next game with her doubts still unresolved. However, if the tennis player considered her negative match experience as a controllable factor, that is, she views it as an avoidable occurrence because it is related to matters like insufficient effort (i.e. in poor training, poor preparation or poor attitude), then arguably she shows awareness of a specific problem area that she believes is fixable and can target for correction.
2.9.1 The role of Affect: *Personality Systems Interaction*

The autonomy loss cycle demonstrates the link between the self-incongruent behaviours in the self-control mode of volition and the mode of state orientation. It is posited (Kuhl & Beckmann, 1994b, p. 379) that it is the suppression of self that occurs in self-controlled (self-alien) behaviour maintenance and the resultant conflict causing uncontrollable intrusive thoughts which define the preoccupation element of state-orientation. In effect, the intrusions block conscious awareness because consciousness is preoccupied with negative cognitions. Intrusive thoughts generate negative affect and in order to compensate for volitional impairment the individual increases self-controlled maintenance of intention and potentially further intentions.

The auxiliary-functions assumption (Kuhl, 1994a) states that volitional support of intentions can be aided by two auxiliary functions: Volitional initiation and maintenance of an intention is facilitated when one has a *conscious* representation of it and; Positive affect facilitates efferent processing mediating the execution of intended activities (i.e., it generates appropriate emotions for initiation and action).

According to Personality Systems Interaction theory (PSI; Kuhl, 2000a; 2000b) positive affect is a necessary component to activate volitional facilitation. However, the ability to generate positive affect to support goals can be severely compromised by the negative affect that accompanies intrusive thoughts (volitional inhibition).

Kuhl (1994a, 2000a, 2000b) argued that an individual’s ability to self-initiate processes to “down-regulate” negative affect, in other words, the capacity for self-relaxation (and/or “up-regulation” of positive affect), is a crucial factor that determines whether an individual is able to enact their intentions. Action-oriented individuals are postulated (Kuhl, 1985) to be more likely to implement strategies to minimize the impact of negative moods on their actions and performance. Affect is
considered as a pre-cognitive reaction (Zajonc, 1980; 2000) of the organism to stimuli, which can occur independently of cognitive processes. (2000, p. 32) conceptualised an affective response as an expressed or inferred ‘preference’ toward a stimulus over another, whereas a cognitive reaction is depicted as a ‘recognition’ of a stimulus. This stance has created some debate (see section 4.2), indeed Zajonc’s (1980) argument that affect is has largely been ignored (p. 152) in cognitive psychology is similar to that of the overlooked aspect of volition and may go some way to further explaining the predominance of cognitive theory in the area of goals and intentions. However, it is commonly accepted that affect is an all encompassing concept that includes both moods and emotions (Forgas, 2000). Forgas suggested emotions as a reaction to stimuli causing a brief, intense phenomenon. In contrast, mood is depicted as a more lasting affective state of which the individual is not necessarily aware of the cause.

The key role of affect has consistently been demonstrated empirically. Heckhausen and Strang (1988) showed through a basketball free-throw task that state-oriented individuals function better under relaxed rather than competitive conditions. State-oriented individuals have also been shown to out-perform their action-oriented counterparts in tasks undertaken in lower pressure circumstances that emphasise accuracy of decision-making over speed (Roth & Strang, 1994). Under such conditions it can be anticipated that there would also be lesser experiences of negative affect, which enables equal levels of ability between the groups. Beckmann (1994b) observed that if negative affect was not induced during breaks in an intelligence test task, then no differences in the levels of ruminative thinking about the test occurred between the two orientations. The suggestion of the detrimental impact of negative mood on performance is furthermore supported through the findings of the extremely
distracting effect of high emotion arousing words (e.g., ‘helpless’, ‘able’) on a reaction-time task. Stiensmeier-Pelster and Schürmann (1994) reported similar mean reaction times for action- and state-oriented individuals under no-distraction conditions. However, emotional (or self-referent) words caused more distraction (lower concentration on action-relevant stimuli) than neutral words and, a significant difference between state- and action-oriented participants for emotional words. The influence of negative emotionality on the performance ability of state-oriented individuals is corroborated by neuro-physiological data. State-oriented participants have shown positive (inhibitory) shifts in pre-frontal brain potentials (Kuhl, Schapkin & Gusew, 1994, as cited in Kuhl & Baumann, 2000) after exposure to negative words. Yet shifts were reversed to negative (facilitative) potentials through brief exposure to positive words. Roth and Strang (1994, p. 473) concluded that when under stress (physical or psychological pressure) action-oriented individuals have no clear cut advantage in quality or speed of performance. However, they highlighted that under pressure the decision-making process of action-oriented individuals is very much independent of their state of arousal. Evidential findings of the consequences of negative affect on state-oriented individuals appear to concur with this pronouncement.

Reported studies (Beckmann, 1994b, 1998; Kuhl, 1981, 1984; Kuhl & Weiβ, 1994; Kuhl & Beckmann, 1994a) bear testimony to the tendency of state-oriented individuals to experience uncontrollable ruminations and impaired performance as a result of pressure or induced negative affect. PSI-theory (Kuhl, 1994a; 2000) explains rumination through the same mechanisms postulated to account for symptoms of volitional inhibition, such as alienation and self-infiltration. PSI-theory makes two assumptions which encompass the two forms of state-orientation (volitional
inhibition) of hesitation and preoccupation. The first modulation assumption presumes that positive emotionality facilitates the release of volitional inhibition (Fuhrmann & Kuhl, 1998, p. 657). In other words, good mood eases the progress of behaviour associated with striving for intentions and issues of hesitancy (thinking without doing; passive goal awareness) are avoided. The second modulation assumption maintains that negative affect inhibits access to a personal self-system of holistic feelings and self-representations. According to PSI-theory, negative emotionality can actually place the individual in a position of not knowing, or not feeling what they want (Kuhl & Baumann, 2000). Any incapacitation of the self-system reduces access to self-representations and feelings and without these concepts the self cannot reliably inhibit any unwanted, self-alien thoughts (rumination), or recognise self-infiltrated ideas as self-alien (Kuhl, 2000).

Attention to intruding thoughts and feelings represents the ‘attentive self-neglect’ or preoccupation component of state-orientation (Fuhrmann & Kuhl, 1998). Kazén, Baumann and Kuhl (2003) identified negative affect as the main prerequisite for self-infiltration and the ensuing unhelpful effects on needs and preferences. The suggestion (Kuhl, 1994a, 2000) that state-oriented individuals possess a decreased self-regulatory capacity to self-relax (down-regulate negative affect) and therefore, a decreased thoroughness of self-compatibility checking has been verified empirically through role-play studies (Kazén et al., 2003; Kuhl & Kazén, 1994a). Participants playing as “the secretary” were requested to choose eight activities (from a total of 24 options) that they felt were most important to complete. An investigator role-playing “the boss” further assigned eight more activities from the list. In later recall tasks state-oriented participants were shown to significantly misperceive a greater number of their total planned activities as self-chosen. Self-infiltration of the ideas of others
was shown even where "secretaries" had rated "the boss's" suggestions as higher in unpleasantness than their own choices. This increased propensity was further demonstrated under conditions where external pressure was placed on participants. Kuhl and Kazén (1994a) observed that as a rule, most 'introjected' beliefs are initially accepted and taken onboard \textit{uncritically}. State-oriented athletes are shown in other studies to take this self-internalisation to the next stage and act against their own ideas and beliefs (e.g., Kuhl & Beckmann, 1994b; Kuhl & Kazén, 1994b). Action-oriented individuals are shown as better able to identify self-alien goals or attitudes and reject them where necessary; therefore their actions are more consistent with their own goals and ideas (Kazén \textit{et al.}, 2003).

\subsection*{2.9.2 The Action Control Scale}

Individual differences and modes of control can be identified using the Action Control Scale (ACS-90; Kuhl, 1994, see appendix 1), which was developed to measure individual dispositions in the ability to maintain and enact intentions and thus, the ability to escape the state-oriented mode when needed. The ACS-90 is a forced choice scale of two response items per question constructed on the basis that the intended meaning of a concept has more clarity when the opposite is known, a tenet of Personal Construct Theory (Kelly, 1955). Kuhl, (1994b) considered this format offered a better definition of the construct being assessed than a single response format, such as a direct rating of general disposition on a Likert-scale. Implicit behavioural knowledge is assessed through three sub-scales each with 12 items measuring different aspects of action and state orientation: the Failure-Related Scale, the Decision-Related Scale and the Performance-Related Scale. The Failure-Related Scale (Preoccupation; action-oriented failure [AOF]) / state-oriented failure
[SOF]) measures individuals' inability to stop thinking about a failure experience or stay preoccupied with ruminations about the missed goal attainment. The Decision-Related Scale (Hesitation; action-oriented decision [AOD] / state-oriented decision [SOD]) measures individuals' inability to terminate a decision process and initiate action. The Performance-Related Scale (Volatility; action-oriented performance [AOP] / state-oriented performance [SOP]) measures the inability to become immersed in an activity and instead show a high volatility in shifting between action alternatives. In each subscale high inability (low score) is labelled state-orientation and high ability (high score) is labelled action-orientation. (Full psychometric properties of the ACS-90 are reported in section 3.5). For example, Question 7, taken from the preoccupation scale demonstrates a forced choice response:

"When I'm in a competition and have lost every time":

A.) I can soon put losing out of my mind

B.) The thought that I lost keeps running through my mind

In this example item ‘A’ illustrates an action-oriented response and item ‘B’, shows a state-oriented response. Kuhl and Beckmann (1994a) contend that it is necessary to examine the specific effects of thoughts, beliefs and emotions and behaviour and not just the contents alone. This stance forms the underlying basis of the ACS-90 as the content of the construct being assessed, preoccupation in the above example, is demonstrated as related to a phenomenal experience and capitalises on Kuhl’s (1994b, p. 48) assumption that a person’s implicit knowledge of their typical behaviour is used when answering questions about behaviour in concrete but unspecified circumstances.
The validity of the scale has been demonstrated in numerous fields of application where differences in volitional control across orientation have been shown, these include elite sport (Beckmann 2002; Beckmann & Kazen 1994, Heckhausen & Strang, 1988), education (Brunstein, 1994; Burns, 1996) and psychopathological disorders, including depression (Hermann & Wortmann, 1985). Findings in schizophrenic patients, alcoholism and obsessive-compulsive patients (Hautzinger, 1994) have indicated that ‘individuals with propensity towards state-orientation are more susceptible under stress, to depressions’ (p. 215). Additional studies have examined orientation in groups with phobic disorders (Hartung & Schulte, 1994) and in hypertensive groups (Wiedemann, Busjahn, Heinrich, Listing, Mueller & Richter-Heinrich, 1994).

2.10 Volition and Athletic Performance

Given the time pressures and demands of competitive sport, individual differences can crucially influence action control in sport performance (Strang, 1994). In this area of limited research emphasis initially focussed on the expectation that sport performance would suffer from the loss of self-regulatory ability under pressure mediated by state-orientation (Beckmann & Kazen, 1994). Specifically, ‘state-oriented cognitions block effective concentration’ on the task at hand, and self-regulatory strategies cannot be used effectively in order to deal with these concentration problems (Beckmann & Kazen, 1994, p. 442). State-oriented individuals have consistently been demonstrated to operate at their best when there is no time constraint or pressure (e.g., Heckhausen & Strang, 1988; Roth & Strang, 1994). Under stressful circumstances the volitional control of processing necessary to
implement intentions becomes impaired (Kuhl, 1981; Strang 1994) because of persistent and uncontrollable negative emotional states (Kuhl, 1994a).

Athletic environment stressors can make state-oriented athletes more susceptible to poor performance (Beckmann, 2002). In a skiing study state-oriented athletes were shown to be more preoccupied during races with their own potential finishing places (as opposed to focussing on the task at hand) and what consequences would follow from their placing than were action-oriented athletes (Beckmann and Hazlett, 1989, as cited in Beckmann & Kazen, 1994). Similar examples of preoccupation and rumination were identified in German state-oriented volleyball and basketball players who were shown to experience higher and earlier levels of competitive stress (nerves) than their action-oriented team mates (Beckmann & Trux, 1992, as cited in Beckmann & Kazen, 1994).

Empirical evidence also shows that in addition to problems with preoccupation individual differences also impact the meta-volitional skill of exertion control. Based on the knowledge of how effort and exertion should be applied in the performance situation, Strang (1994) considered that being able to control exertion enables athletes to avoid the performance decreasing effects of hyper- or hypo-motivation. The trying-too-hard (hyper-motivation) effect has been most commonly evidenced when state-oriented individuals resort to erratic guessing (e.g., Kuhl, 1981; Brunstein & Olbrich, 1985), which expends unnecessary energy. Or, when a goal has been self-infiltrated (Kazen, Baumann & Kuhl, 2003) and the individual is trying to make something happen to please someone else. The issue of implementation strategies (action planning), or lack of, is highlighted as a key factor in the effectiveness of goal setting (Burton, et al., 2000). Similarly, the action control literature draws heavily on the initiation of a plan. Kuhl (1981) characterised planning as the cognitive representation
of an action plan containing more or less specific information concerning: the present situation; the future goal state to be attained; action steps that transform the present into future steps; and the conditions under which these steps are to be initiated. When in a state-oriented mode at least one of these elements will be absent (Kuhl, 1981); thus state-oriented cognitions will often focus on future states without taking into account the necessary steps to make the transition. Kuhl and Goschke (1994) suggested the tendency for individuals in a state-oriented mode to ruminate excessively about past events that cannot be changed, or imagined future states is due to absent parts of an action plan. A lack of sub-goals (i.e. a poorly defined plan) for completing the intention also contributes to the state-oriented tendency to become distracted under pressure (Stiensmeier-Pelster & Schürmann, 1994), as perseverating preoccupation with future states can inhibit volitional control of action (Kuhl, 1994a).

In a basketball study measuring the individual difference effect on exertion control with semi-professional players Heckhausen and Strang (1988) examined athletic performance over four 5-minute circuits of dribbling tasks ending with a basket shot. Two circuits were undertaken under normal conditions and two under ‘record’ demands with athletes instructed to set records for baskets hit and running speed (measured by shot attempts) under ‘do your best’ (Locke and Latham, 1985) performance conditions. Results showed action- and state-oriented athletes having similar scores in terms of shot attempts, hits and lactate concentration under normal conditions. However, under record conditions whilst both groups increased their running speed/shots the actual hit rate was twice as high for action-oriented players as compared to state-oriented players. In fact, the state-oriented athletes’ hit rate under record conditions was almost identical to their hit rate under normal conditions. This evidence that state-oriented athletes perform poorly under pressure is reinforced by
lactate levels (used as a measure of exertion) which show whilst both group increased their exertion under do-your-best conditions, the state-oriented group exertion level is significantly higher than the action-oriented group. A lack of efficiency (i.e. increased effort is detrimental to performance) under stressful conditions suggests action-oriented athletes exerted more control of their performance and regulated it to meet the demands of the situation. It is speculated that under conditions of high mental strain state-oriented athletes lack differentiated employment of exertion (Strang, 1994). In other words, when the challenge becomes more difficult they do not modify the contents of their intention, they instead increase the intensity of their execution/exertion (i.e., they try too hard, make erratic guesses, waste energy and become inefficient at the task).

An example of strategic attempts to moderate exertion control is demonstrated in a tennis task (Strang, 1994) with a ball machine throwing balls left and right consecutively. High ranking players attempted to accurately return these balls to marked areas on the left and right sides of the court. Similar results to the basketball task are shown in terms of a detrimental effect of increased exertion and accurate shot return in state-oriented players. Strang (1994) additionally examined the strategies employed by action-oriented athletes under pressure, as the machine set the rhythm of the ball pace, athletes couldn’t maintain exertion by choosing an individual running pace. Some athletes opted to employ an anticipatory strategy and having returned a ball ran to the other side of the court immediately to receive the next one without following the returned shot with their eyes. The implication being that ball watching would have left too much to do on the next shot and would have resulted in uneconomic over-exertion to reach the ball, whilst moving immediately actually allowed more rest time. These studies serve to emphasise that if attention control or
keeping to a competitive plan are an essential component of an event, then state-orientation will negatively affect athletic performance (Beckmann & Kazen, 1994). It is not just performance that may be impacted; recent research indicates state-orientation can also be detrimentally related to the process of recovery (Beckmann & Kellman in press) in sport. Based on the results of a separate study with German national level rowers, Beckmann (2002) asserted that athletes with high self-regulation skills were better able to handle higher training loads because they possessed the volitional abilities to avoid over training, and deal with stressors that may impact recovery.

Beckmann and Kazen (1994) suggested that detrimental effects occur because state-oriented individuals have poorer ability in making use of cognitive (higher level) processing under demanding conditions. Therefore, it is speculated that only sports that do not require a controlled or tactical expenditure of energy will be less disrupted by state-orientation. High energy investment sports which require delivery of effort in one short lived maximum energy burst, such as shot put, long jump, or sprints were identified (Beckmann & Kazen, 1994) as impulsive events. In these events the positive effects of a state-oriented mode of control are anticipated as it is feasible negative affect can be channelled into an explosive performance burst. In a study with track and field athletes Beckmann (1987, as cited in Beckmann & Kazen, 1994) revealed that German elite level action-oriented athletes competing in impulsive events had employed competitive strategies to create “favourable” control states for their sport. An example of this behaviour in sport may be in viewed in elite sprinters; whilst impression management has an arguable role to play in high profile events such as the 100m sprint, it is also arguable those most successful at this event in recent years are not athletes who could be accused of lacking confidence. Potentially, an
action-oriented outlook may not generate the necessary energy burst for this event, so these individuals are considered to employ self-regulatory strategies to create a level of hyper-motivation to direct their energy (Beckmann 2003, in correspondence). Athletes of this type have often been accused in the media of ‘having a chip on their shoulder’, in terms of their attitude. It can be speculated that this attitude may, in part be a competition preparation strategy to generate enough feelings of unfairness or misfortune that would be detrimental to a state-oriented athlete, but enable some action-oriented athletes to perform their best.

Sports such as basketball, karate and distance running, for example, are identified as ‘controlled’ sports (Beckmann & Kazén, 1994). In these sports it is considered that automated (low level) regulation might disrupt the need to focus on the manoeuvres of an opponent or stick to a tactical plan and control mental and physical energy. Beckmann and Kazén (1994) further differentiated controlled sports because of necessary information processing demands. For example, distance running, swimming and rowing are indicated as sports requiring simple co-ordinated movement to the extent that the athlete can focus on their own performance and to the virtual exclusion of the external environment. By contrast, sports like basketball and boxing require constant monitoring of the external environment of both an opponent’s and an individual’s own actions. Research suggests that athletes with an action-orientation would be expected to perform better in controlled type sports (Beckmann, 2002; Beckmann & Kazén, 1994; Heckhausen & Strang, 1988; Strang, 1994). The concept of different mental demands for different sports has previous been explored in the motor learning literature within the dimension of open and closed skills (Schmidt, 1991). In the sport psychology literature, Mahoney, Gabriel and Perkins (1987) also highlighted significant differences in athletes’ mental skills according to sport type.
particular, more reports of difficulties with concentration, anxiety and confidence were noted of athletes in closed skill sports. This is consistent with the action control research, as many impulsive-type sports can be included within the category of closed sports.

Additional studies with elite athletes (Beckmann & Kazén, 1994) have demonstrated that the nature of certain action-state orientation disposition combinations when exposed under stress could be more advantageous to particular sport types. Athletes in distance events (i.e. running, swimming and rowing) were shown to possess much higher scores on the performance (AOP); subscale than a control group of non-athletes. This highlights above average ability to get engrossed in an activity, which is an essential for success in their events. Furthermore, in the same study, ninety percent of high-level athletes in judo, karate and boxing showed distinctive score patterns on the preoccupation (AOF) and hesitation (AOD) subscales, which indicate better abilities in getting over setbacks and decision-making under pressure, vital qualities in events where the external environment must be heavily monitored.

It is possible that athletes with tendencies toward self-controlling behaviours (external control) and the preoccupation type of state-orientation might have a greater susceptibility to self-infiltrate the attitudes and ideas postulated by senior or experienced coaches. However, Kazén, Baumann and Kuhl's (2003) proposal that the key prerequisite for self-infiltration is the presence of negative emotionality (which inhibits access to the self-system) implies that state-oriented athletes are not only open to self-infiltrate the suggestions of authority figures, but also those of team mates, friends, or even advertisements. As well as demonstrating the debilitating impact of negative affect on performance, empirical evidence where state-oriented individuals
have been exposed to positive or emotive words (e.g., Kuhl, Schapkin & Gusew, 1994; Stiensmeier-Pelster & Schürmann, 1994) should also be used to display the facilitative powers of positive affect. In accordance with the first modulation assumption of PSI-theory, Kuhl and Baumann (2000) advocated that positive affect causes increased access to self-representations in state-oriented individuals. Research supports the notion that state-oriented athletes perform better in relaxed conditions (e.g., Heckhausen & Strang, 1988; Roth & Strang, 1994). Moreover, studies also show that when action-oriented thinking is induced in state-oriented individuals through the encouragement of continuous and explicit verbalisations of their hypothesis/strategy in various discrimination and logical reasoning tasks (Kuhl, 1981; Kuhl & Weiß, 1994), state-oriented participants were able to avoid engaging in the erratic guessing behaviours typical of functional helplessness. In addition to short-term ‘immunisation’ (Kuhl & Weiß, 1994) control states are suggested to be trainable (Beckmann, 2002; Beckmann & Kazén, 1994). Hartung and Schulte (1994) successfully increased the degree of action-orientation in patients with phobic disorders through a long-term therapy programme. This demonstrates the dynamic qualities of volitional modes of control, not only in the influence they possess over an individual’s ability to deal with pressure, but also in their utilisation of performance strategies to plan, initiate and complete their goals.

2.11 Coping strategies and performance

The effect caused by a demanding competitive challenge is shown to mediate the volitional competence with which the situation will be handled (Kazén et al., 2003) and is therefore related to the type of coping strategy utilised. According to Folkman (1984), an individual’s efforts at coping can be theoretically separated from
the expected or actual coping outcome. This stance is related to the contention that (action-state) orientation is a method of coping dependent on situational factors, such as the experience of failure (Kuhl, 1994a; Kuhl & Weiß, 1994). For example, problem-focused coping strategies, such as action planning, enhanced effort and suppression of competing action tendencies, are considered active responses and associated with positive affect. These behaviours are also similar to action-oriented behaviours in pressure situations (e.g., Kuhl, 1985, 1987, 1994a). Moreover, strategies associated with furthering negative affect, such as emotion- and avoidance-focused coping, which can involve denial and behavioural or mental disengagement are not only similar to state-oriented responses under pressure, but are also suggested as indicative of a lack of control or a lack of direct action (Ntoumanis & Biddle, 1999).

In the action control literature, inaction is identified as functional helplessness (Kuhl, 1981; see section 2.9). The negative impact of functional helplessness on athletic performance is empirically supported by research findings that suggest indirect coping strategies, such as avoidance result in the perception of lessened situational control (Ntoumanis, Biddle & Haddock, 1999). An examination of affective-coping strategies used by athletes and their situational perceptions of control at stressful competitive events showed that negative affect resulting from state-oriented type coping methods can cause an athlete to perceive they possess low situational control.

Whilst coping strategies, such as denial and avoidance, are depicted as maladaptive (Carver & Scheier, 1994), it is also noted that these strategies may well be interpreted as functional behaviours by some athletes (Ntoumanis and Biddle, 1998). It is important to note that the coping strategy of distancing, which involves playing down the significance of a problem, has not been found to be associated a performance climate. Ntoumanis et al., (1999) reasoned that reappraisal in sport
actually serves a facilitative function, especially if undertaken with appropriate levels of self-awareness. Re-appraisal of negative cognitions and emotions is commonly included in cognitive-behavioural techniques, such as self-talk, thought-stopping and "what-if" scenarios as a positive coping behaviour. However, the detrimental consequences of perceiving self-controlling avoidance behaviours (the suppression of personal needs) as facilitative are depicted by the loss-of-autonomy cycle (Beckmann & Kuhl, 1994b; see section 2.8.2). In order to maintain action in difficult situations (i.e., when behaviour is otherwise paralysed by a preoccupation with negative affect), the individual resorts to self-controlling strategies, such as denial and avoidance. As the athlete is effectively "doing something" in the face of a demanding situation they perceive their activities as positive, whereas they are in fact exacerbating the problem. These athletes are actually lessening their control of the situation because by suppressing their personal needs they risk both a loss of autonomy and increasing intrusive ruminative thoughts due to internal conflict. The negative affect caused by these issues will cause further self-regulatory inefficiency and a downward cycle where the athlete must resort to even further self-controlling strategies to maintain action and feel "in control". Whilst this strategy has some arguable merits because it can be utilised to get a tough or unpleasant task completed in the short-term, it is also a highly damaging strategy if adopted with any frequency (Fuhrman & Kuhl, 1998), because the athlete does not ultimately learn how to develop volitionally competent (self-determined or intrinsically motivated) goal achievement strategies. Research suggests that athletes will experience more positive emotions if they are able to confront the situation which is the source of the threat (Ntoumanis et al., 1999).
2.12 Research Issues and exploration point

Considerable experiential evidence supports Kuhl’s (2000) suggestion that state-oriented individuals have a bias toward inaction under pressure (e.g., Kuhl, 1981; Brunstein & Olbrich, 1985; Heckhausen & Strang 1988; Roth & Stang, 1994; Kuhl & Weiβ, 1994; Kuhl & Kazén, 1994b; Beckman, 1994b, 2002; Kazén, Baumann & Kuhl, 2003) because demanding conditions impair their access to self-representations and the necessary self-regulatory skills to down-regulate negative affect (or up-regulate positive affect). The pertinent performance issue for athletes disposed toward state-oriented preoccupation should be that the competitive stress of sport serves to augment their bias toward inaction. Increased stress is shown to enhance levels of negative affect in state-oriented individuals (Stiensmeier-Pelster & Schürmann, 1994). Therefore, it is possible to speculate on the relationship between negative emotionality and the deployment of performance strategies such as, goal setting, concentration or emotional control. Kuhl’s (1985) contention that action-oriented individuals are more likely to use self-regulatory strategies to reduce the influence of negative affect on their actions is supported by findings showing that action-oriented individuals possessed better and faster levels of goal enactment (Fuhrmann & Kuhl, 1998).

A key exploration point is raised in Strang’s (1994, p. 462) assertion that it is still unclear how the employment of [self-regulatory] strategies in sport is functionally effective. This point highlights the need to assess both how action-oriented individuals manage to down-regulate negative affect (or up-regulate positive affect) and also, what specific strategies they adopt to combat competitive stress. Research has shown that volitional control states can be both temporarily induced (e.g. Kuhl, 1981; Kuhl & Weiβ, 1994), or changed through training (Hartung & Schulte, 1994).
In order to develop a programme with the specific intention of developing action-oriented cognitions and behaviours in state-oriented athletes to enable more effective competitive performance, it is first necessary the clarify the activities the two orientation groups when attempting to overcome the difficulty of goal enactment (Kuhl, 1984). These can then be conceptualised as the sport specific skills of action-oriented athletes and the needs of state-oriented athletes. In the first instance, Study 1 will consider the functional significance of action-state orientation on athletic performance through an exploration of volitional strategies utilised under competitive pressure and athlete testimony of the effects of volitional impairment. Empirical findings from Study 1 will be used in conjunction with theoretical understanding of the properties of affect regulation to derive Study 2, an intervention programme to develop action-oriented skills in state-oriented athletes.
Chapter 3: Study 1: Volition and individual differences in athletes' coping and use of mental skills

3.1 Research Question

The present study focuses on the functional significance of action-state orientation on athletes' volitional skills of planning, initiating and completing their intentions when faced with competitive pressures, such as a stressful experience. Kuhl (1994a) maintained that persevering preoccupation with thoughts or feelings caused by (real or imagined) negative experiences can inhibit volitional skills in state-oriented athletes. Furthermore, according to the first modulation assumption of PSI-theory (Kuhl, 2000a; 2000b, 2001), positive affect facilitates the release of behavioural inhibition. The issue of this investigation is threefold, firstly, how does orientation impact the way a stressor is experienced? Secondly, how does orientation impact the way an athlete is able to use self-regulatory coping skills to realise their goal and finally, to highlight specific and underlying affect regulation skills relevant to an athletic environment that may be developed to help athletes overcome the effects of volitional inhibition.

Beckmann (2002) identified performance skills such as coping, emotional control and confidence as critical components in competitive success. As well as the importance of examining differences in ability and usage of skills such as these, it is necessary to move beyond findings that simply indicate action-oriented athletes employ these skills more commonly, to uncover how exactly this deployment manifests under competitive pressure. To investigate these key issues two approaches are presented; athlete behaviour under pressure will be considered through self-report
measures outlining specific performance related skills and initially explored through personal testimonies of athletes' feelings, thoughts and actions in attempting to get over negative experiences and enact their intentions at competition.

3.2 Study aims

The purpose of this investigation is to use quantitative and qualitative testimony to: 1) identify the control states of action vs. state orientation within a UK athletic population; 2) establish differences in performance-related self-regulatory mental skills and coping strategies between athletes in different control states; 3) clarify affect regulation strategies utilised to combat competitive stress; and 4) highlight the specific skills of action-oriented athletes and the specific needs of state-oriented athletes under pressure, in order to develop specific and underlying targets for intervention. Aims will be investigated by examining the modulation assumptions of PSI-theory. Firstly, that self-regulation is facilitated by positive mood and secondly, that down-regulation of negative affect enhances access to self-representations. It is hypothesised that under competitive pressure action-oriented athletes possess better ability to regulate affect (both up and down) and hold a stronger holistic conceptualisation of their own needs, wants and beliefs enabling them to behave with more autonomy.

3.3 Methodology

Protocols and materials for this study received ethical clearance from the University of Strathclyde ethics committee.
3.3.1 Participants

Participants were 101 athletes (47 male and 54 female) aged between 18-36 years (M = 21.9) and competing at various levels from representing Great Britain to club level (GB = 22%; Scotland International = 49%; Regional = 14%; City = 2%; University = 4%; Club = 10%). Athletes were drawn from both individual sports (n = 39) and team sports (n = 62) in the events of track and field athletics, rowing, rugby, basketball, field hockey, netball and judo. Athletes had participated in their events for an average of 7.5 years (SD = 3). Athlete contact was initiated through coaches who received an email from the investigator inviting them to participate in the study and a follow-up letter on university headed paper providing more background information. In return for participation of their athletes the coaches were offered the option of each of their athletes each receiving (confidential) feedback or a group workshop on a sport psychology area of their choice. Individual athlete feedback was not made available to the coach. One team (rugby) opted for a ‘mental toughness’ workshop, all other participating athletes received personal feedback and background details to the investigation by email.

3.3.2 Instrumentation

Athletes completed a Competitive Experiences Questionnaire booklet containing three quantitative scales and a short written qualitative section in the presence of the investigator. All questionnaires (see section 3.3.4.1 – 3.3.4.2: Action Control Scale; Athlete Coping Skills Inventory [see appendix 3] and the Test of Performance Strategies [appendix 2]) contained instructions aimed at minimising the social desirability bias, such as ‘there are no right or wrong answers’. In addition, at the time of receiving the booklet all athletes were given initial verbal instructions to
respond as honestly as possible as if they wished, they would be able to receive
detailed personalised feedback based on the quantitative questionnaire responses in
return for their participation.

3.3.3 Athlete personality disposition: *The Action Control Scale*

The Action Control Scale (ACS-90; Kuhl, 1994b) is designed to assess athlete
disposition that is, individual ability to escape the state-oriented mode of control when
required. The ACS-90 contains three subscales: Hesitation; Preoccupation; and
Volatility (see section 2.7.3). Each subscale has a range of 0-12 points, the higher
score then the stronger the disposition towards action-orientation. Internal consistency
(Cronbach’s alpha) scores for the ACS-90 are satisfactory across each subscale
(Preoccupation = 0.70; Hesitation = 0.78; Volatility 0.74; Kuhl, 1994b). Applying the
norms listed in Kuhl (1994b; p. 57), athletes were classified as action-orientated
(AOF) or state-oriented (SOF) groups based on a median split of their responses
according to the preoccupation (failure) dimension (see section 2.9) of the scale which
assesses preoccupation versus disengagement. Responses on the preoccupation scale
were chosen as the specific measure for determining orientation in line with previous
studies (e.g., Kuhl & Baumann, 2002; Kuhl & Kazén, 1994b). Furthermore, the
present research was concerned with how the initiation of action is made difficult by
an inability to prevent intrusive thoughts concerned with aversive experiences. A
factor most appropriately assessed by the preoccupation scale. Athlete scores showed
a distribution across the full range of 0-12 with a negative skew. As the median was
located within the most frequent class of scores (7.0) and the group mean score was
7.4, it was chosen to assign athletes with a score of 7.0 or below to the state-
orientation group (Beckmann & Kuhl, 1984). 51 athletes were classified as SOF
which indicates a stronger disposition to become preoccupied with real or imagined failure under stressful conditions. 50 athletes were classified as AOF (median = 10, mean = 9.96).

3.3.4 Competitive practices

Athletes' competitive practices were examined through two approaches. In the first condition, athletes' frequency of mental skills and coping strategies usage was assessed through two questionnaires. The second approach utilised a brief, qualitative approach designed to elicit athlete behaviours prior to and during stressful sporting experiences through an initial open-ended question, followed by a series of focused questions. Due to the exploratory nature of the research and because responses were partially dependant on athletes possessing strategies to regulate negative affect, it was anticipated prior to the investigation that the amount of raw data yielded would not be substantial enough to warrant a full inductive analysis. Qualitative results were therefore utilised to provide a supplementary support to quantitative findings. These two approaches will be introduced separately (see section 3.3.4.4).

3.3.4.1 Athletic Coping Skills Inventory

The Athletic Coping Skills Inventory (ACSI-28; Smith, Shultz, Smoll & Ptacek, 1995) assesses seven sport-specific psychological coping strategies: Coping with adversity; Peaking under pressure; Goal setting/mental preparation; Concentration; Freedom from worry; Confidence and Achievement motivation; and Coachability. The scales can be summed to provide an overall Personal Coping Resource Score (PCRS). It is speculated that several factors measured by the scale could potentially impact the self-regulatory functions that mediate the ability to enact
and maintain difficult intentions when preoccupied by failure. The ACSI-28 may indicate differentiated behaviours depending on orientation in subscales such as Freedom from worry which contains items including: “I think about and imagine what will happen if I fail or screw up” and “I worry quite a bit about what others will think of my performance”. In addition, differences may be evidenced within the Coping subscale (“when I feel myself getting too tense, I can quickly relax my body and calm myself”); Concentration subscale (“It is easy for me to keep distracting thoughts from interfering with something I am watching or listening to.”) and Peaking under pressure subscale (“The more pressure there is during a game, the more I enjoy it”).

Experiences of skills usage were measured on a Likert scale of 1-4 with the labels: 1 = almost never; 2 = sometimes, 3 = often, 4 = almost always. The internal consistencies (Cronbach’s alpha) provided by Smith et al., (1995) show the seven subscales ranged between 0.62 (Concentration) to 0.78 (peaking under pressure). PCRS scored a high internal consistency of 0.87. Test-retest coefficients ranged between 0.47 (Coachability) and 0.87 (Peaking and PCRS) and apart from Coping (0.63), all other subscales scored coefficients of over 0.70.

3.3.4.2 Test of Performance Strategies

A version of the Test of Performance Strategies (TOPS; Thomas, Murphy & Hardy, 1999) was used to assess the frequency of usage of eight mental skills at competition on Likert scale of 1-5 (1 = never use this skill; 2 = rarely use; 3 = sometimes use; 4 often use; 5 = always use this skill). The TOPS was modified to include only the ‘competition strategies’ component of the scale as the study focuses specifically on action and affect under pressure. The ‘practice strategies’ component was dropped as research has consistently demonstrated SOF individuals perform well.
in relaxed or training conditions (e.g., Heckhausen & Strang, 1988; Kuhl & Fuhrmann, 1998; Roth & Strang, 1994). Moreover, the questionnaire booklet contained several scales and a qualitative section, and was completed either before or after a training session in the presence of the investigator. Therefore, an athlete-friendly approach that avoided unnecessary questioning was utilised in the interests of expediency.

In addition to measuring usage of typical sport-relevant psychological skills such as Goal setting, Imagery, Attention control and Relaxation, the TOPS includes the constructs of Self-Talk, Activation and Emotional Control. The extra dimension of emotional control ("When I make a mistake in competition, I have trouble getting my concentration back on track") has not been explicitly identified in other scales (Thomas et al., 1999), but the ability to control negative thoughts and emotions under pressure is especially relevant in the volitional control of action and facilitating positive affect. The construct of Activation refers to the ability to raise physiological arousal and is based on the assumption that the ability to lower one's arousal level is a different skill to being able to raise one's arousal level (Thomas et al., 1999). Providing a contrasting dimension to relaxation control the inclusion of scales measuring both activation and relaxation should offer a more pertinent examination of affect regulation skills. The factor of Automaticity, "I don't think about performing much – I just let it happen", is cited by the scale authors as an essential element of high level performance and linked with both flow (Csikszentmihalyi, 1990) and autonomous behaviour. Coefficients for internal consistency provided by the TOPS scale authors yielded scores of Cronbach's alpha > 0.70 for six out of the eight subscales, with the dimensions of Automaticity and Activation scoring 0.67 and 0.66 respectively.
3.3.4.3 Stressful Competitive Experiences Questionnaire

A brief questionnaire based on an adapted version of the ‘Competition Stressors questionnaire’ (Dugdale, Eklund & Gordon, 2002) was used to ascertain athletes’ recent experiences and behaviours under competitive stress. The questionnaire was adapted (see appendix 4) and structured to remain as open and general as possible, in order for the athletes to develop their own depiction of their thoughts, feelings and actions when under stress. Athletes were asked an initial open-ended question before a series of focussed questions. Parts of the question were highlighted in bold for emphasis.

1. Please describe the **most stressful experience** you have had **prior to or during a recent important** match/game event.

Athletes who indicated verbally to the investigator present that they felt they did not have any very stressful recent experiences to draw upon were asked to write what they had verbalised and if possible explain why they felt that was the case.

Following this initial question athletes were then asked to indicate (yes or no) whether they felt their performance was affected by this stressful experience and if it was, they were then asked to describe how exactly their performance was affected. Athletes were also asked to indicate as specifically as possible the time their most stressful experience occurred (e.g., 1 hour before my performance, or 20 minutes into the first half of the competition etc). Question 5 asked if the stressful experience was unexpected or expected (i.e., was it something that they and/or their team had prepared for). If the stressful experience was expected, athletes were asked to expand on what preparation had been undertaken.
In order to determine reasons behind action and inaction and potentially different approaches to helplessness and behavioural control, the questionnaire asked the following questions on a semantic, differential scale:

7. In general was your most stressful experience something that you could change or do something about? (please circle)

<table>
<thead>
<tr>
<th>Could not change</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>Could change</th>
</tr>
</thead>
</table>

8. Something you felt you had power over?

<table>
<thead>
<tr>
<th>No power</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>Had power</th>
</tr>
</thead>
</table>

9. Did your most stressful experience affect your level(s) of concentration during your game/match/event?

<table>
<thead>
<tr>
<th>Affected</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>Not Affected</th>
</tr>
</thead>
</table>

As a follow-up to question 9 (above) athletes were then asked to briefly illustrate what occurred with their concentration, whether they were affected, or were not affected. In the final section of the questionnaire athletes were asked “did they use any strategies to help maintain their concentration or help refocus” and if so, to describe their approach. In addition, athletes were asked to elaborate on any usage of specific thoughts, cue words, moods or self-statements utilised and the perceived effectiveness and ease of application of their coping strategies.

3.4 Data analysis

Although demographic data regarding gender, age, sport played and competitive level was taken for all participants, data analyses (Mann-Whitney)
showed no significant differences within any of these factors. The only significant
difference was shown between the two groups: action-oriented athletes and state-
oriented athletes. Therefore, orientation is the only factor used to distinguish athletes
and all findings presented (see section 3.5) are for the entire sample and split by
orientation alone.

To establish which statistical procedure was most appropriate for data analysis,
descriptive statistics and trends in the distribution of the results were initially
explored. Histograms of ACS-90 scores showed negatively skewed distributions of
both AOF and SOF scores, this skew suggested data would not meet the assumption
of a normal population necessary for parametric tests. To clarify the normality of the
distribution, the Shapiro-Wilk test was used to provide an objective measure by
comparing the observed scores against a normally distributed set of scores with the
same mean and standard deviation. The Shapiro-Wilk test was chosen because it is
considered to provide greater accuracy than the Kolmogorov-Smirnov test (Field,
2000). Results revealed highly significant differences (preoccupation subscale = p <
0.004) between the observed data and a normal (expected) population across all three
dimensions of the ACS-90 scale, which confirmed the data was a non-normal
distribution. These deviations were further depicted to be substantial in Q-Q charts
which plotted the observed data values against expected values. As the assumption of
normality was not met by this sample and the data was also grouped nominally
(AOF/SOF) it did not meet the prerequisites for analysis by parametric tests. The
Mann-Whitney test was selected as the appropriate non-parametric test as it tests for
differences between means over the two conditions of state- and action-orientated
athletes.
3.5 Results

The probability of error was calculated for each dimension of the ACS-90 (For ACSI-28 and TOPS scores; see Table 1). An acceptable internal consistency (Cronbach’s alpha > .70) was evident for the preoccupation (.76) dimension of the ACS-90 scale, which is the dimension used to distinguish action-state orientation. Scores on the other dimensions of the ACS-90 [decision (.79) and preoccupation (.56)] were also recorded. However, athlete scores for these two dimensions did not feature in this research.

<table>
<thead>
<tr>
<th>ASCI</th>
<th>AOF</th>
<th>SD</th>
<th>SOF</th>
<th>SD</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coping</td>
<td>7.74</td>
<td>2.42</td>
<td>5.69</td>
<td>2.13</td>
<td>0.77</td>
</tr>
<tr>
<td>Coachability</td>
<td>9.92</td>
<td>2.10</td>
<td>9.39</td>
<td>1.82</td>
<td>0.63</td>
</tr>
<tr>
<td>Concentration</td>
<td>8.30</td>
<td>2.25</td>
<td>7.31</td>
<td>1.77</td>
<td>0.68</td>
</tr>
<tr>
<td>Confidence</td>
<td>8.70</td>
<td>2.04</td>
<td>7.57</td>
<td>2.21</td>
<td>0.68</td>
</tr>
<tr>
<td>Goal Setting</td>
<td>6.94</td>
<td>2.69</td>
<td>5.51</td>
<td>2.83</td>
<td>0.77</td>
</tr>
<tr>
<td>Peaking</td>
<td>7.90</td>
<td>2.76</td>
<td>6.54</td>
<td>2.60</td>
<td>0.81</td>
</tr>
<tr>
<td>Freedom</td>
<td>7.52</td>
<td>2.73</td>
<td>5.96</td>
<td>3.16</td>
<td>0.78</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOPS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activation</td>
<td>4.08</td>
<td>0.66</td>
<td>3.79</td>
<td>0.64</td>
<td>0.77</td>
</tr>
<tr>
<td>Relaxation</td>
<td>3.70</td>
<td>0.83</td>
<td>3.23</td>
<td>0.77</td>
<td>0.88</td>
</tr>
<tr>
<td>Imagery</td>
<td>3.81</td>
<td>0.70</td>
<td>3.31</td>
<td>0.93</td>
<td>0.86</td>
</tr>
<tr>
<td>Goal Setting</td>
<td>3.86</td>
<td>0.90</td>
<td>3.34</td>
<td>1.03</td>
<td>0.88</td>
</tr>
<tr>
<td>Self-talk</td>
<td>3.47</td>
<td>0.95</td>
<td>3.24</td>
<td>0.87</td>
<td>0.82</td>
</tr>
<tr>
<td>Automaticity</td>
<td>3.32</td>
<td>0.79</td>
<td>3.25</td>
<td>0.58</td>
<td>0.67</td>
</tr>
<tr>
<td>Emotion control</td>
<td>3.81</td>
<td>0.75</td>
<td>3.39</td>
<td>0.62</td>
<td>0.83</td>
</tr>
<tr>
<td>Negative thinking</td>
<td>2.04</td>
<td>0.73</td>
<td>2.55</td>
<td>0.82</td>
<td>0.83</td>
</tr>
</tbody>
</table>

Table 1: Scale means and Internal consistency scores.

Table 1 shows the internal consistency scores calculated for each subscale of the ACSI-28 and the TOPS scales. Coefficients for the ACSI-28 showed a very good mean subscale alpha of .88 and satisfactory alpha for the subscales of Coping (.77), Goal Setting (.77), Peaking under pressure (.81) and Freedom from worry (.78). A low coefficient is seen in Coachability (.63), which represents a somewhat greater
level of chance occurrence for scores on this dimension of the scale. However, .63 is substantially higher than the original .47 subscale coefficient reported by the scale authors (Smith et al., 1995). Furthermore, a precedent is set in the coping research literature, Crocker and Graham (1995) maintained acceptable internal consistencies in coping subscales with Cronbach’s alpha > .60. It was chosen to retain the coachability subscale because of the exploratory nature of this research into the coping skills of action- and state oriented athletes under pressure. For the TOPS inventory internal consistency is very good (α > .70) for seven of the eight subscales and the mean subscale alpha was also very good (.83). Low internal consistency is shown in the Automaticity subscale, however, in development the alpha on this subscale was reported at .67 (Thomas et al., 1999) and the nature of this particular area and implications have been previously examined (see section 3.4.2.2).

Figure 1 shows AOF athletes scoring higher usage levels across each component of the ACSI. The score difference between athletes on the ACSI for total Personal Coping Score (PCRS) shows a highly significant difference (z = -3.88, p < 0.001) between the overall resources of action- and state oriented athletes. This high level of significance is replicated for specific Coping skills (z = -4.18, p < 0.001) indicating that action-oriented athletes have not only a more rounded range of strategies for dealing with aversive situations, but they are also better at coping with these challenging experiences (e.g., repeated failure). Significant differences in ability are also shown between the two groups in the competitive skills of Concentration (z = -2.46, p < 0.05); Confidence (z = -2.39, p < 0.05); Goal Setting and mental preparation (z = -2.38, p < 0.05); Peaking under pressure (z = -2.51, p < 0.05); and Freedom from worry (z = 2.52, p < 0.05). No significant difference was observed for the Coachability scores between groups, which denotes that despite great differences
in overall mental skill usage both action- and state-oriented athletes are able to follow the instruction of a coach when under competitive pressure (see section 3.7.2).
Figure 1. Difference in coping skills usage (ASCI) between orientations.
Athlete scores on the test of performance strategies (TOPS; see figure 2) show a highly significant ($z = -3.20$, $p < 0.001$) difference in levels of Negative thinking as SOF athletes report experiencing higher levels of debilitating and intrusive cognitions under pressure (specific examples of athlete descriptions of thoughts experienced and the resultant effect on their performance are appraised within section 3.6.1). Action-oriented athletes show significantly better performance levels in Imagery ($z = -2.86$, $p < 0.005$) and Goal Setting ($z = -2.63$, $p < 0.009$). The significant scores for Relaxation ($z = -2.86$, $p < 0.004$) and Activation ($z = -2.34$, $p < 0.05$) show action-oriented athletes as having superior control at both raising and lowering their arousal levels.

This variance in ability between groups is further reflected in the significant difference in scores for Emotional control ($z = -3.02$, $p < 0.003$) of behaviour, where AOF athletes show superior skills. No significant differences in ability were shown between the usage of Self-Talk and in Automaticity. The non-significant Self-talk scores contrast with the higher levels of Negative thinking shown by state-oriented athletes as the Negative thinking subscale includes the statement, “My self-talk is negative” and responses would have contributed to the overall higher unhelpful cognitions score. Results do, however indicate that both groups of athletes make use of self-talk as a skill under pressure. Nevertheless, as SOF athletes have been shown to demonstrate poorer performances under pressure (e.g., Roth & Strang, 1994; Strang, 1994), it is possible there may be some variance in terms of whether all athletes actually believe what they tell themselves, given the susceptibility of state-oriented individuals to self-infiltrate the beliefs of others (Kazen, Baumann & Kuhl, 2003). This may explain why use of self-talk is similar between groups yet there are great divergences in actual performance levels. This finding is specifically
investigated in conjunction with athlete testimonies of their self-talk under pressure and is discussed in section 3.7.1.

Differently oriented athletes scoring similarly in the autonomous behaviour related subscale of Automaticity may be attributed to athlete misinterpretation of the construct. Thomas, Murphy and Hardy (1999, p. 708) posited that an athlete confusion exists in distinguishing actual automaticity (autonomy) and a disorganised or laissez-faire competition preparation style. For example, the latter part of the statement, “I don’t think about performing much – I just let it happen” may imply very different meanings to individual athletes. This self-sufficient vs. unsystematic distinction of approach to competition is more consistent with the action vs. state orientation differences highlighted in the other subscales.
Figure 2. Difference in performance strategies usage (TOPS) between orientations.
3.6 Competitive Experience Questionnaire Data Analysis Strategies

Raw data responses such as quotes or paraphrased quotes that represented a meaningful point were codified as categories in terms of the question posed. For example, Type of stressor; Effect on performance/concentration; and Strategies used to combat negative affect. Themes were identified within each category that represented the distinctive strategies measured by the quantitative scales. Not all participants fully completed all sections of the competitive experiences questionnaire, therefore results presented are in terms of the number of responses to each individual question.

3.6.1 Qualitative results

Athletes identified a diverse range of stressful competitive experiences including experiences of: developing an injury, pre-existing injuries, physical fatigue, poor/no warm up, failure to warm-down/rest/re-hydrate, poor start, over confidence, lack of confidence, new/missing equipment, concerns over personal issues, fear of making mistake, concerns over place in squad, frustration (at self or others), nerves and pressure of coach or family expectations. Types of experience were not differentiated between groups.

Two AOF athletes responded that they had not experienced any stressful experiences with the responses, for example, a 20 year old female Scotland International Netball player elaborated in her response:

"As an athlete prior or during match I cannot think of any incidents which I have been stressed over. My preparation before a match is calming, so when I
take to court I don’t think so much of what may come about on court. I deal with the situation when it appears...”

From the 94 responding athletes, 24 AOF and 25 SOF athletes indicated their performance had been affected by their stressful experience, whilst 19 AOF and 24 SOF considered their performance unaffected. 64.3% of AOF and 57.1% of SOF athletes claimed their stressful experience occurred prior to competition compared to 31% AOF and 34.7% SOF who experienced their stressor during their event. 16 state-oriented athletes and 9 action-oriented athletes had anticipated their stressor, whereas 34 (79.1%) AOF and 33 (67.3%) SOF considered it an unexpected occurrence. Responses for whether athletes believed their stressful experience was something they could change (q. 7), or something they felt had power over (q. 8) both show bimodal distributions. However, in each question action-oriented athletes show greater percentages at the opposing poles. 39.5% AOF compared to 20.8% SOF believed the stressor was something they absolutely could not change (score = 0), yet 23.3% AOF in comparison with 14.6% SOF also deemed the stressor as something they definitely could change (score = 9). 39.5% AOF also felt they had absolutely no power over the stressor (Score = 0) as opposed to 24.5% SOF athletes who felt the same way. 14% AOF compared to 6.1% SOF athletes felt they had power (Score = 9) to do something about their stressful experience. A similar but slightly less bimodal response patterns were also yielded regarding ‘Affect’ (18.6% AOF vs. 22.4% SOF) or ‘No affect’ (14% AOF vs. 6.1% SOF) of the stressor on the athletes’ levels of concentration.

As befitting a bimodal response pattern both groups reported examples of athletes simply just not being able to focus on game plans or the competition itself. However, subtle differences in the types of preoccupations experienced were also
evident. For example, only state-oriented athletes highlighted negative feelings of being distant and removed from their performance:

"I felt extremely distant, my concentration was not on the task at hand" (SOF, 18yr old female league club level basketball player)

"Hugely affected – I felt distant from the game over analysing negative aspects of my performance and concentrating on the wrong aspects" (SOF, 19yr old female university level basketball player)

This sense of removal from performance possesses elements similar to the concept of functional helplessness (Kuhl, 1981) as athletes' negative experiences increase feeling of being hopeless (Strang, 1994). Rather than a focus on the state they are in (preoccupation), it is only AOF athletes that report on the inability to create the mental state usually achieved, for example:

"Drop in concentration. Difficult to get into usual frame of mind" (AOF, 19yr old male league club level hockey player)

"Difficulty getting 'psyched up'. Poor concentration affected my listening to coach and remembering practised games" (AOF, 22yr old female university level basketball player)

The SOF group were the only athletes that reported (unhelpful) cognitions related to external factors, such as the image they were presenting in their situation:
"I was concentrating too much on what others were thinking of my performance and not concentrating on my goals" (SOF, 22yr old female Scotland International netball player)

"I became angry and was determined not to look 'shite' - to look better than him [team mate]" (SOF, 18yr old, male regional level hockey player)

"All I could think about was not tripping up and trying to cover myself up because I was hanging out of the vest! Not race plan at all" (SOF, 23yr old female GB International sprinter)

"I could not concentrate, I felt emotional: I could not handle criticism as well as I normally can" (SOF, 18yr female university level basketball player)

Results here demonstrate the increased propensity of SOF individuals to value the judgments of others over their own ideas (Kazén, Baumann & Kuhl, 2003) and poorer powers in exercising attention control (Steinsmeier-Pelster & Schürmann, 1994). Instead of a focus on the task at hand SOF athletes report negative ruminations concerning the views other people have of them. This is fitting with suggestion that state-oriented individuals tend to end up in self-evaluation loops (Beckmann, 2002) as an inability to disengage from past events causes preoccupation. Several AOF athletes report their concentration levels being impacted and being aware their preparation was not perfect, but that they attempted to reconcile with the situation and continue with their routine in order to maintain focus, for example:
"I continued my race prep as normal, however it was always at the back of my mind that the build-up was different to normal and that wasn't ideal" (AOF, 27yr old female GB International middle distance runner)

“I knew the injury was going to affect my race and had basically resigned myself to running the race the best I could” (AOF, 32yr old male GB International endurance athlete)

“During my warm-up I felt sick and struggled to concentrate. I was not fully hydrated and the little food I had taken wouldn’t settle. It made me more worried than affecting my concentration” (AOF, 20yr GB International rower)

It is notable of the athletes who continued with their plans are International level athletes. Experience of competing at the highest levels may be an influencing factor on strategies adopted under pressure. Furthermore, Beckmann (2002) suggested action-oriented athletes posses better context sensitivity, that is, they are better able to ignore distractions and find incentives to help focus on actual realisation of their goal. Similarly, only AOF athletes report how the stressor created understated changes in the type of concentration they now needed to perform successfully:

“The 1st 2 throws I was concentrating on throwing as far as possible, then I had to concentrate on my technique to ensure I got a registered throw” (AOF, 18yr U21 Scotland International discus thrower)
“I had to change my entire competition plan and work out quickly in my head how I was going to take my jump – I had to make my 3rd round jump more controlled” (AOF, 18yr old male Scotland U20 long jumper)

The bimodal spread is further evidenced as several members of both groups report how the stressor actively served to stimulate their concentration and performance:

“It made me focus even more on the race and what I was doing. I blocked out everything else and focussed on rowing well” (SOF, 25yr old female Scotland International rower)

“Surprisingly affected for the better, performance was improved - felt I was on auto-pilot” (SOF, 18yr old regional level rugby player)

“During the race if anything, my concentration levels were sky-high as a result of the previous tension” (AOF, 21yr old male regional middle distance runner)

“I actually seemed to focus more on my game and played very well” (AOF, 21yr old female League club level netballer)

The qualitative results demonstrate that aversive conditions tend to generate negative affect in the majority of athletes, therefore it is pertinent to consider the differences in athletes’ reactions to these cognitions and the strategies applied to regulate affect. 18 action-oriented athletes and 21 state-oriented athletes reported using a strategy to
maintain their concentration or refocus. 24 AOF and 28 SOF athletes indicated they did not have a strategy. 4.9% AOF compared to 18.8% SOF felt that coping required great effort, whilst 14.6% AOF and 8.3% SOF felt they coped automatically. It is apparent that the questions on a semantic differential scales do not replicate the significant findings in behavioural differences between groups as demonstrated in the ACSI and TOPS questionnaires. However, athletes' written descriptions of their actions in pressure situations more clearly illustrates the different approaches highlighted in the quantitative data. This discordance may additionally suggest state-oriented athletes, whilst believing they are utilising refocusing strategies, may have actually become hopeless (Strang, 1994) and are merely engaging in erratic guesswork (Brunstein & Olbrich, 1985; Kuhl, 1981).

Figures 3a and 3b show the distributions for strategies reported to have been utilised under competitive pressure by the 39 athletes. Of this group 10 athletes (6 AOF and 4 SOF) indicated using two or more different strategies in combination, for example citing both positive thinking and self-talk. All reported strategies are included in the analyses. The most popular strategy reported was self-talk which represents 30% (17% AOF and 43% SOF) of total the mental skills techniques utilised. This popularity also partially corresponds with the finding of no significant difference between groups as shown in the TOPS questionnaire results. However, subtle differences in self-talk methodologies can be observed. AOF athletes identify more specific intentions through their self-talk of the behaviours or the situation they are looking to achieve:

"I used words like discipline and fly through the air" (AOF, female 31yr old Scotland International Netball player)
“Relax. Keep strong posture. Finish the race the best way I can” (AOF, male 31yr old Scotland International long distance Runner)

“Stay calm. Relax. Concentrate – on what needs to be done” (AOF, female 27yr old GB International Middle distance runner)

“Told [my]self that this was the last chance to perform in the season so losing concentration would result in much higher levels of frustration” (AOF, female 25yr old Scotland International middle distance runner)

Alternatively SOF self-talk is based on Less actual ‘strategy’ is often framed within the idea of trying to talk oneself into a belief, rather than reminding oneself, reinforcing an already held positive belief, or action plan. It is almost as if under the pressure of competition the athlete is trying to convince themselves of something they do not necessary believe is true, but if they say it to themselves it is believed it will help them overcome adversity. For example, an SOF 22 year old female Netball Scotland International describes her strategy for dealing with the extra stress she felt in having friends and family watch her play against England for the first time at an International tournament:

“I was trying to convince myself I was only playing a normal league match and that my performance didn’t matter too much” (SOF, 22yr old female Scotland International netballer).
Figure 3a. Distributions of strategies used under pressure reported by SOF athletes.
Figure 3b. Distributions of strategies used under competitive pressure reported by AOF athletes.
Similarly, in the SOF statements below there is much emphasis on ‘trying’ to tell oneself something positive, as if the athlete is fighting a battle to believe their own words/thoughts (see 3.7.1 for self-talk discussion):

“I kept trying to reassure myself that everything was going to be alright”
(SOF, 22yrs female Scotland International Sprinter)

“Tried to think positively, talk myself into the idea I was physically ok” (SOF, 26 year old female Scotland International Rower)

“I tried to talk to myself and rationalise with myself” (SOF, 24yr old female Scotland International Netballer)

Whilst self-talk also represented the most commonly employed strategy for state-oriented athletes the largest proportion (20%) of action-orientated athletes reported using imagery:

“I visualised myself running a good time being fluent over the hurdles, relaxed and smooth” (AOF 20 yr old male, GB International Sprinter)

“I visualised myself throwing a PB and making the cut easily, I pictured every movement of the throw and how good it felt throwing very far. I pictured my competitors as clowns that couldn’t throw the discus – it worked” (AOF 18yrs Female U20 Scotland International, Discus)
A somewhat less detailed version of their imagery technique performance is described by a state-oriented athlete:

"Thought of me playing the game. Not well or badly, just playing" (SOF, 18yr old Male Regional level rugby player)

It is of interest to note that although Figures 3a and 3b show a variety of approaches across both groups there is a difference in terms of the efforts taken to bring attention back to the task at hand. Outside of key and perhaps more well known strategies such as self-talk, imagery, relaxation/breathing control and positive thinking, action-oriented athletes demonstrate a greater range of 'self-focussing' techniques. 12% AOF compared to 3% SOF highlighted 'Self-focus' as a strategy, which was defined by the athlete identifying "focussing" or "focussed on myself" etc. without clarifying if this involved any specific activity. A further 7% of state-oriented athletes indicated they had physically relocated themselves as a strategy to remove the effect of the stressor, which gives a total of 10% using deliberate self-focus strategies to bring their attention back to the job to be done. In the action-oriented group a total 27% identified self-focus techniques including concentrating on undertaking their usual mental or physical routine (6%), for example:

"All I did was go through my full race warm up like I would always do and by doing the routine I have always done it calmed me down and refocused me on doing my job" (AOF 20yr male GB International Rower)
"I just used my usual strategies and kept my focus the same, but slowed my performance down slightly" (AOF 19yr old Male Scotland U21 Long Jump)

"Going through my usual half-time routine allowed me time to focus and calm" (AOF 18yr old Male Scotland U19 rugby player).

Maintaining a preparatory routine at competition is suggested as a means of retaining focus or re-focusing on the ‘here and now’ and it can prevent lapsing into intrusive thoughts about past events or future outcomes (Lavallee, Kremer, Moran & Williams, 2004). These behaviours also demonstrate a clear down-regulation of negative affect as athletes’ indicate their intention was to calm down and reduce tension. Additionally action-oriented athletes highlighted, taking time out at competition to make a written plan (6%) and 3% using specific physical activities to ‘psych-up’, such as deliberate movement and pacing about. Higher usage of in these types of strategies is similarly evidenced in the action-oriented ACSI scores for Goal-Setting and Mental preparation, for example:

"I tried to take pressure away by playing down the situation and trying to focus on me rather the people I was racing" (AOF 20yr old male, GB International Sprinter)

3.7 Exploration of subscales

Results are initially discussed in terms of specific subscales as the findings from the Coachability (ACSI) and Self-talk (TOPS) subscales show scores from AOF and SOF athlete groups to be especially close. These subscales are considered
individually. Overall conclusions and future research questions are discussed separately.

3.7.1 Self-talk and external control

Self-talk data demonstrated both groups reported using self-talk as a mental skill to aid their performance, however, the self-talk statements of action-oriented athletes have been shown to be more positive and more focussed on the specificities of the task at hand. This corresponds with verbalizations noted during a discrimination learning task (Brunstein & Olbrich, 1985). Following failure experiences action-oriented participants were demonstrated to make significantly higher levels of self-statements that focussed on solution based cognitions and initiating self-regulatory instructions to maintain and enhance coping strategies. In a replication study (Brunstein, 1994) state-oriented participants were observed to become greatly preoccupied with loss of control cognitions. This may explain the self-talk language detailed by SOF athletes which emphasises trying to convince oneself that everything is alright, there is no problem and they [the athlete] are in control of the situation. This may be an avoidance coping strategy as the athlete does not appear to demonstrate any confrontation of the problem, rather they ignore it and/or deny there is a problem. Research has suggested that self-talk can actually function as a liability to performance (Zinsser, Bunker & Williams, 1998) if not used appropriately or strategically. To be an effective self-regulatory strategy Schmid and Peper (1998) suggested that self-talk must include vivid properties related to positive attitude and clear target intention or action. Kuhl (1984) deemed specific self-instruction as a useful measure of interrupting state-oriented cognitions and focussing attention to completing current activities. Presumably however, as present findings
demonstrate, for self-instruction to be a valid tool verbalisations must have some specificity toward task actions. This is supported by Kammer’s (1994) analysis of the verbalisation content of action- and state-oriented participants during failure experiences on brick puzzle task. The highest mean contents for the action-oriented group were shown to be in the categories of task related ‘strategies’ (e.g., I will try the red triangle first; this is going to be a square) and ‘comparison with standard’, that is, self-talk matching action to standard or correcting action (e.g., this fits the standard; this is not the way to proceed). The highest groups of state-oriented participants verbalisations concerned ‘Debilitating emotions’, defined as expressions of negative emotions hampering progress (e.g., ‘I feel so ashamed’; ‘I’m afraid’); and ‘Failure attributions’ (e.g., ‘I was clumsy’; ‘this is a difficult task’).

Alternatively, similarities in self-talk usage levels could feasibly be attributed to the higher propensity of state-oriented individuals to submit to explicit suggestions from other people rather than rely on their own judgements (Kazén, Baumann & Kuhl, 2003). Kuhl (2000a) suggested that it is not always the content of what an individual says (or believes), for example, a 100m sprinter who says “I will be able to break the 10 second barrier”, but rather the functional characteristics of the self-system that are activated by this content. In other words, if the self-talk, or belief is not linked to properties that will move the athlete towards action by providing emotional support and intrinsic motivation for a difficult task then the athlete may not achieve their intention. It is also arguable that SOF athletes are only using self-talk because they have infiltrated someone else’s words or expectations. Therefore, they end up making positive statements because they think they should – not necessarily because they want to, or they actually believe the positive words they are using. Whilst positive words have been shown to produce positive affect (Schapkin &
Gusew, 1994), it is also feasible that if the words utilised are not the words or beliefs of the athlete then these (self-alien) statements could create negative feelings, frustration and hopelessness. Perceiving external and self-alien goals as one’s own can be seen as both an avoidance strategy and as a method of reducing conflict between others’ expectations, one’s own preferences and the uncertainty of how to act resulting from that conflict (Kuhl, 2000a). The end result is a SOF athlete who has become behaviourally inhibited and is struggling to reduce negative affect in a challenging situation through the use of self-talk statements with which they are not necessarily reconciled. In action-oriented athletes higher levels of self-access to self-representations can be speculated to enable strong self-talk because the key words should be based on those cognitive self-representations of beliefs and values. Therefore the self-talk of AOF athletes will possesses the vital element of positive affect specifically facilitated by a fully self determined intention (Fuhrmann & Kuhl, 1998). As relaxation is associated with the ability to access self-related constructs (Kuhl, 2000a, 2000b), self-talk that creates positive affect by linking words to emotional qualities and positive movement (Meichenbaum, 1975) should prove especially advantageous in enhancing the ability to think and act appropriately under pressure. Rodgerson and Hrycaiko (2002) expanded this argument by combining self-talk with training in the breathing control technique of centering in ice hockey goalkeepers. Results showed enhanced performance (measured by save percentages) and more performance consistency over a three month post-intervention period, which further highlights the relevance to performance of being able to use self-talk for self-regulation, rather than for avoidance.
3.7.2 Coachability and external control

Coachability scores from the ACSI-28 signify that both action- and state-oriented athletes are equally easy to coach as both groups report listening to and taking advice from coaches as well being able as take criticism as performance feedback, rather than becoming upset. This finding of comparable coachability in action- and state-oriented groups has not been identified in previous research; however findings from other studies do provide precedents for the corresponding scores. In a study with elite German basketball players, Beckmann and Trux (1992; as cited in Beckmann & Kazén (1994) discovered the bulk of attacking players were action-oriented (on the preoccupation subscale; AOF), whereas most players in play-making positions were SOF. The significance of this finding is in the contention (Sahre, 1991; as cited in Beckmann & Kazén, 1994) that AOF athletes are more likely to be the point scorers because they function better under pressure and are more likely want possession or to take last minute shots/free throws (i.e., strikers or penalty takers). Sahre suggested that it is in fact SOF athletes who most likely to execute tactical instructions from a coach, which makes them better suited to a play-maker role. This inclination toward external control in state-oriented athletes (Kazen et al., 2003) is further exemplified in a tactical decision making test with experienced footballers. In a video screen based exercise (Roth and Strang, 1994) footballers were asked to assume they held possession of the ball and make the best tactical decision from a selection of six options of variable decision-making complexity. Results showed whilst action-oriented footballers did not alter their decision complexity, quality or time across different conditions of speed and accuracy, state-oriented athletes showed a ‘clear dependence’ (p. 470) on external control by adopting situational instructions to the detriment of both their decision making and their
performance. If SOF athletes were asked to make an accurate decision they would take time to make the most appropriate decision. However, if put under time pressure and asked for a quick decision they responded by changing their decision making process in order to meet the instruction given, which would result in a poorer decision.

A predisposition toward external control has been demonstrated in role-play studies (Kazén et al., 2003; Kuhl and Kazén, 1994a) previously discussed (see section 2.9.1). Findings highlighted a significantly greater propensity of state-oriented individuals (in comparison to action-oriented participants) to self-infiltrate the ideas of someone they believed to an “expert” in preference to their own beliefs, despite rating the suggestions of the “expert” more unpleasant. Kuhl (1994a) suggested the misperception or self-infiltration of goals (i.e., the inability to distinguish between ones’ self-generated thoughts and the ideas suggested by other people) results in the ‘external-control’ pattern of behaviour. This pattern is characterised by rigid adherence to rules/instructions imposed by others and an impaired ability to change one’s intentions when confronted with unexpected situational changes (p. 19). Walschberger (1994) considered that the stronger reaction of state-oriented individuals to external control was not because they considered their abilities as low, but rather the environmental demands of challenging situations that induced worries about real or imagined failure experiences, which in state-oriented individuals can unleash a cycle of negative affect and poor performance. A key danger for state-oriented athletes in submitting to external control, or self-infiltrating alien goals is blindly persevering with these goals is that it decreases the ‘think-on-ones-feet’ ability of the athlete to make changes in performance. Moreover, these goals may lack the termination conditions specified in self-generated goals (Kuhl, 1994a) and the athlete
doggedly sticks to the task when the original plans are no longer relevant or effective. For example, an SOF football winger is instructed by his coach to stay out wide on the right and supply crosses into the box, however when the game does not pan out as planned the player remains fixated on an unrealistic goal and sticks with his directive to stay wide rather than moving inside and trying to get more involved. In effect, the footballer is behaviourally inhibited (functionally helpless) and this inhibition may cause him to miss opportunities to make a change (Fuhrmann & Kuhl, 1998).

A key aim of this study was to examine the differences between control groups in terms of performance related self-regulation skills. Findings of similarities in mean Coachability scores (AOF = 9.92; SOF = 9.39) across orientation has important implications for the methodologies employed by coaching staff. Whilst coaches may not specifically distinguish athletes by orientation, they may well be aware of athletes in their charge who are quite self-sufficient in their competition preparation, and of those who seek explicit direction. In addition, coaches may inadvertently or directly foster athlete dependency, this may be especially true if the training environment is managed in an autocratic style. Arguably in such surroundings the overt development or encouragement of athlete autonomy may not necessarily occur. This may explain why certain athletes can be perceived as individuals who listen and take advice, but fall apart at competition because they are actually rigidly adhering to instructions (whether explicit, or self-infilttrated beliefs) when it is impractical to do so, or are unable to make changes without being told what to do. This also has practical implications for autocratically managed squads at competition where they are suddenly required to think and act autonomously, but have not necessarily been trained to develop the underlying skills that would enable them to do so.

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For self-determined, autonomous behaviours under competition pressure, that is, the think-on-feet ability to avoid persevering preoccupation with real or imagined failure and get over the difficulties of intention enactment and completion (Kuhl, 1984), athletes need to be encouraged to develop better access to what they feel and want (Beckmann, 2002) so they can act on these feelings with trust. Athletes with greater access to self-representations are considered (Kuhl, 2000b) to be more ready to act out their intentions and less susceptible to self-infiltrate the ideas of others. As such these individuals are the ones who tend to act more in line with their intentions (Kazén et al., 2003). The postulation that negative affect is the key prerequisite for self-infiltration of external values (Kazén et al., 2003) is a vital point in athletic settings. Given the propensity of some athletes to adopt the ideas of others, coaches need to be aware of how their interpersonal style is specifically absorbed, particularly a flippant comment to an athlete in a low emotional state. Whilst it is beyond the scope of this research, these findings highlight potential interventions/education programmes may be beneficial in training coaches to encourage athletes to develop their own ideas so they can function better under pressure by acting in accordance with their own beliefs.

3.8 Discussion

The purpose of this study was to conceptualise the strengths of AOF athletes under pressure (in terms of volitional efficiency and performance strategies utilised to plan, initiate and complete intentions) and the needs of SOF athletes. Results emphasise the superior usage of mental skills by action-oriented athletes. Moreover, athlete testimony distinguishes a greater capacity of AOF athletes to maintain a focus on the task at hand, largely through the ability to relax and get rid of a poor mood. A
key aim of the study was to test the first modulation assumption of PSI-theory (Kuhl, 2001). Study 1 findings correspond with Kuhl's contention that self-regulation is a mode of volitional control facilitated by a positive mood. A significantly higher usage of mental skills, in particular, relaxation, emotional control and activation are reported by AOF athletes. These athletes described the benefits to their performance once they were able to regain their focus and had facilitated a more positive mood. This is especially pertinent because the ability to relax is suggested as a vital component in maintaining volitional efficiency (Kuhl, 2000b). If an athlete can regulate their mood they will be able to take advantage of the facilitating affect.

The importance of being aware of personal preferences and therefore being able to maintain a conflict-free self is also highlighted as vital for self-determined action and maintenance of positive mood under stressful circumstances (Elbe et al., 2005). This is especially pertinent with regard to the subscale scores on the ACSI (Coachability) and TOPS (Self-talk) which clearly indicate specific danger areas for SOF athletes that materialise from their increased susceptibility toward external control and resultant internal conflict that stems from literally not knowing oneself. In addition to a lack of self-awareness, Kuhl and Baumann (2000) asserted that these state-oriented cognitions (preoccupations) cause the individual to become unable to ascertain how they feel or what they want, hence their inhibited behaviour. The concept of knowing oneself and possessing self-awareness of meta-moods is a key factor in the emotional intelligence literature. Goleman (1996) suggested that being self-aware is actually a distinctive style of dealing with affect, whereas becoming engulfed with negative emotionality, a feeling a loss of control an inhibited behaviour is a style related to state-orientation and avoidance coping. The ability of an athlete to be aware of a personal mood and how they feel about that mood in a non-reactive
manner is cited by Goleman as a mark of an emotionally intelligent individual. Without being able to call upon self-related constructs in decision-making and planning the individual is somewhat bereft of intuition. This could explain the propensity of SOF athletes under pressure (functional helplessness) to submit to the judgements of other people if they cannot rely on their own instincts. Without self-awareness of personal preferences athletes are effectively making their decisions with their working memory disrupted by internal conflict (Kuhl, 1984) and engaging in erratic guesswork (Kuhl, 1981).

Similarities in AOF and SOF scores in the coachability and self-talk subscales bring to light considerably different manifestations regarding actual competitive behaviours. Differences in cognitions and feelings are given additional support by the statistically significant differences shown between the AOF and SOF usage of coping skills and performance strategies, expressly affect-regulation skills such as, emotion control and relaxation. Kuhl (2001) suggested that negative affect impairs access to the self-system. Higher scores of AOF athletes should reflect that because these individuals are better able to relax they are therefore more likely to be able access self-related constructs. As such, they can reduce any uncertainty that might cause an individual to prefer external control over their personal judgement. As the results depict, it is athletes that are better able to appropriately regulate mood can better facilitate the necessary support for performance in demanding conditions. The role of affective factors in coping with pressure is well acknowledged in the area of stress management. Recognising that stress is frequent, unavoidable and somewhat institutionalised in certain performance environments (e.g. sport, medical, legal, military), Meichenbaum (1996) emphasised the importance of self-monitoring, developing a ‘problem-to-be-solved’ focus and emotional self-regulation skills.
Significant declines in reports of irrational beliefs across the factors of Demand for approval, High self-expectancies, Anxious over-concern, Helplessness and Perfectionism were shown in a study with first year US law school students (Sheehy & Horan, 2004) following a streamlined stress inoculation training programme of relaxation instruction. These elements of irrational beliefs have implications for the competitive sport environment, Kuhl (1994b) noted that the experience of setback or failure, whether real or imagined is the greatest promoter of the intrusive preoccupations that hamper efficient volitional behaviour. Empirical evidence also demonstrates that task focus is blocked by specifically uncontrollable and dysfunctional mental intrusions about negative states (Beckmann, 2002).

It is feasible that questionnaire results are correlated, with the greater performance of AOF athletes presumably facilitated by superior volitional planning skills such as goal setting and imagery. These may enhance skills assisting initiation, such as concentration and being able to peak under pressure, which arguably results in better coping, more freedom from worry and lower reported instances of negative thinking. All of which ultimately aid completion of intentions in demanding conditions. Fundamentally, however, results show action-oriented athletes have a more robust ability to think and feel appropriately toward to the task they are undertaking. In other words, AOF athletes are better able to shield their intentions from distraction because their superior self-awareness means their intentions are intrinsically motivated and self-determined. This is especially important because it provides the athlete with the basis with which to create positive affect and re-energise mood if effort or motivation is flagging midway through goal completion. Kuhl & Baumann (2000) recognised that if actions are viewed as self-compatible supportive
then action-control processes (see section 2.8.1) can be utilised to assist goal attainment.

A second aim of this research was to test the second modulation assumption of PSI, results are consistent with the suggestion that action-oriented athletes are better able to sustain enhanced access to their holistic feelings and self-representations when placed under stress or feel low mood. Findings show AOF athletes better able to manage their level of affect in order ensure access to their holistic representation network of beliefs, needs and wants. The most vital skill underlying self-regulatory ability and a key target for skills development is therefore suggested as self-access (Fuhrmann & Kuhl, 1998). Self-awareness is not only associated with the prevention of self-infiltration of the beliefs/goals of others, but it enables self-determined and confident action which, in turn, facilitates positive mood. Athletes able to create positive affect can be anticipated to fare better under competitive stress. Goleman’s (1996) contention that emotional self-awareness is the platform that enables an individual to shake off a bad mood is comparable the suggestion that the ability to get rid of a bad mood is far more important than the mood itself (Baumann & Kuhl, 2002).

Also of note is the relationship between action-orientation and level of performance. For example, the proportion of action-oriented athletes may be greater at the elite level because the process of becoming more experienced as a performer may well facilitate greater self-awareness and self-regulatory ability. Examination of the developmental nature of the personality construct of action-state orientation is beyond the scope of this research, but merits further consideration, as does the relevance of gender, age and type of sport (see section 7.3 for overall research Limitations).
3.9 Summary

Results indicate that action-orientation is associated with the ability to plan, initiate and complete tasks under competitive pressures. This is evidenced through quantitative data showing AOF athletes consistently scoring higher in skills vital to competitive success, such as confidence, coping and emotional control. Findings demonstrate new areas influenced by a disposition to submit to the ideas and goals of other people (external control), specifically self-talk and coachability. Athlete depictions of their activities explicitly demonstrate AOF athletes as more focussed, better able to relax and thus, less emotional in their approach to adversity. In contrast, SOF athletes are shown to have a greater tendency to become preoccupied by negative experiences.

3.10 Research question and intervention points

This research conceptualised the strengths of action-oriented athletes as the ability to draw upon a wide range of mental skills/self-regulatory strategies under competitive pressure, in particular the ability to remove excessive levels of negative emotionality and stay calm. This highlights several underlying issues which present intervention/training points for state-oriented athletes: Specifically maintaining a conflict free self represents the key target to be attained through the development of other skills. Central to achieving this goal it is necessary for the individual to have access to their self-representations and other holistic feelings. Possessing enhanced self-access means the individual has a better sense of their own beliefs and is therefore less susceptible to self-infiltration or task alienation. Moreover, self-access can provide the individual with the sense of intrinsic motivation and self-determination so persuasive at enabling an athlete to stand behind their decision. It is
also easier to regulate affect appropriately and invigorate efforts when the individual backs their personal decision. Beckmann (2002) recommended that athletes learn to focus on what they feel and want, so they make their decisions from a solid basis. If an athlete can regulate their affect so they feel positive they will have better access to their self-representations (Kuhl & Baumann, 2000) and experience less internal conflict, which means more autonomous actions under competitive stress. Arguably it is easier to initiate and maintain goals when the appropriate emotions are generated (Kuhl & Beckmann, 1994b). In addition, qualitative results support the evidence suggesting that action-oriented athletes use a wider range of mental skills, which indicates state-oriented athletes require training to ensure they have the self-awareness and tools to execute mental skills such as appropriate goal setting and also, that their self-talk is built on solid foundations. Ntoumanis et al., (1999) contend that athletes will feel better if they can learn to acknowledge and confront the situation which is the source of the challenge or threat, rather than rejecting it’s existence. An explicit intervention approach is therefore recommended in order to develop action-oriented skills. It is suggested that state-oriented individuals should be encouraged to act rather than think, so as to have the functional tools to combat negative affect (Kuhl, 1981).
Chapter 4: A functional approach to volition

4.1 Introduction

Baumann and Kuhl (2002) suggested that in demanding situations the ability to self-regulate affect may be more vital to efficient performance than the actual mood itself. This process of regulating affect to support volitional action is advocated to be intuitive, efficient (Koole & Jostmann, 2004) and undertaken in harmony with the self (Elbe, Szymanski & Beckmann, 2005). Action-orientation is reasoned to exemplify the ability to function with great self-regulatory capability and focus on self-determined action alternatives under competitive stress. In contrast, state-orientation is linked to cognitions dissociated with the 'here and now' (Kuhl & Kazén, 1994a), rumination and self-controlling modes of goal directed behaviour under pressure. The proposition that volitional modes are trainable (Beckmann, 2002; Beckmann & Kazén, 1994) has been demonstrated empirically through both short-term 'immunization' (Kuhl, 1981; Kuhl & Weiß, 1994) and long-term behaviour therapy programmes (Hartung & Schulte, 1994) with depressive patients. Study 1 briefly introduced Personality Systems Interaction theory (PSI; Kuhl, 2000a; 2000b; 2001) which specifies a mode of volition regulated by affect. This chapter will expand PSI-theory as a dynamically derived personality framework for the study of volition which will be used to develop a theoretically driven intervention strategy with the aim of enhancing athletes' affect regulation skills in the face of competitive challenges. Using the tenets of PSI-theory to highlight where collapses in volitional efficiency can occur alongside findings on basic mental strategies gleaned from Study 1. A phase based Mental Strength Conditioning (MSC) intervention is introduced to provide
athletes with functionally equivalent self-regulatory skills to access their self-representation system and facilitate self-determined, autonomous action.

4.2 Personality Systems Interaction Theory

Volition is operationally defined in terms of the self-regulatory ability to activate and coordinate mental resources for performing activities that satisfy the needs of an organism (Kuhl & Goshke, 1994). The auxiliary-functions assumption (Kuhl & Beckmann, 1994b) maintains that volitional support of intentions is mediated by two assumptions: 1) a conscious representation of one's intention that specifies the necessary commitment and mindset for action; and 2) facilitative positive affect. State-orientation, namely volitional inhibition is linked with negative affect and uncontrollable inhibition of consciousness (i.e., blocked auxiliary functions), through preoccupation with intrusive unwanted thoughts. In the theory of action control (Kuhl, 1984) specifies that breakdowns in the volitional support of goal striving are due to an inability to shield the intended action from the interference of competing action tendencies (such as, dwelling on previous failures), until the action has been initiated and executed. By explicating the unconscious intuitive affect regulating elements of volitional action, PSI-theory is therefore an extension of action control theory (Kuhl, 2000b) that can facilitate understanding of how volitional inhibition can result from self-introjections, causing uncontrollable thoughts and over-maintenance of intentions (Kuhl & Kazén, 1994a).

PSI-theory focuses on affect and individual ability to move between affective states (Kuhl, 2000a) through an emphasis on the functional (operational) properties of the connections between cognitive and personality systems. This approach is distinguished from theories that explain goal-directed action (motivation and self-
regulation) through cognitive and emotional determinants (Kuhl, 2000b). Cognitive accounts (e.g., Atkinson, 1957; Bandura, 1977) have been shown in this review to focus on beliefs about controllability of goal-attainment or behaviour and skill. This both presumes a hedonistic approach to behaviour and ignores the mediating role of volitional processes, for example, the individual’s ability to shield their intentions from the interference of competing action tendencies (Kuhl, 1984). Moreover, in cognitive-behavioural sport psychology it is suggested that states more conducive to performance success may be facilitated through interventions that increase the importance of an athlete’s goals (Uphill & Jones, 2004). Kuhl (2000b) dismissed the approach of content based theories that have typically suggested interventions that focus on changing the content of beliefs, in terms of controllability or goal type. PSI-theory instead specifies a more direct approach to shifting cognitive and self-regulatory mechanisms, that is, by shifting the way an individual regulates affect (Kuhl, 2000a, p. 667). Kuhl and Beckmann (1994b) contended that positive affect facilitates efferent processing mediating the execution of intended activities, in other words, it is easier to maintain goal-directed behaviour when appropriate emotions are generated. The key role of affect in PSI-theory is especially pertinent, as in a parallel with the “neglected” issue of volition, affect (including terms such as, emotion, feeling and attitude) is also deemed to have been ignored in cognitive psychology (Zajonc, 1980).

In the previous review, interventions devised from cognitive content based theories are shown to focus on beliefs and controllability through goals. This approach can be critiqued through an examination of the volitional aspects of depression and cognitive approaches to dealing with this area, which is characterised by meticulous and controlling personality styles (Kuhl & Kazén, 1994a) and has been
associated with state-orientation. For example, Rholes, Michas and Schroff (1989) conducted studies using the ACS-90, the Beck Depression Inventory (BDI; Beck, 1967) and the Life Events Inventory (LEI; Cochrane & Robertson, 1973), which suggested state-orientation was significantly related to a high incidence of depressive symptoms and higher levels of stress. It was concluded that state-oriented individuals are more vulnerable to depression than action-oriented individuals. Rholes et al., (1989) further intimated that state-orientation is related to both the perseverance of depressive states and the inception of depression when under stress. Similarly, the Zeigarnik effect seen in depressed students who showed a stronger recall for uncompleted tasks than non-depressed students (e.g., Johnson, Petzel, Hartney & Morgan, 1983) has similarities with dispositional state-orientation, which is characterised by chronic over-maintenance of unfulfilled intentions and poor self-discrimination (i.e., acceptance of beliefs over others over personal preferences). This includes chronic fixation on intentions at odds with personal emotional preferences, or in more severe cases depression (Kuhl & Kazén, 1994). The effects of such chronic fixations can be viewed through the degenerated-intention hypothesis (Kuhl, 1984), whereby, individuals using self-controlling styles are more prone to taking goals and instructions seriously and upholding them even when they are not self-compatible or are unrealistic. Eventually, these degenerative intentions or affects and frustrations intrude into consciousness (working memory) and disrupt ability to enact any intentions. In a study designed to demonstrate the effect of degenerated intentions using groups of hospitalised depressive patients (Kuhl & Helle, 1994), participants were confronted with a messy desk and asked to tidy it up before they undertook some memory tests. However, within two minutes participants were interrupted and told they needed to start the memory task at this time. Participants were then given a
vague instruction that they could continue tidying the desk when they felt they had the opportunity. Results showed a significant difference in the recall of uncompleted intentions between depressive and normal control groups demonstrating that individuals with a clinical disposition towards depression tended to take onboard unrealistic instructions in an intentional format, which meant they had a lower recall of realistic intentions. To surmise, for depressives it is difficult to disregard unrealistic intentions even when they have new realistic intentions they are trying to focus on. This demonstrates the debilitating impact that striving for unrealistic intentions has on achievement of all activities, if an individual cannot or does not disengage. In addition to results which showed reduced short-term memory capacity in depressives was caused by perseverating cognitions related to tidying the table, a significant interaction effect was shown between state orientation (preoccupying; SOF) and depression.

Given such strong associations between depression and state-orientation it is feasible to examine content based approaches to dealing with depression with a view to speculating on their applicability to lessening self-controlling behaviours (viz. state-orientation) and promoting more autonomous self-regulatory behaviour. For example, Kuhl and Kazén (1994a) critiqued cognitive approaches such Rational Emotive Therapy (e.g., Ellis & Harper, 1975) because of the focus on symptoms, as opposed to the determinants of depression. Kuhl and Kazén reasoned rather than analyse the content of an implicit belief (e.g., I must always win), it is more important to highlight any ‘alien origin’ of the belief. They posited that, ‘as a rule all of these ideas or goals were initially uncritically taken from other people’ (p. 312). In terms of intervention planning it maybe that if erroneous thoughts are caused by self-internalisations leading to resultant emotions such as, frustration or brooding, then
merely attempting to alter these flawed ways of thinking neither targets nor removes
the principal causes of state-orientation or depression. Kuhl (2000b) further rejected
the notion that exploring the beliefs and other cognitive contents of the individual
could provide sufficient explanation of the affective basis of motivation and volition.
For example, even if the support staff who work with an elite high-jumper have
convinced him that he is capable of clearing a world record height, he may still have
problems with developing his intrinsic motivation, or feeling positive affect and
undertaking specific training towards the goal if the issues causing the underlying
state-orientation are not dealt with.

Zajonc's (1980, 2000) contention that affective processing is pre-cognitive and
can occur independently of cognitive processing provides support for Kuhl's (2000b)
stance that rejects the precedence of cognitive content. Zajonc (1980) proposed that
affective reactions were inescapable, in that they are effortless and holistic and as
such, should be under less control of cognitive processes. It is considered affective
reactions may be separated from content, for example, an athlete may be unable to
remember the place where a certain stadium is based, but can easily recall his affect
when competing in that arena. An athlete meeting a sport psychologist for the first
time may not later recall the psychologist's name, but will almost certainly and easily
remember their reaction to the psychologist and whether they were impressed or
repelled by that individual. The athlete is likely to have made a first impression
decision on whether or not they liked the sport psychologist within the first moments
of meeting. Zajonc (1980) suggested these feelings are always present whether or not
an individual is aware of them, however, it is often difficult for people to verbalise
this affective reaction. Kuhl (2000b) highlighted the intuitive role of affect in terms of
a 'tacit knowledge' about performance, indeed in PSI-theory volitional functioning is
believed to be facilitated by intuitive affect regulation processes (Koole & Jostmann, 2004). In a sporting context when a professional golfer is asked to verbalise the finer details of her swing, or a sprinter his stride, they may struggle to offer to anything other than intuitive feeling, they just do what “feels right”. This intuitive regulation has similarities with the concept of flow (Csikszentmihalyi, 1985) in peak performance. In a study to establish whether preferences are merely based on effects of being exposed to a stimulus (unconscious) or whether they are marshalled by conscious cognitive processes, Kunst-Wilson and Zajonc (1980) presented participants with a stimulus of random polygons for brief 1 msec durations. Following this exposure phase, a pair of polygons (one new and one shown previously) was presented for a longer duration of 2 seconds. Participants were required to indicate which stimulus they preferred and which stimulus they had seen previously. Results showed that even without conscious recognition of the old stimuli, these stimuli were preferred to new ones. This exposure effect demonstrated that preferences can be developed without participant awareness, that is, without conscious cognitive processes. It was also apparent that preference judgements were made faster than memory judgments and participants showed greater confidence in their preferences. These often replicated findings support the possibility of separate cognitive and affective processing.

It is suggested that affective responses, such as motivation and volition are not necessarily always explicable by an athlete’s thoughts or beliefs (Kuhl, 2000b). Research by LeDoux (1995) provides neurological evidence for separate cognitive and affective processing through findings that indicate two routes between perception and affect generation, which includes a route that by-passes cognitive structures. LeDoux identified the part played in the brain by the amygdala, a sub-cortical brain
structure believed to be responsible for affect generation and conditioning and it’s connectivity with higher order (i.e., cognitive) brain structures such as the cortex. All sensory signals from stimuli pass through the thalamus (Gross 1992), whilst the amygdala receives inputs from sensory processing areas in the thalamus and cortex, connections between these systems show the amygdala-thalamus route is only one synapse in length (Zajonc, 2000). It is posited that representations from the thalamus to the amygdala are more coarse but arrive faster (LeDoux, 1995), whilst input from the cortex contains more detailed information about the stimulus, but reaches the amygdala more slowly because it must first pass through the thalamus and cortex itself. This suggests there is a direct route that produces affect without deliberate processing in higher order brain structures (Martin, 2000). These neurophysiological findings underline the suggestion in PSI-theory that cognitive and self-regulatory mechanisms can be more overtly controlled, by manipulating ones’ regulation of affect (Kuhl, 2000a, p. 667) as positive affect facilitates action (Kuhl and Beckmann, 1994b). Put simply, athletes are more likely to do well in a task if they feel good. However, PSI-theory moves beyond feelings of efficacy toward a task and indicates that it is not necessarily this ‘feel good’ mood that enables a good performance, but rather it is the ability to create a positive mood or remove feelings of negativity (Baumann & Kuhl, 2002).

PSI-theory conceptualises the dynamic processes that underlie mental functioning as ‘affective’ and ‘cognitive’ macrosystems (Kuhl, 2000a). Affective “energy” is posited to flow between two high-level (i.e. volitional) and two-low level cognitive macro-systems. For example, Kuhl and Baumann (2000) trace uncontrollable rumination to low-level processes outweighing high-level processes. In functional terms, a state-oriented goalkeeper who has to rush his pre-match
preparation and has not had time to fully undertake his usual warm-up might experience negative thoughts and emotions (on an elementary level) because his ability to undertake 'top-down' regulation by self-representations is (volitionally) inhibited. In other words, intrusive thoughts or frustration about his inadequate preparations begin to intrude on his working memory (consciousness) causing negative affect and inhibiting his ability to focus on his new intention: concentrating on tending goal (Kuhl, 1984). It is reasoned that bottom-up processing occurs most in problem scenarios and top-down processing in less trying issues (Martin, 2000). This suggestion can be linked to the 'loss-of-autonomy' cycle (Kuhl & Beckmann, 1994b) where the individual attempts to manage the problem situation through self-controlling mechanisms that unwittingly trigger uncontrollable ruminations. Furthermore, the individual perceives utilising self-controlling behaviours as a useful reaction which exacerbates the situation. Kuhl (2000b) specifies the functional characteristics of each macro-system in detail and these will be explored individually before introducing a model of how these systems interact through two affect modulation assumptions at the heart of PSI-theory.

According to the theory, the power of motivation and self-regulation is manipulated by the strength of each system, as modulated by affect (Kuhl, 2000a). A functional model of volitional action is identified whereby individual movement is dependant on the connectivity between thoughts and the various subsystems controlling both motivational meaning and the execution of action intended by the thought (Kuhl, 2000b). An emphasis on "intersystemic connectivity" is considered a new approach (Kuhl, 2000b), as cognitive and motivational theories are indicated to describe concepts such as motivation or arousal as properties of single entities, rather than as relations between groups. At the practical level this connectivity may explain
why an athlete can strongly intend to engage in course of action, for example maintaining a food diary, but lack the motivational energy to stick with it after a few days because the intention is not sufficiently connected with systems providing (personal) meaning and or practicality.

The functional structure of PSI-theory is partly derived from Aristotle’s motivational model depicted in his Nicomachean Ethics (trans. 1908), which states: "It is not thought as such that can move anything, but thought which is for the sake of something and is practical." Cognitive content based and hedonistically driven theories have typically inferred that thought moves action. In contrast to this stance Kuhl (2000b) functionally interpreted Aristotle’s suggestion that cognitive representations of goals are in fact non-dynamic that is; on their own they do not possess the energy that propels action. Kuhl viewed the power of thoughts to facilitate action as being critically dependent on the connection of the thought with the subsystems that control motivational meaning (e.g. the self) and/or subsystems that control execution of actions. Volitional mechanisms are supported within a hypothetical central executive system than facilitates an intelligent form of intuitive affect regulation (Baumann & Kuhl, 2002). On the basis of this concept of connectivity, four subsystems (see figure 4) that interact in terms of a flow of energy to facilitate action within PSI-theory are identified (Kuhl, 2000b p.12) as: 1). A system providing holistic presentations of external and internal contexts that includes integrated self-representations (EM). In other words, a subsystem generating self-related constructs, beliefs and self-compatible goals (i.e. thoughts for the sake of something); 2). A subsystem for analytical thinking (problem solving) including an explicit memory for difficult intentions (IM), that is, a system generating explicit consciously accessible representations of intended actions (motivational thoughts); 3).
A system controlling intuitive behavioural routines (IBC), that is, a subsystem producing ‘thoughts that are practical’ and; 4). A discrepancy-sensitive perceptual subsystem recognising perceptions also known as ‘objects’ (OR), in other words, a system to identify new objects on the basis of mismatches of representations of familiar objects and new objects encountered. For example, the process of recognising goals as incompatible with the self is based on the ability to recognise self-infiltrated goals as foreign objects. Intersystem connections are considered to be mediated by affect, in other words, if an individual is able to generate task appropriate positive moods and emotions then it is easier to complete the task (Kuhl & Baumann, 2000; Kuhl & Beckmann, 1994b). These connections can also be observed conversely, Uphill and Jones (2004) noted that athletes experiencing negative affect may struggle to recall their previous successes or past positive feelings in order to create the necessary emotions to boost confidence in their ability to undertake new challenges. For an explanation of how the model in figure relates to a proposed intervention see section 5.6.

The four cognitive macrosystems (IM, EM, IBC and OR) depicted in figure 4 are postulated to function at different levels of integration (Kuhl, 2000a, 2000b). Object recognition (OR) and intuitive behaviour control (IBC) are considered lower-level systems, that is with limited or no conscious intervention. Kuhl considered IBC to be a contextual, holistic system oriented toward the present and future, this means systems supporting intuitive behaviour integrate and contextualise information based on feelings toward that information. Whereas systems underlying object recognition de-contextualise information, ‘objects’ can include any perception that can be abstracted (de-contextualised) from its environment and matched (recognised) against a template. As the focus of OR is on matching perceptions to stored templates, it is
characterised by a past orientation. Kuhl suggested it is the dependency of OR on matches between stored information and incoming sensory information that makes it vulnerable to non-matching information. For example, taking onboard self-alien goals as personal goals is an example of lower level processes outweighing high-level processes. IBC over-riding high level (IM) processes is exemplified by hyperactivity (see section 4.5).

Figure 4: Personality Systems Interaction model (Kuhl, 2000b). Dashed arrows indicate inhibitory relationships between systems; solid arrows indicate facilitating relationships. A+ = positive affect; A- = negative affect; A(-) = down-regulation of A-; A(+) = inhibition of A+. See section 5.6 for an explanation of how this model specifically relates to the intervention.

The high-level inferential systems of intention memory (IM) and extension memory (EM) are associated with the two main modes of volition, goal-maintenance and self-maintenance. IM is characterised as a goal-oriented, analytical ‘thinking’ believed to rely on verbal processing and an explicit memory for intended actions
associated with left-hemispheric thinking (Kuhl & Baumann, 1998). Planning and explicit representations of intended actions are deemed to be necessary whenever intuitive systems are inaccessible for goal attainment. Kuhl (2000a) typified such situations as when problem solving is required, or the system must delay action until the appropriate moment (e.g., until it is the discuss thrower’s actual turn to throw in the competition). At these times an explicit representation of the intended action is maintained in IM until it can be enacted. Kuhl (1984) introduced the concept of the ‘difficulty of enactment’ as a condition of volitional control of action. The intention memory system is meant for purposes where an action cannot (or should not) yet be enacted. For it to become functional the path between IM and the lower-order processing of IBC must be inhibited, which is regarded as a component of intention memory.

EM represents holistic ‘feeling’ and an implicit memory for self-representations and is related to the concept of intuition. PSI-theory holds that concepts of the self are based on implicit and intuitive knowledge based on a network of representations of ‘states’. This refers to personal preferences, needs, emotional states, past experiences and options for action under certain conditions. It is from this extended network of self-representations that the system maintaining self-representation is termed extension memory (EM). This is in contrast to approaches in personality and social psychology where the concept of self is related to explicit beliefs about the self. Kuhl (2000b) sought to emphasise the close connectivity between EM and the autonomic system, that is, the suggestion that self-representations may be based on implicit right hemispheric processing. Functional differences regarding brain asymmetry have strongly correlated right hemispheric activity with emotional processes. For example, Wittling (1990) used lateralised
presentation of a romantic film (i.e., keeping movie view in left visual field for right hemispheric activity and vice versa) to demonstrate that right-hemispheric processing caused higher instances of autonomic responses, such as changes in blood pressure.

The operational energy flow throughout the four systems of IM, EM, IBC and OR with regard to self-regulation and goal directed behaviour has previously been described as being marshalled by affect, however these affective relationships are also considered to interact on an antagonistic (inhibitory) basis (Kuhl, 2000a, 2000b). In effect, if one system is active it will inhibit the activities of adjoining systems. In figure 4 these antagonistic inter-systemic relationships are depicted by dashed lines. The model also depicts facilitating relationships (solid lines), which highlights the significant role of affect as it is considered to hold the key to strengthening or releasing (Kuhl, 2000b) activating relationships. This further highlights Kuhl’s postulation that affect holds the intuitive dynamic properties that goals alone do not.

Two key affect modulation assumptions (Kuhl, 2000a, 2000b) have previously been introduced (see section 2.7.1) as part of PSI-theory, however a total of seven assumptions are proposed to describe the dynamic affective processes mediating goal-directed action through systems interaction. (Kuhl, 2000a; 2000b), which will be outlined in section 4.5. Firstly, the two central modulation assumptions forming the basis of PSI-theory will be specifically explored in-depth to underline the role of affect in transitions between cognitive macrosystems.

4.3 First Modulation Assumption: *Volitional facilitation*

The first modulation assumption (1st MA) explains how a person facilitates volition through an up-regulation of positive affect (Kuhl, 2000a), that is, the individual is able get themselves “revved up” in the face of difficult challenges. Kuhl
stated 'positive affect (A +) facilitates intentions and releases inhibitions associated with them whereas the inhibition of A + facilitates maintenance of difficult intentions in intention memory (IM) and inhibits their enactment' (p. 667). In other words, when positive affect is inhibited an individual will struggle to enact difficult intentions (viz. positive affect facilitates intentions). This affective relationship between cognitive systems is depicted in figure 4. Difficult challenges can be tough to even contemplate let alone start if an athlete does not feel sufficiently 'revved up' and ready to take on the challenge, for example a pole-vaulter jumper with two no-jumps against her at competition is aware she will need to make some technical adjustments to her last jump if she is to progress through to the next round. Her problem solving process represents an active phase in IM which is the memory system for analytical thought and explicit future actions. Whilst this system is active, the conjoining behavioural system IBC (the system that controls behaviour by providing routines for action) is volitionally inhibited and explicit intentions are difficult to undertake. This may account for an athlete's inability to act under pressure if they are unsure about what to do, as it will be accompanied with a degree of debilitating negative affect which inhibits volitional action. Kuhl reasoned that when the connectivity between IM and IBC is inhibited and it is difficult to undertake explicit intentions as the self (currently experiencing negative affect) becomes susceptible to external controls. Kuhl suggested that these could either come from conditioned responses or could be based on stored representations of introjected demands, that is, self-internalised goals or beliefs taken onboard from other people and acted upon as if they the goals of the individual. However, if the pole-vaulter feels spurred on by the difficulty of her final jump situation she is effectively up-regulating positive affect and releasing the inhibitory function of IM that prevents action from taking place until appropriate, thus
IBC is activated and she can go about her actions. Given the time demands of competitive sport it is feasible the athlete may have had to make her jump with IM still active. In other words, whilst still feeling negative affect or suffering under state-orientation related preoccupations caused by dwelling on her previous no-jumps, or imagined failure experiences. Suffice to say that under these conditions it is unlikely her jump would be successful. Indeed with an increased susceptibility to external control the athlete may even attempt to copy a technique she has seen someone else use, or do what she thinks her coach might want her to do, without ever feeling self-determined about her decision (i.e. unable to stand behind her choices). As such, she does not approach the jump with her full conviction or commitment and no-heights out of the competition. Furthermore, Kuhl (2001) indicated that the inhibition of behaviour enactment caused by IM activity can be experienced a loss of energy. This feeling could explain why being a bad mood can cause an athlete feel lethargic, as if they can’t be bothered to do anything, be it attend a training session, or undertake a simple task, such as cleaning the living room. Yet in the athlete’s head they are acutely aware of the things they feel they should be getting on with (IM active), whilst not experiencing any real inclination to do so (IBC inhibited). This additionally serves to underline that when making decisions the ability to self-regulate a mood may more important that the mood itself (Baumann & Kuhl, 2002).

Research shows that many athletes do set goals, however they also report experiencing goal setting as only a moderately effective performance enhancement strategy (e.g., Burton et al., 2000). This paradox which hints at procedural problems and inconsistencies in the goal setting processes utilised by athletes can be explored through PSI-theory. It is arguable that the intricacies of the goal setting and goal striving processes that involve using a variety of goal types and devising a realistic
and appropriate action plan are not always undertaken by athletes and their coaches. It is possible to speculate that for some athletes their goals may be little more than good intentions or even daydreams. Therefore, for many athletes goal setting may effectively mean little more than developing loosely conceived outcome goals. Merely indulging in fantasies however positive will not increase goal-directed action as day dreaming or good intentions will only facilitate simple goals (Kuhl, 2000b). For example, easy goals that do not require maintenance in IM and therefore do not require self-regulatory support to be implemented (Kuhl, 2000b). This critical difference is highlighted in the findings of Oettingen, Pak and Schnetter (2001) who increased of the immediacy of starting goal-directed action through a fantasy realisation intervention that turned free fantasies into binding goals. University students were invited to list several current important interpersonal problems (e.g., 'improve relationship with my partner'). Participants also wrote four positive keywords from each problem that they associated with the problem coming to a happy conclusion and four negative aspects that of reality preventing the happy ending (e.g., 'I get too emotional'). Only participants in a fantasy-contrast condition finally undertook a mental elaboration (through free writing) contrasting two positive aspects of a happy ending and two negative realities. Positive-fantasy and negative-reality groups elaborated one-sided outcomes. Results demonstrated that the process of contrasting that caused participants to make formulated plans was stronger in the contrast condition than both the positive-fantasy and negative-reality conditions, as was taking responsibility for realising their goals, providing expectations of success were reasonable. If expectations were low then both planning and levels of responsibility were lower in the contrast group than in other conditions. This may be indicative of an action control based ability to disengage when goal striving becomes
unrealistic, as it also exemplifies the reverse situation often seen in state-oriented individuals where individuals are committed to goals with ill-conceived plans for attainment.

The process of turning a fantasy into a binding goal commitment can be explained through PSI-theory. The practice of having participants mentally contrast their desired futures with their negative reality served to upload IM with a difficult intention, yet additionally supported the up-regulation of positive affect necessary to activate IBC and behavioural activities toward the goal. In other words, the difficulty of the challenge was used to activate positive affect and a realistic approach to tackling the problem, therefore extinguishing the negative affect that may cause intrusive thoughts and frustrations. These findings are similar to the work of Kuhl (1981) and Kuhl and Weiß (1994) where state-oriented athletes were ‘immunized’ by being required to make consistent and explicit verbalisation of their hypothesis for solving a puzzle task as they worked on it. This activity and the encouragement of participants to explain their expectations of task difficulty served to enable better appreciation of the nuances of the task at hand and more realistic planning. With this underlying approach the problem can enter IM to be solved, but because the athlete is realistic and feeling more positive they can terminate the problem solving process appropriately (i.e. make a fast, accurate decision without over analysis,) and enter IBC through positive affect. A further study by Oettingen et al., (2001) using identical contrasting of positive future with negative reality procedures demonstrated that when participants felt favourable expectations they felt more energised and initiated action towards their goals more swiftly than other conditions. Oettingen and colleagues suggested goal implementation strategies are more important than the goal itself, which is related to the future-action rather than present state-dwelling issues of state-
orientation (Kuhl, 1994). Moreover, it is also reasoned that fantasy realisation theory goes further than clarifying the necessary criteria for goal commitment, rather it specifies self-regulatory modes that cause individuals to ‘respect the criteria’ (p. 751) when setting goals. Parallels between these practices and the auxiliary functions assumption (Kuhl & Beckmann, 1994b) can be drawn as the first function suggests the development of a conscious representation of ones’ intention is necessary, that is, something that specifies the mindset for action and the commitment required.

4.4 Second Modulation Assumption: *Suppression of the unwanted (self-facilitation)*

Whereas the 1st MA focused on volitional facilitation (up-regulation of positive affect) the second modulation assumption (2nd MA) is restricted to the down-regulation of negative affect. Kuhl (2000b, p. 22) specified that down-regulation of negative affect [A(-)] facilitates access to integrated self-representations and other contents of extension memory (EM) by strengthening the inhibitory effect EM has on sensory input stemming from unexpected or unwanted information provided by it’s adjacent experiential system of object recognition (OR). This means that perseverating negative affect (A-) hinders the inhibitory impact of EM, that is, if an individual cannot down-regulate negative affect they may struggle to perceive introjected beliefs/thoughts as self-alien. In contrast to the more concrete nature of IM, EM is depicted as a holistic system that holds extended networks of goal representations (Kuhl, 2000a) which permits a variety of acceptable outcomes and self-representations. Kuhl considered that the depth of these representational networks means many alternative options and action plans can be available to an individual in instances of setback or failure. As such, when access to EM and this range of
acceptable options and beliefs is inhibited then behaviour loses much of the positive emotional support necessary for self-determined and autonomous action. This is because EM effectively provides the best representation of an individual's needs, wants and beliefs. Therefore, when EM is not restricted it is able to monitor, check and reject unwanted thoughts (i.e., self-infiltrated goals, especially self-alien beliefs). If an athlete can inhibit unwanted goals it is easier for them to draw events to a conclusion, or disengage from a task when appropriate (Beckmann, 2002). As opposed to engaging in a detrimental process of rumination about the unwanted contents of object recognition (OR). The quote below from a professional snooker player in competition exemplifies the specific functions provided by extension memory:

"At 16-16, I was singing songs in my head. I was singing Tom Jones' Delilah. I just tried to take my mind off the arena, the crowd, everything". (Mark Williams, 2003 world snooker champion, after he had defeated Ken Doherty 18-16 in the final.

To the snooker player, the match noise is recognised as an unwanted object that may interfere with his play. He attempts to self-regulate by down-regulating the negative affect (by singing to himself) and strengthening his activation of EM, that is, his holistic network of self-representations (the belief when he plays well he is calm). It can thus be seen that Extension memory has something of a monitoring capacity able to identify information that is congruent with currently activated content. It is this vigilant activity that enables the individual to pick out environmental cues and opportunities to act. It can be speculated that state-oriented individuals (viz. lacking
access to EM), may have all the right intentions, but without EM and a framework of self-representations they will be liable to self-infiltration, unwanted thought content and because of these distractions they will miss chances to act. As well as interfering with self-monitoring functions, an impaired ability to down-regulate negative affect also disrupts the generation of long term goal planning (Kuhl, 2001). The performance implications caused by poor affect regulation highlights key intervention possibilities within sport. Kanfer and Schefft (1998) observed that efficient self-regulation of one's internal and external environment requires self-monitoring. Lack of vigilance may mean that whilst an athlete may be aware of increasing negative affect during performance (or in competitive environs), they may be unaware that reduction of the negative feelings or mood requires self-monitoring of their emotional or motivational state, as opposed the ruminative dwelling on real or imagined failure experiences that they are probably undertaking. Ability to be vigilant at this time should enable the athlete to be less self-absorbed by their “misfortune” and more attuned to environmental cues that might provide opportunities for a change of action. From an applied perspective it is important to note the holistic nature of EM and that individuals who subscribe to more self-controlling modes of volition may not be able to take advantage of any kind of intervention until they have learned to develop access to their holistic feelings (Kuhl, 2000a, 2000b). For example, without the snooker player being able to access his holistic feelings about how he played best, he may not have been able to recognise that crowd noise would have pushed his arousal to levels not conducive to his best game.

A further fundamental reason for the need to be able to access extension memory is provided by the role EM plays in the process of realistic goal setting as the importance of having realistic goals has frequently been stressed in applied research
literature (e.g., Locke & Latham, 1990; Weinberg, 1994). During the complex decision making process of setting realistic attainable goals, the individual needs to be able to access EM to search for implicit positive feelings held within the extended network of actions and acceptable associated outcomes (Kuhl, 2000a). Part of the process involves self-compatibility checking as goals under consideration must be checked against personal wants, needs and beliefs. This process is so crucial because it provides the functional basis for motivation. Essentially without access to EM the individual will struggle to develop any true identification with their goals and thus, any emotional commitment to the goal. If an athlete experiences negative affect toward their own goals and at an implicit level do not feel especially engaged toward them, this has many implications for the process of actually making the goal happen. For example, this may be true in the case of the high jumper convinced by his coaching team that he is capable of world record heights, but is personally experiencing self-conflict (Elbe et al., 2005) and struggling to feel emotional commitment or intrinsic motivation towards this goal. Kuhl (2000a) highlighted a second meaning to ‘realistic’, which is the ability to take into account barriers in the goal striving process. If a boxer is unable to deal with his boredom during his monotonous conditioning regime (i.e., he becomes quickly frustrated or is over impulsive in sparring) his self-regulatory system will not develop the skill of inhibiting and tolerating positive affect [A(+)]) until appropriate and therefore struggle to support the difficult pursuit of a professional belt because he will be unable to create the affective change from EM to IM necessary to activate persistent goal pursuit. An explanation of how the PSI model can be related to an intervention is provided in section 5.6.
4.5 3\textsuperscript{rd} – 7\textsuperscript{th} Modulation Assumptions

In addition to specifying the functional characteristics of the four macro-systems, PSI-theory specifies five further modulation assumptions (Kuhl, 2000b). As these assumptions either reverse or extend the two initial MA’s of volitional and self facilitation assumptions they are discussed briefly. Modulations include the processes of volitional inhibition, self-relaxation, self-motivation, systems conditioning (6\textsuperscript{th} MA, see section 4.4) and self-actualisation. The 3\textsuperscript{rd} MA is a reversal of the 1\textsuperscript{st} MA (volitional facilitation): Activation of intention memory reduces positive affect, that is, it causes ‘Volitional inhibition’ because intention memory (IM) is overloaded with unrealistic goals, as exemplified by the demands of the table laying exercise with depressive patients (Kuhl & Helle, 1994) causing all their intentions thus become inhibited, demonstrating the degenerated-hypothesis (Kuhl, 1984). The 4\textsuperscript{th} MA is the ‘self-relaxation’ assumption and a reversal of the 2\textsuperscript{nd} MA (self facilitation), whereby the activation of extension memory (EM) down-regulates negative affect. Kuhl (2000b) considered activities that take advantage of the extended networks of EM and it’s supporting feeling system can help down-regulate negative affect because they have a therapeutic effect and reduce distress. For example, undertaking creative work or finding “meaning” in one’s life. It is reasoned that the search for meaning or creative solutions in problems effectively engages networks and associative connections amongst implicit self-representations (Kuhl, 2000b). This may be the reason why implicit motivation provides an extremely functional and effective force in supporting goal-directed behaviours (Deci & Ryan; Kuhl & Baumann, 2000). Moreover, the search for creative solutions and meaning echoes the mastery orientation (Dweck, 1986) of self-determined behaviour, specifically mastery-approach goals (Elliot & Conroy, 2005), which focus on personal skills development.
whilst mastering a task. Kuhl (2000b) hypothesised that individuals with an underdeveloped self-system have difficulty coping with negative affect (i.e., poor ability to access EM and the networks of representations or creative solutions), as they struggle to isolate subjectively enjoyable challenges (Csikszentmihalyi, 1988) and develop intrinsic motivation within the negative emotionality and stress associated with failure experiences.

Showers and King (1996) distinguished individuals with a poorly developed self-system through the processes used to categorise believed information (i.e., self-aspects), that is, their self-concept. If positive and negative self-beliefs are separated into distinct self-aspects where each self-aspect has a largely positive focus or a largely negative focus, self-knowledge is said to be evaluatively ‘compartmentalised’ and positive and negative aspects cannot be activated concurrently. However, if self-aspect categories hold a mix of negative and positive self-beliefs, then self-knowledge is believed to be organised in an evaluatively ‘integrative’ fashion. For example, if a table tennis player with a negatively-compartmentalised organisation of self-knowledge about competing in tournaments, holds items such as, ‘worrying’, ‘tense’, ‘moody’ and ‘distracted’ under that category then the event of competition is likely to cause negative self-beliefs. Showers and King suggested that if information is categorised in such a skewed perspective, then when accessed self-knowledge literally *floods* the individual. This should be potentially detrimental to performance if an individual is overwhelmed by a flood of negative self-beliefs. Yet, if the athlete holds a positively-compartmentalised view with items, such as, ‘motivated’ and ‘enjoyable’, then any “flooding” is likely to make them feel very good. However, as ‘compartmentalised’ individuals experience extreme reactions to situations, those with a positive-compartmentalised organisation are posited to be vulnerable to
negative states. It was experimentally demonstrated through a self-reflection activity to prime a sad mood (i.e., negative compartments) that this caused ruminations and a difficulty to return to a positive mood was experienced. It is intimated that the baseline positive mood can be overridden by situational factors that alter the prominence of the compartment content. In other words, even if the table tennis player feels great about the tournament he is playing, other situational variants, for example, poor umpiring can induce a negative compartment and resultant negative self-beliefs causing negative affect, restricted access to their self-system and thus, a cycle of rumination and a flood which may be difficult to stem. By contrast, an integrative approach to competition means the athlete might hold a mix of positive and negative self-beliefs, which is suggested to be advantageous in demanding conditions, such as competition, where various situational negative self-aspects could be aroused because an integrative organisation still enables access to the positive self-beliefs that do actually exist. It is reasoned that self-reflection opportunities may be beneficial to integrative individuals because it permits easy access to positive self beliefs and if needed the integration of these beliefs with salient negative beliefs, thus strengthening the self-system.

Many state-oriented individuals use denial to 'consciously escape' to positive affect (Kuhl, 2000b) in aversive conditions. Self-denial can be based on self-introjection of the ideas of others that are not compatible with personal beliefs, or even feelings of alienation from the task (Kuhl & Beckmann, 1994b). By definition, denial should not involve actually accessing self-related constructs, such as beliefs, needs or wants, as it is a pure rejection of the difficulty / reality of the situation. The role of denial is well noted in the literature on coping and identified as a potentially dysfunctional coping response (Carver & Scheier, 1994). In a study of emotions
reported at points before an exam, after posting of grades and post exam, Carver and Scheier observed participants who reported dealing with stress through overt denial more consistently appraised their emotions as related to feelings of threat (worry, fear, anxiousness) than related to challenge. Richards (2004) highlighted ‘avoidance coping’ as especially relevant to the sport domain because over the short term, avoidance may be a fast and effective means of dealing with competitive stress. This type of stress is considered to be essentially related to an impending event, the duration of which is relatively short, thus the value of the stressor tends to decrease once the race or game actually starts, or once it is over. Avoidance can be both physical, for example, an athlete simply staying out of his coach’s way so he does not have speak to him and face whatever issue he is avoiding. Or, it can also be a more mental approach, for example a boxer who avoids discussing or thinking about the fight until shortly before he must prepare to go into the ring. In both instances this avoidance is a self-controlling mechanism, which has been defined as a form of self-denial whereby the individual uses self-discipline (Kuhl & Beckmann, 1994b) to maintain intentions through the inhibition of emotions, information and motivations (Beckmann, 2002). Richards (2004) also identified the sport relevant coping strategy of ‘blunting’ (Miller, 1980), which is related to the avoidance of all information associated with the stressor.

Based on the findings from an intervention to create a healthy diet by helping action and state-oriented individuals utilise planning strategies that incorporated elements of reward (i.e., buying oneself a treat) and punishment (i.e., purposely not buying oneself anything), Fuhrmann and Kuhl (1998) emphasised that state-oriented individuals should be made aware that whilst self-controlling strategies such as denial or self-punishment can be beneficial and get results in the short-term, over the long-
term this behaviour is extremely detrimental and would not ultimately help them develop further strategies for goal achievement. Self-control is recognised as a beneficial strategy in sport over the short term (see section 2.6.2), however, over-exposure to self-discipline for goal maintenance is considered to initiate the loss-of-autonomy cycle (Kuhl & Beckmann, 1994b; see section 2.8.2) and the exacerbation of rumination and negative affect both detrimental to performance.

The opposing strategy to blunting is ‘monitoring’, that is a heightened monitoring and sensitivity for goal threatening information. This behaviour has parallels with action-oriented behaviour, which is characterised by efficient external and internal monitoring activities that will specifically facilitate personal intentions (Kuhl, 1984). Kanfer and Scheffit (1998) observed efficient self-regulation is derived from an ability to self-monitor. It is additionally reasoned that state-oriented athletes possess lower context sensitivity (Beckmann, 2002), which may be the result of a refusal to acknowledge the reality of a competitive stressor.

Showers and King (1996) experimentally blocked individuals with negative-compartmentalisation from using strategies that do not involve the self-system, that is by inducing sad mood through a ‘who am I?’ writing task where participants completed 20 statements starting with the words ‘I am...’ and then rating statements into positive and negative categories in order of importance. Results indicated these individuals struggled to deal with being flooded by negative self-beliefs which was significantly correlated with higher level usage of negative items in self-descriptions compared to baseline measures of self-concept taken seven days earlier. These findings not only support the importance of being able to access ones’ self-system when under pressure, but also highlight that the self-system is somewhat integrative to avoiding extreme situational reactions. It can be further suggested that an integrative
organisation represents a realistic approach to challenges, that is, an athlete may be better prepared for competition if self-concept items stored in this category contain a variety of beliefs. For example, whilst items like ‘difficult’ and ‘challenging’ may need to be included as negatives, positive items such as, ‘go for it’, ‘willpower’, ‘effort’, could be included as positives, indeed ‘challenge’ may even represent a positive. With a fusion of positive and negative items a realistic approach can be maintained, yet the athlete has something (viz. positive self-beliefs) to literally grab onto in the face of setbacks or adversity.

In a university based experiment Orbell (2003) asked undergraduate students to indicate their attitude and intentions towards studying at least three hours per course module. Actual studying behaviours reported after two weeks demonstrated that students who held positive intentions to study and reported using self-determination performed significantly better than those who did not employ self-determination. This shows the effect on performance when the self-system is involved in goal-directed behaviour as an extended network of affective support through values, beliefs and acceptable outcomes made available to enable goal attainment. The 5th modulation assumption explicates ‘Self-motivation’ as the creation of positive affect associated with an action (Kuhl, 2000b), based on the activation of appropriate self-representations (e.g., values associated with the activity). In common with the findings explored in 4th MA, the self-motivation assumption posits that an individual’s intrinsic motivation is crucially reliant on their ability to access their self-system. In PSI-theory the generation of positive affect toward an object once it has been identified is explained as a top-down self-regulatory mechanism. Kuhl speculated that any condition that activated the self also aids self-motivation, for example, consider the post-decisional stage characterised as ‘time biased’ information
processing (Beckmann, 2002) that recruits 'energy' for tasks that one has already made the decision to undertake. In study asking participants to make a preferential choice from a selection of rental apartments (Beckmann & Kuhl, 1984), action-oriented individuals were shown to increase their attractiveness rating toward an initially preferred apartment (despite receiving no new information about the property), once they were asked to make a final decision about which apartment they would most like to rent. This further demonstrates the extra "power" available to support goal striving if the goal is intrinsically motivated / self-system is activated. (For 6th MA see section 4.4). The final and 7th MA relates to 'Self-actualisation' and the ability to flip between positive and negative associations of an activity, that is, make affective changes. Self-actualisation has two components: Self-development; and Volitional efficiency. Kuhl (2000b) postulated that neither the individual nor self-system can grow without intermittent bouts of negative emotionality and the integration of new personal experiences. Without bursts of negative affect the self-system would be constantly active, Kuhl suggested that whilst this would make for a very assertive personality, the inability to integrate new experiences is associated with antisocial personality disorders. Furthermore, the self-system is also stunted when there are no periods of down-regulating affect because needs, beliefs, affects and other aspects of the self would be stored in isolation. Rather, they would not be integrated into an associative system and would be simply hoarded as fragments of self-related constructs, leading to a low self-esteem personality. Kuhl additionally suggested that self-actualisation requires volitional efficiency, that is, appropriate down- and up-regulation. For example, hyperactive behaviour can be associated with constant positive affect, in other words a low ability to volitionally maintain difficult goals in intention memory by down-regulating arousal. This is contrary to the
Zeigarnik effect seen in depressed individuals who are able to maintain intentions in IM (Kuhl & Kazén, 1994b), but are unable to down-regulate their negative affect sufficiently so as to enact the intention. The critical ability to transition between affective states has previously been explored in several studies by Oettingen, Pak and Schnetter (2001) which have facilitated the original issue of action control (getting over the difficulty of task enactment) through a fantasy realisation intervention that involved participants contrast their desired future outcomes with their present reality. This approach has many similarities with the auxiliary functions (Kuhl & Beckmann, 1994b) of PSI-theory which suggests a conscious representation of the intention that spells out the necessary mindset for action and commitment required (first function). In PSI terminology, the transition between the antagonistic systems of IM and IBC was enabled by uploading IM with difficult intentions that needed some problem consideration, whilst supporting the facilitation of positive affect (second function) necessary to mobilise action.

4.6 A Systems conditioning model: Associating the self-system with action control

A systems conditioning model of action control will firstly be described to introduce how the level of involvement of the self-system in volitional control can be conditioned (Kuhl, 2000b) by utilising the inter-systemic connections of the cognitive sub-systems. This model will then be expanded to depict a sport-specific model that could be used to enhance self-regulatory efficiency in athletes. The systems-conditioning assumption of PSI-theory (6th MA) specifies that the connecting pathway between two sub-systems can be strengthened if it is repeatedly activated within a specific time window. Figure 5 shows a systems conditioning model which Kuhl
expanded using the tenets of classical (Pavlovian) conditioning and based on two assumptions (2000b, p. 25): The expression of negative or positive affect is associated with an activation of the self system; and there are external cues that have a 'pre-wired' (unconditioned) effect on affect regulation. In other words, the comforting effect of a mother verbally encouraging or making eye contact with her child facilitates positive affect whilst soothing the baby verbally or through touch inhibits negative affect. In essence, when a child is interested or distressed by something and they express this through positive or negative affect their self-system is activated. The mother's response of arousing positive or down-regulating negative affect serves to strengthen the association between the child's self-system and the arousal or down-regulation of affect. That is, the empathic response of a mother (conditioned stimulus; CS) to her baby's distress (unconditioned stimulus; UCS) strengthens the link between the systems that control self-expression and the systems that control affect.
Classical Conditioning
The formation of new S-R Associations

1. CS (Bell) → 2. UCS (food) → 3. UCR (salivation)
   (800 msec)

4. CS (Bell) → 5. CR (Salivation)

Systems Conditioning:
The formation of new associations among systems

Baby
1. Self-Expression
   (800 msec)
2. Comforting
3. Affect-regulation
Child/Adult
4. Stress: Self-activation
   (800 msec)
5. Stress: Self-relaxation
Child/Adult

Figure 5. Associating the self-system with action control (Kuhl, 2000b)
Kuhl speculated that the resultant effect is that the child develops the ability to regulate affect without the need for 'external stimulation of affect generating systems' and self-regulating behaviour eventually becomes more under the control the individual's self-system. The same effect is believed to occur when positive self-expressions are made and the individual receives a speedy and 'adequate' response. Kuhl (2000a) suggested that the positive affect that is automatically provided by what he called an 'interaction partner', (i.e., parent, psychologist, teacher, coach who can respond to a person's self-expression of affect) becomes conditioned onto the self-system. However, this is conditional on the self-system being activated (through self-expression). The more often the activation of the self becomes linked with the arousal of positive or down-regulation of negative affect the more the self builds the ability to control positive and negative affect. It is reasoned the more often the self-system is involved in affect regulation the more frequently elements of the individual's needs, wants and beliefs are involved in goal pursuit. For example, in an athletic environment a similar association of the self-system with action control may occur perhaps during a difficult circuit training session when an athlete who expresses a lack of energy is supported by a coach encouraging them to persevere with a cry of 'you can do it, hang in there, keep moving', or even by making a clenched fist "come on" type gesture. Kuhl (2000b) used PSI-theory to explain excessive tendency toward extrinsic (non self-determined) motivation and striving for material goals, such as money or status symbols. Kuhl suggested this tendency is attributable to weak connections between the self-system and affect generating sub-cognitive systems. Moreover, the achievement of extrinsic goals is regarded as a rather short lived experience because it is more likely the value of the goal is attached specifically to the goal, as opposed to implicit self-representations of needs, wants and beliefs. In
accordance with findings suggesting that maintaining an integrated self-concept (Showers & King, 1996) facilitates access to positive affect. Sheldon and Elliot (1998) indicated that integrated goals are pursued with greater effort, persistence and with more success.

The systems conditioning model is based on the notion that self-regulation of affect is the internalisation of a process that originally encompassed a timely external regulation of affect (Kuhl, 2000b). As such affect regulation (viz. self-relaxation or self-motivation) when marshalled by the self-system is anticipated to occur within a certain time frame, the speedy external regulating response is depicted in figure 5 as a response within 800 milliseconds is key. Conditioning is postulated to be most effective with an interval of less than one second (Kuhl, 2000b). Support for this tight time frame is provided in findings from both lab based research with action- state-oriented participants and studies of mother-child interactions. In a study with mothers and their 10-14 week old babies, Keller and Gauda (1987) observed that children whose mothers who consistently failed to respond to their initiations of eye contact within the interval time of 800msec struggled to down-regulate negative affect in later life. Similarly, when shown aversive words (reminding participants of unpleasant life-events) before undertaking a task, action-oriented (AOF) individuals were seen to demonstrate event related potentials (ERP) between 180 and 600msec after viewing the negative words. This is especially pertinent because it is considered that conscious suppression of the word cannot occur so soon after presentation (Halisch and Kuhl, 1994). When instructed to focus on the experiences shown by the words the strong ERP responses did not occur. In the same study the attempts to inhibit unwanted thoughts before they reach consciousness (i.e., ERP 600msec) were not seen in state-oriented participants (with a disposition toward failure based ruminations; SOF), even
when instructed to suppress the experiences associated with the words. These findings demonstrate the importance of conditioning to ensure negative affect is down-regulated before it intrudes on consciousness. This is especially vital to individuals with a predisposition to ruminate uncontrollably when placed under demanding conditions. It is considered that attempting to suppress unwanted thought through conscious mechanisms (Wegner, 1994) is much less effective than the utilisation of implicit self-representations at an unconscious level (viz. activation of the self-system) of processing.

4.7 A model of systems conditioning for sport

The systems conditioning model is readily transferable to the athletic environment, for example, Figure 68 shows how an adapted version of Kuhl’s (2000b) model might look if the interaction partner role providing the UCS is played by a sport psychologist or coach. It is the interaction partner who opens the affect regulation “window” once the athlete has activated their self-system through an expression of affect (personal feelings), or when they feel understood on a personal level (Kuhl, 2000a). It is suggested that this connection is the reason why empathy works so well in human interaction (Kuhl, 2000a).
Using the PSI-theory model (Kuhl, 2000a, pp. 689-690) specified five key problem areas that highlight the detrimental performance effects caused by an inability to regulate affect; these issues are especially pertinent to the sports context. Firstly, without the ability to down-regulate negative affect [A- to A(-)], representations of other’s expectations and self-introjections cannot be checked for compatibility with the self. Furthermore, any new ‘objects’ that are actually compatible with the self cannot be integrated or supported by the self because access to EM is impaired by the perseverance of negative affect. Secondly, without the ability to down-regulate negative affect [A- to A(-)], an athlete cannot formulate realistic goals. This is because negative affect blocks access to extension memory and the implicitly held positive feelings about various (realistic) actions and outcomes,
thus goals cannot be checked for self-compatibility. As such, the goal is simply not connected to the self-system. An athlete experiencing negative affect and unable to shift that affect is susceptible to forming and accepting beliefs and goals that are not necessarily true to them. This could be the case where an athlete is continuing to train hard and doing what he has been asked to do, or what he feels he ought to be doing, because of this, he neglects to inform his coach of his intense fatigue and his personal feeling that his body may require a brief rest at this point. The athlete ploughs on with his current training load and his performance ultimately suffers.

A third issue relates to individuals experiencing negative affect and unable to inhibit positive affect \([A(-) \text{ to } A(+)]\) as implicit wishes held in EM cannot be translated into explicit intentions (lM). In other words EM can’t confer with IM, which is necessary when there are problems or difficulties. A fourth problem occurs when an individual does not possess the ability to move from feeling inhibited positive affect to positive affect \([A(+) \text{ to } A+]\), otherwise known as self-motivation. This occurs if an athlete is focussed on unrealistic goals and ideas, but does not generate the “energy” necessary to enact their intentions. Lastly, without the ability to ability to tolerate painful experiences (down-regulate the experience of negative affect \([A(-) \text{ to } A-]\)), it is speculated that the self-system cannot develop and its functions are stifled if new and discrepant when negative affect cannot be down-regulated. In conclusion, Kuhl (2000a) stated that self-regulation is central to PSI-theory because it is shown as the most important generator of affective transitions, that is, self-regulatory skills enable to the individual to make necessary affect transitions with autonomy. Kuhl describes the interactions of PSI-theory as reciprocal in nature, in other words, self-regulation is facilitated by the down-regulation of negative affect whilst simultaneously supporting down-regulation.
This review demonstrates that the flow of affect is a key factor in self-regulation, as PSI-theory is predominantly focussed on interaction and transition between phases. This functional stance provides a different approach in terms of developing interventions to enhance volitional self-regulatory efficiency. In sport psychology there is much applied emphasis on cognitive aspects to aid performance, such as, using ‘positive thinking’ or having a ‘positive attitude’. The modulation assumptions of PSI-theory specify the role of affect in facilitating the action-oriented ability to enact realistic and self-determined intentions, therefore interventions with the aim of training optimism (i.e., positive attitude) would be insufficient to change the way a person regulates affect (Kuhl, 2000a) and ultimately their self-regulatory abilities. Kuhl reasoned that any training would be better served by applying the processes of interaction and transition between systems, that is, interventions should aim to teach smooth transitions between optimism and problem awareness (and vice versa). Through this approach difficult intentions are loaded in IM, whilst maintaining optimism will provide the necessary up-regulation of positive affect to inhibit IM and active IBC. Support for the development of this approach is provided across studies undertaken at two Olympics with elite athletes (Gould, Greenleaf, Chung & Guinan, 2002), results demonstrated that the most successful athletes approached the challenge of their event with a ‘let’s see how good I am’ attitude, that is, they acknowledged the great difficulty of the task at hand, yet maintained the optimism necessary to inhibit any negative affect (and thus volitional inhibition) caused by thought of difficulty by up-regulating positive affect (viz. feeling most enlivened when circumstances challenge me).
4.8 Intervention targets derived from PSI-theory

The suggestion that control states that govern self-regulatory ability under pressure can be trained in athletes has been previously forwarded (e.g., Beckmann, 2002; Beckmann & Kazén, 1994) and empirically demonstrated (e.g., Kuhl, 1981; Hartung & Sclulte, 1994). In terms of developing enhanced volitional ability PSI-theory contains many useful principles and areas to target through intervention in the sport environment. Fundamentally, PSI-theory attributes personality dysfunction to poorly developed system inter-connectivity (Kuhl, 2000a). Furthermore, PSI-theory expounds that state-orientated individuals are less effective at moving themselves toward a goal because they have lower ability to activate the self-system under conditions of frustration or threat (Kuhl, 2000b). Therefore, a key target of any intervention to enhance volitional ability should involve strengthening these system connections to enable more effective affect regulation and thus better cognitive functioning under pressure. As such, the ability to self-regulate affect can be considered more essential in efficient performance that the overriding mood itself (Baumann & Kuhl, 2002). At the core of PSI-theory and self-regulated behaviour is the need for an individual to access their self-system of self-representations and networks of wants, goals, affects, beliefs and needs that can be used to provide intrinsic motivation and affective support for intentions. It is evident in the previous review of action-state orientation (section 2.7) and from the findings in study 1 regarding coachability and self-talk (e.g., an increased propensity to internalise self-alien beliefs) that individuals possess different levels of self-awareness not only of their behaviours, but also of their own implicit wants and needs. These findings are consistent with the maxim that individuals with a predisposition toward self-control and the preoccupation type of state-orientation (SOF) struggle to perceive self-
incongruent and interfering cognitions as unwanted and facilitate their goal-directed
behaviour through self-punishment strategies (Kuhl & Baumann, 2000).

Without self-awareness (viz. inhibited self-access) the individual cannot check
ideas and goals for self-compatibility. Moreover, awareness is the first step to gaining
control of any pressure situation (Ravizza, 1998, p. 171). Without any idea of their
ideal performance state an athlete cannot contrast it with their present condition and if
necessary, make any adaptive changes. Issues of self-awareness may initially be
addressed through self-monitoring to develop enhanced understanding of personal
behaviours through structured means (i.e., focussed diaries), rather an awareness of
both internal and external environments (Kuhl, 2000a; Kanfer & Schefft, 1988). The
role of awareness is also considered to be critical at another level, Kuhl (2000a;
2000b) suggested certain individuals (i.e., those relying on self-controlling means of
volitional control) would benefit from an extended period of self-awareness and self-
expression training before they can take advantage of any specific objectives that
focus on improved performance. This illustrates that any intervention with state-
oriented individuals must build skills from the ground up in order for overt top-down
skills training to be successful. This approach is supported by Fuhrmann and Kuhl
(1998) who argued state-oriented individuals should be trained to frequently express
self-related concerns (affect), that is, to carefully consider any “recommendations” for
self-compatibility and reject them if they are incongruent with personal needs and
other self-representations. Kuhl (2000b) inferred that self-expression opened up a
window of access to the self-system. Put specifically, Beckmann (2002, p. 280)
argued that state-oriented athletes should ‘learn to focus on what they feel and want,
and then decide on that basis’.
An additional area for intervention highlighted by PSI-theory is based on the capacity for self-relaxation. PSI-theory proposes that the reduced ability for self-access in state-oriented individuals is based on a tendency to preoccupy caused by reduced capacity for self-relaxation. Enhancing individual ability to self-relax when faced with demanding conditions is an especially valid skill for principal development if it is considered that inducing self-awareness may only work in participants who have the ability to down-regulate negative affect (Kuhl, 2000a). Depressed or anxious individuals (viz. people with low self-actualisation) are more prone to stimulation at the fragmented level of OR. In other words, individuals who use techniques such as denial to circumvent negative affect effectively stunt their self-system, firstly through limiting learning experiences which come from negative affect and secondly, by developing a vulnerable compartmentalised (Showers & King, 1996) storage of needs and beliefs, rather than a more robust and integrative personality.

Consistent with approaches based on increased "feeling" is the suggestion that extension memory (EM) functioning can be enhanced through developing awareness of bodily sensations (Kuhl, 2000a). The systems conditioning model maintains that the perception and expression of bodily states is the most basic function of EM and the integrated self. According to the 2nd MA training EM can fortify the ability to down-regulate negative affect. Ravizza (2002) highlights the issue of bodily awareness as factor in the self-relaxation training technique of breathing control. Ravizza opined that controlling breathing was the most simple method of monitoring the emotional elements of performance and ensuring an athlete was in control of their performance. It is clear a technique like breathing control may serve the triple purpose of developing self-awareness and self-relaxation and thus the ability to regulate affect.
Fuhrmann and Kuhl (1998) advised that for state-oriented athletes reducing the amount of stress in their lives should be promoted. Research has shown emphatically that state-oriented athletes have above average self-regulatory ability under conditions of lower frustration or threat (e.g., Kuhl & Fuhrmann, 1998; Roth & Strang, 1994). Kazén and colleagues (2003) concluded from this and evidence from their own research that in demanding conditions a relaxation treatment should kick-start the process of down-regulating affect necessary for self-access in state-oriented individuals. Interventions that support relaxation by “downplaying” the personal consequences of task failure are proposed to help shift negative affect. For example, having athletes consider the strengths and weakness of a particular activity in order to “help others” or to “improve” the activity for the future. Kuhl (2000a) hypothesized that a trainer (i.e., psychologist, teacher, coach) could further facilitate part of a developmental process by creating conditions that support relaxation by ‘orchestrating affective transitions’ (p. 691). For example, a sport psychologist could introduce athletes to a new task (especially if it is a difficult task, such as maintaining a self-monitoring diary over a certain period of time) by emphasising it will be difficult and challenging. It may be easier to generate positive affect toward the task if the reality of the situation is appreciated. The generation of positive affect to help neutralize an anticipated fall in positive mood when undertaking difficult tasks has been demonstrated experimentally (e.g., Kuhl & Weiβ, 1994) where short-term immunization against state-orientation has been achieved through participant hypothesis verbalisation and anticipation of task difficulty, these assist the formulation of realistic goals that lessen the shock of surprise at poor performance.

Functional use of the difficulty awareness approach is also evidenced in applied sport psychology, when working with young athletes attending national
training camps for the first time Ravizza (2002) emphasised the importance of maintaining perspective and clarifying challenging experiences, as part of the process all athletes must go through. In this case the athlete is stepping up a level and performing against the most talented and experienced individuals in their country, setback and failure experiences are normal occurrences in development. This is comparable to the fantasy realisation techniques (Oettingen et al., 2001) used to facilitate action initiation and commitment in goal striving by enabling smooth transitions between task difficulty and optimistic outlook by loading intention memory through difficulty awareness. At the same time this practice supports positive affect through feelings of achieving the desired goal so problem solving would be problem solving and action initiation, rather than inaction caused by dwelling ruminative thought. Kuhl (2000a) advocated facilitating transitions to and fro between difficulty awareness [A (+); inhibition of positive affect] and self-motivation [A+; positive affect] though the development of a creative mindset. For example, a sport psychologist could enable an athlete to shift out of the negative affect linked to maintaining a self-monitoring diary by thinking about the benefits maintaining a diary might hold for them. Creative utilisation of extended networks of the self-system could further be induced if the athlete is encouraged to develop functionally significant goals for action, particularly be considering barriers to goal attainment for example, “can you think of three things you can do to ensure you complete the diary everyday”. In this way the athlete has recognised the challenging elements of the activity, but is also able to optimistically focus on how to thwart these issues using techniques that that are congruent with their wants, beliefs and affects. It is important to note that whilst a sport psychologist or trainer who consistently utilises a positive encouraging approach will set the grounding for improving client self-motivation, this
would not be enough for the athlete to learn how to restore positive affect. Kuhl suggested that this skill is dependent on attentive encouragement once discouragement is expressed. Most importantly a focus of any intervention must be to ensure that athletes become independent of encouragement and support over the long term. Therefore it may be necessary that any intervention programme is built to ensure autonomous behaviour is developed in a supportive system that trains the athlete to become their own means of regulating affect.

Of particular relevance to methodologies for developing self-monitoring for self-awareness, for example, through structured procedures (e.g. logging data in a diary) is that it fits closely with other therapies which techniques that serve to stimulate extension memory (EM), such as behaviour therapy and hypnotherapy (Kuhl, 2000a). Instead of making global statements (“I was awful in training today”) athletes can be encouraged to make graded judgements based on specific elements of their training session on a likert scale (“I wanted to train today” or “I gave 100% effort in the last 10 minutes”). Conversely, Kuhl suggested that athletes who indulge in excessive positive affective may benefit from expressions of clear cut dichotomous statements. Therefore, it maybe important to ensure that options for both stimulations are available to athletes.

Results from Study 1 highlighted a variation in usage levels of sport psychology specific tools such as goal setting and relaxation. In addition to have a knowledge base of these skills it is also a practical necessity that athletes know how to use the skills in a self-congruent manner, for example self-talk that comes actually comes from the self. It can be speculated that an understanding and ability to form a variety of appropriate goals should lessen the likelihood that athletes with a disposition toward rumination, or are less skilled at disengaging from unrealistic
targets actually focus on such inappropriate goals in the first place. Furthermore, these athletes should develop experience at checking and re-adjusting plans as the situation demands. In stressful or emotional conditions many demands are made on cognitive processing. PSI-theory emphasises the role of affect as enabler of mental processing because it is considered as the link between cognitive systems (Kuhl, 2000b). The role of affect has been demonstrated in the results from Study 1 where differentiated TOPS scores between action- and state-oriented athletes indicated the importance of being able to up-regulate (arousal control) and down-regulate (relaxation) affect under pressure.

4.9 Summary

The ability to restore positive mood is a prerequisite for individuals to accept difficult challenges without running the risk of depression (Kuhl, 2000a, p. 695). It is evident in this review of PSI-theory and the systems conditioning model that in order to develop the ability to self-relax and self-motivate through affect regulation, it is necessary to adopt a multi-phased approach that targets key areas for development. A development structure focussed on the building of core skills to support to learning of additional skills can target areas such as awareness, self-regulation of affect and principal sport psychology strategies in a s. For this purpose it is proposed that any intervention should initially encompass a long term "awareness" stage, where the focus is solely on monitoring and establishing basic self-relaxation skills. It is speculated that action-oriented behaviour may be compelled if the individual is able to experience success and control using self-regulating rather than self-controlling techniques (Stiensmeier-Pelster & Schürmann, 1994), as this may prevent passivity or ruminating on failure experiences. Therefore, the importance of practical teaching of
functionally significant monitoring, self-relaxation and self-motivation techniques is critical. The provision of a sport psychologist to act as an interaction partner to initially support expressions of affect (based on athlete-monitored data) and guide the athlete in transitions between problem awareness and optimism may also be valuable.

4.10 Research Rationale

The aim of the Mental Strength Conditioning (MSC) Intervention is to enhance individual cognitive functioning in the face of challenging demands through affect regulation training. The purpose of the intervention is to provide athletes with a means of accessing their self-system to promote self-determined autonomous behaviours. Kuhl & Kazén (1994a) suggested elements of Gestalt therapy may be applicable to helping limit the propensity of state-oriented individuals to maintain unrealistic goals and control their introjection tendencies because it focuses on the importance of the 'here and now' and 'control of the controllables'. State-oriented cognitions are linked with a dissociation from the present, whilst the feeling-thought-action approach (Partlett & Hemming, 1996) of gestalt theory has resonance with the pre-cognitive affective intuition that forms the basis of PSI-theory. The auxiliary-functions assumption (Kuhl & Beckmann, 1994b) further provides a format for volitional skills development, namely the need to develop a conscious representation of an intention and the ability to facilitate positive affect. A key feature of this process will be functionally significant training that develops a positive outlook simultaneously with an awareness of task difficulty. A phased approach to training will initially focus on self-awareness training through an extended period of self-monitoring of internal and external environs in the present. The athlete will additionally learn a means of regulating affect and develop the ability to look for and want the challenge in a...
difficult situation. Once these skills at the centre of a systems condition intervention are embedded, then the athlete has a basis by which to progress to an “armour” phase where essential performance strategies can be addressed. This should encompass the development of a basic sport psychology skills toolbox. This includes individualised training in goal setting, pre-competition and competition management skill and self-talk. Eventually the athlete will be able to draw these skills together and “activate” them to develop consistent mental game/race plans and competitive routines, which will ultimately enable athlete “autonomy”.
5.1 Aims and proposed evaluation of intervention effectiveness

The aim of this study is to further examine the modulation assumptions of PSI-theory (Kuhl, 2000a; 2000b) by testing the efficacy of a systems conditioning intervention to enhance volitional efficiency in track athletes. Middle and long distance athletes (800m and above) were chosen for this study as the endurance demands of their events requires that athletes must learn to manage their exertion efficiency and follow a competitive plan. Beckmann and Kazén (1994) stated that under such demands state-orientation should have a sizeable detrimental impact on performance. It is hypothesised that self-regulatory skills can be developed in state-oriented athletes through a process of conditioning the self-system with affect regulation skills. Furthermore, it is hypothesised that skills training may cause some degree of negative ‘reactance’ (Beckmann, 2002) to the self-regulatory abilities of action-oriented athletes as it may disrupt their already high level of monitoring efficiency. Finally, state-oriented athletes who do not develop sufficient initial self-awareness skills may struggle to take advantage (Kuhl, 2000a) of later intervention tools training. In order to determine if the intervention has enhanced self-regulatory efficiency, results must demonstrate evidence of changes in prevention of passive behaviour and brooding, that is, show that in demanding conditions athlete reflection on misfortune can be self-interrupted (i.e., down-regulation of negative affect). Stiensmeier-Pelster and Schürmann (1994) suggested that improved self-regulatory efficiency can be evidenced through changes in attention control that indicate the
athlete only focuses on the information necessary to enact intentions and can ignore irrelevant information. In other words, information is only utilised by the athlete to the extent it is needed for realisation of intentions, or task solutions. Enhanced volitional efficiency can also be evidenced through improved affect regulation (viz. emotional control).

Overall intervention effectiveness is assessed in a triangulated approach, Firstly, individual changes in volitional skills development are quantitatively tracked over a 10-month period which comprises pre-season (including the 18-week intervention; see Table 2), the summer track season and post-season. Athlete progress is additionally assessed through self-report measures and finally, a follow-up interview study (study 3) will be used to explore any key issues raised in the findings. Table 2 shows the intervention timetable highlighting the relevant supporting methodology and applied materials used at each phase.
Table 2. Intervention timetable, supporting methodology and materials

<table>
<thead>
<tr>
<th>Phase</th>
<th>Week</th>
<th>Session</th>
<th>Content</th>
<th>Text Section</th>
<th>Materials</th>
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</thead>
<tbody>
<tr>
<td>BASELINE TESTING (2 weeks prior: ACS-90 &amp; VCI)</td>
<td>1</td>
<td>1</td>
<td>Self-monitoring</td>
<td>5.2.3 Instrumentation</td>
<td>Appendix 1: ACS-90 Appendix 5: VCI</td>
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<td></td>
<td>3</td>
<td>2</td>
<td>Here &amp; Now focus / Breathing control</td>
<td>5.3.2 Self-monitoring 5.3.3 Awareness training</td>
<td>Appendix 10: PECO</td>
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<td></td>
<td>5</td>
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<td>Bring it on &amp; performance awareness</td>
<td>5.3.6 Challenge</td>
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<td>Awareness (see 5.3.1)</td>
<td>12</td>
<td>4</td>
<td>Goal Setting &amp; Self-management (ACS-90)</td>
<td>5.4.1 Goal Setting</td>
<td>Appendix 12: Booklet 2</td>
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<td>15</td>
<td>5</td>
<td>Self-talk &amp; Competition management</td>
<td>5.4.2 Self-talk</td>
<td>Appendix 12: Booklet 3</td>
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<td>Armour (see 5.4)</td>
<td>18</td>
<td>6</td>
<td>Race planning – pulling it all together (ACS-90)</td>
<td>5.6 Intervention &amp; PSI model</td>
<td>Appendix 12: Booklet 3 Appendix 9: Athlete Observed Behaviour Questionnaire</td>
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<td>Autonomy (see 5.5)</td>
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<td>Post Intervention</td>
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<td>10-weeks post testing (ACS-90 &amp; VCI) QUESTIONNAIRES COMPLETED BY MAIL OVER SUMMER BREAK</td>
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<td>20-weeks post testing (ACS-90) DEBRIEF SESSION</td>
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<tr>
<td>INTERVIEWS (2 weeks after debrief)</td>
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5.2 Methodology

5.2.1 Gaining entry

The Loughborough University Students Athletic Club endurance performance director (male distance athlete coach) and female distance athlete coach were contacted in person to explain the nature and length of the programme. Coach permission was sought to recruit university athletes for the Mental Strength Conditioning (MSC) programme and for the sport psychologist (investigator) to attend squad training sessions over the programme duration. It was explained individually to coaches that the MSC programme was grounded in a 'hands-on' approach and that athletes would be encouraged to practice their sport psychology skills in physical training sessions. It was also explained that athletes would be encouraged, if they wished to discuss and develop materials such as their goal charts or mental race plans with their coaches. It was emphasised at this stage that all collected data and contacts between the athlete and investigator would be confidential and would not be available to coaches. Coaches received a follow-up email to confirm details (e.g., recruitment dates, advertising materials, proposed programme start-end dates) and to clarify programme content. Over the course of the intervention they also received hard copies of all programme materials, such as workbooks and diaries and a personal explanation of these materials by the investigator.

5.2.2 Participants

12 male and 6 female university middle and distance track athletes (mean age 19.6: range 18-22) competing in British University Sports Association events at distances between 800-10,000 metres and cross-country completed an 18 week intervention programme. The programme commenced in February/March at the close
of the winter season and continued through to the start of the summer track season in June. Athletes were initially contacted by email advertisements and/or through posters offering free individualised one-to-one sport psychology support through a programme lasting a course of six sessions. The advertisements indicated that interested athletes could meet the investigator in the athletic track pavilion (warm-up and meeting area) prior to a key weekly training session and sign up to participate by completing a brief questionnaire (ACS-90). A ‘stall’ and large poster advertisement were set up in a quiet corner of the pavilion with tables and chairs where athletes could complete the scale. Interested athletes who were unable to complete the scale at that time left their email addresses with the investigator and were emailed a copy of the questionnaire to complete and return online. Other interested athletes who independently contacted the investigator by email also submitted their questionnaire online. Questionnaires were completed two weeks prior to the start of the intervention programme and were used as the baseline measure of action-state orientation (see Table 2). Athletes were informed when they returned their questionnaire that as there were limited places, participating athletes would be anonymously selected to reflect a wide variety of gender, event and personality and that they would be contacted by telephone to participate. Initially 22 athletes (18 completed all sessions of the programme) were selected to offer a general spread of action-state orientated scores. Athletes who were not selected were contacted by email and thanked for their time.

Selected athletes were contacted by telephone and invited to participate in the programme by the investigator and an initial meeting was arranged. Athletes were informed they were free to meet or contact the investigator as many times as they wished over the course of the programme. Some athletes involved in the programme were chiefly involved with coaches based in their home club rather than university
coaches, but trained with the university squad. Therefore, with athletes’ permission names of MSC intervention programme participants were provided to university coaches who agreed to provide additional support to these athletes, if the athlete personally approached the university coach. This enabled a consistency in terms of coaching among participant athletes, as athletes who cited home club coaches as their chief coach appeared to see these individuals relatively infrequently compared to a minimum three times weekly contact with the university coaching staff.

5.2.3 Instrumentation

**Personality.** Two weeks prior to the start of the programme athlete baseline disposition toward the maintenance and enactment of intentions was measured using the ACS-90 (see appendix 1). Applying the norms listed in Kuhl (1994b, p. 57), 6 athletes (5 male, 1 female) were rated as action-orientated based on a median split on the preoccupation dimension (AOF scale median = 8.5). 12 athletes (7 male, 5 female) were classified as state-oriented (SOF scale median = 2). After the baseline measure athletes completed the ACS-90 a further four times at: Intervention week 12; Intervention final session week 18; 10 weeks post-intervention and; 20 weeks post-intervention (see Table 2).

**Behaviours.** Athletes’ self-regulation skills were further assessed using the Volitional Components Inventory (VCI; Version 6, US-1; see Kuhl & Fuhrmann, 1998). The VCI-6 (see appendix 5) used here used here is the first English Language version (US-1) and is based on a reduced item pool that resulted from item selection according to reliability and validity criteria. The scales were obtained directly from the authors (personal communication, Julius Kuhl, 2003). The first part of the VCI assesses competence by attempting to capture conditions that would require the
individual to overcome the difficulty of enactment, for example current instances of self-regulatory behaviour. The second part of the inventory focuses on volitional inhibition, that is, symptoms of reduced access to volitional competencies under conditions of frustration or stress and captures the resulting decrease in the functional efficiency of specific volitional subcomponents in demanding situations.

The VCI examines 35 functional components of volitional competence (see Table 3) to provide a detailed analysis of the processes related to the self, such as; Self-determination; Alienation; External control; Conscious attention control; Implicit attention control; Fear of failure and Arousal control (up & down). Based on a self-descriptive statement depicting behaviour when pursuing a challenging goal, athletes indicated on 7- or 8-point likert scales how descriptive the statement is of them at the present time; “These days this is how often I am like that... (almost always, often, somewhat often, sometimes, somewhat seldom, seldom, almost never)”. For example, Conscious attention control and Implicit attention control assesses experiences of maintaining concentration on a goal. Alienation focuses on experiences of feeling detachment from a goal. Arousal control focuses on feelings of being able to up-regulate positive affect (arousal control up) and down-regulate negative affect (arousal control down). Self-determination focuses on thoughts experienced whilst pursuing a goal. Alienation comprises seven items (e.g. ‘Finding myself striving for a goal that I myself did not really decide to take up’, ‘Having a sense of detachment from the goal but still working towards it’, ‘Feeling unable to recall my original reasons for committing myself to a difficult goal’). Arousal control down is assessed through 8-items (e.g. ‘Being able to relax even after some inner tension’, ‘Becoming calm when excitement would hinder me’, ‘Being able to reduce my tension if it threatens to get in my way’). Arousal control up comprises 8-items (e.g. ‘Feeling
most lively when circumstances challenge me’, ‘Being spurred to my top form by difficulties in attaining a goal’, ‘Getting really activated by difficulties when I am trying to accomplish something’). Self-regulation is assessed by 8-items including, ‘Taking action in the knowledge that I am acting on my own free will’, ‘Sensing that it is I who want to pursue a particular goal’, ‘Knowing that I really want something’. A scale score was computed for each volitional factor by averaging item scores. Athletes completed the VCI twice, firstly as a baseline measure prior to the start of the study and again at the 10 week post-intervention stage. Due to several missing questionnaires, the results (baseline and post-intervention) are presented for 14 (5 female; 9 male) athletes (AOF = 3; SOF = 11).

Athlete Observed Behaviour Change. At the end of their final programme session (week 18) athletes completed a short written questionnaire (see appendix 9) to provide a qualitative self-assessment of their personal experiences and also, to rate their progress over the course of the programme. Athletes were asked six focussed questions based on the development of the active action control processes (Kuhl, 1984) including; Selective attention; Emotional control; Motivation control; and; Parsimonious information processing. For example: ‘These days are you better able to keep control of your emotions under pressure?’ Or; ‘These days are you better able to focus on yourself and on the task at hand?’ Athletes were asked to provide examples of their behaviours with their responses.
<table>
<thead>
<tr>
<th>VCI SCALE</th>
<th>DEFINITION</th>
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<tbody>
<tr>
<td>1 Effort avoidance</td>
<td>Preferring to do things that can be easily handled.</td>
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<tr>
<td>2 Reactance</td>
<td>Refusing to satisfy demands of others</td>
</tr>
<tr>
<td>3 Self-control pressure</td>
<td>Imposing discipline on self</td>
</tr>
<tr>
<td>4 Spontaneity</td>
<td>Relying more on intuition than complex plans</td>
</tr>
<tr>
<td>5 Decision control</td>
<td>Able to make quick certain decisions</td>
</tr>
<tr>
<td>6 Intention monitoring</td>
<td>Monitoring, often rehearsing decisions</td>
</tr>
<tr>
<td>7 Strategic intention control</td>
<td>Finding aids to better recall intentions</td>
</tr>
<tr>
<td>8 Lack of energy</td>
<td>Energy deficit, feeling dull</td>
</tr>
<tr>
<td>9 Planning</td>
<td>Thinking out details, making plans in mind</td>
</tr>
<tr>
<td>10 Initiating</td>
<td>Starting with vigour, even for unpleasant activities</td>
</tr>
<tr>
<td>11 External control</td>
<td>Only getting going when threatened by time/pressure</td>
</tr>
<tr>
<td>12 Goal neglect</td>
<td>Procrastination</td>
</tr>
<tr>
<td>13 Conscious attn control</td>
<td>Deliberately focussing on task</td>
</tr>
<tr>
<td>14 Arousal control up</td>
<td>Able to down-regulate negative affect</td>
</tr>
<tr>
<td>15 Implicit attn control</td>
<td>Absorbed without losing sight of goal</td>
</tr>
<tr>
<td>16 Attentional distractability</td>
<td>Daydreaming / lack of concentration</td>
</tr>
<tr>
<td>17 Arousal control down</td>
<td>Able to reduce tension if it gets in the way</td>
</tr>
<tr>
<td>18 Self determination</td>
<td>Feeling at one with your decision</td>
</tr>
<tr>
<td>19 Volitional self-efficacy</td>
<td>Self-confidence / belief in ability</td>
</tr>
<tr>
<td>20 Mastery</td>
<td>A sense of being able to handle task / feeling competence</td>
</tr>
<tr>
<td>21 Introspection tendency</td>
<td>Feeling guided by what others want</td>
</tr>
<tr>
<td>22 Volitional optimism</td>
<td>Feeling confident that I will cope</td>
</tr>
<tr>
<td>23 Fear of failure</td>
<td>Focus on how it would feel to fail</td>
</tr>
<tr>
<td>24 Emotional control</td>
<td>Putting self in right mood to keep on track</td>
</tr>
<tr>
<td>25 Emotional Distractibility</td>
<td>Getting sidetracked by temptation</td>
</tr>
<tr>
<td>26 Motivation Control</td>
<td>Thinking of +ve aspects of goal difficulty</td>
</tr>
<tr>
<td>27 Alienation</td>
<td>Feeling detached from goal but still working towards it</td>
</tr>
<tr>
<td>28 Shifts cost action</td>
<td>Rigidity – hating shifting between tasks/changing habit</td>
</tr>
<tr>
<td>29 Shifts cost cognitive aspects</td>
<td>Rigidity – difficulty thinking in new ways</td>
</tr>
<tr>
<td>30 Failure control</td>
<td>Quick to learn from error</td>
</tr>
<tr>
<td>31 Positive goal fantasies</td>
<td>Fantasizing about how good it will feel to achieve</td>
</tr>
<tr>
<td>32 Emotional perseverence inhibition</td>
<td>Paralyzing thoughts – losing drive after failure, blocking action</td>
</tr>
<tr>
<td>33 Reinforcing self-evaluation</td>
<td>Patting self on back! Celebrating steps of way</td>
</tr>
<tr>
<td>34 Emotional perseverence ruminaton</td>
<td>Constant brooding</td>
</tr>
<tr>
<td>35 Self-rewarding</td>
<td>Rewarding success</td>
</tr>
</tbody>
</table>

Table 3. VCI definitions (Adapted from VCI 6 US-1 version. See Kuhl & Fuhrmann, 1998).
5.2.4 Procedures

Baseline questionnaires were numerically coded and scored anonymously by the research programme supervisor. Scales were then stored in confidence for the duration of the programme. Only the name, age, event and contact details of selected athletes were provided to the investigator to make the initial telephone contact. Athletes were selected to allow as equal a mixture as possible of both gender and action-state orientation. In a double-blind strategy individual scores from all questionnaires utilised in the programme were not revealed to athletes until a debrief session at least 20 weeks after their final programme session. To further ensure unbiased interaction and a standardised programme delivery, the investigator also remained ‘blind’ to all scale scores taken over the course of the programme (i.e., the investigator was unaware of individual orientation). All additional scales undertaken during the programme were sealed in envelopes and stored un-scored by the research programme supervisor. Athletes met with the investigator on campus in one-to-one sessions at their convenience, either in a psychology consulting room, or at the athletics track. Throughout the duration of the programme (i.e., recruitment through to university track season completion) the investigator regularly attended squad training sessions and was present at major and university based competitions. At the time of the intervention the sports investigator was a probationary sport psychologist working under professional supervision and in the final year of the British Association of Sports and Exercise Science (BASES) accreditation programme. The intervention programme was additionally overseen by a project supervisor who was a British Psychological Society Chartered Psychologist.
5.2.5 Design: *Intervention philosophy*

In order to better examine the practicalities of a long term intervention programme on action-state orientation and to test a model that might be replicated in other sport settings, a key philosophy of the mental strength conditioning programme was that it ran as closely as possible to a psychology skills training model and maintain in-the-field validity. Great care was taken to ensure a realistic service delivery with specific protocols and adherence to the BASES code of conduct. In particular, whilst the programme was general, an individualised approach was taken to meet the differing needs of each athlete.

5.2.5.1 Delivery model

The intervention was structured within a behaviourist framework encompassing elements of Pavlovian (classical) conditioning. An objective of the behavioural model is to enhance athlete self-regulatory behaviours through self-modification and control of behaviour (Hill, 2001). This was utilised to enable athletes to make associations between stressors and affect regulation (self-relaxation / self-motivation), through the learning of new behaviours. A central element of the practitioner's role within the behaviourist context is to facilitate active client participation, as the athlete determines and identifies issues for exploration and goal setting. The responsibility of the sport psychologist is therefore to enable the athlete to feel that they are an agent of change. This approach was supported by the 'how-to-do-it' practical opportunities for learning self-regulatory behaviours built in to the Mental Strength Conditioning Programme. When providing a 'tailored' service delivery, the behaviourist approach to assessment focuses the spotlight on the psychologist building a rapport and developing an understanding of the athlete, in order to
effectively disseminate and personalise techniques. The approach to the intervention was also grounded in Ravizza’s (2002) applied sport psychology philosophy for consulting. Based upon educational and existential principles, the central concepts of freedom and responsibility, appropriate self-control, clarification of a mission and present focus allow communication and facilitation of a strong agenda and a task relevant approach.

5.2.6 Session protocol development

Each of the six consultancy sessions followed a basic structured protocol of material/drills to be introduced in each session (see Table 2 and appendices 10-12) and designed to last no more than one hour). This provided a degree of professional standardisation as well as permitting the sport psychologist to create a session agenda for activities, appropriate to the working relationship with the athlete. Giges and Petipas (2000) suggested that teachable moments are more effective when grounded within an established working relationship. Athletes were informed that everything said to the investigator was in confidence and would not be reported to coaches. It was also explained that the investigator would attend training sessions and track events over the course of the intervention and would be liaising with coaching staff to report the overall progress of the programme in order to ensure that coaches were aware what kind of mental skills athletes were working on at different periods. Relationship building and communication are the crucial first steps in the behavioural process (Hill, 2001). Part of establishing the athlete’s background, the programme philosophy placed an early emphasis on the relationship as being a ‘team’ with a partnership focus (McCann, 2000) and that it would be enjoyable. This continued the programme maxim ‘our goals are the same as your goals’, which had been
emphasised in the poster advertisements and as part of the invitational phone call made to athletes. A further element of the intervention philosophy placed immediate emphasis upon an athlete understanding that the intervention would be “no quick fix”, by using the example of the effort their physical progression would have taken. Giges and Petipas (2000) reasoned that changing behaviour was such a considerable process of time and energy, being realistic with the athlete helped avoid the disappointments that might later inhibit skill building. In addition, being honest with the athlete from the start should build increased sport psychologist trustworthiness.

In line with the argument that the best time to initially implement psychological skills training is during the off-season or preseason (Weinberg & Williams, 1998), it was chosen to undertake the intervention outside of the competition season to allow 18 weeks for self-regulatory skills to be practised and tested alongside regular training to the point of “ownership” by the athlete so foundations were fully laid before the competitive season. Within the group of athletes it was evident there were action- and state-oriented individuals with different requirements, that is, certain athletes would need more time learning self-monitoring and self-awareness skills before they would be able to truly utilise new self-regulatory skills (Kuhl, 2000a). It is reasoned action-oriented athletes in particular might lose interest and not commit to explicit and basic step-by-step instructions, or a training programme that did not provide a challenge (Beckmann, 2002; Fuhrmann & Kuhl, 1998; Kazén, Baumann & Kuhl, 2003). Whilst the MSC programme was developed for the purpose of developing action-oriented skills, it is true that levels of state-orientation vary from high to low, therefore, it was necessary that the intervention contained an uncomplicated self-progression format, yet remained challenging enough to engage a wide range of individuals. However, in order to determine where
group differences may manifest it was necessary to undertake a “blanket” approach and apply the same intervention across the group, hence the investigator remained blind to athlete scores on the action-control scale.

5.2.7 Record keeping protocol

To ensure individualisation for each athlete and enable the intervention programme to run as closely as possible to a typical sport psychologist-athlete consultation process, as well as to maintain consistent records for possible later case study analyses, case notes of all athlete interactions were undertaken using the SOAP (Subjective; Objective; Assessment & Plan) session analyses format, as recommended in Anderson (2000). The ‘Subjective’ element of this structure was especially pertinent for logging the client’s statements and perceptions. This enabled the construction of a basic description of what actually happened during the session. In terms of managing reflections and analyses in a consistent manner, observations were organised using a structured reflective practice cycle based on the 6-stage model of reflection (Anderson, Knowles & Gilbourne, 2004). Although not every session evaluation followed a strict analysis using every stage, an awareness of the procedure allowed the formation of a structural context and consideration of what sense was made of any arising issues.

5.3 Rationale for phase based intervention

Key targets for affect regulation training to enhance self-regulation were identified from the systems conditioning and research literature (section 4.8). These targets were developed into three broad and overlapping phases (Awareness; Armour & Autonomy; see Table 2) to permit some athlete-paced improvement within a
structured skills building programme. The ultimate purpose of this stage was for the athlete to find their own ‘Autonomous’ stage after the final session of the intervention. The ‘Awareness’ training phase lasted 12 weeks (including the Easter holiday break in which athletes attended warm weather training camps overseas) and encompassed three sessions with the investigator. The ‘Armour’ phase consisted of sessions 4 and 5 and the ‘Autonomy’ phase was initiated in the final programme session at the start of the summer track season (see Table 2). This developmental phase was monitored by post-intervention quantitative testing. In their first session athletes were informed that the programme would be phased based and the names and content of each phase briefly introduced. This approach was undertaken to increase familiarity with terms and also to highlight clear programme goals and that skills development would be progressive in preparation for the upcoming track season. Sessions fitted within the overlapping phases of the MSC intervention and each session was focussed on developing skills based on the last session. The theoretical rationale for the development of functionally significant training and experiences covered in each session is discussed in terms of each phase.

5.3.1 Awareness phase

A 12 week awareness phase was used to initiate the intervention programme. This phase represented the largest time period of the intervention in order to combat Kuhl’s (2000a) proposition that the longer time spent of awareness training the more able State-oriented athletes should be better prepared to take advantage of later more specific mental skills techniques. The central factors of this awareness training stage (Self-monitoring; Here and now focus; Breathing control; and Challenge) are discussed individually.
5.3.2 Self monitoring

The Awareness stage focus on several training areas, in addition to self-awareness athletes were also trained in performance awareness. As a precursor and to develop necessary skills athletes were initiated in to the process through structured self-monitoring. Kanfer and Scheffl (1998) suggested that efficient self-regulation required monitoring of an individual's internal and external environment. Self-monitoring skills are also related to extension memory (EM) as the athlete learns to become more alert to information that is self-congruent (Kuhl, 2000b), rather than getting distracted by irrelevant details. Moreover, if the athlete can develop better efficiency in their self-monitoring they will be less likely to miss opportunities for action because they will be more attuned to cues that indicate feelings of negative affect and to enact self-regulatory activities such as self-relaxation. If they miss the cues then the cycle of reflective brooding (i.e., the negative affect) will merely continue and the athlete will not achieve their goal. Ravizza (1998) suggested maintaining a journal as a structured means of developing awareness through learning from experiential knowledge. Importantly, Ravizza noted journals present an opportunity for "closure" on performance issues. State-oriented athletes' possess lower ability at disengaging from poor performance and have greater predispositions to ruminate about failure experiences (Beckmann, 1998, 1994b), therefore, maintaining a log can serve as a double aid to performance.

Athletes were introduced to self-monitoring using an adapted version of the Professional Excellence and Achievement Diary (PECD; Harwood, 2004), a daily diary designed specifically for student athletes. The PECD (see appendix 10) contains four sections: Developing a healthy start to the day; Managing academic responsibilities; Self-management as an athlete; and Physical and psychological well
being. Within each section are several components containing items such as, Mental attitude to the day – setting clear plans; Quality of time on coursework; Quality of attitude and motivation to train; Quality of breakfast/lunch/dinner/hydration; and Quality of mood and communications with others. Each item is graded on a 1-5 scale (low-moderate-high / poor-OK-excellent), or an actual number to represent daily time spent on an activity (i.e., hours, minutes) or alternatively, for example, the actual number of units of alcohol they drank. Scores are self-graded by athletes and a weekly total and average is created to help set goals for the next week. The log also contains a daily written section where the athlete can make notes about the day and set specific tasks for the following day, athletes were introduced to the log in session 1. In order to orchestrate a basic climate of affect change (Kuhl, 2000a) the investigator asked the athlete when they considered the most practical time of day might be for an athlete to complete the sheet and how best to evaluate each component. Athletes were asked to commit to completing the diary for 14 days, whereupon they would meet with the investigator again to review their experience. After two weeks, in session 2 athletes were again asked to complete the log for another 14 days, however, in order to facilitate athlete involvement and ownership of their own training athletes were allowed to drop items that they did not feel appropriate to monitor. For example, attendance at lectures, if they felt they always went to their lectures anyway and it was not a useful area to monitor. Athletes were also able to re-define categories as they felt appropriate after discussion and select target areas they specifically wanted to focus on / improve over the next time period. The second log additionally contained a new section on time (daily minutes) spent devoted to mental training, as session 2 introduced athletes to breathing control exercises (section 5.3.5). Homework was set
for the athletes to develop their bodily awareness by practicing through a range of techniques provided and finding one they preferred.

5.3.3 Awareness training

The first aim of self-regulation is self-awareness (Lovell, 2004). To enhance the developing levels of self-monitoring, in session three (week 6 / 7) athletes were introduced to a performance awareness diary which replaced the PECD, but still encompassed many aspects to which the athletes were now familiar, for example monitoring hours of sleep. Session 3 was held just before the Easter break and many athletes were attending warm-weather training camps over the period. The MSC programme performance log was designed to take advantage of a time where athletes would largely be training full time without their usual daily distractions and potentially better able to think about their holistic awareness. Accordingly, athletes were invited to examine their most recent training session using a Performance Evaluation sheet (adapted from Holder, 1999). The sheet encourages athletes to break their performance into Technical, Tactical, Physical and Mental elements and to identify the ‘positive’ points in each area and also, the ‘points to work on’. A particular feature of this approach is that the sheet requires the athlete to balance their performance negatives (points to work on) with their positive points, that is, if the athlete finds five technical issues which they deem as negatives in their race, they must identify five positive technical elements. Holder suggested that this format enabled the athlete to focus on performance improvements based on factors within their control and also establish clear athlete-led targets. This approach is posited to influence the factors of: Goal Setting; Perceived competence, Process orientation, Affect; Intrinsic motivation; Self-efficacy; and Rationality. Additionally, the sheet
encompassed five elements from the initial professional attitude (Sleep; Hydration; Daily mood; Daily Plans; and Minutes spent on mental skills practice) and two spaces for any other areas the athlete chose to keep targeting. Finally, the sheet contained 11 statements on a 5-point semantic differential scale designed to enhance athlete self-, performance- and bodily/sensory-awareness. For example, “My energy felt high (= 5) – My energy felt low (= 1)”, or “My muscles felt loose (5) – My Muscles felt tight (1)”. The purpose was to enable athletes to engage with the sensations of good running that they had previously identified in session 2, where, athletes were asked to specify their physiological movements and sensations they associated with their best running style. For example, one athlete identified: “Systematic (arm) pumping, good posture – head looking forward (not rolling on upper body), springy step, controlled breathing”. It is considered that athletes must be able to monitor their bodies for subtle messages about which to make precise enhancements (Ravizza, 1998). Ravizza suggested athletes ‘often push too hard or don’t push enough’ (p. 174), as such it is vital athletes learn their psychological and physiological triggers and what is to be running at their best so they can work toward that sensation. The purpose facilitating more autonomous efficient actions and lowered mental effort under stress was to facilitate the development of ‘flow’ (Csikszentmihalyi, 1988) in performance. In order to provide an athlete friendly and simple, easy-to-use, take anywhere approach to performance monitoring, the performance evaluation sheets were packaged into a bound A4-size booklet, which also contained autobiographical quotes and stories taken from famous track athletes about their attitude and experiences evaluating performance. This was undertaken to offer something of a triangulated approach, the athletes would first hear concepts from a sport psychologist, they would develop some experience of the concept being introduced through their own practice of performance
evaluation and these would both be further reinforced by the testimony of a champion athlete. The structural nature of the Performance evaluation sheet also permits easy review and an opportunity for athlete and coach to compare performance perceptions (Holder, 1999). Therefore, the sheet also contained a ‘reviewed with:’ box at the bottom of the page, that was added so if a coach and athlete reviewed the sheet together they could both sign the page to indicate they were both in agreement as to its contents.

5.3.4 Here and Now

In addition to a sense of self-awareness about what represents their good running, an understanding of time and place is a vital component in the learning of self-regulation. Beckmann (2002) intimated that individuals with lower self-regulatory skills possessed lower levels of context sensitivity, that is, a greater propensity to dwell on real or imagined failure experiences that keep their minds in the past or the future, anywhere other than the task at hand. In their critique of techniques for enhancing self-regulatory ability, Kuhl and Kazén (1994a) considered state-oriented individuals should benefit from approaches that emphasise a focus on the present because it limits inclinations toward rumination about issues that are not in the control of the individual, for example the performance of competitors. Goldberg (1998) identified the most effective method to enable athletes to stay focussed on the task at hand as the ‘here and now’ rule, that is, maintaining the mind in the present. In session 2, athletes were invited to explore in what ‘time zone’ they mentally ran, in other words, was their head preoccupied with the past mistakes, or imagining the future and what they might say to their coach if they ran badly. The ‘present’ was then linked with the athlete’s definition of good running. Goldberg suggested that
narrowing attention was the most efficient means to regaining concentration and maintaining focus in the present.

5.3.5 Breathing control

It is proposed that it more effective for state-oriented individuals to learn how to act rather than think (Kuhl, 1981), so that they can experience actual control of their own feelings through an explicit behavioural process. This is particularly pertinent to mastering the skill of effective breathing control which is widely distinguished as the easiest behaviour for an individual to manipulate and posses control over (Ravizza, 2002; Taylor & Wilson, 2002, Williams & Harris, 1998). Using a range of participants from various social, environmental and cultural backgrounds, Pal (2004) demonstrated that regular practice of slow (deep) breathing exercises over a three month period improved autonomic functions. Results showed increased oxygenation of tissues enhanced parasympathetic activity (helping restore energy) and decreased baseline heart rate and blood pressure. This demonstrates several health benefits to the athlete as the body is better able to build up energy in a relaxed state, additionally a calmer athlete should be able to feel more in control.

Once athletes had been familiarised with the mental and physiological benefits of managing their breathing, they were introduced to a rhythmic controlled diaphragmatic breathing exercise centred on their own ratio/count preferences based on the ‘hara’ technique (adapted from Heathcote, 1996). Stiensmeier-Pelster and Schürmann (1994) speculated that action-orientated behaviours can be compelled if an intervention can provide state-oriented individuals with opportunities to experience success and control, as the individual’s habit of passive behaviour and rumination about their misfortunate situation can be broken. Therefore, a functionally equivalent
approach was undertaken and the investigator accompanied the athlete to the athletic track to practice control in typical pre-race situations, such as standing on the track in lane near the start line. The investigator discussed at what point the athlete felt most comfortable and was most likely to experience the elements of negative and how they could develop more consistent pre-race routines that incorporated breathing control to calm their emotions when most appropriate. Murphy and Murphy (1992) suggest athletes learn more and derive more enjoyment from participatory learning.

5.3.6 Challenge

In addition to spending considerable time learning to develop access and trust of holistic systems and regulation of those systems through affect, a major aim of the intervention was training in the ability to switch between an awareness of problem difficulty and positive outlook and vice versa. Research has demonstrated the enhanced performance effects in SOF individuals (Kuhl & Weiß, 1994) and students by loading difficult intentions into IM whilst supporting the activation of IBC with up-regulated positive affect, that is, self-motivation (Oettingen et al., 2000, 2001). Rotella (1995) suggested that when confronted with an difficult situation, for example a tennis player ranked 150th in the world being drawn against the world number 1 in the first round of Wimbledon, the athlete should change the 'burden of proof'. In other words, rather than assuming that faced with the challenge of such a mismatch he is already beaten, the athlete should play with the attitude that he can meet the challenge until his opponent proves otherwise. This way the lower ranked athlete accepts the difficulty of the problem, which means it is loaded into IM rather than the prospect of playing well remaining a wishful fantasy. However, because the tennis player now has the outlook that his opponent will have to beat him and prove he is the
superior player, rather than the other way around he can feel more positive and optimistic about the situation meaning that he is less likely to dwell on his misfortunate tournament draw and cause IM to inhibit the action of IBC. Looking for the challenge is identified as an aspect of superior performance by Gallwey (1974). In his book, “The inner game of tennis”, Gallwey observed the habit of surfers to wait for the biggest wave to ride because they valued the obstacles the wave placed before them. Here the emphasis is on the process and the benefit of the athlete have to use all their concentration and skill, moreover, the athlete actively wanting the opportunity of the challenge because they learn more and can improve athletically. Gallwey commented on the difference this attitude made to performance, rather than hoping for the easy option, for example, the 1500m runner now hopes his competitors will take the race on, or the basketball player feeling enthused when double-teamed by opponents. It is notable of this outlook that the athlete can effectively become more anticipatory toward competition and far more realistically mentally prepared.

For the purposes of the intervention this transition shifting attitude was termed “Bring it on” (BIO) attitude. Rather than the ‘trash talking’ context that the phrase is sometimes employed, BIO can be used to recreate the auxiliary functions assumption of PSI-theory (Kuhl and Beckmann, 1994b), by helping to create a conscious representation of an intention in the self-system (i.e. specifying the mindset, action and commitment needed) and also, facilitating positive affect. Athletes were initially introduced to BIO by the investigator eliciting athlete perception of the phrase and asking if they had ever said it previously. A problem awareness-optimistic attitude was established definition using Gallwey’s (1974) surfer analogy and discussing “why does a surfer surf”. Having a sport psychologist orchestrating an affective transition (Kuhl, 2000a) is considered to reinforce learning and change, until the athlete is able
to make the transitions autonomously. Athletes were encouraged to think of a situation soon upcoming in their sporting life that they found difficult, boring or just did not like, such as a tough evening hill run. Athletes were encouraged to explore how they could apply a BIO attitude to aid their performance in these challenging situations. When state-oriented individuals feel good they have better access to the self-representations (Kuhl & Baumann, 2000) necessary to further intrinsic motivation for a demanding activity. In accordance with protocols suggesting the benefits of linking energising cues and breathing (Morris & Summers, 2004; Williams & Harris 1998) athletes were encouraged (session 3) to self-induce affect regulation by combining the phrase ‘bring it on’ with pauses in their breathing control pattern.

5.4 Armour phase

The ‘Armour’ stage of the intervention was introduced to athletes in session 4 which followed the Easter break warm weather training and coincided with a more intense period of track based training sessions. The phase was underlined by the maxim ‘attitude is a decision’ (Ravizza, 2002) which served the purpose of emphasising personal responsibility for training and performance. This was undertaken with the intention of moving SOF athletes away from any functional helplessness (Kuhl, 1981; 1984) caused by preoccupation with the state caused by real or imagined failure experiences and more towards a feeling of controllability over performance outcomes. This phase encompassed the development of skills such as Goal Setting, Self-talk and competition management, the rationale and facilitation of these skills is discussed individually.
5.4.1 Goal setting

The importance of realistic goal setting to performance is well documented in the previous reviews of both the goal setting theory (see section 2.3) and volitional processes (see section 2.5). Similarly, Burton, Weinberg, Yukelson and Weigand (2000) highlighted the great importance of action planning to facilitate the initiation and completion of intentions. Effective goal setting is of particular importance to state-oriented athletes because of their higher propensity to introject to self-alien goals (Kuhl & Beckmann, 1994b; Kuhl & Kazén, 1994b) and their inability to disengage from unrealistic goals (Beckmann, 2002). In addition, significant pressures and anxieties are caused because most athletes tend to make winning and event outcome their highest priority (Burton, 1992). In order to ensure the usage of more beneficial goals it was necessary for athletes to learn to shift the emphasis of their goals. Athletes were initially asked to write down all of their goals to introduce issues such as, goal urgency and action plans through the use of outcome, performance and process goals. It is suggested that such a training programme develops a more resourceful and adaptive problem solving approach (Pierce & Burton, 1998), which has particular resonance with the ability to find creative solutions to challenging situations that is linked with a mastery orientation, self-determined behaviour and access to the networks of creative solutions (holistic representations) contained with extension memory in the self-system (Kuhl, 2000b). Athletes were also encouraged to review their goals set in session 4 with their own coach at their next monthly performance review and to develop their goal ladder that worked backwards from an end goal and split the goal striving process into small manageable chunks (Danish, Petipas & Hale 1995).
5.4.2 Self-talk

Findings from Study 1 demonstrated that self-talk can be a problem area for athletes with dispositions towards ruminating over real or imagined failure experiences when under pressure. Moving beyond the detrimental effects of the brooding type of negative self-talk such as ‘if only I’d paced the first 600m better’, self-talk can also be extremely problematic if athletes have self-internalised statements which they later use for self-talk, yet the statements hold no real intrinsic meaning for them. PSI-theory (Kuhl, 2000a, 2000b) contends that cognitive representations alone do not possess the energy to change behaviour, in other words, when an athlete uses a typical “positive thinking” self-talk statement such as ‘I’m a winner’ or, ‘let’s go’ to improve her performance they will only be useful if they are connected with the self and systems controlling action. Therefore, the self-talk must inspire the necessary affect to facilitate systems interactions. For example ‘bring it on’ is a form of self-talk that has been connected with positive affect arousing capabilities because it is linked with the concept of challenge. An athlete uttering an “unconnected” statement, such as, ‘think like a winner’ to herself, is merely making something of hollow sound, as thought must be for the sake of something and practical (Aristotle, trans. 1908). Self-talk can be effective for regulating affect and developing self-efficacy when linked with emotional properties (Zinsser, Bunker & Williams, 1998). Similar to the purpose of the ‘Armour’ phase of building confidence through solid practical skills, athlete self-talk statements were built on firm foundations using a multi-layered approach. Ravizza’s (2002) maxim ‘attitude is a decision’ was emphasised throughout the intervention to highlight that athlete accountability and responsibility for performance could be enhanced through the establishment of a climate where the athlete were asked to consider what they thought
and felt, rather than be told what to do. In order to facilitate feelings of personal autonomy athletes were asked to verbally list what skills they had developed over the course of the programme. To enhance future recall of their abilities, each skill was written on a luggage label attached to a real tool and retrieved from a real toolbox when the athlete identified that skill (i.e., a screwdriver labelled ‘breathing control’, or a spanner marked ‘balanced performance evaluation’). Athletes were then challenged to close their eyes and create a sentence true to their personal ability about each skill using phrases such as, ‘I always...’; ‘I’m good at...’; ‘I know how to...’; ‘I can...’, or, ‘I like/I love to...’. Through a discussion of what their personal favourite athletes’ best qualities are (e.g., ‘What does Michael Johnson bring to the party?’), athletes were then challenged to describe and investigate their own skills in answer to the same question (what does ‘athlete own name’ bring to the party?), athletes were then challenged to create several personal affirmation on an A1 flipchart and given time alone to write. For example, one athlete generated the statements:

1. I love to run.
2. I have goals I am determined to achieve.
3. I know how to control myself and bring out the positives in me.
4. I always put 100% into everything to bring out the best in myself and make it worthwhile.

Once athletes had prepared their statements they were asked to present them to the investigator and explain the personal meaning of each statement. Athletes were also asked if they agreed that these self-talk phrases were their own words and that they were not the words of the sport psychologist or their coach. Once the athletes agreed the words were all theirs they were asked to sign and date the poster and were
then given it to take home. This process is line with the recommendation that self-
determination should be promoted athletes’ learning to feel and focus on what they
want (Beckmann, 2002), so they have a basis on which to make their decisions or
goals. Undertaking this activity following the toolbox drill was designed to provide
the solid foundations necessary for building beliefs and self-talk that could be
returned to under demanding conditions. Given the propensity of athletes with lower
volitional skills to self-infiltrate (Kazé et al., 2003) it was vital to allow programme
athletes to consider their own skills and beliefs through explicit learning
opportunities. To complement these skills the development of performance
responsibility was further facilitated through competition management training as it is
during competition athletes are alone and required to be self-sufficient in terms of
both mental and physical preparation. Athletes were guided by the investigator to
identify the issues of ‘who, where and what?’ could both aid and negatively impact
their performance at competition (Taylor, 2002). This was used to form the basis of a
race day timetable (Bull, Albinson & Shambrook, 1996) of personal activities to help
build a personal plan for organisation, responsibility and accountability. In addition, if
the athlete knows what they are supposed to be doing at any given time before or
during competition there should be less opportunity for distraction, which may
develop into rumination and debilitating negative affect.

5.5 Autonomous phase

Orlick (1996) suggested competition was the time for an athlete to trust their
body. In session 6 athletes were required to draw together all the key elements of the
previous sessions, such as, self-talk and breathing control and build a race plan
incorporating their ideal mental and physical activities. The finalised plan was used
by the investigator to review all the different performance elements covered in the 18-week period and highlight specifically how and where these fitted into competition.

5.6 Intervention and PSI model

The key elements of the intervention can also be outlined theoretically through Kuhl's PSI model (2000b; Figure 4, see section 4.2). PSI theory is based on the assertion that affect is the underlying dynamic function that mediates volitional action. If an athlete can appropriately regulate their affective mood they are better organised for initiating goal-directed behaviour. For example, an athlete able to maintain a positive mood will be more relaxed in demanding conditions and better able to access the personal beliefs, needs and wants necessary to form intrinsically motivated and self-determined intentions and actions. These properties are especially dynamic in pressure situations where there is less time to think and more room for error in decision making, therefore the athlete can act more intuitively and decisively because they 'stand behind' their intentions. Where the athlete is unclear on their true thoughts and feelings in a challenging situation any resulting hesitation and indecision can cause inaction and/or erratic guesswork (Kuhl, 1981). These detrimental effects occur when intentions are formed without motivational meaning (i.e. intrinsic motivation and self-determination) which underlines the importance of the athlete developing their self-awareness skills through monitoring of their behaviours and attitudes (Kuhl, 2000b). Internal conflict can occur in situations where the individual takes onboard the goals and beliefs of others as their own, ignoring their own preferences or never actually determining if they feel truly supportive toward these adopted beliefs. In these instances the impact of any internal conflicts may well surface when in a pressure situation and disrupt conscious behaviour (Kuhl, 1984).
Alternatively, the athlete may deliberately avoid involving self-related constructs because denying the existence of any threatening issues can create behaviourally facilitative positive mood in the short-term.

The aim of the intervention is to enhance volitional efficiency under pressure by developing affect regulation skills in athletes so that they can form their goal-directed behaviours in conjunction with the constructs that enable motivational meaning and action initiation. Figure 4 showed the link between object recognition (OR) and extension memory (EM). The role of OR is to recognise perceptions in an athlete’s environment and send these objects (beliefs and goals) to EM to be stored as intuitive self-related constructs. When a poor mood (negative affect) is experienced EM will struggle to function effectively and do the job of rejecting beliefs and goals that are incompatible with the athlete’s personal wants, needs and beliefs. Therefore, the athlete must be able to regulate their mood because when in this state they are more susceptible to taking onboard the ideas and beliefs of other people (or even adverts) as their own goals. Most fundamentally these intentions may actually be damaging to their own interests. If the athlete can shift a negative mood then intention memory (IM), which functions as problem solving component can communicate with EM and can make plans based goals that are true to the athlete. This activity is comprised by the auxiliary assumption of PSI (Kuhl & Beckmann, 1994b) which is applied as the key “bring it on” attitude in the intervention programme. In other words, the athlete is able to formulate a conscious representation of a previously an intuitive self-related construct. They can therefore specify the mindset for action and the commitment required in their planning. Turning this into action involves maintaining a functional relationship between IM and intuitive behaviour control (IBC) and applying another part of “bring it on” and the second auxiliary function of
PSI that is, creating facilitative positive affect. An athlete will not be able to initiate their plans if positive mood is inhibited at this stage. Even the athlete has a plan, when faced competitive pressure it is more difficult to enact intentions. Inhibition is experienced as a loss of energy (Kuhl, 2000a) because IM is active but IBC which provides the behaviour for action is inhibited A positive mood must be created in order to end the problem solving process which keeps IM active. By teaching athletes to look for the challenge, rather than view the situation as threatening athletes can generate the appropriate emotions to initiate behaviour. Furthermore, the athlete can be fully aware of the difficulties the situation represents, but able to feel positive and able to think and act accurately based on their intuitively determined beliefs.

5.7 Data Analysis

Both ACS-90 and VCI questionnaire data analysis was undertaken using Wilcoxon signed-rank tests. As the data was repeated measures and non-parametric the Wilcoxon test was used to compare the magnitude as well as the direction of differences between the two groups to determine whether the intervention was effective in enhancing self-regulatory skills. A Mann-whitney test (see section 3.5 for rationale) was initially undertaken on the VCI data to highlight any initial differences between the means in the different conditions of SOF and AOF athlete baseline scores. All other VCI data was also analysed using the Wilcoxon test. Results for both questionnaires and qualitative testimony are presented with concurrent discussion of findings. Concluding remarks are provided in section 5.11.
5.8 ACS-90: Results and discussion

Mean ACS-90 scores over time were analysed in five separate groupings: 1). Scores of all participating athletes (ALL, n = 18); 2). Total action-oriented (AOF, n = 6) athletes; and 3). Total state-oriented (SOF, n = 12) athletes. The total SOF group was further split in two experimental groups: 4). SOF athletes who improved scores (n = 9; SOF CHANGE); and 5). SOF athletes who did not improve scores (SOF NO CHANGE), n = 3.
Figure 7. Development of volitional efficiency scores (ACS-90) over time for ALL athletes
The ACS-90 scores in Figure 7 show an overall improvement for the 18 athletes as a group (ALL) in their ability to escape a state-oriented mode of control. These scores can be examined according to time period. Over the course of the 18 week intervention scores between the baseline and final testing show a highly significant ($z = -3.414, p < 0.001$) increase. This significant improvement is maintained at both 10 weeks ($z = -3.312, p < 0.001$) and 20 weeks ($z = -3.608, p < 0.001$) post-intervention. Significant increases are additionally evident between the baseline and 12 week stage ($z = -2.732, p < 0.01$) and 12 weeks to the Final session ($z = -3.397, p < 0.001$). The significant finding ($Z = -3.397, p < 0.001$) between the 12 week stage where awareness training ended and the final session indicates the key role played by a long-term focus on developing self-awareness. Significant differences are further demonstrated in all groups that showed an improvement over the intervention period (i.e., SOF; SOF CHANGE and AOF) as the greatest mean skill increases occur between the post awareness-final session stages. Mean scores indicate a slight overall fall in scores from 8.44 at the Final session to 8.0 at 10 weeks-post stage before they recover to 8.5 at 20 weeks-post intervention. This trend is also shown in the analyses of each sub-group (see Figure 8) and may be explained by the timing of each testing. The 10 weeks-post stage was during the university summer break and most athletes had moved away from the university training environment for the period. Furthermore, for participants at university athletic level this point represented their post-summer season and a down period in terms of training. This factor is also compounded by 13 of the athletes reporting injury or physical inability to train during this time. The 20-week post stage was during term time and represented winter pre-season, a period of intense training vital for both the winter and summer seasons ahead. These factors may well have all contributed to a fall and rise in scores,
however because the scores at the 20 week-post stage are not significantly higher than scores taken at the final session, this suggests scores as actually stabilising, rather than demonstrating independent increases over time. Over this 10 month period overall group scores did not return to the baseline levels, instead increasing steadily to a point more than double the original scores. This suggests a very robust nature to the self-regulatory skills developed over the course of the intervention and that athletes were able to develop the skills necessary to self-relax or self-motivate under pressure and maintain access to their self-representations. It is also notable that these new skills were sustained over the summer period without the regular support of the investigator, which indicates SOF CHANGE athletes had learned to function autonomously with support and encouragement.

The specific progress of athletes when divided into AOF and SOF groups are shown in Figure 8. It is evident that scores of the two groups rise and fall at the same stages. Mean scores for the 20 week-post stage however indicate a slight variation as AOF scores rose to their highest level, whereas SOF athlete scores have actually decreased from final session scores. Marginally significant differences were found for AOF athletes between the baseline and final session ($z = -2.041, p < 0.05$) and baseline to 20 weeks post-intervention ($z = -2.232, p < 0.05$). Although the biggest mean score difference is seen in skills development between the post awareness stage and the final session, the significant finding ($z = -1.913, p < 0.05$) is comparable with developments between other levels. No significant differences for this group are shown between the baseline and 12 week stage. A highly significant increase is seen for SOF athletes between the baseline and final session ($z = -2.809, p < 0.005$) and baseline to 10 week post ($z = -2.816, p < 0.005$) and 20 week post ($z = -2.914, p < 0.004$). Mean scores double between the baseline and 12 week stage, which is
reflected in a significant ($z = -2.214$, $p < 0.005$) increase. Increases over the six weeks between the post awareness stage to the final session is shown as significant at the $z = -2.810$ $p < 0.01$ level and mean scores almost double again during this time. These findings further indicate the most key developments in SOF athlete self-regulatory skills occurred between the 12-18 week stages of the intervention and a steady increase is shown over the course of the intervention. Most importantly, SOF scores despite showing a slight decrease during the off-season were still being sustained at a high level some five months after the close of the intervention. Figure 8 shows the progress over time of the two groups within SOF. No significant differences were found for the three SOF NO CHANGE athletes over time as scores stayed relatively constant over the entire ten month period. In the SOF CHANGE group the nine athletes showed significant increases at the key points from baseline ability levels to the 12 intervention week stage ($z = -2.214$, $p < 0.05$), 12 weeks to final session ($z = -2.673$, $p < 0.01$), baseline to final session ($z = -2.673$, $p < 0.01$), baseline to 20 weeks post-intervention ($z = -2.682$, $p < 0.01$). This suggests that the large rise in scores seen between the 12 week and 18 week stages is built upon the foundations of self- and performance awareness training that were put down in the initial 12 weeks of the programme. Kanfer and Scheff (1998) emphasised that efficient self-regulation skills could only exist if the individual had learned how to undertake vigilant self-monitoring of both mood and external environment. With an awareness of both mood and thoughts and feelings about that mood that are non-reactive (Goleman, 1996) the athlete can be more realistic when developing their hypothesis and in making decisions because they can avoid getting self-absorbed in irrelevant details (Kanfer & Scheff, 1998). Where the athlete has learned to only consider the necessary and relevant information for action planning (parsimonious information processing [Kuhl,
1984; see section 2.8.1]) it is easier for them avert over-analysis of their decisions or rumination, so they can more easily end the problem-solving phase and focus exclusively on the task at hand (Kuhl & Weiβ, 1994). The ability to develop personal intentions with self-determination is a fundamental skill if an athlete is to perform with any volitional efficiency under pressure because it means the athlete can summon the positive affect to both initiate action and revive action in times of difficulty (Kuhl & Baumann, 2000). The importance of this skill is reflected in Study 2 findings, which suggest that if the developmental work of building self-awareness has not occurred before more specific mental skills are introduced then it may be difficult for SOF athletes to take advantage of these skills later.
Figure 8. Development of volitional efficiency scores (ACS-90) across sub-groups
5.9 VCI: Results and discussion

The VCI data shown represents 14 athletes (see section 5.2.2; AOF = 3, SOF = 11) and findings are presented initially for the group as a whole (ALL) over time. Specific analysis was then undertaken for the AOF group and the SOF group. This SOF group was further divided based on progress over the course of the intervention into two separate groups: SOF CHANGE (n = 8) and SOF NO CHANGE (n = 3).

Baseline differences (see Figure 9) between the groups shown by a Mann-Whitney test reveal AOF athletes possessing significantly higher levels of Decision control (z = -2.182, p< 0.05). Which indicates a better ability to make decisions under pressure (e.g., 'Being able to stop pondering alternatives when a quick decision is due' and 'Sensing clearly whether my decision is correct'). A significant difference (-2.572, p< 0.05) is also shown in the factor of Shifts cost action with SOF athletes reporting more rigid behaviour and difficulty in making changes (e.g., 'Losing time due to repeatedly switching attention when having to work on several things at the same time'). These findings are consistent with the behaviours of AOF and SOF individuals reported in Kuhl & Beckmann (1994). Whilst no significant difference is reported between the initial Self-determination and Spontaneity scores of the groups, it is notable that a marked difference can be seen with AOF athletes reporting higher levels in both areas. Similarly, differences are evident in the higher levels of Intention monitoring, Planning and Emotional Perseverance Rumination indicated by SOF athletes. These activities of constantly thinking out ones’ plans, rehearsing decisions and brooding are all consistent with typical behaviours anticipated of SOF individuals, for example, an over focus on real or imagined negative past, present or future states, rather than the task at hand.
Figure 9. Baseline volitional competence scores (VCI) for all (n = 14) athletes.
Figure 10 shows scores for ALL athletes between the baseline and 10 weeks-post intervention (7 months). Significant differences are reported in 19 component subscales of the VCI indicating increased dispositions toward self-regulatory skills. Most notably a highly significant rise in Initiating ($z = -3.188, p < 0.001$) was found, which refers to the ability to get started immediately with difficult or unpleasant activities. By implication this suggests an increased ability to create and maintain positive affect because difficult/unpleasant tasks should normally cause feelings of negative affect, unless one is able to get 'revved up' by the sense of challenge. This rise is supported by a highly significant decrease ($z = -3.182, p < 0.001$) in Goal neglect, otherwise known as procrastination. Also significant at the $p < 0.001$ level ($z = -3.301$) is decreased External control which is related with the two previous findings as it indicates athletes less likely to only be 'Getting going after someone puts me under pressure' or 'Getting going more easily if somebody else joins in'. Taken together it is arguable these particular scores demonstrate enhanced self-determination as athletes report being able to avoid over deliberation and an increased ability to get started on activities. Kuhl and Weiβ (1994) maintained that if an individual can generate facilitative positive affect then they can draw to a close to their deliberation process as appropriate and avert any paralysis by analysis. The necessary affect regulation skills to aid task enactment also show a significant increase ($z = -2.797, p < 0.01$) in Arousal control down, that is their skill at getting rid of a negative mood. A significant enhancement ($z = -1.855, p < 0.01$) is also reported for Arousal control up (up-regulation). Consistent with the ability to get stuck into a task is increased levels of Implicit attention control ($z = -2.641, p < 0.01$) and lower levels of Attentional distractability ($z = -2.590, p < 0.01$). These skills represent better
concentration levels combined with a more instinctive ability to focus on the task at hand.
Figure 10. Volitional competence scores between Baseline and 10-weeks post intervention for all athletes.
Scores over time further reflect an intervention aim of enhancing feelings of Self-efficacy ($z = -2.858, p < 0.05$) and Mastery ($z = -2.641, p < 0.01$), in other words, increasing athletes' sense of being ready and able to take a task on. Significant decreases at the $p < 0.01$ level are the related areas of Emotional distractability ($z = -2.764$) and Emotional perseverance rumination ($z = -2.691$), which highlight overall lower levels of debilitative brooding on real or imagined failure experiences. This a vital development as research indicates that the ability to get rid of a negative mood is more important than the mood itself (Baumann & Kuhl, 2002; Goleman, 1996). A fall ($z = -2.482, p < 0.05$) in levels of Lack of energy, that is, a lower occurrences of low energy is substantiated by a rise in Motivational control ($z = -2.523, p < 0.05$) as this represents the ability to take an energizing 'bring it on' type approach when faced with difficult tasks. These findings can also be linked to enhanced levels of Emotion control ($z = -2.201, P < 0.05$) which shows athletes making more successful attempts at raising the positive affect necessary to stick with a task in demanding conditions. Similarly, a parallel can be drawn between increased Self-determination ($z = -2.273, p < 0.05$) and a decreased Introjection tendency ($z = -2.002, p < 0.05$) as the more an athlete feels that they can make and trust their decisions (i.e. enhanced access to personal preferences) the less likely they are to take in (introject) the beliefs of others, or even feel they are directed by others. Self-regulated behaviour is only possible if the athlete has been able to connect with the processes that govern action initiation and motivational meaning (Kuhl, 2000b). Finally, a rise in self-rewarding ($z = -2.345, p < 0.05$) behaviours further indicates an overall shift away from self-controlling behaviours that focus only on goal maintenance towards more self-regulatory behaviours.
Figure 11. Baseline to 10-weeks post intervention VCI scores for SOF CHANGE athletes.
Figure 11 shows a wide range of changes at the p < 0.05 level across the 8 state-oriented athletes who significantly increased their baseline (ACS-90) orientation scores. Whilst intervention targets such as procrastination (Goal neglect, z = -2.371), enhancing Self determination (z = -2.371), Self-efficacy (z = -2.100), Mastery (z = -2.176) and Motivation control (z = -2.366) were significantly lessened. Debilitating tendencies such as, External control (z = -2.533), Introjection (z = -2.201), rigid behaviour (Shifts cost action, z = -2.197) and paralysing thoughts or brooding (Emotional perseverance inhibition, z = -254; and Emotional perseverance rumination, z = -2.524) are also significantly decreased. It is also evident that no development was shown in other areas, for example Intention monitoring remained high despite more self-regulatory efficiency occurring across a vast range of factors. It may be that in the process of so many behavioural changes it was still necessary for athletes to monitor and rehearse many of their decisions because full trust in their decision making processes was still developing. Similarly, Spontaneity scores actually fall slightly over the period which is inconsistent with enhanced self-regulation. Results suggest athletes not yet fully ready to trust their own judgement and choose self-regulation over self-control strategies. In this transitional state it is feasible that these former SOF athletes when placed under competitive pressure might choose the self-controlling mechanisms with which are more familiar. Beckmann (2002) suggested that a reactance to intervention should be expected in AOF athletes, but it is also arguable that for SOF-CHANGE athletes learning new methods of volitional control would also over-stimulate intention memory and cause over-deliberation of decisions. This would be especially damaging in individuals who already over-analyse and are quite used to employing self-control behaviours such as denial to alleviate any problems. The scores on the Self-control pressure subscale which depict
the relatively unchanged levels of self-imposed discipline further substantiate this argument.
Figure 12. Baseline to 10-weeks post intervention scores for SOF NO CHANGE athletes.
In the SOF NO CHANGE group (n = 3) no significant differences were shown over time and it is important to note this finding may be related to the small sample size. However, figure 12 shows that there were some interesting developments in the group across mean scores over the MSC programme. It is possible to speculate minor positive progress in several scores including Attentional and Emotional distractability which have both fallen, suggesting better levels of concentration on the task at hand. Increased levels of Self-determination, Volitional self-efficacy and Mastery reflect general improvements in a belief in personal ability. These are supported by improved levels of Self-reward and Reinforcing self-evaluation that is, celebrating small steps in achievement rather than brooding over major outcome goals. Small decreases in feelings of Alienation and Rumination and increased Motivation are also seen, all of which suggest the intervention did impact key areas to a certain degree. During this time, however, scores indicate that this group of SOF athletes effectively increased the level of discipline they imposed on themselves (Self-control pressure) and whilst making some progress in becoming more Self-determined, their Fear of failure scores actually rose. This suggests that these SOF athletes may have become or remained trapped in a loss-of-autonomy cycle (Kuhl & Beckmann, 1994b), which can occur if the individual is over exposed to external control. Figure 12 demonstrates the introjection tendencies of this group to have remained the same throughout the intervention. It is feasible that these SOF athletes may have self-infiltrated the recommendations of the investigator without actually integrating the tenets of the MSC programme into their self-system of beliefs. To a certain extent they may have merely been following instructions, such as maintaining a diary and trying to practice their breathing control without ever truly “buying in” to the programme. If so, the athlete should have experienced internal conflict over doing what they feel obliged to
do and what they want to do. It is likely these resultant uncontrollable ruminations and intrusive thoughts meant the only way for these individuals to deal with volitional impairment was to resort to self-controlling mechanisms (i.e., Self-control pressure) to ensure they at least attempted tasks set by the investigator or attended sessions. When athletes resort to such means for volitional control is can be anticipated that their fear of failure should also increase because they may become even more worried about messing up and “letting down” the investigator. Whilst somewhat speculative in nature this argument has several implications. Firstly, the impracticality of general interventions in sport psychology that do not take individual differences into account. For example, the benefits of self-awareness training are well documented within the literature (see section 5.3.3), yet it is apparent in this study that even a three month training period was not sufficient to enable all athletes to alter their behaviours to those more appropriate for performance success. For the development of volitional efficiency it may be necessary that the specific requirements of each individual need to be explored before interventions can be applied. For example, it would be useful to know whether an individual’s intentions are poorly connected to the systems controlling action or motivational meaning and therefore preventing effective performance because of a deficiency in self-motivation or self-relaxation (Kuhl, 2000a).

Initial baseline differences between SOF athletes when split into the groups of SOF CHANGE and NO CHANGE showed only one significant difference (p < 0.01) between the scores for Emotional perseverance rumination, which is the amount of brooding about failure experiences. As hypothesised, no significant differences were found in the AOF group over the period of the intervention, however, some mean scores are shown to have changed.
Changed scores that mirror self-regulatory performance improvements in the SOF CHANGE group include: increased Initiating; increased Strategic intention control; lower External control; lower Goal neglect; and increased Arousal control of both Up and Down. Whilst these positive benefits are demonstrated, it is also true that over time several skills appear to have been negatively impacted when compared with baseline scores. This is especially evident in the increase of Intention monitoring skills, with AOF athletes tending more towards over rehearsal after the intervention. This is further compounded by increased scores in Planning and Conscious attention control. In other words, more deliberate focusing on tasks where they would normally be somewhat more spontaneous and able to think and act appropriately and with speed. Notably, a small increase in inhibition is also reported.

As results are not significant and reflect the responses of just three individuals any comments are speculative. Nevertheless, it is arguable that the intervention purpose of developing Action-oriented skills in SOF athletes may have debilitated some of the instinctive skills already present in AOF athletes. The training process required individuals to undertake very specific forms of monitoring and awareness training, which may have caused individuals with an already high vigilance a minimal degree of paralysis by analysis, by over stimulating intention memory and thus increasing negative affect and rumination. Findings are consistent with the suggestion by Beckmann (2002) that any explicit direction in self-regulation strategy would cause a reactance in action-oriented individuals as they already possess effective strategies. Such behaviour reflects that AOF athletes' skills were negatively impacted when required to re-learn these skills in a step-by-step process. It is most likely that this disrupted their parsimonious information processing skills and caused them to start involving irrelevant factors in their decisions.
Figure 13. Baseline to 10-weeks post-intervention VCI scores for AOF athletes.
It is evident in these findings that whilst a System conditioning intervention was able to induce significant increases in aspects of self-regulatory efficiency, three athletes did not improve from their original SOF score. It is possible to speculate based on the present findings that the key stages in the intervention either “broke down” or did not occur for these athletes at some point during the initial 12 week Awareness phase, as athletes who developed their skill levels were seen to make their most significant improvements at the end of this phase, suggesting that activity at this time was an important indicator of future progress. In order to extrapolate the facets of the intervention experience for individual athletes and to draw out any commonalities that could be used to help more specifically target athlete issues of development, it is proposed to conduct a follow-up interview study (see Chapter 6). The study will explore specific experiences of volitional skills development, or any lack of development.

5.10 Tracking over time: Results and Discussion

Figure 14 shows each individual athlete’s development of action control (ACS-90 scores) tracked over a 10-month period. All AOF (baseline score of 5 or over) athletes are shown to have increased or maintained their scores, that is, at the 20-weeks post intervention point no individual AOF athlete score was below their original baseline level. Whilst three SOF athletes (athletes: 3, 7 and 13) remained at the same or similar level as their baseline score, at no point did these athletes’ ever score over 2.0. For example, at the start of the study athlete 3 had a baseline score of zero which remained until 20-weeks post intervention whence the score rose to 1.0. Athlete 7 also increased by 1.0 score point, whereas athlete 13 dropped from a consistent score of 2.0 to score 1.0 at the end of the study. In contrast, 9 SOF athletes
are seen to have increased their scores. Most notably, athletes who began the study with baseline self-regulatory ability on a par with the SOF NO CHANGE athletes, such as athlete 6, with a baseline score of zero and athletes' 15 and 18 who scored at 2.0, are demonstrated to have dramatically developed their skills, despite their initial extremely low ability. Results show these particular athletes to have achieved their greatest gains between the 12-18 week stages of the intervention that is, after the awareness training was completed. When explored as a whole, findings further emphasise the importance of affect regulation in developing volitional efficiency. The appropriate management of moods and emotions mediates both self-access (self-awareness) and facilitates goal striving. If an athlete has access to the deep intuitive network of their personal beliefs and preferences then alternative options for action are available in face of failure or setback (Kuhl, 2000a) that do not involve self-controlling and avoidance coping strategies. Without self-access the athlete is susceptible to internal conflict as depicted in the degenerated intentions hypothesis (Kuhl, 1984), whereby individuals with no awareness of their own preferences adopt the beliefs of other people with such zeal they struggle to drop these ideas even when the goals become unrealistic. Internal conflict is experienced as frustration which intrudes on conscious behaviour as preoccupying ruminations and impairs the athlete's ability to do anything at all.
Figure 14. Score development (ACS-90) over 10-month period for all athletes.
5.10.1 Athlete observed behaviour change: Results and discussion

This section will highlight changes in behaviour by considering the athlete perspective. Progress of the 9 SOF CHANGE athletes over the course of the study in particular is supplemented by testimonies describing positive changes in attitudes, behaviours and performance. A State-orientation is associated with a predisposition to ruminate over real or imagined failure experiences (Kuhl, 1984) that triggers a cycle of negative affect and loss of autonomy which stifles action (Kuhl & Beckmann, 1994b). Given the seriously debilitating effect that brooding can have on performance, athletes were asked to reflect the development of their ability to avoid negative over-reflection and being able to get over setback or failure. The importance of using written analysis was most commonly cited by SOF CHANGE athletes in enabling disengagement from failure experiences:

'It really helped to write things down to help me forget about any bad sessions. It also helped to write down good performances to help me focus on my next performance' (Athlete 12, SOF CHANGE)

'Now I am much better able to ‘get over it’ as I look at my poor performances in detail, writing down every part of it, then look for ways to combat my bad results and then forget about it. Also sometimes before a race I have a look to refresh myself on what I am to do new' (Athlete 11, SOF CHANGE)
'When I have a steady run that feels awful i.e. my legs feel like lead weights, I used to get downhearted but now I record the run in my training log, analyse why it happened, learn from it and forget about it' (Athlete 5, SOF CHANGE)

Not only is this related to Ravizza's (1998) contention that journals represent an opportunity for closure, but also the athletes show evidence of becoming more alert to self-congruent information (Kuhl, 2000b), rather than attending to irrelevant details. Perhaps reflecting a developmental difference, two examples from AOF athletes demonstrate more pragmatism in their attitude:

'I realise that if something has gone wrong and I have no control over it, it is pointless to get upset about or brood over' (Athlete 2 AOF)

'Ran terribly recently in a 1500m felt awful but soon after I acknowledged the reason I knew I'd be on fire the next time' (Athlete 16 AOF)

Interestingly, the attitudes of the SOF NO CHANGE group identify both a similar approach to the other groups (i.e., balanced performance evaluation) and show the athlete using language which suggests they feel they have improved in this area.

'Able to take positives from bad races, realise and break down exactly what went wrong and learn from mistakes. e.g. BUSA final: ran tactically poor, but realised what was wrong and how to solve the problem next time'. (Athlete 3 SOF NO CHANGE)
'If I have a training session (steady run) and my calf is sore it takes me a while to forget about it and stop thinking negatively about what might happen in the future, however, I feel I am better able to deal with this situation now and look at it in a positive way. i.e. focus on what I can do and not what has already happened' (Athlete 7 SOF NO CHANGE)

These comments are especially pertinent not only because athlete 7 describes no longer undertaking classic state-oriented behaviours (i.e. an unrelenting focus on real or imagined failure/setback), but also because they are so contrary to the same athletes’ scores over time (see figure 18), which are specifically scored on the 'preoccupation with failure' subscale of the ACS scale. Over the 10-month period no SOF NO CHANGE athlete indicated any improvement in their behaviours, for example, when responding to questions such as:

When I'm in a competition and have lost every time:
A. I can soon put losing out of my mind (AOF response)
B. The thought that I lost keeps running though my mind (SOF response)

An intriguing response is provided by the final SOF NO CHANGE group member athlete 13, who describes using a self-controlling technique identical to the chronological process depicted by Stiensmeier-Pelster and Schürmann (1994), whereby the individual fails acknowledge the root of the performance problem. In other words, they do not attribute it to their own efforts (controllable), rather they blame misfortune or other “uncontrollable” elements. Furthermore, as shown in the example below, the athlete interprets her self-controlling behaviour as a positive
response (Kuhl & Beckmann, 1994b; Ntoumanis and Biddle, 1998) to aversive conditions:

'Yes, I think that I am better nowadays by putting bad performances out of my mind. I tend to try and attribute them to something that is extrinsic and unstable, therefore it is not a problem of mine' (Athlete 13 SOF NO CHANGE)

Whilst such an avoidance coping strategy should exacerbate the loss-of-autonomy cycle (Beckmann & Kuhl, 1994) and result in continued self-controlling actions, this perception may also be indicative of the accepting style of dealing with emotions identified in the emotional intelligence literature. Goleman (1996) highlighted an attitude to moods where the individual accepts the negative mood without accepting responsibility for either its existence or removal.

State-orientation is also associated with cognitions focussed on the past and future, rather than the here and now (Kuhl & Kazén, 1994a), as such a key component of the MSC intervention study was the development of a present focus through physical performance awareness training. When an individual is focussed on the task at hand, rather than real or imagined failure experiences it is reason it is easier to access the self-system and individual wants, needs and beliefs under pressure. A vital element of self-regulated behaviour is the ability to focus on the task at hand and avoid distractions. Kuhl (1984) identified overcoming the difficulty of enactment as the key reason why goals were not achieved. No qualitative differences were shown between the groups in terms of their development in this area, all 18 athletes indicated improved focus, for example:
'At the BUSA champs I took myself away from the stadium and lay down in the changing rooms to focus on my race and what I needed to do' (Athlete 18 SOF CHANGE)

'Now I am more able to focus and block out any distractions. e.g. when on the track doing my strides I can fully focus on what I am doing in the here and now. Also I am not concerned about my opponents. I look at where I have to go. When in a high class race I am able to focus on what I need to do, reminding myself of my goals and using my motivation cards to stay focussed'  
(Athlete 11 SOF CHANGE)

'Since preparing for races, i.e. how I want to act and what I want to do before competition and training I have been able to complete this much better. Before, without a specific plan, I would be distracted and maybe not fully prepared. Now I feel prepared at races' (Athlete 14 AOF)

'If I’m finding it difficult to focus I’ve got the tools that give me a kick up the bum and get me doing the task!' (Athlete 16 AOF)

'Greater ability to channel thoughts towards the race, what I need to be doing etc rather than losing concentration. Able to focus on race plan better and ignore distractions going on around me’  (Athlete 3 SOF NO CHANGE)
'I believe I am [better] because I set a plan of how I will run the race, focussing on myself and nobody else. Thinking about how my training has been good and how much work I have put into my running' (Athlete 13 SOF NO CHANGE)

A subtle difference is apparent in the testimonies of the SOF NO CHANGE group when compared to the other two groups with regard to the way the question ‘Are you better able to keep control of your emotions under pressure’? Both athlete 3 and athlete 13 chose to focus on the word ‘pressure’: (Athlete 7 is not included as the response did not directly answer the question)

'Able to think positively before a race and use pressure positively. To be nervous but to show confidence and not frailty' (Athlete 3 SOF NO CHANGE)

'By not allowing the pressure of others to get to me, concentrating on myself. I put enough pressure on myself, so try to block out the pressure I get from others also' (Athlete 13 SOF NO CHANGE)

Both of these SOF responses appear to reflect self-controlling behaviour, that is, emotions are being avoided and denied rather than being dealt with. Rather than attempt to lower emotions by calming themselves for example, both avoid chose to avoid them, athlete 3 through impression management and athlete 13 by actively repressing them, therefore the level of negative affect remains. Contrast this with the
more active approaches and attitudes of SOF CHANGE and AOF athletes, both of which groups cite preparation as an important factor in their affect regulation:

'I now control my emotions instead of letting them control me. I now know how I want to feel at each stage of a race (before, during and after) and get myself feeling that way' (Athlete 6 SOF CHANGE)

'I can pretty much keep my emotions under pressure using the breathing exercises. By moving around I am also able to maintain calmness and remain focussed without getting too worked up' (Athlete 11 SOF CHANGE)

'I feel more relaxed about things and when they go wrong I feel better prepared to control them, through breathing or knowing there is nothing I can do to prevent it' (Athlete 14 AOF)

'Now I know what works best for me and have a consistent pre-race plan, this keeps me focussed on myself and not others around me' (Athlete 8 AOF)

'Last race I was put in the highest group by mistake, [I] kept control, knew it was still my race, no difference, even an advantage to shine!' (Athlete 10 AOF)

It would seem from the AOF and SOF CHANGE groups that being prepared and having a plan are key attributes in being able to handle their emotions, in other words, by knowing how they want to feel at important points in competition may provide a
‘base’ to return to in times of trouble, rather than seeking to ignore the emotions. SOF CHANGE and AOF athletes cite techniques such as breathing control, pre-race plans and not knowing not to worry about things they can’t control as strategies. A tendency to stick rigidly to unrealistic intentions has been established a behavioural tendency of state-oriented individuals (e.g., Kuhl & Goshke, 1994; Strang 1994). Beckmann (2002) observed the critical matter of being able to disengage from goals when it was no longer realistic to pursue them. A important demonstration of the success of the intervention in compelled more action-oriented behaviours is seen in the SOF CHANGE groups’ observed behaviours regarding their ability to disengage:

‘I can now alter my goals/plans according to form, by looking at why I have not reached such goals and take a different path to reaching them.’ (Athlete 11 SOF CHANGE)

‘I’ve realised that plans/goals need to be flexible as there is never any knowing how others will run or what the conditions will be like. I learnt to change tactics accordingly’ (Athlete 18 SOF CHANGE)

‘My race plans in general are much clearer now, I feel I have more focus in races about what to expect and what to react to. In the past I have sometimes just followed the pack whereas recently I have held back from [an] early pace and tried to run my own race’ (Athlete 15 SOF CHANGE)

This attitude is further exemplified in other groups:
'I was able to push the race on because I felt it was not going anywhere, it was a slow race and therefore I wanted to take the lead to get a better time'
(Athlete 13 SOF NO CHANGE)

'I am able to adapt to any race changes as I have the necessary tools in my locker, both mental and physical' (Athlete 2 AOF)

A key element of reaching a stage of autonomy is based around the ability to trust personal judgement of a situation as state-oriented athletes have greater propensity to acquiesce to the opinion of others (Kazén, Kuhl & Baumann, 2003). The ability to trust personal feelings, wishes and beliefs is indicative not only of enhanced self-access (Kuhl, 2000a; 2000b), but also the role of self-determination in self-regulated decision-making. Being able to act on personal beliefs is tantamount to being able to fully back a personal decision (Deci & Ryan, 1985; Fuhrmann & Kuhl, 1998; Kuhl & Baumann, 2000). A focus of the intervention was based on Beckmann’s (2002) maxim that an athlete should learn to focus on what they feel and want and make a decision on that basis. In accordance with their increased scores SOF CHANGE athletes highlight better ability to recognise and focus on what they want and describe this feeling largely in terms of their athletic performance:

'These days I know when I should run a race and how to run it. I want to win and to run quickly. I know what it takes and how I will feel and I'm not afraid to push to new levels' (Athlete 6 SOF CHANGE)
‘I’m more confident to stick to my own plan. I was not fazed yesterday when everyone sprinted on the first 100m. This was not part of my plan and I stuck to my plan’ (Athlete 12 SOF CHANGE)

‘Through these sessions I have realised that I am capable and will achieve. This has developed a more robust self-confidence that has stood the test of some poor performances as it is built on a belief that I am physically and psychologically ready to perform’ (Athlete 1 SOF CHANGE)

‘Much more confident, especially in the warm up time. Whilst warming up in an indoor centre surrounded by good athletes I was confident in my preparation. In the past I have often been intimidated by people and sacrificed my own plans’ (Athlete 15 SOF CHANGE)

Despite already high levels of self-regulatory skill, several AOF athletes highlight improved recognition and trust of their own feelings:

‘I always go into a race knowing what I want. I now feel I can act on these feelings and get what I want’ (Athlete 2 AOF)

‘Much more confident in my own pace, I used to fall behind other people and let them take on the pace, now I am in front’ (Athlete 10 AOF)

‘I am able to do these things far better. I feel I have the tools to know what I want and thus eventually get them’ (Athlete 16 AOF)
Of particular note in the SOF NO CHANGE GROUP is a comment that offers a real insight into specifically what processes may be occurring when developing self-regulatory skills:

'I am [able] to channel focus more effectively towards what I want to achieve.
Able to trust myself and actually believe my own self-talk' (Athlete 3 SOF NO CHANGE)

In study 1 it was speculated that SOF athletes may be self-infiltrating their self-talk based on the beliefs on others, or simply based on a propensity to over-focus on unrealistic goals (Kuhl & Goshke, 1994). Athlete 3 provides strong evidence in support of this argument, by suggesting that an inability to use self-talk effectively is linked to trust, that is the ability to access personal representations of wants, beliefs, needs and affects.

Contrary to the presented quantitative findings, self-depictions of more action-oriented behaviours and outlook are also clearly reported in the testimonies of the three SOF NO CHANGE athletes. Athletes were each asked six questions pertaining to their observed behaviour change. Of the 18 responses generated for this particular group only one response describes the use of self-controlling behaviour to achieve a goal. This demonstrates something of a paradox as athletes indicate they feel they have developed certain self-regulatory skills, yet at the same time they were reporting at regular stages (in questionnaire format) that their behaviour had not changed. It may be that this particular means of qualitative exploration does not fully reflect the subtleties of volitional development. Therefore, a more individual and specific analysis of individual athlete experiences is necessary. Key areas for examination
through individual follow-up interviews (see section 6.4) permit a more rounded and thorough analyses of the many facets of volitional competence contained within individual VCI scores over time against personal athletic contexts.

5.11 Overall summary of findings

Through a 5-month MSC intervention programme the ability to maintain and enact intentions was significantly increased in nine endurance athletes with a baseline predisposition to rumination and inaction under pressure. These levels were sustained throughout a 20-week post-intervention period which included the summer track and close athletic season. The most significant skills development during the intervention period was shown to occur between the 12 and 18 week stages, which represented an ‘armour’ building phase where athletes focussed on building specific skills such as, goal setting and self-talk in line with their self-related constructs. Examination of specific volitional skills development across the entire group revealed significantly enhanced competence in 26 different areas of self-regulation including, increased Self-determination, Arousal control and Self-efficacy, alongside decreased Rumination, Inhibition and Introjection tendencies. These findings which indicate increased access to self-representations are further supported by athlete testimony demonstrating the development of enhanced ability to get over failure experiences and disengage to limit brooding, self-focus to avoid distraction and emotional control.

Three baseline state-oriented athletes remained state-oriented at the end of the intervention period and showed no significant increases in VCI scores. However, results showed mean increases in fear of failure and self-control pressure indicating athletes increasingly attempting to regulate their action through the use of self-controlling mechanisms, for example the use of self-alien beliefs. This increased
practice of self-controlling behaviours and entrance into a loss-of-autonomy-cycle is supported by testimony indicating that use of these self-control strategies is being interpreted as a positive manoeuvre by the athlete. Six athletes in the group were baseline action-oriented and remained so over the full 10-month period. In this group no significant increases were seen either in level of orientation, or in available mean VCI scores ($n = 3$). VCI findings indicate attempting to develop self-regulatory skills in athletes with already enhanced volitional ability may negatively impact performance by over-stimulating intention memory and increasing negative affect. Taken together post-intervention VCI scores for the SOF NO CHANGE and AOF groups indicate personality change may be accompanied by a transition stage of increased self-controlling behaviours before the individual is fully able to trust their own judgement and make use of self-regulatory processes.

5.12 Concluding remarks

Results show that athletes who were able to develop more efficient self-regulation strategies were also able to develop their skills across a broad range of volitional competencies (shown in Figure 11). Furthermore, both quantitative data and qualitative testimony shows athletes reporting they were both more self-aware and better at appropriately regulating their moods under pressure. Overall findings concur with the contentions that it is not the poor mood of the athlete is in that is so detrimental to their performance. Rather performance is disrupted by the lack of self-vigilance that compromises their ability to get out of that bad mood (Baumann & Kuhl, 2002; Goleman, 1996). It is arguable that athletes in the SOF CHANGE group were able to realise a greater degree of 'intersystemic connectivity' (Kuhl, 2000b) because better affect regulation and awareness cause intentions to be inter-linked to
personal (motivational) meaning and action initiation. In other words, they could create dynamic goals for themselves that were more robust in helping them get started and stick with their intentions in the face of difficulty. The ability to instinctively trust in personal judgement should be especially beneficial to athletic performance as SOF CHANGE athletes could end their problem solving processes with more expediency and also, the confidence that they had made the appropriate decision. This may have also served to enhance their adherence to mental skills training as being able to race without the uncontrollable and dysfunctional mental intrusions (caused by internal conflict) should enhance performance (Beckmann, 2002). This can be related back to the original premisise that poor or inappropriate action planning hampers goal achievement (Burton et al., 2000). From a physical perspective possessing a better trust in personal judgement may have enabled SOF change athletes to benefit from lessened hyper-motivation (Strang, 1994) and trying too hard in races. Where the athlete 'does not know oneself' they are more likely to over-exert themselves and base plans on erratic guessing (Kuhl, 1981), or worse, acquiesce to the anticipated beliefs of other people, both of which may have seriously detrimental consequences in an endurance sport where energy must be conserved.

It is evident that whilst a systems conditioning intervention was able to significantly enhance self-regulatory efficiency in nine baseline SOF athletes, three baseline SOF athletes did not improve their original score. It is possible to speculate based on the present findings that the inability of the SOF NO CHANGE group to develop a sufficient level of self-awareness and affect regulation skills served to impair the impact of the mental skills introduced later in the intervention. Results are consistent with the suggestion that limited self-awareness disrupts the ability to take advantage of other skills (Kuhl, 2000a) and underline the importance being self-
vigilant enough to regulate personal moods. SOF NO CHANGE results appear to have occurred because athletes did not attribute responsibility for mood or performance efforts in line with the accepting style of handling emotions (Goleman, 1996). In this case it is likely they did not take responsibility for mental skills development because they had not linked these skills to performance factors within their control. This conjecture is especially pertinent to the 12 week awareness phase as baseline SOF athlete that did increase their scores were largely shown to make initial increases during the awareness phase. Moreover, their most significant improvements immediately follow this phase, which suggests behaviours during this time as the most relevant indicator of future progress. It would appear necessary to now extrapolate the facets of the intervention process for individual athletes and draw out any commonalities that could be used to more specifically target volitional skills enhancement for particular groups.
Chapter 6: Study 3: A qualitative (interview) follow-up investigation into the development of volitional efficiency

6.1 Research rationale and Research Aims

Whereas the purpose of the intervention study was to test the efficacy of the Mental Strength Conditioning (MSC) Programme in enhancing volitional skills, the purpose of this follow-up interview study is to further explore through qualitative investigation athlete experiences and behaviours in terms of the specific areas impacted, or in some cases not impacted by the intervention. Issues such as self-talk and fear of failure highlighted by the two previous studies are also addressed. Fundamentally, the aim of this follow-up investigation is to explore specifically and individually, the personal experiences of athletes pre-, during- and post-intervention, that is, experiences of learning how to assess performance and learning to act and think in the present moment. This athlete perspective is undertaken in order to highlight any key factors in behaviour, attitude or strategy that may help ascertain why some athletes developed enhanced volitional skills over the course of the intervention, and others did not. Interview responses are examined against findings from the 35 aspects of self-regulation measured by the VCI. It is hypothesised that negative ‘reactance’ by state-oriented athletes occurred because the initial uncertainty of adapting to new techniques caused these individuals to use self-controlling mechanisms with greater intensity in an attempt to gain control over rising negative affect. It is expected that future directions for interventions to better facilitate action-oriented behaviour in all SOF athletes will be suggested based on this in-depth exploration.
6.2 Participants and Interview methodology

13 athletes (3 = SOF NO CHANGE; 8 = SOF CHANGE and 2 = AOF) were interviewed by the investigator within 2 weeks of their 20-week post-intervention debrief session (see appendix 6 for interview schedule). All baseline SOF athletes were invited for interview, while two randomly chosen AOF athletes (one male and one female) were also asked to participate. Interview sessions lasted between 36 - 65 minutes. An interview guide was utilised to guide the research and ensure a standardised approach, however athletes were probed with regard to their personal athletic history, and experiences/attitudes throughout each stage of the MSC intervention. In addition, athletes were asked to comment on their reactions to their individual scores over the course of the programme. Scores were shown to athletes for the first time during a debrief session (see Table 2 and section 6.3) at the end of the 10-month period. The semi-structured interview guide was developed using previous research findings and refinements based on one pilot interview. In line with detailed retrospective interview methodology (Côté, Ericsson & Law, 2005) the interview sought to trace longitudinal skills development by focusing on the recall of factual knowledge about concrete activities. Progressing through a five-phase structure each section of the interview focussed on a specific time/learning period (e.g., Athletic experiences prior to programme; Awareness training; Summer season; Feedback; and Advice for state-oriented athletes). The interview utilised main questions to initiate conversation, such as, “You undertook breathing control techniques, how committed were you to practising a technique that suited you best”? and “What does Bring It On mean to you?”, whilst probe questions were used to elicit specific responses or follow-up any issues raised by the athlete. All interviews were taped and transcribed verbatim by the investigator. Each transcription was coded to ensure confidentiality.
A copy of their individual transcript was sent to each participating athletes for
member checking to verify accuracy and fair representation within two weeks of
transcription. Transcriptions were independently reviewed by the investigator (a
sample was reviewed by the project supervisor) and emergent themes were discussed.
Great care and judgement was exercised in order to clarify the existence and inclusion
of salient features that could be best explored through case study examination (see
section 6.4 for rationale).

6.3 Protocol

Prior to interview and as part of their individual debrief session all 18 athletes
were informed as to the nature of the study and provided background details on
action-state orientation. Individual ACS-90 scores over the course of the intervention
were depicted graphically on computer using a Powerpoint presentation and the
athlete was invited to briefly discuss and contrast their self-regulatory development in
terms of their personal experiences and competitive race schedule over the same
period. Athletes received a personalised hand-out containing their data and supporting
materials for information discussed in the session. This was deemed a key factor of
any follow-up investigation as it was felt confronting athletes with their actual
progress and allowing them time to digest the pictorial data prior to interview would
enable a deeper discussion of what they actually felt had occurred over the previous
10-month process. Previous qualitative data obtained in Study 2 proved somewhat
inflexible for undertaking a multifaceted analysis given the conflicting responses
between quantitative scores and qualitative testimony. For example, if an athlete felt
they had improved at regulating their negative affect, but their own questionnaire
responses regarding their behaviour in concrete but unspecified situations (viz. ACS-
90), or self-regulatory activities (viz. VCI) did not reflect the same result, then specific activities or attitudes could be probed for further detailed explanation at interview. As well as yielding more revealing information, the processes of confrontation and interview may further provide a previously missed learning or self-reflective opportunity that better enables the athlete to examine their own actions in pressure situations.

6.4 Intervention Impact

The aim of the intervention study was to test the assumptions of PSI-theory (Kuhl, 2000b) by testing the efficacy of a systems conditioning intervention. Results have indicated that self-regulatory efficiency can be enhanced by conditioning affect regulation with an athlete's self-system, however in order to specifically extrapolate the impact of the intervention and processes of volitional development as experienced by the athletes, detailed case study analyses of two baseline SOF athletes (one SOF NO CHANGE and one SOF CHANGE) are presented. These two athletes were chosen to reflect examples of how the MSC intervention study both succeeded and failed to facilitate enhanced volitional functioning (see appendices 7 and 8 for transcriptions). Results are presented in the form of two case studies rather than as part of an inductive analysis of all interviewed athletes because the aim of Study 3 was to 'colour-in' the depictions of orientation as shown in the present findings and given in previous research (e.g., Beckmann, 2002; Kazén & Kuhl, 2003; Kuhl & Beckmann, 1994b; Heckhausen & Strang, 1988). Prior research has heavily favoured lab-based testing in order to develop the theoretical constructs of orientation (e.g., Beckmann & Kuhl, 1984; Kuhl, 1981, 1984). The purpose of this research is to build on this understanding and further knowledge of actual athlete cognitions, affect and
behaviours within competitive environments. Smith (1988) contended that case studies can provide dramatic demonstrations of phenomena and furthermore, present the phenomena within its natural context. This may not always have been the case in prior lab-based research with more experimental controls. In the present research, case study analyses permit a deeper exploration of causal links in interventions through real-world attitudes and experiences over an athletic pre-season, track-season and post-season. Such reports should also be beneficial to applied practitioners. Of great importance is the potential of case study research to highlight specifically “where” and “how” behavioural change occurred, or in contrast, where behaviour modification did not occur and/or was rejected. The opportunity is also presented for the athlete to explain their beliefs, actions and decision-making processes in a manner not previously afforded by the quantitative scales used in Study 2. Similar testimony from other athletes in Study 3 is used to provide support for key experiences.

Data from interviews and ACS-90 and VCI questionnaires are supplied to represent a complete representation of each athlete, their background and experiences over a 10-month period. Background information related to each athlete’s strategies are identified and related to the theoretical concepts of action control (Kuhl, 1984) and PSI-theory (Kuhl, 2000). Both athletes entered the study with a baseline score of zero on the ‘preoccupation with failure’ subscale of the ACS-90, yet only one athlete substantially improved on this score, whilst the other athlete barely increased his original level. As such, the experiences, self-perceptions and personal feelings of these athletes toward particular nuances of the intervention may highlight key implications and future directions in attempting to facilitate volitional skills. Athletes presented have been given pseudonyms to ensure confidentiality.
6.4.1 “Anthony” (SOF NO CHANGE)

“Anthony” (Fig. 14 Athlete 3 ; for interview transcript see appendix 8) is a 21 year old student athlete who at the time of being interviewed focussed on cross-country races (winter) and a main track distance of 1500m (summer). Anthony had represented Loughborough University at BUSA tournaments and his country in home-countries International events. At this time Anthony trained with the university distance squads and as he was no was longer involved with a home club coach, he liaised on an extremely informal basis with university coaching staff at squad training. Anthony entered the MSC programme with a baseline score of zero in the ‘preoccupation with failure’ subscale of the ACS-90. At the 20-week post intervention testing point Anthony scored 1.0 on the same scale, which represented his highest score over the entire period. A central feature in Anthony’s baseline VCI scores (see Figure 15) showed high levels of Intention monitoring, which indicated him as being afraid of forgetting intentions and repeatedly reminding himself of his goals in a worried manner. High Fear of Failure scores pointed towards Anthony spending much time contemplating the consequences of not accomplishing goals, whilst relatively high levels of Alienation highlighted an individual who felt detached from his goals, but felt compelled to stick at them rather than face any unpleasant consequences, that is, an over-attachment to the pursuit of unrealistic or self-alien goals. The picture presented by those particular scores is underlined by Anthony’s low scores in the factor of Self-determination, which was not only the lowest score in this subscale of any athlete participating in the study, but also emphasised an athlete who did not feel enamoured toward the goals he was pursuing. In other words, prior to the intervention Anthony was not in harmony with his self-system and arguably possessed limited access to his holistic feelings. Elbe, Symanski and Beckmann (2005) suggested that
an individual must be conflict-free to facilitate efficient self-regulatory processing. That is, in order to be conflict free the individual needs to be able to facilitate positive affect in order to obtain the benefits of being able to access their self-system of personal beliefs wants and needs. Anthony’s scores in both scales reflect a classic depiction of a state-oriented individual (Kuhl, 1984, 1994b), a person who under conditions of stress focuses on the past, present or future states of real or imagined failure, as opposed to options for action. However, Anthony’s low baseline Goal Neglect score was somewhat contrary to the previous findings as it typically indicates lessened levels of procrastination, a type of behaviour most commonly seen in action-oriented athletes. Given his high Alienation score it may be that Anthony made quick enthusiastic starts because of a higher predisposition to self-infiltrate the beliefs and goals of others, which provides him the necessary confidence and energy to undertake a goal. Anthony’s post-intervention VCI score, also seen in Figure 15 are discussed within the context of Anthony’s personal reflections on his development over the intervention period.
Figure 15. "Anthony": Baseline to 10-weeks post intervention VCI scores.
Related to his athletic behaviours prior the baseline testing and participation in the MSC study Anthony retrospectively described the type of athlete he felt was during the winter cross-country season 2004-5, just prior to the intervention:

"Probably quite a worrier I would say, quite a negative one. Little things would distract me... I tried to focus, but often I was just kidding myself really. Not a terribly mentally tough athlete, it tended to be things would affect me and that would be the end of it".

At this time Anthony was receiving limited coaching and he was free to devise his own plans for competition, however his preference for external control was explicitly stated:

"It would have been good to have someone there... just someone to say, look this is want I want you to do, this is how I want you to do it, I want you thinking about this and this... giving you a motivational talk... and giving you advice and tactics".

These comments do not suggest an athlete wanting to be self-sufficient, Anthony is asking to be told what to do. This serves to emphasise Anthony's leaning toward self-controlling mechanisms of volitional control depicted in the two scale scores. A key factor in state-oriented behaviour is the tendency to subscribe to the beliefs and ideas of others, rather than trusting self-judgement (Kazen, Baumann & Kuhl, 2003). However, Anthony felt that at this time he was not affected physically by negative
thoughts and feelings towards an upcoming race, but described the detrimental effects on his performance at competition:

“I don’t think I knew about it affecting me, but it must have done. I would just start doubting myself and then it would be like, well I can’t beat him, he’s got a better time than me. So already I’m down to 4th position, so now I’m fighting for fastest loser before I’ve started... then [in the race] the leaders would go away and it would be like, yep, this is how I thought it would go”.

Anthony’s depiction of his typical approach to competition underlines two levels within a high propensity to become preoccupied with real or imagined failure experiences. Firstly, Anthony demonstrated cognitions disassociated with the here and now (Kuhl & Kazén, 1994a), through an over-focus on imagined future failure and secondly, experienced a feeling of satisfaction when his negative prophesy became real. This also provides a real world example to complement VCI scores that highlighted an athlete with a intense focus on how it would feel to fail. At no point does Anthony describe looking for an action alternative, or thoughts on how to remedy the situation. Anthony explained he most typically utilised self-talk in pressure situations when attempting to stop or control negative feelings:

“I’d try and self-talk my way out of it, just sort of try and blag that I was being stupid you know, ‘Come on!’, positive thinking and all that, but a lot of the time it didn’t really work. I didn’t really believe it and I was just saying it for the sake of it, or to try and focus myself, but it never really had the desired effect.”
Anthony's admission that self-talk was being used for 'the sake of it' is further confirmation of his feelings of Alienation, previously seen in his written testimony in Study 2 (see section 5.10) where Anthony described saying positive sentences to himself but not always believing what he was saying. This finding is also in agreement with results from Study 1 showing similar levels of self-talk between SOF and AOF athletes and supports the postulation that SOF athletes utilise self-talk not only because that what they think they should do, but also that their self-talk is based on self-infiltirated alien goals or statements. As such, the words are rendered ineffective because they are not true to the athlete's own holistic self-representations. Anthony was open in stressing through both written and verbal accounts that his self-talk was a 'blag', that he was trying to trick himself. State-oriented individuals are reported to attempt to use self-denial to 'escape' into positive affect (Kuhl, 2000b). Anthony's behaviours in these situations further highlights his sense of Alienation and his tendency to take on board the beliefs or thoughts of others through his self-talk. It is possible to speculate that Self-denial can be a rejection of reality, thus positive affect generated in this self-controlling manner should circumvent any need to access the self-system for ones own beliefs and needs. Moreover, Anthony's own belief that at that time he was more focussed on not 'messing up', rather than being focussed on doing well in his athletic performance is additionally supportive of an the picture presented by both VCI and ACS-90 scores of a predisposition toward inaction under pressure, which is caused by constant rumination. Anthony's attitude in fact exemplifies a performance-avoidance outlook (Elliot & McGegeor, 1999) depicted in the trichotomous achievement goal model whereby the athlete is most focussed on the avoidance of normative incompetence, that is, it is acceptable to perform poorly as long as he does not perform the worst in the group:  

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“Rather than wanting to do well ‘cos I wanted to win, or ‘cos I wanted to achieve a goal, it was more to perform well so you weren’t performing badly... Just like the fear of failure really, you didn’t want to be last, you didn’t want to be knocked out sort of thing, so you weren’t aiming for the top, you were aiming to be just better than the worst case scenario.”

A key feature of the MSC intervention was the 12-week awareness training phase. Kuhl (2000a, 2000b) suggested that some individuals may not be able to later take advantage of any self-regulatory skills training without prior achievement of self-awareness. Similarly, Lovell (2004) considered the first aim of self-regulation to be self-awareness, whilst central to PSI-theory (Kuhl, 2000a) is the focus on transitions between stages. For these reasons the awareness stage represented the largest component of an 18-week intervention, it is therefore possible to speculate that development and individual approach during this time is indicative of the progress an athlete ultimately makes in terms of enhancing their volitional skills. The first steps of the awareness phase involved undertaking self-monitoring to build self- and performance-awareness. Anthony struggled with both forms of evaluation, firstly questioning the numerical analysis of the daily Professional Attitude log, as he felt unable to sum up his ‘mood for the day’, or ‘quality of breakfast’ for example, in a single numerical value. When evaluating his training or competitive performance Anthony felt the scores did not help him distinguish between his effort, which he felt was always maximum and the actual quality of the session. Similarly, for the more detailed performance evaluation sheets Anthony described these as “almost an impossible to task to fill out”, again citing the inadequacy of the evaluation to cope
with the nuances of his personal experience, for example, when evaluating the positive and negative mental aspects of his performance he explained:

"I'm just training here, there's no mental involved, unless it was a really hard session and I was having to push myself towards the end, but again, steady runs and easier sessions were just... what mental is there? I'm just going for a relaxing run."

In denying that there is was mental element involved in training runs, Anthony demonstrated an inability to find the challenge in a situation or task to make the activity more personally meaningful to him. This attitude is also reflected in Anthony's low VCI Self-determination scores. Logan (1988) suggested individuals able to find manageable challenges in difficult situations are better able to avoid brooding and identifying themselves with misfortune. It is hypothesised (Kuhl, 2000b) that individuals lacking a creative mindset, that is, the ability to engage associative connections amongst implicit self-representations, will struggle to deal with negative affect. Furthermore, the inability to locate subjectively enjoyable challenges (Csiksezentmihalyi, 1988) is linked with difficulties in developing intrinsic motivation and can be suggestive of a self-system stunted by denial (Kuhl, 2000a). Anthony's lack of self-determined action is additionally exemplified in remarks concerning other aspects of performance evaluation:

"The technical was just the same all the time, I didn't think there was any difference between my sessions... in one day I've got a heavy leg, so maybe the style wasn't as good, but to specifically say my shoulders were a bit tense,
my knees weren’t as high... I found it difficult just being able to differentiate between the days."

It would appear Anthony generally rejected the whole process of monitoring due to difficulty. Indeed, all interviewed baseline state-oriented athletes involved in the study acknowledged the difficulties inherent in systematically categorising, describing and analysing their performance. However, overall qualitative findings (section 6.6.1) for the SOF CHANGE group showed that the athletes that specifically overcame this difficulty and “made” awareness training work for them by developing intrinsic motivation toward the task were the same individuals who increased their volitional skills and ability to enact intentions (ACS-90 scores). The rejection of self-monitoring based on difficulties of classification is mirrored in baseline state-oriented athletes who did not improve their self-regulatory ability (section 6.5). In essence, Anthony regarded the awareness phase as “unhelpful” and it is feasible that he was only completing the monitoring sheets because he had self-infiltrated from the investigator that it was important for him to do so, rather than being actively committed to the task:

"...Sometimes you’d just put things for the sake of it really, just to fill in the form and it wouldn’t really be that useful. I’m not convinced it did sort of help any feelings that I had or [help me] recognise my thoughts, ‘cos it didn’t change me when I was training and it didn’t change me during the day ... there’s sort of external factors which can affect your mood and that sort of stuff can affect everything you do, rather than what I want to do... [Training] sessions depended on the session."
Anthony’s focus on the influence of external factors as being a key reason behind his limited success with self-monitoring echoes Stiensmeier-Pelster and Schürmann’s (1994) chronological model of psychological processes based on attributions of failure. In other words, Anthony’s over identification with his misfortune at having to complete a seemingly unworkable performance evaluation can be directly traced back to his assumption that his ‘failure’ was uncontrollable (i.e., Anthony was greatly bothered because he couldn’t score his daily mood at 4 out of 5 as he lived with rowdy non-athlete housemates who made so much noise late at night that he would end up in a bad mood just before he went to bed and score his mood at 2 out 5). In terms of completing the sheets Anthony may have become functionally helpless (Kuhl, 1981) based on his preoccupation with the state created by experiences of uncontrollability in daily life. By choosing not to admit the reality of the situation, that is, considering his difficulties with evaluation as a controllable factor, a cycle of ruminative brooding continued without Anthony ever learning how to handle similar situations. Limited efforts were also seen in other areas of the study, for example, Anthony perceived his commitment to finding and practising a breathing control technique that worked for him as “average”, claiming he found it more annoying than relaxing:

“I could never relax doing it... It was like putting life on hold, so everything had to stop around me whilst I sat there and counted my breaths, which was a hassle... You just put things on hold and end up frustrated even more because I’m quite active you know, mentally and physically and just to be sitting there doing nothing just thinking about breathing...[I] just couldn’t do it.”
An inability to relax under demanding conditions means the individual is prone to uncontrollable ruminations and unable to facilitate the positive affect necessary to access the self-system (Kuhl, 2000b) and enable intrinsic goal directed action. Anthony's difficulty in finding a subjective challenge in the self-monitoring activities was also seen in his approach to practising other mental skills. Anthony described using techniques such as breathing control only in competition and saw no link between practicing skills in a training environment so they would be useful in competition:

"No. Only in races, 'cos in races you tend to be on your own a bit more and it's a bit more important, whereas training wasn't. If you had a bad session it didn't really matter 'cos there's always next time, whereas a race there wasn't a next time... so you tend to try a little bit more there."

Without the ability to adequately relax it is possible to speculate that Anthony would struggle to access his self-system, this situation was further exacerbated by his differentiation between competition and training, which suggested Anthony did not necessarily train for competition, that is, his attitude depicted in interview suggests he would have been unlikely to attempt to simulate race conditions in training. It is also apparent with this approach Anthony was entering races with a greater sense of pressure, because he did not perceive competition as just another race, it was a big deal. The performance of state-oriented athletes has been demonstrated to suffer under conditions of frustration or threat (Kuhl & Beckmann, 1994). A fundamental feature of the MSC intervention was a 'bring it on' attitude which was devised as a mechanism to generate the auxiliary functions of PSI-theory (Kuhl, 1999b) by
facilitating positive affect whilst helping the athlete generate a conscious representation of the necessary mindset for action under demanding conditions. Despite self-reported issues in believing his own self-talk statements, Anthony was extremely positive about using a ‘bring it on’ attitude and claimed it was something he had definitely been able to apply successfully:

“Yeah, I think it was actually because I could apply this to everyday life. If you said that [bring it on], that was almost like bells ringing, c’mon... the edge you needed to sort of go for it really and it helped to give to you confidence as well. It’s quite funny, just by saying that you could sort of convince yourself that you’re ready for it and you start to feel confident about it and you’re like, yeah, okay then, let’s give it a shot!”

Development of a ‘bring it on’ attitude proved the most relevant activity to Anthony during the 12-week awareness phase. His personal assessment of the 12-week awareness training phase is neatly summarised in his response to the question, did you learn anything about yourself during the awareness phase?

“I think I could probably see myself down on paper a little bit, but it was more in numbers than anything else, or just certain words which maybe I knew in the back of my mind anyway. I’m not sure there was any clear statements or facts there that I could look at and think wow, that’s me! It was just, I don’t do this type of thing, or I do this and I’m like, yeah well I know that already.”
Most pertinent in Anthony's assessment of his awareness training was his suggestion that he was already aware of the detrimental elements in his behaviour and that examination of this information did not cause a reaction that made him want to change these behaviours. This statement and reported consequence is utterly divergent to the findings observed in those baseline state-oriented athletes who did develop enhanced volitional ability (see section 6.6.1), or in action-oriented athletes. Members of these groups emphatically report being so alarmed by seeing their data generated from both self- and performance monitoring, that they felt compelled to take make changes that would improve their situation. Ostensibly, whilst Anthony appeared alienated from his own behaviour, this position can also be explored in his thoughts and feelings towards the mental skills he had gained over the course of the entire 5-month intervention programme.

"I think I knew that I'd gone over those tools, but I still wasn't happy with using them, or I didn't know how to, or I didn't believe them when I did use them, so, I think I was still running on the usual thoughts. I wasn't thinking. yeah, I've practised this before, I've done this and now I can adapt it and use it in competition, it was just like well yeah, we did do that, but you know... I never really got into sort of using it."

Anthony's statement confirms the suggestion that, firstly, he did not practice his mental skills in a training environment, but still attempted to use them in competition. Because the skills were not developed enough to rely upon, results under pressure were at best underwhelming and he became frustrated with his mental tools, as he believed they did not work for him. In the penultimate session of the intervention
Anthony developed new self-talk affirmations based on activities orchestrated by the investigator to facilitate affective transitions (Kuhl, 2000a). This was undertaken to enable the athlete to access their holistic self-representations and beliefs so that self-talk statement could be built on more solid groundings, rather than self-infiltrated from the beliefs others. Whilst Anthony actually expressed a trust in these statements he still cited the influence of factors he perceived as uncontrollable as influencing the success of his self-talk when in demanding conditions.

"I think when I wrote them, yes I believed them, but again when you’re in competition you’re away from it and there’s external factors affecting you it goes of the window... So I wasn’t able to pick those out and use them effectively... Come the race situation there’s always things that took me away from that and I was always thinking about other things."

It is arguable that a lack of practice and familiarity with self-regulatory tools introduced through the intervention meant Anthony reverted to (self-control) techniques he had used previously. An increased use of self-controlling strategies in these circumstances can be anticipated as it is likely Anthony interpreted using self-control and being harsh on himself to get things done as a positive and beneficial manoeuvre (Kuhl, & Beckmann, 1994b). This activity is also reflected in VCI post-intervention scores (see Figure 15), where a decrease is shown in Anthony’s levels of Reinforcing Self-evaluation as he became even less likely to reward himself for his good efforts. This reasoning is given considerable weighting through increased levels of Emotional Perseverance Inhibition, which indicated more instances of mental ‘freezing’ after failure or setback for fear of more failure and additionally, higher
levels of Emotional Perseverance rumination, otherwise known as brooding over misfortune. Brooding further increases negative affect and sustains the loss of autonomy cycle (Kuhl & Beckmann, 1994b) triggering self-controlling activities, further negative cognitions and thus, more negative affect. At the same time Anthony’s Attention distractibility scores rose which indicated lower levels of concentration under pressure. Moreover, Anthony’s levels in the key areas of Intention Monitoring, Fear of failure and Goal Neglect remained stable over the intervention period, which corresponds with unchanged ACS-90 data over the same period. Yet, as Anthony most likely viewed his self-controlling behaviours as positive it is not unexpected that he would have felt he had actually improved over the course of the intervention:

“I think for the majority yeah, I felt like I was going into competition and I was sort of as mentally prepared as I could be, compared to maybe previously... Even though sometimes I’ve said I didn’t really believe it, I knew the sort of emotions I should be going through and on occasions yeah they did help.”

“I think I had improved because I was aware of things in my psyche that I wasn’t previously aware of, or if you’ve never really looked at certain things or broken them down. But now I am aware of certain things and I could draw on them whenever I needed to, adapt them slightly and I suppose it really did help.”
Whilst Anthony's unfamiliarity with certain mental skills techniques did cause him to revert to self-controlling techniques he felt more comfortable using, his sense that he had improved his volitional skills in some areas is somewhat supported in the post-intervention VCI scores. Both Self-determination and Volition Self-efficacy scores showed increases, which indicates Anthony had developed greater faith in his will power and ability to see things through. Surprisingly, given Anthony's comments and actions regarding the awareness phase, lower levels of Alienation are demonstrated, whilst his Effort avoidance also had fallen, that is, scores showed that after 8-months Anthony was expressing a greater preference for finding the challenge in a situation. However, once outside of the university training environment during the summer break, Anthony described returning to old habits:

"I wouldn't say I was 100% fully committed to it. Now and again I might draw on certain things that just seemed right at the time to use, but I don't think it was ever a time where consistently every race I went into I was using those tools effectively and they were helping me perform better."

At the 20-week post intervention stage Anthony was debriefed as to the nature of the intervention and confronted with his ACS-90 (preoccupation with failure) scores which had risen from zero to one over the period. Consistent with his attitude to self-monitoring over the 10 month period Anthony described feeling relatively unchanged by the experience of confrontation:

"I probably thought that I didn't expect to see much progress in myself... I thought I'm filling out these questionnaires and I seem to be filling out the
same answers time after time. I still believe the same things and I still think the same things, but some things had improved.”

Prior to interview Anthony had at least one week to consider the data he received in the debrief session. Anthony was asked if receiving this information had any bearings on his thoughts, feelings or running:

“I’m not sure it’s been a wake up call, sort of like this is happening, or this has happened. I think I’m very much the same sort of athlete, although subconsciously maybe I’m doing things that I don’t realise that I was doing.”

Anthony’s statement about his feelings at the end of a 10-month period is near identical to the feelings he described about based on personal data yielded through self-monitoring in the earliest weeks of the intervention, that is, what he saw about himself was not enough to cause him to change his actions, largely because he was already aware this information and had accepted it as part of his personality, believing external and uncontrollable factors were the actual causes of poor performance under pressure. Before drawing any conclusions or addressing implications for future intervention programmes, it is important to briefly compare and contrast Anthony’s experiences and attitudes against two other SOF NO CHANGE athletes who undertook the intervention.
6.5 SOF NO CHANGE: Discussion

The main link between members of the SOF NO CHANGE group (including Anthony) was their reported experiences of difficulty with the various monitoring sheets during the awareness training stage and a rejection of the process without any serious efforts to make the evaluation sheets work for them:

"If you put down number 4 for one day, you could put maybe a 5 for the next day, but it could have been the same thing... For attending lectures you either attend or you don't, whereas for mood and things it's quite tricky to determine... Like the technical thing when you're running, you're obviously doing the same thing every time... the hardest thing was to pick things out."

(Athlete 7)

"I found it a bit sort of straining having to do it everyday and rate yourself on similar things... what I think is a healthy diet might not be healthy for someone else, so it was a bit sort of subjective and just what you thought. Whereas I could have rated the training sessions as being really good, but my coach might think, no you didn't look very good there."

(Athlete 13)

In addition to offering much support to the experience and attitude of Anthony, Athlete 13's statement provides an example of an SOF individual immediately deferring their own performance analysis and beliefs to their coach's opinion. This suggests a situation where self-alien beliefs could easily be adopted by the athlete. The same athlete describes a further sense of alienation from her own performance analysis:
"We'd gone to South Africa to do the warm weather training and we'd all sit down and do them [evaluation booklets] together. Sometimes it was similar things, like we always looked at technique. I could imagine what I wrote a lot of other people had written similar things, sometimes it didn't feel it was just for me, it was like for everybody."

These issues reported by the SOF NO CHANGE group are most striking both in terms of assessing athlete development and enhancing future interventions because no other athletes in any group report the same experiences of difficulty. The development of action-control was not facilitated by intervention in Anthony, nor in Athlete 7 and Athlete 13. Results show that in certain instances intervention may have caused a reactance that lead to the athlete utilising extreme self-controlling behaviours when under competitive pressure. Qualitative analysis suggests any negative issues in developing a strong underlying level of self- and performance awareness will greatly impact the success of any following mental skills training. The athlete must be free of self-conflict (Elbe et al., 2005) in order to function with self-regulatory efficiency. It is arguable that Anthony's postulations that he was already aware of his poor behaviours (e.g., diet, attitude) indicate a highly conflicted athlete, with a highly compartmentalised approach to self-knowledge (Showers & King, 1996). In other words, Anthony's claim that he was actually already aware of issues that when monitored on a daily basis showed up as un-helpful behaviours, suggests that the information he believed about himself (his self-aspects) were organised in negatively evaluated compartments (e.g., under athletics, he might have 'worry' or 'stressful'). When beliefs about athletics are accessed they would literally flood over him and
paralyse his decision making and actions. Findings are in accordance with the suggestion (Kuhl, 2000a; 2000b) that state-oriented individuals would benefit from an extended period of training for self-awareness and self-expression. However, the awareness training phase of the MSC intervention programme lasted three months, therefore, it can be reasoned that state-oriented athletes may need a particular type of awareness training that compels enough affective reaction for the individual to feel moved to make alterations to their behaviours. Kuhl (2000b) suggested that self-expression of negative or positive affect is associated with an activation of the self-system. Findings indicate that state-oriented athletes who did not develop enhanced volitional functioning opted to circumvent their self-system in order to engineer a move into positive affect. This was achieved through a general rejection of the self-monitoring activities and a denial of any potential problem areas. These behaviours have some parallels with avoidance coping, in particular the use of blunting (Miller, 1980), where all information regarding a stressor is actively avoided. Access to the self-system was therefore not developed in the awareness training phase as self-awareness was effectively evaded. This resulted in an inadequate “infrastructure” which provided no grounding on which to build the later specific mental skills training.

6.6 “Liam” (SOF CHANGE)

“Liam” (Fig. 14 Athlete 6, for interview transcript see appendix 7) is an 18 year student athlete who at the time of interview was an 800m specialist who had represented Loughborough University in BUSA events and also competed in Great Britain AAA (Amateur Athletic Association) Under 21 events. In his first year at university Liam still had a very strong connection with his home club coach with
whom he discussed his training programme on a weekly basis, Liam considered this relationship a very equal partnership and indicated that the last decision would always be left with him. Liam’s baseline ACS-90 score of zero is comparable with Anthony’s baseline ability to enact intentions. Similarly, Liam maintained a zero score at the 12-week testing stage, however by the final week of the program Liam’s score had risen to 7 which was maintained throughout the summer break and had reached a high of 9 by the 20-week post-intervention stage. The similarity in initial skill levels and scores after the awareness stage indicates any differences between the attitudes and efforts of Liam and Anthony during this time may highlight important factors in the development of self-regulatory skills.

Liam’s baseline VCI scores shown in Figure 16 reflected high levels of Self-determination and Volitional Self-efficacy and Mastery, which are not necessarily typical of the profile of a state-oriented individual, as these high scores suggested a secure athlete with great belief in his own ability and trust in his own decisions. Prior to his involvement in the study Liam described himself as a chatty and outgoing person, even a confident runner, but considered that under pressure he felt he struggled to take decisive action:

“I was a bit pessimistic to try something that I thought would work, that I hadn’t previously discussed, in case... just in case I failed for myself really and lost a race which I knew I should have won, or ran a time which I knew I could have beat... I was a bit worried about looking different or trying something new.”
Whilst certain elements of Liam’s VCI scores point towards an assured personality, Liam’s depiction of a dislike of standing out and failure was apparent in his very high baseline levels of Fear of Failure and his high usage of Self-controlling mechanisms, which measures reported use of techniques such as forcing himself to undertake tasks and viewing himself harshly. This inability to give himself a ‘pat on the back’ for good efforts is further supported by a low score in Reinforcing Self-evaluation.

The coaching relationship Liam described as a 50-50 partnership coaching relationship may have been especially strengthened by Liam’s reported low VCI score levels of Introjection tendency and low susceptibility to External control, that is, Liam was not an athlete who would readily defer decision making to a coach. Similarly, in terms the competitive environment Liam did not feel he was ever negatively influenced by the activities of other athletes or the presence of certain individuals in his race, he did however describe his focus at that time:

“I was more focussed on messing up than I was of achieving better. I think I was negative and sort of like dreamed a bit.”

Liam’s reported central focus on not making errors, whilst dreaming about the future is fully exemplified by his high VCI scores in Fear of Failure and Positive Goal Fantasies, which indicated Liam was paradoxically preoccupied by both how it would feel to fail and how good it would feel to succeed. This finding perhaps best encapsulates Liam’s pre-intervention data which delineates positive and negative extremes within his volitional ability. Whilst Liam was able to access his system and in key areas held a good awareness of his holistic representations of wants and beliefs, it was also true that he experienced some self-conflict that meant under pressure he
became inhibited and could not access his holistic feelings and generate the necessary positive affect and self-determination or intrinsic motivation to overcome the inhibitions. It is has been previously demonstrated in this review that other athletes (SOF NO CHANGE GROUP) with similar low baseline ACS-90 scores had difficult experiences with self-monitoring that lead to a point of near, if not total rejection, however, in keeping with the approach taken by members of the SOF CHANGE group Liam was both able to utilise the various evaluation sheets and acknowledge the data yielded:

"Doing them quite constantly knowing I was doing them everyday, I think that helped to change my point of view of looking at it. I thought it’s time to stop being silly, ‘cos I know I put a lot of effort in and I know I put all the effort I could in... So I think with it sort of progressing I could do it more honestly."

"I like to have a number of a graph, or something that is in front of me, so putting numbers or comments down, it’s so much more prominent to the eye. Rather than thinking in your head I’ve drunk enough water today...you know, I’ve had a glass here, a bottle of water... but when you sort of totted them up and put a number in, you think, well actually I didn’t have enough."
Figure 16. 'Liam': Baseline to 10 weeks-post intervention VCI scores.
In particular Liam stressed the awareness training process had helped him in both in terms of his observing his attitude toward himself and also, how he had developed into a more complete athlete:

"A thing I've always struggled with is mistakes. I think it's a mistake, so it's wrong - so you dismiss it. Whereas now I'm mature enough to understand where it's a mistake, where did it happen and what caused it.

As with self-monitoring, a commitment to practising breathing control exercises and finding the best technique for themselves during the awareness, may have presented a pertinent marker in terms of ultimately enhancing volitional ability under pressure. The ability to self-relax in aversive conditions is considered to trigger the process of down-regulating negative affect necessary for self-access in state-oriented athletes (Kazén, et al., 2003. As such development of breathing control provides many practical advantages. Moreover it is hypothesised that the experience of self-regulation and success is especially beneficial for state-oriented individuals (Steinsmeier-Pelster and Schürmann, 1994) to help break the cycle of passive behaviour and rumination. Liam was particularly enthusiastic about developing this skill in a practice environment so he would be able to utilise it in competition, he described how his commitment had progressed over the 10-month period:

"At the beginning I think I was a bit lazy in the morning and I'd do it if I had the time, rather than make time to do it, but in the evening I was fairly consistent. Whereas now it's moved on to make sure I do it. I make sure I get
up 10 minutes earlier and go to bed 10 minutes earlier. I've made sure I fit it in, rather than trying to fit it in."

Liam explained his reason for commitment was definitely not because he had been asked by the investigator to try breathing exercises, rather:

"I had nothing to lose, I've gotta give it a good bash to see if it does work, or if it doesn't work and I think the more I did it...I did feel a bit better, especially like now as I get up and find times to fit things in without rushing around and it generally makes you feel better, a bit better prepared for the day, a bit more energised."

An important premise of the MSC intervention was the use of a 'bring it on' attitude as this phrase was used to represent the facilitative auxiliary functions of PSI-theory (Kuhl, 1994, Kuhl & Beckmann, 1994b), which supports research findings that showed enhanced performance could be induced in state-oriented athletes by loading difficult goals into intention memory (IM), whilst supporting the activation of intuitive behaviour control (IBC) by up-regulating positive affect (Kuhl & Weiß, 1994; Oettingen et al., 2001). In other words, using a 'bring it on' attitude about a tough intention embodied the creation of a conscious representation of the intention (i.e., specified the mindset, action and commitment required) and made possible facilitate positive affect. Liam described how his use of a 'bring it on' attitude had developed in his athletics:
"I used to think to myself, I've been running 50 minutes I'm near the end now, I know it's hurting, so if I ease down for 30 seconds or a minute and then give it one last go... Where now it's like, take it by the scruff of the neck and think hang on, I've got 10 minutes to go, so I'm gonna make sure this 10 minutes is the hardest of the run and little things like that in training I've noticed."

The first aim of the MSC intervention was to enhance self-awareness with by aiding athlete recognition of self-congruent information (Kuhl, 2000b), so as to avoid ruminating about irrelevancies beyond their control. In addition to depicting his changed attitude in training, Liam was able to specifically illustrate what he felt he had learned about himself during the awareness training phase:

"That was when I sort of started to believe I was a bit too harsh on myself... that I didn't give true reflections of myself. That was one massive step I took and it was quite unusual for me to take it all in one go... to not be so hard on myself and understand I do have some character traits that do allow me to do my best... it's not like I constantly needed to keep bullying myself and say 'well that could have been better'. So that was the big big thing I learned about myself."

This observation regarding Liam's negative behaviour toward himself appeared to have caused a change in behaviour as post-intervention VCI scores show a rise in Self-rewarding behaviour and a large increase from low to high levels of Reinforcing self-evaluation. Not only had Liam learned to reward himself for good efforts, he was also able to recall the steps he had taken to move closer to his goals and feel proud of
each achievement. Other progress was identified by Liam, such as becoming less distracted, the attainment of a present, here and now focus:

"I can generally clear my mind a lot better now, I can just get rid of a lot of things that aren’t important, I mean before things like the wind... it always used to be the wind. I’d think oh! It’s really windy down the back straight, it took me a while to realise that I was doing it, but I didn’t bother with it anymore. It just seemed ‘cos I can empty my mind and just go into my little world with what I need to run well.”

“In training one time it just suddenly struck me that I wasn’t worrying about future reps and that was almost gobsmackingly...you know, oh my god! I didn’t realise that would ever happen and that just seemed to really free my mind, so I didn’t ever have to know I had the tools they were just there...”

As well as Liam’s self-expression of being scared took take risks under pressure, in his baseline VCI scores he was identified as an athlete with a high fear of failure. Post-intervention scores showed a dramatic drop to low levels in this subscale as well as a drop in Emotional Perseverance inhibition, which relates to paralysing thoughts blocking action and losing all energy when threatened by failure. Liam described how he experienced these changes:

“I just thought I no longer care whether I look stupid or look different, I believe what I’m doing is giving me a better chance to perform well in such and such competition and until someone proves to me that it’s not, or I find a
better way of dealing with things, then I'm gonna stick to looking stupid. Not being scared to stand out is something that has really stuck with me."

An increased level of trust in his own decisions and beliefs is further apparent in post-intervention scores indicating large decreases in usage of Self-controlling mechanisms, that is less imposition of strict self-discipline or pressure on himself to get things done. This is complimented by an increase in Initiating, which reflects the ability to start even the most unpleasant tasks with immediacy and vigour. Action rather than inaction under pressure is arguably an indicator of increased access to the self-system and an enhanced ability to find subjective meaning (Csikszentmihalyi, 1998) and intrinsic motivation for a difficult challenge. Other notable VCI developments show decreased Alienation, the feeling of detachment from goals yet still feeling a compulsion to work towards them, whilst Liam’s reliance on External Control moved from low to very low. These results are supported by Liam’s description of his changed attitudes towards setbacks and failure experiences:

"I feel I’ve learned bits about myself that have added to my armoury of tools that I can use. I’m definitely gearing to becoming a more complete athlete, rather than just running well. I became a lot more confident and appreciative of new ideas, like accepting that bad things happen, I can’t do anything about it now, it happened, so take what I can from it."

"Now I don’t mind making a mistake as such, I mean I obviously don’t want to, but if I try something in a race and it goes absolutely wrong I’ll think, well I gave it my best shot. I’m trusting myself more, I believed at that time in the
Liam's progress over both the course of the intervention and his continued developments afterwards arguably reveals an athlete gaining better connections with his wants, needs, affects and beliefs to develop more robust self-regulatory functioning in the face of competitive pressure. It is feasible to speculate that this connection was facilitated by a combination of awareness training and development of specific skills to regulate affect. However, before any conclusions can be drawn over the efficacy of the intervention in enhancing self-regulatory skills, Liam's
experiences will be compared against the development and experiences of other baseline state-oriented athletes who successful increased their volitional ability.

6.6.1 SOF CHANGE: Athlete experiences

The difference during the awareness phase between athletes that enhanced their self-regulatory ability and those that did not is further emphasised by the comments of SOF CHANGE athletes. In this group all athletes acknowledged that self-monitoring was a challenge for them, however it appears rather than get caught up in the nuances of completing the sheets, the athletes that improved their scores chose to overcome the difficulty of enactment and find a way to make self-monitoring appropriate to their athletics:

"The number sheets, I think they were the right ones for me. It's quite basic really, it's just like a number, but early on they hit home what you're doing. I think you need... well I needed them before I could even begin to do this stuff" (Athlete 15)

"When I had to write the sheets it would make me look at everything I was doing and I'd be... I can't believe I'm doing that. I think I thought there wasn't anything to help my competition, I thought I was doing everything and I realised there was more I could have done." (Athlete 9)

"I always found doing it at the end of the day, you had to make sure you fitted it into your day, it was quite an ask, but while you did that it did increase your awareness and was telling you where you could change things." (Athlete 18)
“It made you look at areas you wouldn’t really look at and it made you analyse yourself, what you did wrong and sometimes people don’t admit what you’ve done wrong and it makes you do that. It makes you look at your performances sort of from an outside point of view, but within yourself.”

(Athlete 9)

Athlete 1 further highlights a key development facilitated by the self-monitoring tasks:

“Being able to use it rather than just knowing is probably the best way. I know that I need to relax my shoulders, or to think positively, but getting to the end of race and going... Why didn’t you think positively? Why did you accept that you were running badly? And actually saying in the race, here and now and doing something about it”. (Athlete 1)

Learning to exist and race in the present moment is especially pertinent for state-oriented athletes who are considered to have an increased propensity to become preoccupied on past or future failure experiences, rather than examining the task at hand (Kuhl, 1985). An applied approach to thinking in the here and now is described:

“When you’re tired your technique starts to go and focusing on the here and now and on good running you start thinking... well, I’m very tense in the shoulders, so that doesn’t make very good running, so what am I gonna do?
Right here, right now I'm gonna relax my shoulders for the next 100m and that's all I'm gonna think about.” (Athlete 1)

State-oriented individuals have been demonstrated to have greater rigidity in sticking unrealistic goals under pressure (Kuhl & Goschke, 1994), even if the goal is no longer appropriate. In order to combat this approach Kuhl (2000a) promoted facilitating transitions between difficulty awareness and positive affect through a creative mindset. This approach was undertaken through the functional use of a difficulty awareness approach encompassed by the phrase ‘bring it on’, a technique athletes reported to both take to heart and find success with:

“It's like you're not worried about the competitors, you're in the race for yourself, you wanna win for yourself. You don’t care if the best people from around the world come, the more the merrier.” (Athlete 9)

“There's nothing to lose, just bring it on. There's no point worrying or complaining. If you're running up a hill just bring it on, just get to the top of and do the next thing in from of you.” (Athlete 11)

“I needed to have a bring it on attitude to brave the challenge of training sessions, rather than be worried about it. Now it always makes me laugh whenever I go to a session and there's people moaning about the weather... well what can you do about it?! Just get on with it and see it as a challenge, rather than something that’s been put there to have a go at you.” (Athlete 18)
“My attitude around races...I’d be like, bring it on! Sort of like, I don’t really mind who you are... just come and race. Before I’d be looking around at people and thinking... God, he’s running well, or he’s having his training run. Whereas now, it like, let’s see after.” (Athlete 14)

“It just means enjoy the challenge in training sessions and don’t ever fear it’s hard... Once I got used to it, it made it more enjoyable because you knew you were supposed to be getting tired, but you sort of enjoyed it in the end, learned to cope with it, so it meant you were training well.” (Athlete 5)

“It’s pretty much the attitude you’ve got to run. I say it to myself whenever something is maybe a little bit more difficult than the norm... It’s me against you and more often than not it could be an inanimate object like the wind or the rain, or it could just be a feeling, you know... I can’t be bothered to do this, no, come on, bring it! It’s just a way of focussing.” (Athlete 1)

The personality disposition of action-orientation is linked with more autonomous behaviour (Kuhl, 1981; 1984; 1985; 1987) because the individual has better access to their self-system and their own wants, needs and beliefs. Better awareness and trust of their own thoughts and feelings is reflected in the statements of the SOF CHANGE group:

“Excuses don’t change situations... I think the turning point was [race] where I kind of took responsibility and started making, creating a situation where it was gonna be helpful to me, rather than using any sort of setback or some
problem as a way of kind of always having a back up plan if things didn’t go well." (Athlete 18)

A sense of maturity similar to Liam’s attitude was also identified:

“I think I’m more mature, more responsible and more aware of what I’m actually gonna do. Whereas before I’d just be told what to do and now I have to do everything on my own. I have to be careful about what I’m doing and when I’m doing too much.” (Athlete 9)

“I was doing what I should because I believed I could run well. I wasn’t really worried about being at the front because I was sticking to my plan better. I was going to somewhere for the first time and I knew how to get there.” (Athlete 15)

“I was definitely more aware of what was going on, what I was doing, the training leading up to things and afterwards, how the race would go, how I’d run my race, my race plan." (Athlete 11)

Enhanced access to the self-system was also shown to lessen athlete susceptibility to external control and the self-infiltration of the beliefs of others as personal goals, this appeared to have a positive effect on some of the athletes working relationships with their coaches:
“It has helped me work with my coach because I’ve been able to say more of what I want to do than what I’ve been told to do... I’ve been able to understand more of what I’m doing and what I want and what I think is best for me.” (Athlete 9)

“I didn’t feel the need to rely on him, like some people with coaches. As soon as they’ve finished races they call them up, or speak to them beforehand. I don’t think coaches should be used as that because they become scapegoats for your problems, you think, oh well coach told me to do that. I still used the coaches, but I didn’t rely on them as much.” (Athlete 11)

“I probably listen a lot more [to coach]. I always listened obviously, but I kind of went of and did my own thing without thinking almost. Now I try and I do listen, I’ve got a longer term plan, I utilise him better than I did before” (Athlete 15)

“I realised I needed to make [coach] realise I needed to talk through the race plan with him, so it would make me more prepared, rather than running the race and then saying, oh I wasn’t prepared.” (Athlete 18)

6.6.2 SOF CHANGE: Discussion

Athlete testimony suggests that developing awareness of behaviour was an underlying skill in developing enhanced self-regulatory efficiency. This refers to the affective reactions caused by self- and performance-monitoring, it is feasible that the acknowledgement of detrimental behaviours may have been enough to activate the
self-system. It may also be the case that the process of monitoring and subsequent balanced evaluation of drawing out the positives and future points to target in performance (and goal setting) created positive affect and this action-oriented behaviour became conditioned with the self-system on a frequent basis. This suggests the process of monitoring may have served as a form of self-expression similar to that to the expression of affect previously depicted in figure 5. The process of writing down thoughts and feelings may serve to deflect ruminative post-event behaviour. Ravizza (1998) reasoned evaluative diaries offer closure on performance experiences and it can be seen that Liam highlighted a key factor in his experience of the intervention was learning to be less harsh on himself. Given the relatively high level of awareness Liam’s baseline VCI scores depicted, it may be for some state-oriented athletes the opportunity to use an actual self-monitoring tool provided the opportunity to structure their self-criticism in a more rationale and effective manner, so they were being “honest” with themselves in a way which involved extension memory and the self-system of holistic representations of needs, wants and beliefs.

6.7 AOF athletes: Intervention experiences

When compared against baseline scores post-intervention VCI results (Figure 13) demonstrated that the self-regulatory skills of AOF athletes suffered a ‘reactance’ (Beckmann, 2002) under intervention conditions. It is speculated that intervention methodology of providing explicit directions to help develop self-regulatory strategies served to over-stimulate intention memory (IM) in AOF. As AOF athletes already possess high levels of vigilance, giving explicit instructions inhibited rather than enhanced behaviour. However, interviewed AOF athletes still described experiences of gaining self-insight and understanding into their behaviour that hold much
similarity with the reported experiences of the SOF CHANGE group. In terms of the awareness phase, self-monitoring caused some surprises even in athletes with previously high levels of self-regulatory and self-monitoring ability:

"Because I was so honest, it was like looking at the things and adding them up and thinking, Oh my god! Is that really me? You could actually see your whole life on a piece of paper just about and think god, I can’t believe I do that! But because it was so shocking it was a challenge, you started to chase things."

(Athlete 16)

“When you see something written down it’s easier to make changes away from it, rather than just going, oh maybe it’s just me... Sometimes [in training] I’d just look at everybody else and get worse and worse and then I’d end up stopping halfway through the rep and when you look at that [the sheet] and you think like, god, your effort wasn’t there.” (Athlete 8)

Similarly, the AOF athletes also interviewed reported noticing increasingly autonomous feelings and behaviours:

“Within like 12 weeks I became so much more confident in assessing myself, assessing things around me and assessing which was the best route for me.”

(Athlete 16)

“I was more focussed on what I wanted to be doing, so I was more like, c’mom let’s do it, rather than just going round and seeing what happens... You could
read the race better and be more like, if you're gonna do it and you think it's right, then just go with it." (Athlete 8)

6.8 Concluding remarks

The aim of the Mental Strength Conditioning intervention was to enhance individual cognitive functioning in aversive conditions, by providing athletes with a means of accessing their self-system to encourage self-determined and autonomous behaviours. Interview findings demonstrated that for action-oriented athletes, whilst VCI scores suggested a negative reactance to the intervention, qualitative testimony supported high ACS-90 scores suggesting an enhancement of self-awareness and self-regulatory functioning through increased self-access to wants, needs and beliefs. State-oriented athletes who did not improve their ability to enact their intentions (ACS-90; SOF NO CHANGE) reported experiencing difficulties with which they could not reconcile in terms of monitoring their performance and athletic lifestyle in the awareness phase of the intervention. Athletes in this group did provide accounts of enhanced self-regulatory ability and these differences were observed in post-intervention VCI scores, however the subtleties of any developments were not reflected within ACS-90 scores measuring preoccupation with failure supporting the interview narrative describing a sustained dependence on negative emotionality (viz. self control) to uphold volitional control. Athletes who demonstrated significant increases in the volitional functions (ACS-90; SOF CHANGE) emphatically indicated in their statements that the process of self-monitoring in the awareness phase caused a reaction which lead them to firstly acknowledge the information presented and secondly, to alter their behaviours in order to rectify any deficiencies in overall performance. Athletes in this group provided consistent accounts of enhanced access
to their self-system through descriptions of increased autonomy, lower rumination and enhanced belief in their own intuitive thoughts and feelings. Interview testimonies offer support for quantitative questionnaire data that suggests self-regulatory efficiency can be enhanced by the facilitation of positive affect and down-regulation of negative affect.
Chapter 7: Discussion

7.1 Research Summary & Discussion

Overall, results have demonstrated action-oriented athletes to possess superior abilities in the initiation and support of their intentions when under competitive pressure. This finding was exemplified in Study 1 through the examination of sport-specific performance strategies and coping skills which identified significant differences in approaches between the action- and state-oriented groups in terms of coping, concentration, confidence, goal setting, peaking under pressure, freedom from worry, relaxation, imagery, activation, emotional control and negative thoughts. These overall findings substantiate the research literature which has overwhelmingly suggested that not only do action-oriented individuals have better volitional strategies toward goal attainment (Fuhrmann & Kuhl, 1998; Kazén, Baumann & Kuhl, 2003; Kuhl, 1981, 1984; Kuhl & Baumann, 1998), but that these strategies are more self-determined and thus more in-line with the individual’s beliefs, wants and needs (viz. self-regulated). Fundamentally, the present findings enhance understanding of action versus state oriented athlete behaviours and distinguish features of sport-specific volitional efficiency. The distinction between self-regulated (self-maintenance) behaviours of action-oriented athletes and the more self-controlling (goal maintenance) activities of state-oriented athletes, with a pre-disposition to ruminate over real or imagined failure experiences, was also exposed from novel findings in the scores for coachability and self-talk (Study 1), which showed relatively similar levels for the two groups. In the first instance, the coachability scores supported previous research findings that showed a higher propensity of state-oriented athletes to prefer the ideas of others (i.e., external control) over and above their own beliefs (Kuhl,
1994a, Kuhl & Kazen, 1994a), which can cause internal conflict if the individual is striving for goals that they find are incompatible and alien to their own thoughts.

The concept of alienation from intentions was also prevalent in the self-talk data which suggested different uses of language between the two groups. Action-oriented athletes emphasised more task-oriented words, whilst state-oriented athletes indicated that their self-talk was negative, avoidance-based. Moreover, SOF athletes indicated that the words they used were not necessary believable for them in competitive situations. These issues may well be related to the suggestion that it is not the content of the language that is relevant to action rather, it is the link between the language or beliefs and the properties that mediate action (Kuhl, 2000a). Rodgerson and Hrycaiko (2002) demonstrated self-talk is especially beneficial to performance when incorporated with centering, a breathing control exercise based on relaxation to develop awareness of physical and mental focus (Nideffer, 1994). In SOF groups self-talk was formed without access to self-related constructs permitted by being relaxed under pressure, that is, self-talk formed on the basis of self-infiltration or with the athlete submitting to external control by taking on a skill because that is what they think other people would want them to do. It is possible to speculate that these athletes would be unable to access their hypothesised self-system of holistic beliefs and link the self-talk instruction with the necessary mindset, commitment and supportive affect for action (Kuhl & Beckmann, 1994b).

Access to self-related constructs is considered one of the most important factors in developing volitional skills because the athlete is able to check their intentions are self-determined and benefit from the extra affective support (Fuhrmann & Kuhl, 1998) and intrinsic motivation (Baumann & Kuhl, 2000) this provides. In terms of enhancing self-regulatory ability in state-oriented athletes, Kuhl (2000a)
suggested that limited self-regulatory ability was related to a lack of self-access. Where an athlete cannot access their self-related constructs of wants, beliefs and needs to check goals for self-compatibility they cannot instinctively trust their own judgements, therefore they may resort to self-controlling volitional mechanisms to support the maintenance of an active goal. Therefore the key intervention target for Study 2 was identified as developing self-access in state-oriented distance athletes to enhance self-regulated behaviour under competitive pressure. The underlying theme in developing self-access was to build self-awareness of thoughts and behaviours in order to ensure self-access can occur without inhibition. In addition to the programme of self-monitoring for self- and performance awareness that encompassed training, the inter-linked role of affect regulation was also addressed to test the efficacy of the two modulation assumption governing PSI-theory (Kuhl, 2000a; 2000b). According to PSI-theory positive mood is a vital component in facilitating volitional action and because it enables enhanced self-access and completion of intentions (1st MA). Moreover, volitional inhibition is related to negative mood (2nd MA), which is caused by the intrusive cognitions of rumination (Kuhl, 1994a). Therefore, in developing volition efficiency it essential that the athlete has the ability to self-initiate processes to shift a negative mood (viz. self-relaxation) and generate a positive one.

It is suggested that state-oriented athletes should be encouraged to act, rather than to think (Kuhl, 1981), as this develops functional tools for use in pressure situations. The training of control states that mediate volitional efficiency has been both posited in the research literature (Beckmann, 2002; Beckmann & Kazén, 1994) and demonstrated empirically (e.g., Hartung & Schulte, 1994; Kuhl & Weiß, 1994). A further purpose of the intervention was to practically enhance affect regulation skills through breathing control training and use of the auxiliary functions assumption (Kuhl
& Beckmann, 1994b) for action. The first auxiliary assumption states the importance of holding a conscious representation of the intention, that is, one that specifies the necessary action, mindset and level of commitment required. This is extended by the second assumption which states facilitating positive affect is also necessary for volitional action. This enables the athlete to appropriately conclude the problem-solving process and act confidently without continuing to second guess and over-analyse their decisions (Kuhl & Weiß, 1994). Kuhl & Beckmann (1994b) suggested that possessing an awareness of task difficulty, whilst experiencing positive thoughts and feelings meant the athlete could develop a more realistic action plan. Therefore, they would be less likely to become stymied by negative cognitions in the face of difficulty. Results from a meta-analytic review of the theories of reasoned action and planned behaviour in physical activity (Hagger, Chatzisarantis & Biddle, 2002) have highlighted the importance of creating a positive attitude and a sense of control in individuals in order to promote behavioural change. Hagger and colleagues noted the greater role played by current cognitions, rather than past behavioural effects, in influencing intentions and behaviour, which is consistent with Kuhl's (1981, 1984) contention that it is a present preoccupation with the emotional state caused by past experience and worries about future mood that cause inaction. Findings from the present research support the suggestion that positive attitude and perceived behavioural control are key influences in forming intentions (Hagger et al., 2002) and that applied interventions should create an environment that promotes calm and confidence. In the physical activity context this environment can be created as an actual physical space (i.e. in a sports hall), however in terms of sport psychology it is arguable that teaching athletes self-regulatory skills, such as breathing control allow the athlete to create a ‘personal environment’ and sense of calm and confidence in any
situation. Study 2 sought to draw together the two elements of attitude and feelings of situational control (using the auxiliary functions assumption of PSI) by teaching athletes to seek the challenge in a situation and then to link energising cues with breathing control exercises. Results demonstrated self-regulatory efficiency was enhanced in nine of the twelve baseline SOF athletes. In addition to increasing levels of action-oriented behaviours, these athletes also showed significant improvements in Initiating, Self-determination, Mastery, Volitional self-efficacy and Arousal control (up and down). Moreover, results showed significant decreases in self-controlling (viz. state-oriented) behaviours such as Fear of failure, Goal neglect, Alienation, External control and Emotional perseverance ruminat

In athletes who were already action-oriented (ADF) at the baseline, no significant improvements in volitional efficiency were demonstrated. Athletes in this group appeared to experience a form of negative reactance (Beckmann, 2002) to the intervention and as a group some of their previously high scores were destabilised by a step-by-step approach to developing skills in areas where they were already highly vigilant. It may well be that intention memory was over-stimulated by the training process and this briefly caused inhibition of some self-regulatory functioning. In other words, these athletes began to over-analyse their plans and delay action, rather than perform their more typical decisive behaviours. For the three baseline state-oriented athletes who showed no improvement in volitional efficiency during the intervention, qualitative data based on athlete observations of behaviour change were not greatly distinguished from athletes who did enhance self-regulation skills. Neither did findings specifically highlight any clear examples of why the intervention was unsuccessful within this group.
Study 3 was undertaken with the purpose of examining the efficacy of the intervention impact and to identify athlete experiences and behaviours over the 10-month period at a more focussed and personal level. Findings from this interview follow-up indicated that athletes in the SOF NO CHANGE group had experienced difficulties developing self-monitoring skills during the awareness training phase. Kuhl (2000a) suggested that awareness training should form a critical and long-term element of any intervention, so as to ensure state-oriented individuals develop a solid basis with which to take advantage of any other mental skills training. However, consistent with behaviours observed by the investigator over the course of the intervention, at interview athletes in the SOF NO CHANGE group verbalised a rejection of the monitoring process. In other words, all three athletes gave reasons why monitoring (or various types of self- and performance-monitoring sheets) was not relevant to them personally, to their athletics, or to their lifestyle. This therefore meant they felt they could not undertake the process and had attempted to self-monitor with a lack of commitment and/or some inconsistency.

The research literature highlights instances of state-oriented athletes attempting to generate positive affect through denial, that is, an athlete can make themselves feel good about a situation by refusing to acknowledge any problems. Kuhl (2000b) likened this behaviour to an “escape plan”. Self-denial itself is heavily associated with self-controlling volitional mechanisms, for example, goal maintenance is based upon the concept of acting coercively (Kuhl, 1994a) against personal needs, beliefs, or emotional preferences in order to complete an intention. Furthermore, the practice of blunting, an avoidance coping strategy is highlighted as relevant to the fast paced sporting environment because it is an effective “quick-fix” strategy (Richards, 2004). By actively avoiding any information associated with stressors the athlete is able to
make a problem go away, without the more time-consuming matter of dealing with the actual issues causing the problem. The use of practices, such as denial and avoidance are identified in the coping literature as dysfunctional strategies (Carver & Scheier, 1994). However, it is also suggested that athletes do not always share this negative perception of avoidance behaviour (Ntoumanis & Biddle, 1998) and will therefore persist with coping strategies that negatively impact the development of volitional efficiency over the long-term (Beckmann & Kuhl, 1994b; Fuhrmann & Kuhl, 1998). Present findings support the contention by Ntoumanis & Biddle (1998) that avoidance strategies demonstrate a lack of control and inaction. Study 1 shows the usage of performance strategies and coping skills in state-oriented athletes to be significantly lower than their action-oriented competitors, which highlights a greater potential for inaction in the face of pressure. Moreover, at interview SOF NO CHANGE athletes described using strategies to control challenging situations that steer clear of actually confronting reality. The use of avoidance and denial effectively involve by-passing the self-system (Kuhl, 2000b), because the athlete averts the need to utilise any self-compatibility checking of their personal beliefs, needs or wants. By denying the existence of any problematic issues an athlete can create positive affect for their goals. Unfortunately, because the athlete has built these goals without self-access, these intentions should lack the sustaining qualities of intrinsic motivation or feelings of self-determination (Fuhrmann & Kuhl, 1998) that facilitate action. This would also explain why members of the SOF NO CHANGE group indicated at interview level that they did not necessarily feel that the mental skills training per se had been useful to them. It may be that as these skills were not developed in harmony with the energising and supportive properties of autonomously made decisions. These behaviours appear closely related to an 'accepting' style of dealing with emotions.
depicted by Goleman (1996) in the emotional intelligence literature. Goleman highlighted a self-aware style, which has similarities to action-orientation and also, an engulfed style, which is analogous to state-oriented behaviour under pressure. However, in the accepting style individuals possess some notion about their negative mood, but accept its existence without necessarily taking any responsibility for either the origin of the mood, or its removal. This may explain why denial or avoidance coping would be the preferred option for the three SOF NO CHANGE athletes in response to negative affect when under pressure.

The purpose of the intervention was to enhance self-system access in state-oriented athletes by developing awareness and affect regulation skills. It is arguable that in the SOF NO CHANGE group the intervention broke down because these athletes never actually learned to access their self-system. However, as this issue was only fully highlighted by study 3 findings the present intervention scope was not wide enough to combat this preference for self-denial over self-access. Fundamentally, self-access was circumvented through the use of avoidance and denial. As a result these athletes never actually developed the skills for self-access, subsequent mental skills, such as self-talk and goal setting were only ever built on non-dynamic foundations (Kuhl, 2000b). In other words, goals and intentions were never actually linked with the functions that control personal motivational meaning and the initiation of action.

7.2 General Conclusions

Findings in the present research provide support across three studies indicating that action-oriented athletes have superior self-regulatory skills and that these skills are extended to include sport-specific performance strategies and coping skills. Present findings further suggest that the functional significance of action-state
orientation in athletic performance is related to the ability to manage affect under competitive pressure. Appropriate affect enables access to the self-system of personal wants and beliefs and can be used to generate self-regulated volitional support of intentions. This is in concordance with the research literature, which has posited action-oriented individuals have better self-access under pressure (Kuhl, 2000a, 2000b; Kuhl & Baumann, 2000). Present findings highlight that in state-oriented athletes self-access can be facilitated initially through awareness training and development of skills such as breathing control for self-relaxation. Results further indicate the importance of developing the ability to transition between awareness of problem difficulty and optimism. Findings show that in athletes who are unable to develop self-awareness, self-regulatory skills may not be acquired because the athlete is not able to create positive affect by means other than self-denial of difficult situations. Fundamentally, this research indicates the link between monitoring vigilance, affect regulation and volitional (viz. self-regulatory) efficiency. Without efficient monitoring of internal and external factors, access to functions that govern and support self-regulated actions become restricted and the athlete must resort to utilising volitionally inefficient mechanisms.

7.3 Research limitations

The ACS-90 represented the key inventory across the present research as it was the only means of identifying the personality dispositions of action- and state-orientation. A limitation of the study was that this scale was not a sport-specific scale and referred to concrete but unspecified behaviours typical of daily life settings. Whilst a sport-specific version of this scale was being developed it was considered that this research would be better supported by a most robust inventory. The purpose
of the scale was to identify behavioural manifestations in demanding circumstances and it is arguable that the ACS-90 was sufficient for the purposes of the present research and showed satisfactory internal consistency (Cronbach’s alpha = .76) for the preoccupation subscale utilised. The strength of the scale in successfully identifying action-state orientation is additionally substantiated in athlete testimonies taken across three different qualitative measures which provide further support for quantitative findings. A further limitation of the study is that the perceptions and experiences of the coaches most closely involved with the athletes were not explored to support athlete personal observations of behaviour change. This would have enabled a more rounded depiction of changes in any more ‘outward’ volitional behaviours that were identifiable to coaches in the competitive environments. However, such analyses may be more relevant to athletic environments where athletes share the same coach, event and similar type of coach-athlete relationship. Furthermore, in this research actual athletic performance (race times) over the course of the intervention (pre-season) and the competitive season were not assessed. Valid analyses of psychological skills enhancement through performance times should entail regular monitoring of race factors such as injury, other competitors, varying event levels and athlete personal issues, in addition to developmental age, ability and performance potential. Given the number of athletes involved in the intervention, their varying circumstances and competitive schedules, accounting for these factors was beyond the scope of this particular research. Paradoxically, this sample size (Studies 2 and 3) represented a limitation to the strength of findings as it is relatively small. Research was also limited by focussing exclusively on middle- and long-distance track athletes. Findings need to be replicated in other similar endurance events (e.g., distance swimming) and
across a variety of sports with different technical (e.g. rugby), tactical (e.g. 400m sprint or boxing) and physical (e.g. discus or golf) requirements.

The overall purpose of this programme of research was to explore the construct of action-state orientation *per se*, that is, the two groups composed by action-oriented athletes and state-oriented athletes. This meant a limited examination of other relevant groupings (such as gender, age, athlete performance level, sport type and position played) where orientation may be an important factor. The sample size in Study 1 was large enough to permit an initial exploration of these factors, however results showed no significant differences amongst the variables of these other groups. Therefore, research proceeded to specifically investigate competitive behaviours based on the distinction between action- and state-orientation alone. As research was concerned with UK samples, findings should also be explored in different countries and socio-economic cultures. An issue of concern is the optimal time in the academic year for an intervention with student athletes. The sport psychology literature places great emphasis on developing off- or pre-season programmes (Weinberg & William, 1998) and Study 2 reflected the accessibility of collegiate level athletes as the off/pre-season will commonly involve some period during academic vacations. Athletics is split into winter and summer seasons, although differences in ability and race schedules mean collegiate athletes experience a less rigid ‘break’ between the two seasons than elite performers. Study 2 was initiated in winter, which represented the summer pre-season and at a more intense point in their physical training than they would have been in the equivalent winter pre-season. The different effectiveness of programmes offered at different time points to collegiate populations across different sports is a point for evaluation. As the present studies were largely comprised of collegiate athletes, a final
issue is that future studies should be concerned with different groups and performance abilities.

7.4 Implications for Professional Practice

The present research findings have highlighted that in some SOF athletes the most effective means of creating facilitative positive affect is through the use of avoidance coping strategies. By denying there are any problems or latching onto external controls, the athlete can make themselves feel good about a situation without ever acknowledging their own personal preferences. As the use of this volitional strategy is especially detrimental if maintained over the long term, two key implications for professional practice are suggested: The need to develop appropriate affect regulation strategies and also, the need to develop the skills to access the essential self constructs of personal wants, needs and beliefs. Furthermore, the present research has demonstrated that it is fundamental that new skills are sufficiently grounded if they are to be used with any effect. However, the strength of any skill appears to be related to the ease at which the athlete learns to access their personal preferences, which emphasises the importance of enhancing athlete self-awareness. The practitioner needs to focus on innovating self-monitoring tools that will promote a level of awareness sufficient enough to merit continued adherence to the monitoring process. Simultaneous attention should be directed to making affect regulation training as accessible, appealing and functionally relevant the athlete’s performance as possible.
7.5 Future research directions

Of most significance to future research in the area of action-state orientation is the development of a sport-specific Action Control Scale questionnaire. Once the scale is developed and refined it can be used to address the limitations posed by the use of a general measure. For example, the sport-specific measure will be entirely composed of forced choice response statements that focus on athletic issues, therefore the ability to get over failure experiences (preoccupation) can be examined exclusively within the contexts of the coach-athlete relationship or, within a performance context. Attempting to pin-point their behaviours in sport-relevant examples of concrete but unspecified situations may be more accessible to the athlete, especially in individuals with a high concept of athletic identity. Furthermore, during completion, a sport-specific scale may be more overtly relevant and purposeful to the athlete and as such may better engage athletes to consider their responses. Moreover, research should be focussed in two directions so as to further the issues of both the theoretical knowledge of the role played by volition in sport and also the applied understanding of how volitional skills can be best developed.

From a theoretical perspective sport psychology research should look to replicate the findings of studies based around the functional significance of action-state orientation that have been undertaken in general psychology. Findings from all three present studies have demonstrated that action and state oriented athletes are both very ‘coachable’ groups, although Study 1 data and previous research findings have highlighted the preference of state-oriented individuals to subscribe to the beliefs and directions of others, rather than trust their own judgements in demanding situations. It would be pertinent to extend self-infiltration research (e.g., Kazén, Baumann & Kuhl, 2003; Kuhl & Kazén, 1994a) into the coach-athlete relationship, as findings have
shown the increased disposition of state-oriented individuals to take onboard the ideas of a ‘boss’ or ‘expert’ as their own, even if they had previously indicated those ideas to be unpleasant. The present findings also indicate the role of ‘believable’ self-talk to play a key factor in the ability to enact and complete intentions. To further substantiate results from athlete testimony future studies should look to replicate and develop understanding of lab-based results from puzzle tasks (e.g., Brunstein & Olbrich, 1985; Kammer, 1994) that have highlighted differences in language, hypotheses and approaches used by action-state groups in studies involving physical performance tasks and sport specific activities under pressure. Through these activities research should ultimately be directed towards the experimental demonstration of the existence of a motivational state (pre-decision) and the volitional state (post-decision) and how this impacts on the initiation and completion of intentions.

Findings from Study 1 indicated the need to explore the relationship between orientation and performance level as more elite athletes may be proportionally action-oriented than performers at lower levels. Research needs to examine whether the personality construct of action-state orientation has much developmental relevance as research (including the present studies) have shown that volitional efficiency is trainable. If more elite performers are shown to be action- as opposed to state-oriented than in other groups, key phases in terms of building skills and competitive experience may be identified as especially pivotal in personality development. The importance of group differences should also be examined across the areas of gender, age, sport type played and position.

From an applied perspective, future research should be concerned with the development and measurement of specific intervention targets. Based on Study 1
findings, Study 2 included relatively general mental skills training targets because it was the first research in this area. Future studies should highlight particular facets such as the enhancement of goal setting skills, concentration skills, or self-talk for specific manipulation. The present research also indicated the importance of awareness training in providing a solid foundation for developing efficient self-regulatory skills. Future directions should be concerned, firstly, with identifying individuals who may struggle during the awareness stage, as baseline scores of the 12 initial SOF athletes presented no obvious indication as to which athletes may later reject self-monitoring techniques. Research should also seek to highlight what kind of specialist awareness training (i.e., activities) would be most beneficial to these individuals to combat a preference for self-denial, rather than self-access. Furthermore, the awareness stage in the present intervention lasted three months and represented a sizeable chunk of the programme. Consideration should, therefore, be given to enhancing the efficiency of this phase and the development of methodology to ‘speed-up’ the process of self- and performance awareness. Efforts should be directed towards current technological developments in the field of autonomic system monitoring devices that can provide objective analyses through scores or records of time spent on the task that increase athlete accountability towards data yielded from monitoring in specific skills. These can also be used to build athlete self-efficacy in their mental skills development. For example, the use of (computer-based) neuro-feedback devices and remote pulse oximeters to train and record breathing control skills practice. This skill has been demonstrated as especially pertinent with regard to enhancing affect regulation and thus, the ability to access the self-system to find support for difficult intentions. Moving beyond the athlete, future research should also be concerned with coach education and programmes that further coach awareness and
understanding of individual difference factors with particular regard to how this can cause self-infiltration of alien beliefs. Training programmes should also be developed that enable better development of autonomous athletes by coaches in the daily training environment.
8. References


9. Appendices
Appendix 1: Action Control Scale (ACS-90)

Please circle one of the possible answers (A or B) that is most like you.
Please give an answer for every question.

1. When I have lost something that is very valuable to me and I can’t find it anywhere:
   A. I have a hard time concentrating on something else
   B. I put it out of my mind after a little while

2. When I know I must finish something soon:
   A. I have to push myself to get started
   B. I find it easy to get it over and done with

3. When I have learned a new and interesting game:
   A. I quickly get tired of it and do something else
   B. I can really get into it for a long time

4. If I’ve worked for weeks on one project and then everything goes completely wrong with the project:
   A. It takes me a long time to adjust to it
   B. It bothers me for a while, but then I don’t think about it anymore

5. When I don’t have anything in particular to do and am getting bored:
   A. I have trouble getting up enough energy to do anything at all
   B. I quickly find something to do

6. When I’m working on something that’s important to me:
   A. I still like to do other things in between working on it
   B. I get into it so much that I can work on it for a long time

7. When I’m in a competition and have lost every time:
   A. I can soon put losing out of my mind
   B. The thought that I lost keeps running through my mind

8. When I’m getting ready to tackle a difficult problem:
   A. It feels like I’m facing a big mountain that I don’t think I can climb
   B. I look for a way that the problem can be approached in a suitable manner

9. When I’m watching a really good movie:
   A. I get so involved in the film that I don’t even think of doing anything else
   B. I often want to get something else to do while I’m watching the movie

10. If I had just bought a new piece of equipment (for example, a stereo system) and it accidentally fell on the floor and was damaged beyond repair:
   A. I would manage to get over it quickly
   B. It would take me a long time to get over it
11. When I have to solve a difficult problem:
   A. I usually don’t have a problem getting started on it
   B. I have trouble sorting things out in my head so that I can get down to
      working on the problem

12. When I have been busy for a long time doing something interesting (for
    example reading a book or working on a project):
   A. I sometimes think about whether what I’m doing is really worthwhile
   B. I usually get so involved in what I’m doing that I never think to ask
      about whether it’s worthwhile

13. If I have to talk to someone about something important and, repeatedly,
    can’t get hold of her/him:
   A. I can’t stop thinking about it, even while I’m doing something else
   B. I easily forget about it until I can see the person again

14. When I have to make my mind up about what I’m going to do when I get
    some unexpected free time:
   A. It takes me a long time to decide what I should do during this free time
   B. I can usually decide on something to do without having to think it over
      very much

15. When I read an article in the newspaper that interests me:
   A. I usually remain so interested in the article that I read the entire article
   B. I still often skip to another article before I finished the first one

16. When I’ve bought a lot of stuff at a store and realise when I get home that
    I paid too much — but I can’t get my money back:
   A. I can’t concentrate on anything else
   B. I easily forget about it

17. When I have work to do at home:
   A. It’s often hard for me to get the work done
   B. I usually get it done right away

18. When I’m on holiday and I’m having a good time:
   A. After a while, I really feel like doing something completely different
   B. I don’t think about doing anything else until the end of my holiday

19. When I’m told my work has been totally unsatisfactory:
   A. I don’t let it bother me for too long
   B. I feel paralysed

20. When I have a lot of important things to do and they must all be done
    soon:
   A. I often don’t know where to begin
   B. I find it easy to make a plan and stick with it
21. When one of my co-workers brings up an interesting topic for discussion:
   A. It can easily develop into a long conversation
   B. I soon lose interest and want to do something else

22. If I'm stuck in traffic and miss an important appointment:
   A. At first, it's difficult for me to start doing anything else at all
   B. I quickly forgot about it and do something else

23. When there are two things I really want to do, but I can't do both of them:
   A. I quickly begin one thing and forget about the other thing I couldn't do
   B. It's not easy for me to put the thing that I couldn't do out of my mind

24. When I'm busy working on an interesting project:
   A. I need to take frequent breaks and work on other projects
   B. I can keep working on the same project for a long time

25. When something is very important to me, but I can't seem to get it right:
   A. I gradually lose heart
   B. I just forget about it and go and do something else

26. When I have to take care of something important but which is also unpleasant:
   A. I can do it and get it over with
   B. It can take a while before I can bring myself to do it

27. When I'm having an interesting conversation with someone at a party:
   A. I can talk to him or her for the entire evening
   B. I prefer to go and do something else after a while

28. When something really gets me down:
   A. I have trouble doing anything at all
   B. I find it easy to distract myself by doing other things

29. When I'm facing a big project that has to be done:
   A. I often spend too long thinking about where I should begin
   B. I don't have any problems getting started

30. When it turns out that I'm much better at a game than the other players:
   A. I usually feel like playing something else
   B. I really like to keep playing

31. When several things go wrong on the same day:
   A. I usually don't know how to deal with it
   B. I just keep on going as though nothing has happened

32. When I have a boring assignment:
   A. I usually don't have any problem getting through it
   B. I sometimes just can't get moving on it
33. When I read something I find interesting:
   A. I sometimes still want to put the article down and do something else
   B. I will sit down and read the article for a long time

34. When I have put all my effort into doing a really good job on something and the whole thing doesn't work out:
   A. I don't have too much difficulty starting something else
   B. I have trouble doing anything else at all

35. When I have an obligation to do something that is boring and uninteresting:
   A. I do it and get it over with
   B. It usually takes a while before I get around to doing it

36. When I'm trying to learn something new that I want to learn:
   A. I'll keep at it for a long time
   B. I often feel like I need to take a break and go and do something else for a while
Appendix 2: The Test of Performance Strategies (TOPS)

Each of the following items describes a specific situation that you may counter in competition. Please rate how frequently these situations apply to you on the following scale:

<table>
<thead>
<tr>
<th>Item</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>During competition I set specific result goals for myself</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>When pressure is on at competitions, I know how to relax</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My self-talk during competition is negative</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I perform at competitions without consciously thinking about it</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I can raise my energy level at competitions when necessary</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>During competition I have thoughts of failure</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I am able to relax if I get too nervous at a competition</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I visualize my competition going exactly the way I want</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I have specific cuewords or phrases that I say to myself to help my performance during competition</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I evaluate whether I achieve my competition goals</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>When I make a mistake in competition, I have trouble getting my concentration back on track</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>When I need to, I can relax myself at competitions to get ready to perform</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I set very specific goals for competition</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I psych myself up at competitions to get ready to perform</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>During competition I perform on ‘automatic pilot’</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>When something upsets me during a competition, my performance suffers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I keep my thoughts positive during competitions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I say things to myself to help my competitive performance</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>At competitions, I rehearse the feel of my performance in my imagination</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My emotions get out of control under pressure</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I manage my self-talk effectively during competition</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I do what needs to be done to get psyched up for competitions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>During competition, I don't think about performing much - I just let it happen</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I find it difficult to relax when I am too tense at competitions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I set personal performance goals for a competition</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I can increase my energy to just the right level for competitions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>During competition, I play/perform instinctively with little conscious effort</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I imagine my competitive routine before I do it at a competition</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I imagine screwing up during a competition</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I talk positively to myself to get the most out of competitions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I rehearse my performance in my mind at competitions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My emotions keep me from performing my best at competitions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Appendix 3: Athlete Coping Skills Inventory (ACSI-28)

A number of statements that athletes have used to describe their sports experiences are given below. Please read each statement carefully and then recall as accurately as possible how often you experience the same thing.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Almost never</th>
<th>Sometimes</th>
<th>Often</th>
<th>Almost always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. On a daily or weekly basis, I set very specific goals for myself that guide what I do.</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2. I get the most out of my talent and skills.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>3. When a coach or manager tells me how to correct a mistake I've made, I tend to take it personally and feel upset.</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>4. When I am playing sports, I can focus my attention and block out distractions.</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>5. I remain positive and enthusiastic during competition, no matter how badly things are going.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>6. I tend to play better under pressure because I think more clearly.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>7. I worry quite a bit about what others think of my performance.</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>8. I tend to do lots of planning about how to reach my goals.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>9. I feel confident that I will play well.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>10. When a coach or manager criticises me, I become upset rather than helped.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>11. It is easy for me to keep distracting thoughts from interfering with something I am watching or listening to.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>12. I put a lot of pressure on myself by worrying how I will perform.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>13. I set my own performance goals for each practice.</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>14. I don't have to be pushed to practice or play hard; I give 100%.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>15. If a coach criticises or yells at me, I correct the mistake without getting upset about it.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>16. I handle unexpected situations in my sport very well.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>17. When things are going badly, I tell myself to keep calm, and this works for me.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>18. The more pressure there is during a game, the more I enjoy it.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>19. While competing, I worry about making mistakes or failing to come through.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>20. I have my own game plan worked out in my head long before the game begins.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>21. When I feel myself getting too tense, I can quickly relax my body and calm myself.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>22. To me, pressure situations are a challenge that I welcome.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>23. I think about and imagine what will happen if I fail or screw up.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>24. I maintain emotional control no matter how things are going for me.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>25. It is easy for me to direct my attention and focus a single object or person.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>26. When I fail to reach my goals, it makes me try even harder.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>27. I improve my skills by listening carefully to advice and instruction from coaches and managers.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>28. I make fewer mistakes when the pressure's on because I concentrate better.</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>
Appendix 4: Competitive experiences questionnaire

1. Please describe the most stressful experience you have had prior to or during a recent important match/game/event.

2. Did your most stressful experience effect your performance during this match/game/event?
   - Yes ☐  No ☐ (go to question 4)

3. If yes, please describe how your performance was affected.

4. When did your most stressful experience occur? Please be specific (e.g., 48 hrs before my performance, or 20 minutes into the first half).

5. Was your most stressful experience something that was 'expected' or 'unexpected'? (i.e., was it something that you and/or your team had planned or prepared for?).
   - Expected ☐  Unexpected ☐ (go to question 7)
6. If your most stressful experience was 'expected', please describe briefly what you and/or your team had done to prepare or plan for this eventuality.

7. In general, was your most stressful experience something that you could change or do something about? (please circle)

<table>
<thead>
<tr>
<th>Could not change</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. Something you felt you had power over?

<table>
<thead>
<tr>
<th>No power</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>Had power</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. Did your most stressful experience affect your level(s) of concentration during your game/match/event?

<table>
<thead>
<tr>
<th>Affected</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>Not Affected</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. Please briefly describe how your concentration levels were affected or were not affected.

11. How did you deal with your most stressful experience? Did you use any strategies to help maintain your concentration or to help you refocus?

☐ Yes  ☐ No (go to question 13)
12. If yes, please describe these strategies.

13. Did you use any specific thoughts, cue words, mood words or positive self-statements to help you maintain your concentration or to help refocus?

☐ Yes  ☐ No  (go to question 16)

14. If yes, please describe or list these thoughts, cue words etc:

15. In general, how effective were the strategies you identified in questions 10-13 in helping you maintain your concentration or to refocus?

0% effective  100% effective

0 10 20 30 40 50 60 70 80 90 100

16. How easy was it for you to refocus during your most stressful game/match/event?

Hard 1 2 3 4 5 6 7 8 9 Easy

17. In general, during my most stressful experience my coping:

Required effort 1 2 3 4 5 6 7 8 9 automatic

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE

Your time and effort has been most appreciated.
Appendix 5: Volitional Components Inventory (VCI)

Here are quite different ways to handle goals either set by oneself or set by others. Sometimes you persevere and are willing to make every effort, in other situations you prefer to let things run their course. Or you are slow to take on an unpleasant matter or you even refuse it ...

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>almost never</td>
<td>seldom</td>
<td>somewhat seldom</td>
<td>sometimes</td>
<td>somewhat often</td>
<td>often</td>
<td>almost always</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How do I feel about doing something difficult or unpleasant?</th>
<th>These days, I am like this:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferring to do things that can be done without much effort.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Struggling against the expectations others have of me.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Simply forcing myself to do something.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Plunging into something and then seeing how it goes.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Avoiding difficult goals.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Preferring to risk an argument than to give in to another's wishes.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Pulling myself together.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Preferring to follow my spontaneous ideas even on difficult projects.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Feeling better when something is easy to accomplish.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Refusing to satisfy others' demands.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Imposing discipline on myself.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Relying more on my intuitions than on complex plans made in advance.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Preferring to do things that are easy to do.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Becoming angry when others' rules restrict my freedom.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Putting pressure on myself.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Throwing myself into something without lengthy preparation and trying to make the best of it.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>When possible, staying away from uncomfortable demands.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
</tbody>
</table>
How do I feel about doing something difficult or unpleasant?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>almost never</td>
<td>seldom</td>
<td>somewhat seldom</td>
<td>sometimes</td>
<td>somewhat often</td>
<td>often</td>
<td>almost always</td>
</tr>
</tbody>
</table>

These days, I am like this:

- Simply ignoring others' demands.
- Telling myself "You have to..."
- Just get going without having planned the matter from A to Z.
- Reluctantly forcing myself to do something difficult.
- Defying orders from others.
- Treating myself harshly.
- Spontaneously trying something out rather than thinking about it for a long time.
- Readily putting difficult things aside.
- Avoiding being forced to meet other's expectations.
- Disciplining myself.
- Liking to do things where I can simply act according to my inspirations of the moment.
here are situations when it is difficult to choose one of several oals. Even after one has chosen one alternative, doubts may rise as to whether the decision was correct. Once a decision has been made, it is important that certain things actually get done. Then the question of the best future opportunity (place, time etc.) may arise because difficult or unpleasant things cannot always be handled on the spot. Therefore it is important to remember at the appropriate time what one had intended to do then, which, of course, one doesn't always succeed in doing...

<table>
<thead>
<tr>
<th>1</th>
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<th>3</th>
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<td>sometimes</td>
<td>somewhat often</td>
<td>often</td>
<td>almost always</td>
</tr>
</tbody>
</table>

When I have to make a decision or stay aware of my various projects:

These days, I am like this::

29] If necessary, being able to arrive at a decision quickly.  
Almost never: 1 2 3 4 5 6 7  
Almost always: almost never 2 almost always

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<tr>
<td>almost never</td>
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<td>almost never</td>
</tr>
</tbody>
</table>

Being able to decide on something without racking my brain.  
Almost never: 1 2 3 4 5 6 7  
Almost always: almost never 2 almost always

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
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</tbody>
</table>

Sensing clearly whether my decision is correct.  
Almost never: 1 2 3 4 5 6 7  
Almost always: almost never 2 almost always

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<td>almost never</td>
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<td>almost never</td>
<td>almost never</td>
</tr>
</tbody>
</table>

Being able to stop pondering alternatives when a quick decision is due.  
Almost never: 1 2 3 4 5 6 7  
Almost always: almost never 2 almost always

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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</tbody>
</table>

Making a quick decision.  
Almost never: 1 2 3 4 5 6 7  
Almost always: almost never 2 almost always

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
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</tr>
</tbody>
</table>

Being able to arrive at a decision quickly when time is short.  
Almost never: 1 2 3 4 5 6 7  
Almost always: almost never 2 almost always

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</tbody>
</table>

Repeatedly reminding myself during the day of all the things I want to do.  
Almost never: 1 2 3 4 5 6 7  
Almost always: almost never 2 almost always

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
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<td>almost never</td>
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</tbody>
</table>

Using alarm-clocks and other technical aids to remind me of important things I intend to do.  
Almost never: 1 2 3 4 5 6 7  
Almost always: almost never 2 almost always

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
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<td>almost never</td>
</tr>
</tbody>
</table>

Being afraid of forgetting what I intended to do.  
Almost never: 1 2 3 4 5 6 7  
Almost always: almost never 2 almost always

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<td>almost never</td>
</tr>
</tbody>
</table>

Using a "string tied to my finger" and similar tricks to prevent forgetting.  
Almost never: 1 2 3 4 5 6 7  
Almost always: almost never 2 almost always

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
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<td>almost never</td>
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</tbody>
</table>

Forgetting to do some of the things I intended to do, even though I thought of them repeatedly.  
Almost never: 1 2 3 4 5 6 7  
Almost always: almost never 2 almost always

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
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<td>almost never</td>
<td>almost never</td>
</tr>
</tbody>
</table>

Carrying things with me to remind me of something I intend to do.  
Almost never: 1 2 3 4 5 6 7  
Almost always: almost never 2 almost always

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<td>almost never</td>
<td>almost never</td>
<td>almost never</td>
<td>almost never</td>
</tr>
</tbody>
</table>

Telling myself all the things I want to do.  
Almost never: 1 2 3 4 5 6 7  
Almost always: almost never 2 almost always

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<td>almost never</td>
<td>almost never</td>
<td>almost never</td>
<td>almost never</td>
</tr>
</tbody>
</table>

Feeling clearly that a decision is correct once I've arrived at it.  
Almost never: 1 2 3 4 5 6 7  
Almost always: almost never 2 almost always

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
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<td>almost never</td>
<td>almost never</td>
<td>almost never</td>
<td>almost never</td>
</tr>
</tbody>
</table>

43] Using an appointment book or notepad to keep my mind free for other things.  
Almost never: 1 2 3 4 5 6 7  
Almost always: almost never 2 almost always

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>almost never</td>
<td>almost never</td>
<td>almost never</td>
<td>almost never</td>
<td>almost never</td>
<td>almost never</td>
<td>almost never</td>
</tr>
<tr>
<td></td>
<td>These days, I am like this:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------------------------</td>
<td>-----------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Being uncertain whether I will remember to do what I had intended to do at the right time.</td>
<td>almost never</td>
<td>almost always</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seeing to it that I &quot;stumble across&quot; reminders of my intentions by putting appropriate things in my way.</td>
<td>almost never</td>
<td>almost always</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>During the day, repeatedly reminding myself of an important project.</td>
<td>almost never</td>
<td>almost always</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Writing down important though unpleasant intended actions if they cannot be tackled immediately.</td>
<td>almost never</td>
<td>almost always</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Being completely certain of my decision after making it.</td>
<td>almost never</td>
<td>almost always</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeatedly reminding myself of my plans and intentions.</td>
<td>almost never</td>
<td>almost always</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using memory aids to ease the burden on my mind.</td>
<td>almost never</td>
<td>almost always</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bringing to mind again and again what I have to do.</td>
<td>almost never</td>
<td>almost always</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finding useful memory aids to better remember my intentions.</td>
<td>almost never</td>
<td>almost always</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Perhaps you remembered some intention of yours in time and have already planned how you will proceed. In spite of that it may be difficult to actually start what you had planned to do (e.g., signing out for more sports, making an appointment with your doctor, preparing for an exam, cleaning up the basement, etc.). Sometimes you are successful in starting without difficulty, and sometimes you simply cannot get going and perhaps only do so under time pressure...

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>almost never</td>
<td>seldom</td>
<td>somewhat seldom</td>
<td>sometimes</td>
<td>somewhat often</td>
<td>often</td>
<td>almost always</td>
</tr>
</tbody>
</table>

### Starting and staying with an activity that I didn't like taking on.

<table>
<thead>
<tr>
<th></th>
<th>These days, I am like this:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeling as if I have to force myself to get going.</td>
<td>almost never</td>
</tr>
<tr>
<td>Considering how to proceed.</td>
<td>almost never</td>
</tr>
<tr>
<td>Digging in right away.</td>
<td>almost never</td>
</tr>
<tr>
<td>Waiting until others get impatient.</td>
<td>almost never</td>
</tr>
<tr>
<td>Planning something and not following through.</td>
<td>almost never</td>
</tr>
<tr>
<td>Feeling too defeated to get started right away.</td>
<td>almost never</td>
</tr>
<tr>
<td>Explain the necessary steps to myself.</td>
<td>almost never</td>
</tr>
<tr>
<td>Starting without hesitation.</td>
<td>almost never</td>
</tr>
<tr>
<td>Getting going only when time becomes short.</td>
<td>almost never</td>
</tr>
<tr>
<td>Starting something and quickly letting it drop.</td>
<td>almost never</td>
</tr>
<tr>
<td>Feeling too listless to even get started on something.</td>
<td>almost never</td>
</tr>
<tr>
<td>In my mind going over the details of a matter.</td>
<td>almost never</td>
</tr>
<tr>
<td>Starting immediately even with unpleasant activities.</td>
<td>almost never</td>
</tr>
<tr>
<td>Getting going only after somebody gets angry.</td>
<td>almost never</td>
</tr>
<tr>
<td>Telling myself: You can always do it tomorrow.</td>
<td>almost never</td>
</tr>
</tbody>
</table>
Starting and staying with an activity that I didn't like taking on. These days, I am like this:

<table>
<thead>
<tr>
<th>Feeling zestless.</th>
<th>almost never 1 2 3 4 5 6 7 almost always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making a plan for how best to start on something.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Starting vigorously at the first good opportunity.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Taking care of unpleasant things only at the last minute.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Dropping something after an enthusiastic start.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Taking a lot of energy to finally get started.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Making up a schedule.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Starting with vigor.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Getting going only after someone puts me under pressure.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Repeatedly postponing something.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Feeling too much lack of drive to simply get going.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Determining how I want to proceed.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Starting working on difficult matters immediately.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Not getting started until time is about to run out.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Getting started on one thing and then doing something else.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Lacking energy.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Making a plan for myself.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Getting going immediately.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Getting going more easily if somebody else joins in.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Somehow forgetting about a planned project.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
</tbody>
</table>
Sometimes it is easy to concentrate on difficult or unpleasant matters and to pay full attention to them. But often it is difficult to keep your attention on them because you are too excited or too nervous or because your thoughts wander. Then it could happen that you end up neglecting difficult or unpleasant things.

<table>
<thead>
<tr>
<th>What's my experience when I want to concentrate completely on something?</th>
<th>These days, I am like this:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deliberately focusing only on the essentials.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Getting into my best form only when facing a challenge.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Instinctively keeping the goal in mind.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>All of a sudden thinking of something else.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Being able to relax quickly even after some inner tension.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Deliberately paying attention to anything that is important for the matter at hand.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Feeling most lively when circumstances challenge me.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Automatically paying attention only to those things that will bring me closer to my goal.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Suddenly finding myself thinking about something completely different.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Getting rid of nervousness quickly.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Starting an activity with full concentration.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Being particularly wide awake in difficult situations.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Staying focused on the business at hand without any effort.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>My mind wandering.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Being able to handle my excitement before it becomes a hindrance.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Picking out only the essentials to focus on.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>First really &quot;waking up&quot; when difficulties arise</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
</tbody>
</table>
### What's my experience when I want to concentrate completely on something?

<table>
<thead>
<tr>
<th>Experience</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instinctively paying attention to anything that is important for reaching my goal</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Having a hard time concentrating</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Becoming quite calm when being excited would hinder me.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Concentrating only on whatever is important at the moment</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Really hitting my stride when obstacles arise</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Being able to concentrate even on a difficult task without any effort</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Finding myself daydreaming despite wanting to concentrate on something</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Being able to deliberately get rid of my nervousness.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Deliberately increasing my concentration.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Being spurred to my top form by difficulties in attaining a goal.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Being absorbed in something without losing sight of my actual goal</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Again and again having to think of things that are completely different</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Being able to reduce my tension if it threatens to get in my way.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Keeping my mind on the main thing.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Feeling more revved up as soon as I meet with obstacles.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Finding my attention riveted to what I am doing.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Drifting away from what I am doing without intending to do so.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Being able to deliberately reduce my nervousness.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Getting really activated by difficulties when I am trying to accomplish something.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
<tr>
<td>Being able to reduce my level of excitement when it is disruptive.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
</tr>
</tbody>
</table>
While you are occupied with a difficult or unpleasant matter, different things may cross your mind. Sometimes these thoughts and sensations are positively toned (e.g., hopeful, optimistic); on other occasions they may instead be negative (e.g., doubts, apprehensions)...

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>almost never</td>
<td>seldom</td>
<td>somewhat</td>
<td>somewhat</td>
<td>often</td>
<td>almost</td>
<td>always</td>
</tr>
</tbody>
</table>

**What crosses my mind when I pursue a challenging goal?**

<table>
<thead>
<tr>
<th></th>
<th>almost never</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>25) Sensing that I am doing something of my own free will.</td>
<td>almost never</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Thinking that I have what it takes.</td>
<td>almost never</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Experiencing an intense and pleasant feeling of taking action.</td>
<td>almost never</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Feeling that I am gradually getting a handle on something difficult through my own abilities.</td>
<td>almost never</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Being afraid of losing others' good will if I don't come through on a project.</td>
<td>almost never</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Being certain that it will all come out all right.</td>
<td>almost never</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Taking action in the knowledge that I am acting on my own free will.</td>
<td>almost never</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Being convinced that I have the necessary determination to succeed.</td>
<td>almost never</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Enjoying a feeling of competence while doing something difficult.</td>
<td>almost never</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Feeling obliged to fulfil someone else's expectations.</td>
<td>almost never</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Assuming that it will somehow work out all right.</td>
<td>almost never</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Being in harmony with myself.</td>
<td>almost never</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Being convinced that I will stick it out in spite of all the difficulties.</td>
<td>almost never</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Feeling as if I am in control despite obstacles.</td>
<td>almost never</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Being guided by what others want of me.</td>
<td>almost never</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Being confident that I'll think of something that will work.</td>
<td>almost never</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Knowing that I really want to reach a particular goal.</td>
<td>almost never</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>
### What crosses my mind when I pursue a challenging goal?

<table>
<thead>
<tr>
<th>Feeling</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having faith in my endurance.</td>
<td>almost never</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Having a sense of being able to handle something challenging.</td>
<td>almost never</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Feeling that I am dependent on others.</td>
<td>almost never</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Feeling self-confident.</td>
<td>almost never</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Sensing that it is I who want to pursue a particular goal.</td>
<td>almost never</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Feeling certain that my will-power is strong enough.</td>
<td>almost never</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Feeling self-sufficient even during a demanding activity.</td>
<td>almost never</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Imagining what others would think if I don't do a certain thing.</td>
<td>almost never</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Facing things with a positive attitude.</td>
<td>almost never</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Feeling free.</td>
<td>almost never</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Knowing that I won't give up on it.</td>
<td>almost never</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Maintaining a good feeling of competence even when the going gets tough.</td>
<td>almost never</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Acting as if I want to please others.</td>
<td>almost never</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Feeling confident that I will cope one way or another.</td>
<td>almost never</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Knowing that I really want something.</td>
<td>almost never</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Having the commitment to see something through to its end.</td>
<td>almost never</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Having a reassuring sense of approaching a hard goal step by step.</td>
<td>almost never</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Just enjoying doing.</td>
<td>almost never</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Feeling as if my actions serve the wishes of others rather than my own.</td>
<td>almost never</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Having faith in a good outcome.</td>
<td>almost never</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Sensing that it is I who want it.</td>
<td>almost never</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>
When you are doing something hard or unpleasant, it sometimes appens that your feelings and moods turn mostly negative or that you simply feel inclined to do other things. Sometimes you may apply strategies from the outset that help you to stick it out. But on other occasions you perhaps do or imagine things that take it even harder to stay with what you are doing.

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>almost never</td>
<td>seldom</td>
<td>somewhat seldom</td>
<td>sometimes</td>
<td>somewhat often</td>
<td>often</td>
<td>almost always</td>
</tr>
</tbody>
</table>

### How do I feel when involved in a difficult project and how do I handle my moods?

These days, I am like this:

- **63** Being driven by fear of failure.
- **Putting myself into the mood I need in order to keep on track.**
- **Getting distracted by thoughts about other exciting things.**
- **Being able to draw something positive from an activity that originally was unpleasant.**
- **Continuing with a matter though feeling the urge to stop.**
- **Imagining how awful a failure will be.**
- **Putting myself into a happy mood because that will help me to make much better headway.**
- **Letting myself get distracted by more pleasant things.**
- **Finding it difficult to suppress conflicting needs.**
- **In spite of the difficulties, thinking of those aspects of an activity that I like.**
- **Finding myself striving for a goal that I myself did not really decide.**
- **Thinking of the unpleasant consequences of not having done something.**
- **Doing something that helps me to get rid of an unpleasant mood that is blocking me from progressing towards a goal.**
- **Having a hard time resisting a tempting distraction.**
- **Thinking about the positive aspects of a goal when my determination to persevere weakens.**
- **Feeling as if there’s a lot to dislike about the project and nothing to gain from it.**
- **Letting myself be haunted by a guilty conscience.**
<table>
<thead>
<tr>
<th>How do I feel when involved in a difficult project and how do I handle my moods?</th>
<th>These days, I am like this:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deliberately thinking of pleasant things in order to become more relaxed.</td>
<td>almost never</td>
</tr>
<tr>
<td>Getting side-tracked by a tempting distraction.</td>
<td>almost never</td>
</tr>
<tr>
<td>Deliberately focusing on the positive aspects of a difficult activity.</td>
<td>almost never</td>
</tr>
<tr>
<td>Having a sense of detachment from the goal but still working towards it.</td>
<td>almost never</td>
</tr>
<tr>
<td>Thinking about what would happen if I cannot cope.</td>
<td>almost never</td>
</tr>
<tr>
<td>Managing my mood so that my work flows more easily.</td>
<td>almost never</td>
</tr>
<tr>
<td>Having a hard time postponing my other needs as they gradually crop up.</td>
<td>almost never</td>
</tr>
<tr>
<td>Knowing how to increase my interest in a dull activity.</td>
<td>almost never</td>
</tr>
<tr>
<td>Feeling unable to recall my original reasons for committing myself to a difficult goal.</td>
<td>almost never</td>
</tr>
<tr>
<td>Imagining how awful I would feel if I cannot accomplish a particular goal.</td>
<td>almost never</td>
</tr>
<tr>
<td>Cheering up so that things will work out better.</td>
<td>almost never</td>
</tr>
<tr>
<td>Experiencing my other needs so sharply that I find it increasingly hard to stay on track.</td>
<td>almost never</td>
</tr>
<tr>
<td>Being unable to postpone a sudden desire.</td>
<td>almost never</td>
</tr>
<tr>
<td>Knowing exactly how to increase my interest in something I am doing.</td>
<td>almost never</td>
</tr>
<tr>
<td>Feeling compelled to go on in order to avoid unpleasant consequences.</td>
<td>almost never</td>
</tr>
<tr>
<td>Focusing on how it would feel to fail.</td>
<td>almost never</td>
</tr>
<tr>
<td>Changing my mood so that it fits better with what I have to do.</td>
<td>almost never</td>
</tr>
<tr>
<td>Feeling irresistibly drawn to something tempting.</td>
<td>almost never</td>
</tr>
<tr>
<td>Seeing good in something hard that I am doing.</td>
<td>almost never</td>
</tr>
<tr>
<td>Feeling committed to staying on track with something though being unable to derive positive feelings from it.</td>
<td>almost never</td>
</tr>
</tbody>
</table>
Sometimes it can be hard to adjust to new situations and hanging requirements. This may happen if you have been occupied with the same thing for a long time. Then you may or may not succeed in disengaging yourself from the old routine and in adjusting to a new one. This may also lead to errors and criticism.

<table>
<thead>
<tr>
<th>Item</th>
<th>Scale</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hating to start something new as long as another important matter remains unfinished.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Making mistakes if I suddenly have to pay attention to something very different.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Being able to change my ineffective behaviour after few attempts.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Avoiding getting involved in more than one thing at a time.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Only slowly perceiving what is important in a changed situation.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Being quick to learn from criticism.</td>
<td>almost always</td>
<td>7</td>
</tr>
<tr>
<td>Finding it difficult to switch over to something different when I am absorbed in something.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Continuing to think about something even after it is finished.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Finding it difficult to change my usual way of looking at things.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Easily making use of criticism to improve my approach to something.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Having a hard time shifting back and forth between activities.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Having a hard time when I suddenly have to follow completely new instructions.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Learning from my mistakes quickly and without hesitation.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Losing time due to repeatedly switching attention when having to work on several things at the same time.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Finding it hard to adjust again and again to new things.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Only slowly learning to change my thinking in new situations.</td>
<td>almost always</td>
<td>7</td>
</tr>
<tr>
<td>How does it feel for me to suddenly have to &quot;switch&quot; from one thing to another?</td>
<td>These days, I am like this:</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Being able to change my behaviour immediately when someone points out my mistakes.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Having trouble switching from working on one project to working on another, even when there is nothing more I can do at that.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Finding it difficult to adjust to sudden changes of rules.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Needing little time to learn from my mistakes.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Finding it a strain having to change my accustomed ways of doing things.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Finding it difficult to change from my usual actions to new ones.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Finding it difficult when I have to turn my usual ways of looking at things upside down.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Quickly improving my performance if I can see right away where I am making mistakes.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Being unable to start something new because I am still preoccupied with a previous matter.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Finding it hard to reorient myself to a new situation.</td>
<td>almost never</td>
<td>1</td>
</tr>
<tr>
<td>Quickly learning from my mistakes.</td>
<td>almost never</td>
<td>1</td>
</tr>
</tbody>
</table>
If you suffer setbacks in a challenging undertaking or if the whole thing goes wrong, this will have various consequences: Sometimes you are completely stalled and have to keep thinking about your mistake. However, in other situations you might even feel spurred on by your mistakes and be more successful...

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<td></td>
<td>almost never</td>
<td>seldom</td>
<td>somewhat seldom</td>
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### While pursuing a goal, how do I handle successes and setbacks?

<table>
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<tr>
<th>Behavior</th>
<th>Scale</th>
<th>These days, I am like this:</th>
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<tr>
<td>Imagining how good I will feel after having finished the thing.</td>
<td></td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Having &quot;paralyzing&quot; thoughts as soon as something goes wrong.</td>
<td></td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Listing for myself all the things I achieved en route towards my goal.</td>
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<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<td>Finding myself brooding after a failure.</td>
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<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Rewarding myself when I have successfully completed something difficult.</td>
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<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Fantasizing how good it will feel to have achieved the goal.</td>
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<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Finding it hard to start all over again after a failure.</td>
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<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Looking back at all the things I have already accomplished.</td>
<td></td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Immediately having to think of past failures after a setback.</td>
<td></td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Taking a break after having achieved something difficult.</td>
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<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Thinking up a reward for myself for going through the effort.</td>
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<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Losing all of my energy when threatened by a failure.</td>
<td></td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Patting myself on the back for even small accomplishments.</td>
<td></td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Being plagued by worry when something doesn't turn out right.</td>
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<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Doing something nice for myself when I have made progress on a difficult project.</td>
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<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Enjoying the pleasant thought of reaching the goal soon.</td>
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<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Feeling internally paralyzed by a fear of failure.</td>
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<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>While pursuing a goal, how do I handle successes and setbacks?</td>
<td>These days, I am like this:</td>
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<tr>
<td>Recalling the steps I have already taken that have moved me closer toward my goal.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Needing a long time to forget something unpleasant.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Taking the time to savour my success in a difficult activity.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Fantasizing about pleasant things to do when I have reached a goal.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Losing my drive after a failure.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Feeling proud of myself after having mastered a difficult step towards my goal.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Spending a long time thinking of possible reasons for a failure.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>After having reached a goal, rewarding myself for my efforts.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Saying to myself: When you are done with it, you can reward yourself.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Feeling unable to do anything at all for a while after having suffered a setback.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Once in a while reminding myself of the little successes I have already achieved.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Having an unpleasant feeling for a long time after a setback.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Unable to escape my worried thoughts.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Allowing myself time off after having put out effort.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Thinking of the nice things that will happen after I reach my goal.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Mentally freezing up for fear of further failures.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Feeling paralyzed by a setback.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Celebrating each successful step of the way.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
<td></td>
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<tr>
<td>Constantly having to think of a previous failure.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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<tr>
<td>Following a hard push with rest and relaxation.</td>
<td>almost never 1 2 3 4 5 6 7 almost always</td>
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Appendix 6: Interview Schedule.

MSC PROGRAMME INTERVIEW GUIDE

ATHLETE CODE: DATE:
START TIME: END TIME

Section 1:
Introduction (not recorded)

Thanks for agreeing to be one of the participants of this interview study. In this project, I want to get to know how you have progressed as an athlete over the past 9 months to your current level. I am particularly interested in investigating what you think ‘willpower’ means to you in athletics. I shall be focussing the interview mainly on how your ability to harness your willpower has developed as an athlete and what still influences or has influenced you as an athlete.

The information in this study will be used in two ways: Firstly, the information will be used for my own PhD research thesis. Secondly, the general findings will be reported in scientific journals so that other sport scientists, coaches and athletes can benefit from them.

I want to emphasise that all of this information will remain completely confidential. The results and information will be presented in the form of selected quotes from an interview, but these will remain strictly anonymous. You will simply be given a participant number. I am using a tape recorder so that the information brought out of the interview is clear and accurate. The tape recorder is necessary so that I can make a typed transcript for later scrutiny and reference.

As a participant in this study, you have several very definite rights. Your participation in the interview is entirely voluntary, you are free to decline to answer any questions or to stop the interview at any point. There are no right or wrong answers to the questions I will be asking. I am keen to find out what you have to say as an athlete who has undertaken the mental strength conditioning programme. I hope therefore that you will answer the questions in an honest and straightforward manner. If there are any questions that you do not feel comfortable answering, I would rather you declined to comment than tell me what you think or what you think I or others would want to hear. Let me reinforce that it’s you I’m interested in, so please answer the questions as honestly as possible.

If you have any questions as we go along, please ask them and please ask for clarification, if at any time you don’t understand what I’m saying.

Orienting Instructions: There are two things to keep in mind throughout this interview:

Firstly, we will spend some time talking about your experiences prior to starting the programme. Therefore, we will make a progression from the cross-country season last year, through 2004 to the summer track season and finally to the present day. I will
ask you to think back in time to earlier days when answering some of the questions. It might take a while to recall some of your past experiences, but please take your time to remember; pauses are fine. For those questions, it's about how you felt then, not how you feel now that counts. If you still can’t remember, after trying to think back, then just let me know, but please don’t guess.

Secondly, when you are answering any of these questions, I want you to feel free to discuss your overall experiences as a player both on and off the track. In your answers, please be willing to draw on any aspects which you think have made you the athlete you are now. This could include injuries, lifestyle, exams, lectures, relationships, interactions with other people or anything else which is important to your experience as an athlete.

At the end of the interview, you will have the chance to add anything that you think is missing and also offer advice to other athletes.

Do you have questions about what I’ve said so far? OK, then lets get started.
Section 2:

Phase 1: Athletic experiences prior to programme (up to 02/2004)

Introduction:
In order to better understand your attitude and behaviour at competition, I have split the development of your mental strength training into several parts. These phases take you from your experiences pre-programme, during the awareness phase of the programme, through summer and since receiving feedback.

This section is all about your athletic behaviours prior to February 2004, so please answer questions thinking back to when you were in this phase – your behaviour in the winter XC season 2003.

Interview questions:

1. How long have you been running?

2. When did you start to get serious about competing in your event? Specialise?

3. Many athletes spend time thinking about the race / their likely opponents in an upcoming race quite a few days before the actual competition. Prior to Feb 2004, how long before a competition did you start thinking and what thoughts came to mind?

4. Do you feel during this phase that you were more often focussed on not losing races as opposed to going out to win them / to do well? 
   PROBE: Why / Why not

5. Did these thoughts affect your behaviour in the days leading up to competition? 
   PROBE: How / What sort of things did you find yourself doing?

6. (If negative) Were you generally able to stop these thoughts and think more positive thoughts, or think about other things instead? Or just dwell
   PROBE: What strategies did you use / How did you do so?

7. Did your thoughts / feelings affect your organisation / planning and preparation strategies on race day? Describe race day activities? 
   PROBE: How were they affected – what would happen to you?

8. During this phase how would handle a negative experience or a negative race at the time? 
   PROBE: What would you do?

9. At this time how long would it take you to get over a bad experience?

Were you more likely to worry about what others were thinking and try to please other people by doing what you thought they wanted you to do?
10. At this time were you able to recognise and focus on what it was you wanted to do, and be able to trust those feelings enough to act confidently on them?

11. Being totally honest, what kind of an athlete do you think you were at this time? Where you happy / enjoying your running?
Phase 2: Awareness training

Having discussed your attitudes, behaviours and experiences in athletics prior to starting the programme, we can now move to the main area of the interview. These questions are going to be about when you started to focus on your self-awareness and your performance awareness, between ________ & ________. These questions are about you when you were completing these sheets (show athlete awareness charts), so when answering questions, please think back to when you were in this awareness phase, the time you started to look at your thoughts and behaviours in detail, so that I can hear your thoughts as an athlete undertaking awareness training.

Interview questions:

1. How easy did you find it to be honest and rate yourself in terms of your mood & effort?
   PROBE: Was it easy to take a good at yourself?

2. Looking back do you feel you were completely honest with yourself

3. Did you enjoy the process of completing a daily professional attitude diary?
   PROBE: Why / why not?

(RE sheet 1) Did you notice anything about your thoughts or behaviours?
   PROBE: Anything that surprised you / anything you wanted to change?

4. Did completing this sheet for 2 weeks lead to making any changes to your behaviours?

5. Sheet 2: performance awareness – easy? Affect on attitude & behaviour?

6. At this time you learned how to focus on the here & now and where you were focussing, past/present/future – did this influence your attitude?

7. You received training in breathing control – how committed were you to practising a technique that suited you?

8. During this time did you draw on this technique when you experience a stressful situation – please describe how you used it?

9. What does bring it on mean to you?

10. Able to use anything over Easter training break?

11. Being totally honest, looking back reflectively do think at this point in your progress as an athlete, do you think you were being completely honest with your self about your attitude and behaviours – can you look back now and say you know what I don’t think I was fully accepting my responsibilities...WERE YOU TRULY AWARE ABOUT YOUR BEHAVIOURS & ATTITUDES?

At this time did you feel that things happened to you or you made things happen?
Phase 3: Summer – feedback

Having discussed your experiences during the awareness training phase we can now move to the track season (post BUSA). These questions are about that time, so when answering please think back as if you were in that phase, the time when you were developing your goal setting skills, checking the ‘tools’ in your toolbox and devising a race plan, so I can hear your thoughts as an athlete going through these experiences.

1. Autonomy – being honest are you the sort of athlete who seeks to check everything with a coach

2. Toolbox – did you believe all the skills were in your toolbox – were you able to draw upon this at competition?

3. How did you feel about the personal affirmation statements on the board? Did you use the posters – cards – slogans at comp?

4. How committed to activities at this stage?

5. Can you get yourself relaxed in a pressure situation so you can think straight?

Notice any changes in the way you conducted yourself as an athlete at this time – thought, attitude, behaviour? How did this make you feel?

6. How would you describe your ability to think on your feet and trust your instincts to make a change? Has this improved?

7. Have you been working with a coach during this time?

8. Please describe your relationship with your coach?

9. Are you better able to do what you want. Rather than take on other people’s goals or do what you think they want?

10. Have you been able to carry over any skills you’ve learned from athletics into your daily life?

11. Do you feel you know your own mind?

12. Under pressure do feel you know what it is you’re trying to do?

13. Do you still have difficulty getting over negative experiences?
   PROBE: Describe the process when something bad happens or you think about something bad happening?
Phase 4: Feedback

Recently you received feedback on your progress over the course of the programme, this section will focus on your attitude and behaviours since the feedback & at the present time.

.....
Was the data you saw in feedback what you expected? How so?
The information was very ‘in your face’, has this affected your attitude & behaviours since receiving it?
What changes to plan to implement?

Phase 5: Advice

Having been through the MSC programme, you have a great deal of knowledge about training your willpower to make things happen. These last couple of questions are about advice you could offer other athletes.

1. Advice for athletes struggling to be honest with themselves – blaming poor performance on anything, rather than take personal responsibility?

2. What advice or suggestions would you give to other athletes struggling to focus on the task at hand without getting distracted from their intentions?

3. What advice or suggestions would give to athlete struggling to be able to get over negative experiences and avoid brooding over poor performances?

4. What advice or suggestions would you give to athlete struggling to trust themselves and act autonomously?

Phase 6: Conclusions

Almost finished and these last few quick questions will close up the interview.

1. Did you enjoy the interview?

2. Were you able to tell your story fully?

3. Did I lead or influence your responses in any way?

4. The interview was all about how you have worked at developing your willpower. Do you think we have missed out on any important factors related to the previous areas which you would like to add?

5. You have given a lot of time to this interview, do you have any comments or suggestions about the interview itself?

Many thanks for giving your thoughts.
Appendix 7: Interview transcription “Liam”

Athlete 06:

CD: This section is all about your athletic behaviours prior to February 2004, so please answer questions thinking back to when you were in this phase – your behaviour prior to the winter XC season. What kind of races you were running at this time?

A06: Winter 2003 were mainly the long cross countries, but there weren’t really anything else, you know ... it was just sort of like the ones for Loughborough, they’re about 10K... varying sort of courses.

CD: Ok and how were things going?

A06: I think okay... trying to think back, I remember saying how a lot of things changed you sort of like the attitude towards my training when I came here and taking into account that adjustment, you the adjustments that had to be made for the changes, I was very upbeat, very positive about the way training was going, about my approach to general training and you know, speaking with my coach on the phone he sounded quite positive about it... he was quite chuffed that I’d made quite a smooth transition from going to... cos at home I have a little small group of 5 or 6 runners to one coach, to where we’re here with George you know and there’s sort of... a lot! So he quite was happy with the way things were going, so I was quite happy with them, but I thought I getting very fit and aerobically strong, so I was more than happy with the progress really.

CD: Many athletes spend time thinking about an upcoming race or likely opponents quite a few days before the actual competition. Prior to February 2004 how long before a race would you start thinking about it?

A06: If it was a really big race I would like sort of planned to aim for it... for a track race this, I would have planned to aim for it from the start of the winter, so from the October all the training through ‘til Christmas and through the new year. I would have sort of mental note of where all the big track races lie, so I always knew within a week or so of where things were gonna be. So in a sense of knowing when it was, I knew a long time before, but actually sort of... I mean cos the training from like the winter is always pretty similar, obviously you’re doing similar things cos the year’s a cycle. In terms of actually really focussing on the race, I knew it was obviously coming up and then sort of focussing on it, it’d be like a few weeks before we’d really start gearing the training towards it, moving away from the more sort of generalised cycle of training to a making sure it was training for this race. In terms of people in the race, that was one thing I never really tended to bother with. I mean if someone told me that someone was in it that was really the only way I found out, I didn’t really go around looking for them, I mean I knew roughly who was gonna be in the competition, whether they were gonna be in my heat or my semi-final was the luck of the draw, it was such a random process that I never really bothered with it.

CD: So back then did you feelings or your thoughts ever interfere with your athletic performance at competition?

A06: I definitely never had a thought of anything... cos at that point I don’t thing I ever had something that was big enough in my life to really sort of affect things. A levels was the first real sort of whack, you know something’s important now, up ‘til then things just sort of moved on
gradually. I never had nothing too important to really bother me, so outside influences never really got to me that much.

CD: What about thinking about the actual race?

A06: Oh in terms of the actual race?

CD: Yeah, thinking in terms of the race – did that ever affect performance on the track?

A06: I wouldn’t have said so, I knew roughly what to expect... I mean every race is the same in some degrees and different in others, you know generally what’s gonna happen you’ve got a fairly good idea, obviously there’ll be a difference here and there, but you’ve run so many races you’ve almost experiences all the different types of differences, so I was never too flustered, I don’t think, about the race. Cos I knew what to expect from the years of going through the grind, going through the mill I don’t think it really did bother me too much, no.

CD: If you did have any negative feelings or thoughts at the competition would you be able to stop or control them?

A06: I wouldn’t have thought so, no. I think if someone had told me something whilst I was in my warm-up stage that was really sort of... something big, I think it would have thrown me quite a bit, I think I would have got quite side tracked I don’t think I would have really been able to focus on something and the race. So I don’t think I would have really known how to make a choice based on what to try and dismiss.

CD: So what would happen in that instance?

A06: It would either be a complete disaster, or not as well as I wanted to be. It would never go as well as planned.

CD: Back then where your thoughts, feelings or behaviours ever likely to be influenced by the behaviours of other athletes?

A06: I wouldn’t have thought so. When I go to competitions I only really only ever listen to my dad or my coach. I wouldn’t have thought I’d be side tracked one way or another by seeing someone at a race or something like that.

CD: You mentioned you consulted with a coach. At this time did you feel you’re running would be better if you were given a specific race plan to follow, or did you prefer to make the plan yourself?

A06: That’s something me and my coach have always done together, we’ve always... he knows I’m not stupid and he knows that at the end of the day that things might be slightly different on one day to another day, so you know I know how to adjust on the day and things like that. But we’ve always pretty much come up with things together and that will be more or less everything, not just one race. He’ll sort of lay down the foundations for the training and then I might say to him, I think we should run this rep slightly quicker, or I think we should do another few reps, or I think the recovery should be a bit different and things like that and he’ll say yeah, fine, maybe, or I don’t think that’s right. So it’s always been quite like... consultation and then we’ll discuss it until we come to an agreement. At the end of the day he leaves the last decision with me and say like, look if you’re happy to go running it that way, you run it that way, if not then we’ll come up with something else.
CD: So back were you more focussed on not messing up, as opposed to doing well?

A06: I think at the time I didn’t think of it as either messing up or doing well, but I think I probably would of said that I was more focussed on messing up than I was of achieving better. I think I was more negative and sort of like dreamed a bit.

CD: How come this was your focus?

A06: I don’t know, I think I it’s just I expect certain things of myself and if they don’t come off I wanna know why. I know at the end of the day the buck stops with me. I know at the end of the day people can influence me and people can help me, but without me it doesn’t happen, so I think it was just not letting myself down, I knew I’d worked hard, I knew I’d put in the effort and if it didn’t come off, it would be sort of like why?

CD: What sort of athlete would you describe yourself as at that time?

A06: I’ve always been quite a confident person, I mean I’ve always been quite chatty, outgoing, quite confident and I was a confident runner, but I wasn’t, I don’t think... I could take things upon myself as such. When it was sort of like messing around in a park I wasn’t scared to try things, where in a big race, when people whose opinion I care about were sort of analysing or watching me, I was a bit pessimistic to try something that I thought would work, that I hadn’t previously discussed, in case... just in case I failed for myself really and I lost a race which I knew I should have won, or I ran a time which I knew I could have beat and things like that. I was a bit worried about looking different or trying something new.

CD: So what does willpower mean to you?

A06: I think firstly willpower is something... it’s one of those things you’ve either got or your haven’t got, if you haven’t got it you can be given in slightly, but you can’t... I think if you’ve got willpower it’s something that’s a massive advantage. Me and my dad always used to sort of describe it as running through a brick wall. You know some people would sort of not bother, some people would have a go and just bounce off, where some people would just sort of run straight through it. That was the sort of thing that I always thought, the sort of metaphorical brick wall that I always wanted to run through it, rather than bounce off it.

CD: At this time, how was your ability to harness your willpower and make things happen?

A06: That’s something that I think was pretty appalling. I think I’ve always had willpower and I’ve always given my best in every competition and every exam and things like that, but I don’t I’ve always had the lead up to give my best. Silly things like my coach would say to me, oh you’ve got a big race on the Saturday, so he says on the Thursday you don’t have to bother coming down the track, you know go for a gentle 10-15 minute run, a few strides and then a warm-down, a bit of stretching, that sort of thing. Where because I thought that I would do myself more benefit by going for a hard 10-15 minutes, doing some hard strides and then doing more warm-up... I think I took the willpower and the arousal too far, whereas things like that have now changed with like maturity and experience.

CD: Let’s move on to look at when you started to focus on your self-awareness and performance awareness between February and Pre-BUSA. At this time you learned how to rate your mood and
effort on this sheet [pro-attitude sheet] – did you find it difficult to rate yourself honestly and objectively?

A06: Whenever I sort of rated myself I always rated myself a bit lower than other people would rate me. I’ve always put in a lot of effort in things that I’ve done, but I always sort of think back well did I put in the most amount of effort that I could of done... was that sort of like last rep... did I try hard enough, or did I let the pain get to me? When I was warming-up was I being a bit too loose with my warm-up? Was it as confusing as it could have been to perform in and sort of things like that. So I think I was a bit too hard on myself, like in previous years when I had to do things like that for my school work. Doing them quite constantly, knowing I was doing them everyday, I think that helped to change my point of view of looking at it, I thought it’s time to stop being silly, cos I know I did put a lot of effort in and I know I put all the effort I could in and my mood and stuff was good, as well as I personally believed it could have been to achieve with. So I think with it sort of progressing I could do it more honestly without trying to think of stupid little things that didn’t exist really.

CD: Looking at the second sheet then. Several weeks later you moved on to use this performance evaluation sheet, how difficult was it for you to analyse your running in this manner?

A06: One thing that I did learn to do was I did it on my own at first and then I did it with my coach just to see what my differences were. Like my running style, when I run well he’s always said I’ve got a very good running style and I believe I have as well, it tends to be when I get tired it does drop quite drastically, so that was something that I’ve always known myself and he’s known, it’s not like we’ve had to make it up and tip toe around it, so I tried to reassess things like that and get his input on reassign things like that. So it was quite good that I did it on my own and then did it with someone else. There were you know a lot of similarities between the two, but there was also a few differences and that sort of balanced them out. I think it’s again the relationship we have, I think a few times with the difference I was right and a few times he was right. I think it was more like a 50-50 thing of when we did analyse them, rather than no, I’m right, you’re wrong. I think it was good to do them in two separate lights as such.

CD: What did you actually find was the effect of monitoring on your thoughts, attitudes or your performance?

A06: I’m someone who does a lot of sciences and things like that, so I like to have a number or a graph, or something that is a fact in front of me. So putting sort of numbers or comments down, it’s so much more prominent to the eye, rather than thinking in your head, I’ve drunk enough water today... you know I’ve had a glass here, a bottle of water... but when you sort of totted them up and put a number in, you think, well actually I didn’t have enough. So I think actually having a fact in front of you, for me, I can relate to it so much easier than thinking I went to bed a such and such and surely I’ve had enough sleep and that sort of thing.

CD: Did the monitoring make it easier for you to recognise your thoughts and feelings?

A06: Oh yeah! Yeah, definitely.

CD: How so?

A06: I tend to sometimes get a bit carried away with things, things like sleeping and quality of meals and stuff like that and I think, ah well quality of meals I have had a god few days of meals
here, but when I tried to start thinking back through them, well actually it wasn't as good as I thought, so then when it was being recorded it was, oh actually... for a few days I've had 3 pizzas in a week and a couple of burgers and that sort of thing, so although I've had a healthy breakfast and lunch, then the dinner isn't as good and I wouldn't really correlate that unless I found it written down as a fact. It just really stood out and things really shone at you, rather than just thinking, oh well I've done okay this week, you know I've eaten well, slept well and you think... well actually.

CD: Did it help you verbalise or express these thoughts and feelings?

A06: Yeah I think so as well. As I much prefer things in numbers and facts, rather than pages and pages of words or thoughts, so it did. I think I'd much rather express something on a procedural scale of 1-5, rather than as a thought, so it helps me really stand out whether it has been okay, or hasn't been okay.

CD: You learned about using a here and now focus in your running and also, how to focus on the feeling of good running - how difficult was this for you?

A06: That was something that I'd never even done before, I'd never even put any thought into doing it before, I'd never heard anybody mention it, so it was a complete start from scratch thing. I found it... I wouldn't say strange, but a bit sort of abstract, a bit different at first, so the first few attempts were a bit trial and error, I got a few things wrong, but then you know you sort of like learned from it and built on and then it did sort of slightly progress so I could run in the present, rather than in the past or in the future, so it was more of a learning curve. First few attempts, as I said I learned as much from the things that were right as they were wrong, so I thought that was a good exercise. A thing I've always struggled with is learning from mistakes. I think it's a mistake, so it's wrong, so you dismiss it, where now I'm old enough and mature enough to understand where it's a mistake, where did it happen, what caused it.

CD: You were also introduced to breathing control as a method of self-relaxation to help regulate your feelings under pressure - how committed were you to finding and practising a technique that worked for you?

A06: At the beginning I think I was a bit lazy in the morning and I'd do it if I had time, rather than make time to do it, but in the evening I was fairly consistent with it. I did it... I can't remember not doing it, so I must have done it every night, but in the morning I'd leave it 'til the last minute to get up, have breakfast and have a shower before going to my lecture, which I know is not the best approach and things like that, but it was more fitting it in where I can, rather than making sure I fitted it in. Where now it's moved on to I make sure I do it, I make sure I get up 10 minutes earlier and go to bed 10 minutes earlier. I've made sure I fit it in, rather than trying to fit it in.

CD: You have been very committed, how come you were so committed to practice?

A06: I've always been committed to training as such, I can't remember the last time I missed a training session without a very very good reason, you know an injury or something like that. There's no time I think I've ever missed a training session to go to the cinema, or something like that, that's never ever been a problem, it's something that I really enjoy doing and it's sort of like the add on bits. It's sort of like you're not running, what is this? You don't feel like you're training, I'm not running reps, so I sort of struggle to comprehend that it was doing me benefit. Again we've got a learning curve, so well, you know hang on if I try this, if it doesn't work, it doesn't work and if it does I've gained something and lost nothing and generally being around other people up here I
think that’s influenced me as well. When I was back home my friend were quite sporty, but never at a competitive level, it wasn’t like they distracted me, but they never encouraged me as such. People up here you sort of learn from them, you think, hang on, if they’re doing the extra add on bits, so… not I’ve got to do what they’re doing, but it means there must be more to it that just going out and slogging it in training. I think it sort of started possibly a couple of years ago, you know before February, but it’s sort of increased since February, my commitment to other things as such.

CD: Was it something you had a good experience with and that made you more committed, or was it just something you just made yourself do?

A06: It was probably a bit of both, it had been suggested that I do it, so I had nothing to lose. I’ve gotta give it a good bash to see if it does work or if it doesn’t work and I think the more I did it the general sort of… I did feel a bit better, especially like now as I get up and find time to fit things in without rushing around and it generally just makes you feel better, a bit better prepared for the day, a bit more energised and things like that really.

CD: What does bring it on mean to you?

A06: It’s funny actually, one of my housemates has just started reading the Michael Johnston autobiography and I know a lot of the times when you’ve mentioned it you’ve mentioned him, so I’m sort of encouraging him to finish it so I can have it. But to me it resembles that I’m ready for the challenge that no matter what someone throws at me, says about me or thinks of me, I can come back that something that will… not put them in their place to say shut up sort of thing, but to put my point of view across, that sort of thing.

CD: So was it something you were able to buy into?

A06: When I was little watch people like Linford Christie grow up, you always had sort of like… the understanding of it being there, but not the understanding of it, it was something I stepped into and made a big leap from giving nothing to having everything, but it was more of a gradual process. You sort of see it… it’s not just in athletics, we were talking about it not so long ago about how boxers they’ve gotta go I’m the best in the world. You relate to other people and you think well they’re ready for the challenge so it’s… not saying I should just copy them, but it’s something I should ready for as well.

CD: So how did you make it work for you? It wasn’t one big leap, so how did you get there?

A06: I don’t think of me accepting learning as one thing, it’s lots of little things in training and stuff. I use it a lot more these days in my long runs and stuff, I used to think to myself, I’ve been running 50 minutes, I’m near the end now I know it’s hurting, so if I ease down for 30 seconds or a minute and then give it one last go… where now it’s sort of like, take it by the scuff of the neck and think, hang on I’ve 10 minutes to go, so I’m gonna make sure this 10 minutes is the hardest of the run and it’s little things like that in training that I’ve noticed. Through reps and stuff instead of like when you’re coming to the last rep sort of halfway through you think it’s really hurting now, but I’m not close, but I’m not close enough to the end to give it that last kick and it used to be not a matter of easing down, but keeping at something that was still hurting, but bearable. Where now, a few times I’ve thought well if I just push through this one I’ll push through the next and the next one, so it sort of came on from things like that… Attempts at saying to myself I haven’t had enough this is where I want to be and the more I sort of did that the better I got at it, so now it’s like a constant thing, rather than a concerted effort.
CD: Talking of this learning process you feel you've gone through, the awareness stage was a 12 week phase, did you feel you learned anything about yourself during this time?

A06: That was when I sort of started to believe I was a bit too harsh on myself on some occasions and things like that. That I didn’t give true reflections of myself... more negative, I don’t think I ever said that was wonderful, that was amazing even if I thought it was. I’d still think, well hang on that bit could have been better and that was one massive step I took and it was quite unusual for me to take it all in one go. To not be so hard on myself and understand I do have some character traits that do allow myself to do my best. It’s not like I constantly needed to keep bullying myself and say well that could have been better, or that could have been harder, or cos I don’t think I tried a hard last session, I’ve gotta try twice as hard this session. So that was the big big thing I learned about myself.

CD: This next section is about your track season post BUSA up until the final session of the programme in June. We talked about using breathing control techniques to help relax and think under pressure – during this time were you able to relax in pressure situations?

A06: Definitely. Even taking it away from athletics in exams and every day life, I think I’m so much more relaxed now than I was a year – 18 months ago. Definitely more relaxed.

CD: How did you know you were relaxed, what’s the difference?

A06: I think... I know I’m relaxed cos I’m not worked up. It’s not that I think I’m relaxed, it’s more that I know I’m not worked up and that sort of feeling. I don’t sit back and think, oh I’m relaxed, I’m just normal, I don’t tend to think about it in the situation. I think if I do get a bit worked up I can sort of realise I’m getting worked up, rather than before it would just escalate up.

CD: Did you use any other techniques to relax and stay focussed in the face of setback or negative experiences?

A06: My coach has always been quite a good influence for relaxing me and making me feel better. I just can generally clear my mind a lot better now, I can just get rid of a lot of things that aren’t important, you know I mean like before things like the wind, the conditions and stuff like that. It always used to be the wind, it would never really be the rain or the sun, it would just be the wind. I’d think oh it’s really windy down the back strait, it took me a while to realise that I was doing it, but that I didn’t bother with it anymore. It just seemed like cos I can empty my mind and just go into my little world with what I need to run well, it generally does make me relaxed. It seemed like previously like before a race, like the night before... I generally tend to watch a lot of films now, or comedy episodes, I generally find that tends to sort of help me slip back and take a couple of hours off and things like that that I’m doing a lot more of to help me relax, you know 2-3 days before the competition, if I’m starting to get a bit nervous, or getting a bit anxious towards it. Taking a couple of hours in the even when I don’t really do anything, that tends to help me relax before the day of competition.

CD: At this stage we reviewed all the skills you had learned over the course of the programme to build your toolbox – was it useful or relevant to you in pressure situations to know you had tools?

A06: I mentioned to you a couple of weeks ago about how now I could run in the present, in training one time it just suddenly struck me I wasn’t worrying about the future reps and that was
almost gobsmackingly... you know oh my god! I did realise that would ever happen and that was one thing and that just seemed to really free my mind, empty my mind, so I think I didn’t ever have to know I had the tools, they were just there. It’s not something that you had to consciously think about like breathing, it just happened. But that contributes to helping me be more relaxed and more sort of focussed.

CD: A this time you also generated a series of positive affirmations on a poster and blue cards – was there any affirmation you made particular use of?

A06: There was one that I said about not being scared to try anything different or look a bit different, if someone from an outside end used to look at me and think what did he do that for, I’d start to question why did I do that do that. Where now it was just like I did because I know it was right. That’s another thing that got to me about 6-7 months ago, I just thought I no longer care whether I look stupid or look different, I believe what I’m doing is giving me a better chance to perform well in such and such competition and until someone proves to me that it’s not, or until I find a better way of dealing with such and such things, then I’m gonna stick to looking stupid. Not being scared to stand out is something that has really stuck with me and I think 2 years ago I’d never have done what I just did.

CD: When you attended competitions at this time did you feel like an organised and prepared athlete?

A06: Oh definitely, it’s something that I feel I’ve always been quite good at, you know packing my bag the night before and making sure I’ve got a spare pare of socks, trousers, shirt and stuff, pins, an extra pair of shoelaces and I always take a few more spikes than I know I’m gonna need. So I’ve always been quite a finicky prepared person, but now I feel I can understand myself that I’ve done this, this week and I’ve carried that on to next week and that’s helped me from the week just gone, so mentally I know I’m a lot more prepared and I understand the cycle. So I feel an all round more complete organised athlete.

CD: How would you rate your ability to harness your willpower and make things happen during this time?

A06: I don’t think I’ve even still quite got it, I think it’s still... getting better, but then I mean it was half as good as it is now and hopefully in six months time it will be twice as good as it is now. There’s always something more you can do to harness something more and more.

CD: This section focuses on your summer track season after the final programme session, but before you received any feedback, so how committed were you to using and maintaining your mental skills over summer?

A06: Cos I speak to my coach quite often on the phone, I phone him once a week on Sunday afternoons and tell him how things are going and the addition of the mental strength programme and he knew it was something else I was doing, as is quite often the way with me and him, he was making jokes about it and I was making jokes back at him. It was never like I forgot it, well it was never like I was given the chance to forget it you know, it was always something that was being brought up. You know cos it was a sort of continuous flow then, so it didn’t have to be forced commitment, it just happened.

CD: So what sort of athlete would you describe yourself as by the end of the track season?
A06: Last year physically for me just didn’t happen, but I feel I learned bits about myself that have added to my armory of tools that I can use. I’m definitely gearing towards becoming a complete athlete rather than just running well. I became a lot more confident and appreciate of new ideas, like accepting that bad things happen, I can’t do anything about it now, it happened so take what I can from it. Now, I think it’s a good thing my cold came with my hamstring injury, so I can get them out the way, whereas in previous years I’d have thought, oh I’ve got a hamstring injury and a cold, something’s going to go wrong again, I’m gonna forget to hand some work in, which will be another thing to think about... stuff like that I just generally think, get them all out the way in one go with 1 rubbish week so I can have 15 good weeks.

CD: How would you describe your race focus at this time - we talked about January, we’re you still trying to avoid messing up?

A06: Now I don’t mind making a mistake as such, I mean obviously I don’t want to, but if I try something in a race and it goes absolutely wrong, I’ll think well, I gave it my best shot. I’m trusting myself more, I believed at that time in the race that was the best thing to do, so not being afraid to stand on my own two feet and make my decisions, rather than just go by the norm.

CD: Now I know you’ve worked with you coach very closely, has developing your mental skills changed the way you work together?

A06: I don’t think anything could really! I wouldn’t say we’re similar characters, but a few of our main strengths are similar, so that makes us a good partnership. I don’t think it’s changed, we’ve both accepted that we’ve moved on and we’ve moved on together rather than him moving on and me catching up, or vice versa.

CD: This next section will focus on your attitude and behaviours since the feedback and at the present time. 1 month ago you received feedback on your progress over the course of the programme - was the data what you expected to see?

A06: I was quite surprised about that first one... you know from the continuum, the action and state oriented, I was quite surprised about that. When you initially said to me, where did you think you lie [on the continuum] and I thought I said I was more in the middle and I was surprised I was so far over to the state, that did shock me to be fair. I knew now that I’d be much more over to the action, you didn’t have to tell me that it was just that feeling of knowing it. So that was a big surprise to me. The other graph you showed me of the coachability and confidence and things like that... everything on that was more or less how I expected it to be, you know, both then and now, so that was more a confirmation of my beliefs rather than a big shock like the first thing was.

CD: I know you like graphs and numbers, so how did it actually feel when you saw the chart – you were there and then you were there?

A06: It makes me and my learning and appreciation of things so much easier, just seeing a number, a graph and as I say that shocked me a lot to find out I was so low and then... I generally tend to improve little bit by little bit and that one big step, that was surprising and shocking to see such a big increase.

CD: How had receiving this feedback affected your thoughts, feelings, actions and running since them?
A06: Cos a lot of it tends to be a confirmation, I don’t think it’s really sort of opened my eyes, or closed any avenues, it just seems that I’m on the right track, everything is going up and it’s just a matter of keeping it going up, rather than hanging where I am or going back down. I think I’m in a position now where I’m strong enough to make sure that it goes up, rather than hope it goes up.

CD: If you could pinpoint any turning point, I know you talk about things happening in progression, where things came together for you, where would it be?

A06: That one time I was analysing that session, it did really gobsmack me, I almost took a step back when it hit me, it was in the summer some time, probably about August time. That was a real realisation that things had come together a bit.

CD: Can you identify any particular programme materials that were especially useful in your development?

A06: Definitely the recording things down, as I say for me it’s just something I like doing having numbers and facts, rather than thoughts, so recording things down was a big help to me.

CD: Having been through the MSC programme, you have a great deal of knowledge about training your willpower to make things happen. These last couple of questions are about advice you could offer other athletes. Any advice or suggestions for an athlete struggling to be honest with themselves, they blame poor performances on anything rather than take personal responsibility?

A06: I was quite lucky that I completely changed environments you know I went from being back home with mum and dad doing everything for me, where everything is set, to coming up here on my own and I think that really helped me take a few steps back. When you say about people blaming things, they’re looking at it from inside, cos I changed surroundings and had to look at everything, not just athletics and possibly having to get a job at xmas, easter and summer and how I was going to manage my work, my eating times that sort of things, so that really did help me having to uproot. If I couldn’t have done that I think I would have needed something to help me come out of my world and look at it from the outside.

CD: What about an athlete struggling to be able to get over negative experiences and avoid brooding over poor performances?

A06: I used to do that a lot and it used to make it worse because I would finish my session, warm down and then go straight home. Now because I quite often discuss with my coach, even if I take my mind of by talking to him about football or something like that, it takes my mind off the bad feeling and then it’s not such an emotional thing, it’s not like, oh that was disastrous, it was terrible, you’re being emotional rather than logical thinking, so by the time I’d warmed down, talked to me coach and had 10-15 minutes to remove my thoughts... it was more in training, I didn’t tend to do it so much at competition. If just gave myself that thinking space, it was just that gap to cool down and think a bit more logically and then I could often understand why it went wrong.

CD: Almost finished and these last questions will close up the interview. The interview was all about how you’ve have worked at developing your willpower – do you think we have missed any important factors related to the previous areas which you would like to add?
A06: Generally I think everything is on a learning curve and I'm sort of creeping up it, just trying to double up as such, making sure things good now that were bad 6 months ago get a bit better, so I think generally we've covered everything.

CD: Many thanks for giving your thoughts and time.

A06: That's okay.
Appendix 8: Interview transcription “Anthony”

Athlete 03:

CD: This section is all about your athletic behaviours prior to February 2004, so please answer questions thinking back to when you were in this phase – your behaviours in the winter XC season 2003. So, what kind of races were you running at this time?

A03: Well it wasn’t many was it cos I got injured and I was ill before that... so it was more the end of the track season, I think it was going... average, it wasn’t as good as it had been in previous years, as the last 3 years had been on a similar sort of par and so I was almost going through the motions a little bit.

CD: How so?

A03: Don’t know really, maybe it was something to do with my training, maybe it was something to do with motivation at that point, but it was the end of the track season, start of the XC season, just turning over really. Rather I wasn’t setting a goal, it was just carrying it over, doing it because I was just used to doing it.

CD: Many athletes actually spend time thinking about an upcoming race or likely opponents quite a few days before the actual competition. Prior to February 2004, how long before a race would you start thinking about it?

A03: I think it depends on the competition, something like a simple league race... like the relays, I think probably the day before, like maybe on a Friday, you’d be aware of it then because you’d be thinking oh actually I can’t go haring about with football now because I’ve got the race tomorrow, or I’ve gotta make sure I’m eating this and this, so it’s sort of like on your mind a little bit then. But if it was something like a British Champs or a Welsh Champs where there’s pressure on you to win, then it would probably be the week before. You sort of forget about it you know, but it pops into your head and you think oh God that at the weekend! So get a bit nervous about it and then you forget about it and then it will come back and hit you the next day.

CD: Oh okay, so did these sort of thoughts and feelings ever interfere with your performance at competition at that time?

A03: I think they have done in the past yeah, when I’ve got too worked up about something and it’s just been playing on my mind, or if I’ve seen certain athletes... say in a track race when you look who’s in your heat and you think oh God, I’m in a difficult heat and that affects you. So it has been the competition and other people in the race that have affected me.

CD: And in what way would that actually affect your performance?

A03: I don’t think physically, I don’t think I knew about it affecting me, but it must have done. I think I would just start doubting myself then and it would be like, well I can’t beat him, he’s got a better time than me, so already I’m down to 4th position. So now I’m fighting out for the fastest loser before I’ve started, rather than, ok every man for himself, let’s go for that. I’d almost put myself in fastest loser position before the start and then the leaders would go away and it would be like, yep, this is how I thought it would go and then just mentally really, it’s almost a sub-conscious
thing, you don’t realise that you’re doing it, but the last lap when you’re sprinting, you’re not going
with it, even though physically you probably could and if there was some sort of motivation, or
confidence you probably could, but you just lose it a little bit and you know, you don’t realise
you’re doing it.

CD: So, at this time could you actually stop or control these negative feelings?

A03: Well I’d try and self-talk my way out of it, just sort of try and blag that I was being stupid you
know, c’mon positive thinking and all that, but a lot of the time it didn’t really work, I didn’t
believe it and I was just saying it for the sake of it, or to try and focus myself, but it never really had
the desired affect.

CD: Where you working with a coach at this time?

A03: I would have had a coach, but I wouldn’t have been working with him or talking with him
before, I might have had a quick 2 minute chat and that’s about it really. So there was no you know
help, no motivation, no sort or gearing me up for the race or advice or tactics, it was just a quick
comment and left to my own devices really.

CD: So at this time did you feel your racing would have been better if you’d have been given a
specific plan to follow, or did you like to devise your own plan?

A03: Well I did that because it was what I knew really. I think it would have been good to have
someone there and not a parent because it different with parents, but just someone there to say, look
this is what I want you to do, this is how I want you to do it, I want you thinking about this and this
and this and just really giving a motivational talk and really sort of getting you mentally prepared
for it and giving you advice and tactics, but I never had that and I think it would have helped.

CD: So, back then, were you more kind of focussed on not messing up, rather than focussed on
doing well?

A03: Yeah it was more this of fear of failure sort of syndrome, rather than wanting to do well cos I
wanted to win or to cos I wanted to achieve a goal, it was more to perform well so you weren’t
performing badly, if that makes sense. So, yeah just like the fear of failure really, you didn’t want to
be last, you didn’t want to be knocked out sort of thing, so you weren’t like aiming for the top, you
were aiming to just to be better than the worst case scenario, so … that’s a quote!

CD: So what sort of athlete would you describe yourself as at this time?

A03: Probably quite a worrier I would say, quite a negative one. Little things would distract me.
Tried to focus, but often thought I was, but was just kidding myself really, not a terribly mentally
tough athlete, I tended to be things would affect me and that would be the end of it.

CD: What does willpower mean to you?

A03: Willpower… my definition would be… it’s a bit like mind over matter. It’s just believing in
your mind you can do something and being able to push yourself so you can achieve that, so it’s
nothing physical I don’t think, although physical is linked to it, but it’s your mind turning over the
physical, pushing the physical to the limits of the thing, rather than your mind just fairly relaxed and
your physical doing all it can on that. I think it’s giving your physical an extra helping hand and really pushing it on, that’s mind power really.

CD: So at that time, how would you rate your ability to harness your own willpower and make things happen?

A03: Pretty poor I would say. I mean throughout the whole of my athletic career if someone overtook me that shouldn’t have done, it was always head down then, it was never come on let’s get back in front of them. I always struggled to sough of gee myself up again and to work on something, it was always if something happened my head went down. So I don’t think my willpower was terribly great, although in a racing situation no, but I mean to keep training cos I was training on my own a lot of the time, to keep training, to keep still racing.. that’s a certain element of willpower because at the end of the day I didn’t have to be doing any of that. When things are tough it’s easy just saying I’ll leave it for a bit I’ve had enough, so I think in a way that’s sort of good willpower as well, but in terms of the races it wasn’t great.

CD: These next questions are going to be about when you started to focus on your awareness between February and up until just after Easter. So, you learned to rate your mood and effort on this sheet [professional attitude sheet] - how difficult did you find it to rate yourself honestly and objectively?

A03: It depends when you filled out the form because it’s usually at the end of the day and if you’d had a really good day and your mood was high, but if just half an hour before you filled out the form something annoyed you, like someone playing some load music that would put me in a bad mood and I’d just give it a 2. It was quite hard to sum up the whole day in one single value because sometimes something makes you happy, sometimes something pees you off, so especially the mood thing it was difficult to actually average out the whole day. And things like quality of foods, I tended to... I mean things like breakfast, it was just the same every morning, so I mean if you have a bowl of cereal where do you rate that is that compared to a big breakfast, or that fine because that’s all you need really, it quite hard to judge what is considered a good breakfast, a 5 breakfast and a 1 breakfast. Some of the mealtimes were hard, do you compare it to what research says you should eat, or what you usually eat.

CD: What about things like effort in training, was that easier to complete?

A03: I mean I always find that when I was going training I put in the maximum effort anyway because for the hard sessions you put in the maximum effort anyway because other it’s a bit pointless doing it, so I always found that way high, but I felt I had to put other numbers down as well, sort of to even it out, it’s hard to explain, but I just felt I wanted to put 5 every time even though my sessions weren’t that good and on a daily basis I wanted to keep the all in sync, cos I was training hard and the session’s gone well, then I’m putting in good effort and vice versa. Sometimes I’d be putting a 5 for effort all the way and the training [quality] would go from 1 to 5 to 5 to 3 just all over the place, so it was hard to sort of differentiate what was effort and how good the session was, if that makes sense.

CD: So you’re still putting in the effort, the effort was quite high, but your actual experience of training was varied.

A03: Yeah, so you might have a really poor session and thought okay is that just the way today’s gone, or is it because I wasn’t putting in the effort, does one correspond to the other, or is effort just
completely always good effort, but it’s just how you’re feeling that day... can’t do anything about it, so that was also a bit tricky as well.

CD: So when you actually looked back at it did you find the numbers were what you expected, or are you looking back and thinking no that isn’t what I should have put.

A03: A lot of the time it was just sort of spur of the moment and this is what I think there and then and the other times I’d sort of look back and think, well 2 days ago I put that, but I’ve actually had a worse session today so maybe I was a bit harsh on myself then. So a lot of the time I’d go back and just sort of alter things cos every you’re comparing to what the previous day was, rather than starting with a clean slate you’re always looking back.

CD: Several weeks later you moved on to using this performance evaluation sheet - how difficult was it for you to analyse your running in this manner?

A03: I found that sheet almost an impossible task to fill out. Because A. it depended on the session and sometimes you can’t put fitness in terms of a 30 minute steady run, that doesn’t really gage how fit you are it’ just a steady run and again ‘tactical’ on a steady run, what could you say about it... I suppose you could say you went off too fast, but I always thought it was very difficult to put tactical down in a training session, except for the possibility of, I could have gone faster to start with, or I went too fast to start with. Apart from those things I found tactical very hard to do and then mental was sort of... I’m just training here, there’s no mental involved, unless it was a really hard session and I was having to push myself towards the end, but again, steady runs and easier sessions were just... what mental is there, I’m just going for a relaxing run. The technical was just the same all the time, I didn’t think there was any difference between my sessions... in one day I’ve got a heavy leg, so maybe the style wasn’t as good, but to specifically say my shoulders were a bit tense, my knees weren’t as high, I found it difficult just to be able differentiate between the days.

CD: Just to clarify then, it’s more the type of session, rather than you struggling to find the words?

A03: Yeah, it is the type of session because of steady runs is very difficult to fill all those points, no matter what words you’ve got, it’s just because there’s nothing to say about it, it’s just a simple steady run that I’m not thinking about, there’s no tactics involved. But, on the other hand it was difficult to be specific and find the correct words to say with technical, what exactly am I supposed to be writing here specifically.

CD: So what did you find the effect was of monitoring on your thoughts, feelings or behaviours, was there any affect?

A03: I suppose when you broke it down because you had to with that sort of form, you could sort of look at the points to work on there and do something about it, so when you were looking back if you saw patterns of the same things every time, you’d think actually I’m not doing anything about this, maybe I should because I keep picking it out in my session every time, maybe I should start to work on it. I suppose it did help to analyse your performance in different areas. Sometimes it would work and you could actually say, yeah I see this is a common denominator that keeps coming out, I need to work on this, but sometimes you’d put things for the sake of it really, just to fill in the form and it wouldn’t really be that useful.

CD: Did it help you recognise your feelings or thoughts?
A03: I’m not convinced it did sort of help any feelings that I had or recognise my thoughts, cos it didn’t change me when I was training and it didn’t change me during the day because for the daily things that sort of go one in your life, there’s sort of external factors which can affect your mood and that sort of stuff can affect everything you do rather than what I want to do and I suppose it’s the same with training as well. Sessions depended on the session, so I’m not sure it did sort of help me at all in terms of how I felt.

CD: You also learned bout using a here and now focus in your running and also, how to focus o the feel of good running, how difficult was this for you?

A03: It was almost impossible to be honest because I’d always seem to be thinking about other things and I’ve got quite an active mind and I find it difficult to blank things out, there’s always something which needs thinking about, or analysing... any session that I do was always thinking about something else. To focus on your running at a certain time is almost vital in a race situation and of course I was struggling to do that even in training and just sort of keep concentration for any long duration of time...

CD: Did you find yourself thinking about trying not to think?

A03: Well, I wasn’t trying to think about that, I was just trying to block out things and concentrate and of course once you start trying to do that it starts to make you think about things more and then you’re too busy thinking I’ve gotta block this out, rather than concentrate on the running. You’re playing games with yourself at that point trying to fight the devil on your shoulder, so I find it very difficult to do that.

CD: You were also introduced to breathing control as a method of self-relaxation to help regulate your feelings under pressure - how committed were you to finding and practising a technique that worked for you?

A03: Average I would say. To start with I would do it and I would almost get tired of it and think, this is actually annoying me more than relaxing me when I wouldn’t focus, because the practise, the deep breaths and the counting to start with, I could never relax doing it because I just felt I was just suspended in life not doing anything, it wasn’t right. If you’re gonna sleep, then yeah you’re gonna do it for a reason, but I was almost like rather than relax, I’ll relax and just watch a bit of TV or something, or just go to sleep sort of thing simple as that, rather than just sitting here counting and breathing is just sort of you know... I just didn’t feel that... it was almost annoying me more, getting me more tense and come races when I wanted to focus I found everything was on standstill a bit while I just went through a couple of breathing exercises and then started up again. It was just like putting life on hold, so everything had to stop around me while I sat there and counted my breaths, which was hassle it’s hassle doing it and as soon as I’ve done 5 minutes that’ll do, back into it again. You just put things on hold and end up frustrated even more because I’m quite active you know mentally and physically and just to be sitting there doing nothing just thinking about breathing... just couldn’t do it, just struggled with those.

CD: Did you start with the practising because I said so, or because you did it and thought maybe it worked, so you carried on?
A03: Well it's always good to try something new, when to keep at it because you know some things are more difficult than others and I think you figure out for yourself what suits you and what doesn't and you adapt to that then.

CD: Did you ever try to practise it in a training environment?

A03: No. No, I think if I went out on my own I went out on my own and I'd be doing certain things and if I was out with the group and I'd be chatting away... it was never really... Only in races, cos in races you tend to be on your own a bit more and it's a bit more important, whereas training wasn't... if you had a bad session it didn't really matter cos there's always next time, whereas a race, there wasn't a next time, or for that certain race anyway, there was another race, but there wasn't really a next time so you tend to try a little bit more there, but it was never really...

CD: What does bring it on mean to you?

A03: I suppose it means something like you can take on any challenge really. If you've got that attitude towards something then you're ready to sort of take it on, you're ready to have a go again. I suppose that's almost like fighting talk a little bit, which is sort of gearing yourself up to believe you can beat what's ahead of you, whether it be anything in life really. It's self-motivation almost and confidence I think.

CD: Was this something you were able to buy into?

A03: Yeah, I think it was actually because I could apply this to everyday life sort of thing, if you said that that was almost like bells ringing, c'mon... the edge you needed to sort of go for it really and it helped to give you confidence as well, it's quite funny. Just by saying that you could sort of convince yourself that you're ready for it and you start to feel confident about it and you're like yeah, okay then let's give it a shot!

CD: So did you find you actually learned anything about yourself during this 12-week phase?

A03: I think I could probably see myself down on paper a little bit, but it was more in numbers than anything else, or just certain words which maybe I knew in the back of mind anyway. I'm not sure there was any clear sort of statements or facts there that I could look at and think wow! That's me. It was just I don't do this type or thing, or I do this and I'm like well yeah, I know that already and there's a load of numbers here which tell me I have a good breakfast, but then I know that already, but in the short term not really, no.

CD: So looking back from the position you're in today in December 2004 – can you say that back then you were being completely honest with yourself and accepting personal responsibility for your performance?

A03: Yeah I think so. Yeah I was being honest.

CD: OK. Having discussed your experiences during the awareness training phase of the programme we can now move to the track season post BUSA, up until the final session of the programme in June. You mentioned you had found using breathing control techniques successful at competition, did you use any other techniques to relax yourself at this time?
A03: Again it was just the fear of failure sort of thing, that was what always kept me going in big meetings, just had to perform, there was no like I feel confident, I can perform or I want to perform well, it was I have to perform well. It was just off that really, not I can or I will... it's just I have to and that was the difference between it. If you go into a race saying, not so much I can, because I can, but I might not, so there's still an element of negativity in there, but I will is like, yeah, it's gonna happen. But I was the other end of the spectrum even more, sort of saying well I have to. Doesn't matter whether I can, I have to, there's no option and if I don't I'm in trouble!

CD: At this time where you thoughts, feelings or behaviours at competition likely to be influenced by other athletes?

A03: Yeah, it would still play on my mind, if certain people are in. It's funny, if I looked at a start list and I then I saw that a couple of big names weren't in there, that would give me confidence straight away, or of someone would say so-and-so's not running anymore they're running in another event or something that would really give me confidence just because they weren't in it, so it always had a big affect on me really, which probably shows a lack of confidence, cos if you're confident and in good shape, it wouldn't matter who was in the race, I know I'm gonna perform my best... then I'll win it. Whereas, I was just like well yeah, but so-and-so's in the race so that's first place gone.

CD: So you weren't using bring it on or anything in those situations?

A03: Not really, I suppose I started to a little bit in certain situations, but again we had the problem of did I really believe it, it did help...I can do it and that type of self-talk, but there were occasions where again, I didn't really believe it, it was just like, oh you're saying this because I've been told to say this, which isn't really the way to go.

CD: We reviewed all the skills you had learned over the course of the programme to build your toolbox - was it relevant or useful to you in pressure situations to know you had tools?

A03: I think I knew that I'd gone over those tools, but I still wasn't happy with using them, or I didn't know how to, or I didn't believe it when I did use them, so I think I was still running on the usual thoughts, I wasn't thinking yeah I've practised this before I've done this and I can now adapt it and use it in competition, it was just like, well yeah we did do that, but you know... I never really got into sort of using it.

CD: Is that what you mean when you say you didn't know how to use it?

A03: Yeah, it was more I've been... whatever with breathing control, so something like that, yeah I knew what it was for, but it didn't help me. Some of them were like that I knew that I had done this before, but it didn't really help me in competition and other things I just thought, if I do use this, how's... well it's the same thing really, I'm just repeating what I'm saying, but y'know...

CD: You've mentioned self-talk, at this time you generated a series of positive affirmations on a poster and blue cards - was there any particular affirmation you made a lot of use of, or you were able to use?

A03: I think when I wrote them, yes I believed them, but again when your I competition you're away from it and there's external factors affecting you, it goes out the window a little bit. So I wasn't able to pick those out and use them effectively and believe them in competition. But I think
when I wrote them I thought, yeah this could be me, I do believe these that I'm capable of these, but come the race situation there's always things that took me away from that and I was always thinking about other things to even be thinking about those.

CD: So when you attended competitions during this time, did you feel like an organised and prepared athlete?

A03: There were times yeah, I think for the majority yeah. I felt like I was going into competition and I was sort of as mentally prepared as I could be, compared to maybe previously. I think though even though sometimes I've said I didn't really believe it, I knew what the sort of emotions I should be going through and on occasions yeah they did help. But you learn to devise your own ways which help and maybe adapt them to suit you better, cos there are different things for different people, so maybe use them in a different way to help me.

CD: So at this time how would you have rated your ability to harness your willpower and make things happen, had it improved?

A03: I think it had improved because I was aware, aware of things that in my psyche that I wasn't previously aware of, or you've never really looked at certain things or broken them down. But now I aware of certain things and I now could draw on them whenever I needed to, adapt them slightly and I suppose it really did help.

CD: Let's talk about the summer season then and focus on your track season after the final programme session, but before you received any programme feedback. How committed were you to using and maintaining your mental skills over summer?

A03: In training not very, I would say. In a way being back home and training on my own again sort of made me get back into old routines sort of thing, even though the lack of motivation to really sort of push on with the training, sort of get the mileage. I wouldn't say I was 100% fully committed to it, now and again I might draw on certain things that just seemed right at the time to use, but I don't think it was time where consistently ever race I went into I was using those tools effectively and they were helping me perform better.

CD: So at this time, we talked about your race focus previously, were you still going into races looking to avoid being last and driven by a fear of failure, or were you more looking to do well?

A03: I think it had changed from this fear of failure thing, but it again it did depend on the race. I think if it was a really big race yeah I still struggled with that, but in sort of the lower league races and races for club or university, I was going into them more positive perhaps, a bit more wanting to race rather than being in a race. So by that I mean rather that just sort of getting in there racing because I have done in the past, I was in the race to win. So I think I did have that sort of aspect.

CD: Just want to talk about the feedback now, so this section will focus on your attitude and behaviours since you received feedback and at the present time. So, 1 month ago you received feedback on your progress over the course of the programme – was the data what you expected to see?

A03: I probably thought that I didn't expect to see much improvement in myself, cos I thought I've done this, but looking at results I hadn't really made any more progress from it, but I know there
were some aspects which according the graph results had improved and I had got better. Some had stayed the same, but there are some which had improved. Whereas I would think ok it has improved, I didn’t think it would, I thought I’m filling out these questionnaires and I seem to be filling out the same answers time after time, I still believe the same things and I still think the same things, but some things had improved, you know I didn’t realise.

CD: So how has the feedback actually affected your feelings, thoughts or running since?

A03: I’m not sure it’s been a wake up call, sort of like look this is happening, or this has happened. I think I’m very much the same sort of athlete, although sub-consciously maybe I’m doing things that I don’t realise I was doing. When I saw the results certain things I didn’t realise did had improved, had improved. It might be I’m doing certain things that I don’t realise I’m doing better. It’s not something I can see in myself. I can’t say yeah I’m doing this more now, it’s pretty obvious for anyone to see, to me it’s just I’m doing the same sort of thing, so it’s a bit sort of like when you grow physically, you don’t see yourself growing, but over the years you’re getting taller.

CD: Can you identify any particular programme materials that were especially useful to you in your development?

A03: I found the staircase to success thing quite useful, cos you could see where you were then in steps and sort of break it down a little bit. That was quite useful to see that and it didn’t sort of like look into the future too quickly, you were looking at every small step. It almost broke down your career in manageable chunks and it was easier to see where you were going then. This was quite good (back of PE sheet) because it had your sleep, energy, hydration, clear plans for the day and this was quite useful to me because I like to see how much sleep I’ve had and that sort of helped me and I liked to monitor my hydration and that was quite important for me. And then there was the one with the circles about the session, did you have a hard session, did you try hard in the session? Was it successful? It broke it down a little bit more and you could see what was the problem there, cos in the other one, if you didn’t have much energy, but you trained, they wouldn’t go in sync with each other, but this one, you could see well you’re dehydrated today so that maybe a reason why. This day I’ve tried hard, but my energy was low, or I didn’t enjoy the session, it was raining. It broke it down a little bit, that was useful.

CD: Well having been through the programme, you have a great deal of knowledge about training your willpower. These last couple of questions are about advice you could offer other athletes. So, what advice or suggestions do you have for an athlete that is actually struggling to be honest with themselves? They are blaming poor performances on anything rather than take personal responsibility.

A03: I’d probably say at the end of the day it is that person that is performing and there’s a lot of things out there which may effect you mentally, but they don’t effect your physical performance. They are not physical barriers there that are in the way of you, it’s just the same person standing on another track against the same people, so I think it’s just a matter of believing that really. One of the things that helped me going into a race, rather than thinking it’s a race that I’ve gotta win or do well in, was going in there was to actually race. What I’d tended to do in the past is not think of it as a race, but think of it as my sport and I’m running because it’s just what I’ve always done and I’m going to competition and I was thinking I’ve gotta win this, or I’ve gotta do this and at the end of the day you should go right back to basics. What is it? It’s a race, you just want to see whether you can run faster than other people, cos if you break it down to that it’s starts to make you want to do it a little bit more. I found that I was actually going into races thinking, this is a race, I’ll give you all
a race. I was actually starting on the start line thinking in my mind c’mon then I’ll give you all a race! I’ve always liked to time things, I’ve always time even walking down to the shops, so I would now be thinking let’s see who wins, getting back to the basics of a race, let’s all run as fast as we can. At a simple level that’s all it is really and I think to believe in that is quite a good thing to do, rather than getting worked up about oh it’s windy, you’ve just got to get your head around the fact that you’re just racing.

CD: What about an advice that would give an athlete struggling to get over negative experiences and stop brooding and beating themselves up about poor performances?

A03: I would probably say... what you’ve done in the past is in the past and it shouldn’t effect what you do next time. It’s almost like what’s done is done sort of thing and you’ve gotta start from a clean slate again. Forget everything that has gone and go into that next race feeling positive that you want to run and you want to compete. Just to use an analogy, it’s a bit like doing an exam, just because you’ve done badly in 3 modules, why should you do badly in the 4th. You know it’s a completely different exam, the marker’s not gonna say be prejudiced against you because you’ve done badly in the other one, he’s just getting another paper and he’s marking it. He’s starting with a clean opinion, you’ve got a new so of questions, go and do better.

CD: Last one for you, what advice or suggestions would you give an athlete struggling to focus on the task at hand without getting distracted by all the things going on around them?

A03: For me that’s a bit like the pot calling the kettle black. I would probably say... experiment with things that might suit you, whether it’s meet up with a group of athletes you know before competition and chat away while you’re warming up, talk about other things if you need to get away, or if that helps you focus go away on your own, or maybe listen to music if that helps. I would say, try and figure out what suits you best and what situation do you feel that you can run off best.

CD: Okay, well this last question will just close up the interview. The interview was all about how you have worked at developing your willpower - do you think we have missed any important factors related to previous areas, which you would like to add?

A03: I can’t think of any.

CD: Thank you for giving your time.
Appendix 9: Athlete Observed Behaviour Questionnaire

1. These days are you better able to focus on yourself, or the task at hand? (i.e. at competition are you better able to enact your intentions without getting distracted? Please explain with recent examples:

Please circle your level of improvement in the area of attention control:
Improved 100% 90% 80% 70% 60% 50% 40% 30% 20% 10% 0% not improved

2. Are you better able to keep control of your emotions under pressure? Please explain with recent examples:

Please circle your level of improvement in the area of emotion control:
Improved 100% 90% 80% 70% 60% 50% 40% 30% 20% 10% 0% not improved

3. These days are you better able to avoid negatively over-reflecting on races or brooding about performances? Please explain with recent examples:
Please circle your level of improvement in avoiding negative brooding:
Improved 100% 90% 80% 70% 60% 50% 40% 30% 20% 10% 0% not improved

4. These days are you better able to think quick on your feet & make vital decisions in competition? Please explain with recent examples of how you take in only the relevant information.

Please circle your level of improvement in focusing only on relevant details:
Improved 100% 90% 80% 70% 60% 50% 40% 30% 20% 10% 0% not improved

5. These days if you have a bad race (not caused by injury) what do you believe are the most likely reasons for your poor performance? Please explain with recent examples:

6. These days are you better able to disengage from plans/goals when they become unrealistic? i.e. if a change in expected race indicated your planned race strategy is now inappropriate, are you better able to change tactics? Please explain with recent examples of pressure situations:
Please circle your level of improvement in disengaging from unrealistic goals/plans:
Improved 100% 90% 80% 70% 60% 50% 40% 30% 20% 10% 0% not improved

7. These days when in competition are you better able to recognise and to focus on what you want, and to be able to trust those feelings enough to confidently act on them? Please explain with recent examples:

Please circle your level of improvement in trusting what you feel & acting on it:
Improved 100% 90% 80% 70% 60% 50% 40% 30% 20% 10% 0% not improved

Anything you wish to add?

Thank you for your time.
Your comments will be kept anonymous and in the strictest confidence.
## Appendix 10: PECD

**Professional Excellence and Achievement Diary: Guide to completion**

Most components are rated on a 1-5 scale of low-moderate-high/poor-OK-excellent

<table>
<thead>
<tr>
<th><strong>Developing a Healthy Start to the Day</strong></th>
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<tbody>
<tr>
<td>No. of hours sleep (quality hours)</td>
<td></td>
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<tr>
<td>How many hours sleep did you get on the previous night -- this includes quality of sleep? <em>(i.e. 10 hours but only 8 of quality?)</em></td>
<td></td>
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<tr>
<td><strong>Energy and vigour (healthy physical state)</strong></td>
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<tr>
<td>What did you feel like in the morning compared to your normal energy levels and vigour? Use 3 as a norm rating -- if you feel under the weather, knackered, ill, or stale then score under 3; if you feel more hyper, full of energy, ready to go, bright and breezy than normal. Then score yourself over 3.</td>
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<tr>
<td><strong>Units of Alcohol (previous evening)</strong></td>
<td></td>
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<tr>
<td>How many units of alcohol last night? Be honest. 1 pint of beer is 3 units; 1 glass of wine is 1.5 units; 1 bottle of beer is 2 units approx</td>
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</tr>
<tr>
<td><strong>Mental commitment to the day (clear plans)</strong></td>
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<tr>
<td>On a scale of 1-5, how well did you set a clear plan for the day?. Have you considered what you want to achieve from the day. Basically, how much thought did you/have you put into the day that has given it some direction to your efforts. This is as opposed to being reactive for the entire day. This rating also includes how well you stuck to your plans and achieved your goals. So the rating is a combination of planning and sticking to it.</td>
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<tr>
<td><strong>Quality of breakfast</strong></td>
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<tr>
<td>You need to establish what a perfect 5 is from nutritional information. A 1 would be no breakfast or a very poor one</td>
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**Managing academic responsibilities**

| **Attendance at lectures** |   |
| 5 out of 5 would be 100% attendance with full concentration; 3 would be missed a lecture; 2 and 1 would be multiple lectures missed |   |
| **Quantity of time to coursework/projects (hrs)** |   |
| How many hours including library work, study and group work did you devote to projects, notes and revision? |   |
| **Perceptions of academic workload** |   |
| How stressed are you feeling at the moment about your study load and projects etc. A 1 would be highly stressed and failing to manage at present; 3 would be loaded but under control; 4 and 5 would be sailing without too many concerns at present |   |
### Self-Management

**Quality of attitude and motivation to train**

On a 1–5 scale, how much enthusiasm and motivation do you/did you have to train – with respect to today's sessions? Did you enter the session with excuses weighing down like a rucksack full of bricks! Looking for an out? Would others have considered you a 'moaner' who couldn't take any personal responsibility? Or do you take the lead and/or contribute to the productivity of an individual or group session?

**Quality of concentration in session/nets**

Did you stay focused throughout the session on the goals that you had set yourself? Did you adopt appropriate routines and use of mental preparation strategies – imagery and self-talk. Did you retain your concentration when fatigued or in the face of distractions and external/internal pressures? Or did your concentration wander to negative thoughts, or aspects that were irrelevant to performance?

**Quality of communication and social interaction**

_How well did you communicate with others in a supportive and encouraging manner? Would others have seen you as an individual who helped and cared about the quality of others’ performances and offered advice where possible. A score of under 3 would suggest limited communication and interaction with others, whereas a score of over 3 would suggest that you made efforts to communicate and support a number of teammates/players – particularly those who you don’t know very well._

**Contribution of work to mentally tough responses**

Did you place yourself...or imagined that you had placed yourself in challenging and adverse situations/scenarios during your training session. For example, in nets it might be how often you put yourself into a stressful batting or bowling scenario – and then practiced your responses having simulated that situation repeatedly using your routines comprising self-talk, imagery or goal setting. In fitness, it might be increasing your pace in the last mile of a run by imagining that you had to complete a race in a certain time; or taking the harder/uphill route when there was an easier, flatter one to take. Judge for yourself on a 1-5 scale, how much your work today physically and mentally contributed to developments in your long term mental toughness for cricket.

**Quality of attitude of the group in session/training**

_How hard did you feel the group worked – what was the group productivity as governed by its attitude to the session and each other. Did everyone take personal responsibility and contribute to building the confidence of the team? This score is a measure of how much mental toughness a team may ‘gather’ over the course of a winter season._

**Sense of achievement and satisfaction**

_How much feel good factor did you take away from the session? 3 is a normal level less would reflect disappointment and frustration perhaps. Over 3 would reflect a real personal improvement in an area or a satisfaction for having completed something well that was a meaningful goal._

**Time devoted to specific mental skills**

_In terms of your learning about sport psychology, the role of mental skills in cricket, and the need to practice certain skills, how much time did you feel you devoted today to the development of mental skills that you view as important to your development as a player?_

### Physical and Psychological Well-being

**Quality of lunch**

You need to establish what a perfect 5 is from nutritional information. A 1 would be no lunch or a very poor one given your energy expenditure.

**Quality of dinner**

You need to establish what a perfect 5 is from nutritional information. A 1 would be no dinner or a very poor one given your energy expenditure.
<table>
<thead>
<tr>
<th>Quality of snacking</th>
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<tr>
<td>You need to establish what a perfect 5 is from nutritional information. A 1 would be no snacking, a 2/3 might be some but bad snacking contents (i.e. a curry at 2 in the morning). 4/5 would be fruit and cereal bar types in between meals – boring I know!</td>
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<th>Quality of hydration</th>
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<tbody>
<tr>
<td>The must is 2 litres of water per day, and generally 1.2 litres for every kg of body weight lost. But one would imagine that to score a 5 you are looking like 4 litres plus on a heavy training day. Cut down on the tea and coffee as it will dehydrate you.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mood (at end of day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>With everything that has happened in the day......how do you feel? Pissed off -----Angry-----Stressed or Happy-----Relaxed-----Positive and enthusiastic. Generally Ok, but no great emotional high or low scores a 3.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quality of relaxation and free-time use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did you get any time to relax and devote to other enjoyable activities or hobbies? Plan this in.</td>
</tr>
</tbody>
</table>
Professional Attitude Log: Mental Strength & Conditioning Programme: Loughborough Athletics

<table>
<thead>
<tr>
<th>Professional Attitude Log: Mental Strength &amp; Conditioning Programme: Loughborough Athletics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Week 1:</strong> Month: Date</td>
</tr>
<tr>
<td>Developing a Healthy Start to the Day</td>
</tr>
<tr>
<td>No. of hours sleep (quality hours)</td>
</tr>
<tr>
<td>Energy and vigour (healthy physical state 1-5)</td>
</tr>
<tr>
<td>Units of Alcohol (previous evening)</td>
</tr>
<tr>
<td>Mental attitude to the day (clear plans 1-5)</td>
</tr>
<tr>
<td>Quality of breakfast (1-5)</td>
</tr>
<tr>
<td>Managing academic responsibilities</td>
</tr>
<tr>
<td>Attendance at lectures (1-5)</td>
</tr>
<tr>
<td>Quantity of time to coursework/projects (hrs)</td>
</tr>
<tr>
<td>Perception of workload (1-5)</td>
</tr>
<tr>
<td><strong>Self-Management as an athlete</strong></td>
</tr>
<tr>
<td>Quality of attitude and motivation to train (1-5)</td>
</tr>
<tr>
<td>Quality of concentration in session (1-5)</td>
</tr>
<tr>
<td>Sense of achievement and satisfaction</td>
</tr>
<tr>
<td><strong>Physical and Psychological Well-being 1-5</strong></td>
</tr>
<tr>
<td>Quality of lunch</td>
</tr>
<tr>
<td>Quality of dinner</td>
</tr>
<tr>
<td>Quality of snacking</td>
</tr>
<tr>
<td>Quality of hydration</td>
</tr>
<tr>
<td>Quality of communication/interaction (friends)</td>
</tr>
<tr>
<td>Mood (at the end of day)</td>
</tr>
<tr>
<td>Quality of relaxation and free-time use</td>
</tr>
</tbody>
</table>
Appendix 11:

PERFORMANCE EVALUATION SHEET

Day: ____________ Date: ____________

Remember balance: YOU MUST HAVE AS MANY POSITIVES AS YOU HAVE POINTS TO WORK ON.

<table>
<thead>
<tr>
<th>POSITIVES</th>
<th>POINTS TO WORK ON</th>
</tr>
</thead>
<tbody>
<tr>
<td>TECHNICAL</td>
<td></td>
</tr>
<tr>
<td>ACTICAL</td>
<td></td>
</tr>
<tr>
<td>ENTAL</td>
<td></td>
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<tr>
<td>TNESS</td>
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</tbody>
</table>

Circle how satisfied you feel about your performance:

😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊😊

Reviewed with: __________________________
<table>
<thead>
<tr>
<th>Item</th>
<th>Scale (1-5)</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISleep last night (hrs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AM Energy &amp; vigour (1-5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear plans for day (1-5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental skills practice (mins)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydration today (LITRES)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

wanted to train today 5 4 3 2 1 I didn’t want to train today
My senses felt alert 5 4 3 2 1 My senses felt dulled
I felt focussed in session 5 4 3 2 1 I felt unfocussed in session
Felt in tune with my body 5 4 3 2 1 Not in tune with body
My energy felt high 5 4 3 2 1 My energy felt low
I felt confident 5 4 3 2 1 I didn’t feel confident
I felt fluid in my moves 5 4 3 2 1 I didn’t feel fluid in my moves
I controlled my breathing 5 4 3 2 1 I didn’t control my breathing
My muscles felt loose 5 4 3 2 1 My muscles felt tight
I felt a sense of control 5 4 3 2 1 I didn’t feel a sense of control
I enjoyed the session 5 4 3 2 1 I didn’t enjoy the session

**General notes:** (What happened – What I’ve learned – What I want to do etc.)
Appendix 12: MSC PROGRAMME BOOKLETS

ATTITUDE IS A DECISION:

(Booklet 1)
"The fight is won or lost far away from witnesses. It is won behind the lines, in the gym and on the road, long before I dance under those lights".

Muhammed Ali

Confidence comes directly from proper physical & mental preparation. It means feeling like a winner. However you can’t expect to feel like a winner unless you can physically prove to yourself that you have the capability to be one. This physical proof has to come the old fashioned way. You have to earn it day after day, week after week, month after month, year after year.

Confidence is about staying within yourself when you perform and doing what you know how to do best. It’s about focussing on your own stroke and not trying to be someone else or do what the others are doing. It’s about sticking to your own plan and competing the same way you practised.

Primarily, however, self confidence comes from the knowledge that you’ve put at least as much effort as effort into your training as everyone else. Look for opportunities to practice ‘the little differences that will make a difference’. What can you do in training today that will give you a slight edge over the competition? Will you train 15 minutes longer? Will you deliberately go harder? Will you do 15 more push ups that everyone else? At the end of practice will you spend 4 minutes practicing your pre-race routine?

‘At the highest levels the difference between the performance of individual athletes is measurable only in tenths or hundredths of a second. Any technique that will tighten those fractions has to be used’.

Sally Gunnell

You build self-confidence by understanding that is a privilege not a right. You earn the right to trust yourself by what you do today and every day in practice.

Think about YOU for a moment. Every time U work out, your training efforts go in to U. If the quality and intensity of your training is good, then you’re putting a lot of good stuff into U. If U miss practice, ease up on exercises, or regularly take mental time-outs during sessions, then you’re putting a significant amount of nothing into U.

Sooner or later all athletes come up against a situation where their back is against the wall. It’s the last lap, you’re running on empty and your arch rival is pulling level with you. Now you must make your move. During these emotionally and physically trying times, you must really dig deep and come up with what you’re really made of. What you’re ‘really made of’, is exactly what you’ve been putting into U over the past days, months and years.
If you've been filling up with consistency, gutsiness, dedication, determination, extra work and positive attitude, then you'll come up with the confidence to produce a winning effort. *No deposit, no return.*

**What is Total Confidence?**
From 'Performing' in 'Slaying the Dragon' by Michael Johnson

I leave the hotel and go out to the track to warm up an hour before I am to run. Headphones slide over my ears - the familiar rhythm and raw power of rap music. My eyes close. I am calm and yet I am at the edge of something, the adrenaline beginning to well up already.

Earlier on the day of competition, I have met with my coach, Clyde Hart, and we've gone over every outstanding detail. Where will I go between races? Will I stay in the stadium or return to the warm up track? When will I begin my final warm-up? I want every detail considered and planned. When I'm in the zone I don't want to come out to figure how I'm going to get into the stadium or where I should stand.

I am deep inside. There is no fear here. No second guessing. None of the games we play with ourselves. My self-discipline has cut most of that fat away and whatever is left is no match for my self confidence. I am in the best shape here. I am the best performer here. I am in control of what happens.

I stretch, I run a few starts at the warm-up track. I run with my mind completely focused on the technique, the hundreds of muscles that will join to create each stride. High legs, quick strides, arms pumping. Nothing has been left to chance in my training. Now I am as confident in my preparation as I am in my ability. Now, for me, they are one and the same.

*This level of preparation and total confidence is the goal. What can you do in training today to move a step closer the goal?*

**Awareness is Everything**

So why do I need to monitor my diet, my sleep, my hydration, my performance and my feelings in training?

Because awareness is everything. The best athletes are able to systematically evaluate their performance which enables them to draw a line under poorer performances, but be ready to deal with similar situations should they arise in the future. Working with your coach you are going to develop your skills in making balanced and honest performance evaluations.

This process is about getting ready to think fast and make accurate decisions under pressure. To be effective in pressure situations you need to be able to focus on what you feel and what you want. This is a great confidence booster because you also need to be able to express how you feel and what you want verbally.
It sounds easy, but sometimes under stress it's pretty difficult to clear your head, establish exactly how you feel about a situation and then decide what action to take. Research tells us that when we experience negative emotions, moods, feelings, or anxiety we have difficulty acting on our intentions. Indeed, we can become so preoccupied with, or persist on focussing on failure or setbacks (real or imagined!), that we become almost paralysed and miss opportunities to act.

Because we struggle to access what we really want and feel, we can end up forcing goals. We attempt to do the things we think we should be doing, or what we think other people want us to do, or what someone else is doing. Once we've embarked on this forced course it's very difficult to change direction. For example, the 1500m runner falling behind, but sticking to her coach's original race plan even when it is apparent the nature of the race has changed and the strategy is no longer effective.

When a goal is taken on board without the athlete checking it against their own needs and values. Forcing yourself to stick something you don't necessarily feel compatible with can cause you to actually feel 'alienated' from the goal. Because of the pressure and the fact your emotions are so messed up you can't read your own mind, it's difficult to move away from the goal and make a change. So you keep forcing it until you're trying too hard, wasting energy and ultimately end up increasing the feelings of alienation.

By daily monitoring of your feelings and moods at training you are becoming more aware of yourself, what feelings you associate with performing poorly and how you like to be feeling. The next stage will be to learn how to self-relax, cut out all the distractions and focus solely on your needs. When we are relaxed and feel good we can access our 'self', check whether our intention is self compatible (i.e. it has your signature all over it & you're doing it for you). If the goal is yours then it can be readily accepted, if it's not then it gets modified or rejected.

Being able to 'check' a goal is vital for personal motivation because the goal is connected with your own values, needs and beliefs. You identify with the goal, you are emotionally committed to it, you're self-motivated to achieve it and you're confident enough to change it as necessary. It's a lot more satisfying working at that kind of goal.

If you are an athlete who likes to be told what to do, then you are not an athlete who is ready for anything and it is going to cost you. It's time to take on responsibility. There may come a moment when no one is around to assist your decision making, so you'll need to be ready to act autonomously and do what you think is right for you. If your goal is more meaningful to your parents, coaches or friends than it is to you, then you will be less motivated to endure the hardships, disappointments, frustrations and sacrifices that are an integral part of the journey. It's big step, but you will develop all the skills to recognise it and say what needs to happen then act on it with confidence. So, what do you want to do?
What to do with a mistake?
You recognise it, you admit it, you learn from it, and you forget it.

Dean Smith

Performance Evaluation

Mental toughness starts with taking a professional and honest attitude about your effort and performance. Sometimes athletes say, "I'm my own worst critic". We should of course be self-critical but not in a destructive way. A setback can be used for constructive training and for building up concentration and motivation.

Why use Performance Evaluation Sheets?

Being able to evaluate your athletic performance and establish areas of success regardless of the outcome is a great way to positively influence your self-confidence and belief. It is also vital in developing the ability to set appropriate goals and enhance performance.

Performance evaluation sheets allow you to examine your own performance and learn as much as possible from that performance. Many athletes, especially juniors evaluate their performances solely on a win-lose basis and make many emotionally linked evaluations that are rarely converted to an analysis that can be learned from. This means you end up beating yourself up after a poor jump and can punish yourself for a long time, without ever learning or concluding anything. With Performance Evaluation sheets, you make an honest analysis, learn from it, establish key areas for work and then get on with your life.

Why balance negative aspects of performance with positive aspects?

This rule helps evaluate in a way which draws on the good aspects of any performance, but highlights the bad aspects in a balanced a realistic fashion. Accepting what you're good at in written form is just as important in the evaluation process as your identification of areas for improvement through the things to work on column.

When to use it and how often?

The sheet can be used after every training session. Although if you're doing several different sessions in one day, the sheet is best used to evaluate the whole day's training and pick out certain key performances to evaluate in a more detailed fashion. If possible making use of video playback for evaluation can help enormously in how you come to view your swimming. Complete the sheet as often as possible with your coach to compare your perceptions of performance.
If problems occur in evaluating performances at training sessions then it is useful to set a specific target for that session and evaluate performance on that target with your coach.

Benefits to you:

Alterations to perceptions of competition can be achieved, which when coupled with a greater sense of control and influence over preparation and performance, can lead ultimately to greater opportunity for each individual to access their potential.

Short-term benefits:

- Setting of short-term goals. The sheet is designed so that the negative aspects column can be used by athletes and coaches alike as a ‘things to work on’ list can be put into action at the next training session.

- Develop rational and logical critique. The process of filling in the sheet helps the athlete to establish a rational and logical search through the performance to make an all-round evaluation.

Long-term benefits

Log of progression: The development of a log can help to indicate long-term progression and act as an acute reminder of the great strides made over a period of time.

Identification of frequently occurring problems: Some performance difficulties which occur once or twice over a significant period of time can often be ignored. A long-term benefit can occur when a similar problem occurs infrequently, but regularly, especially in certain scenarios where opportunities to access information are sparse (e.g. coping with a major championship final).

Transformation in attitude towards success and failure: Through a regular emphasis upon evaluating performance by analysing the processes of performance in preference to the outcomes the performers adapt and change in the focus of their competitive experiences. They become more able to learn from both defeats and successes whilst still maintaining a drive to achieve.
Andre Cason was running...bang! bang! bang! down the warm up track and doing some really fast starts. He was about to do a run and to avoid some people, I walked into his lane. He looked up, saw me and stepped across into another lane. As soon as he did that, I knew I was going to beat him. If he had walked in my lane at that particular moment leading up to major final, I would not have changed lane. I would have run straight into him.”

Linford Christie

Athletes, just like most people spend a considerable amount of time worrying about things over which they have little control. This is a fruitless endeavour, not only because you can’t change things by worrying about them, but you place a huge amount of unwanted stress on yourself. There is only one thing that any one of us can truly control, and that is ourselves.

“In the box below make a specific list of controllable and uncontrollable factors that you may encounter at competition. I’ll be testing you in the next session!

<table>
<thead>
<tr>
<th>Controllable</th>
<th>Uncontrollable</th>
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</table>
"The human body is the only thing we can control to some degree, and the mental controls the physical. There are things we are physically capable of doing but shy away from because I minds tell us to.”

*Alan Page (NFL player)*

*We've already discussed the importance of focussing on yourself and always evaluating performance in a balanced and honest manner. So how do you know you've run well if you can't look at the times, nobody you know is there to talk to, you don't have any video evidence and it doesn't matter who else was in the race? How can you always know?*

<table>
<thead>
<tr>
<th>How I know I've raced well:</th>
</tr>
</thead>
</table>

"*All pressure is self-inflicted. It is what you make of it, or how you let it rub off on you.*"  *Sebastian Coe*

**Bring it on!** Why? – Why does the surfer wait for the big wave, that's why..

Surfers wait for the big wave because they values the challenge it presents. They values the obstacles the wave puts between them and the goal of riding the wave to the beach. *Why?* Because it is those very obstacles, the size and churning power of the wave, which draw from the surfer his greatest effort. It is only against the big waves that he is required to use all his skill, all his courage and concentration to overcome; only then can he realise the true limits of his capacities. At this point he often slips in 'the zone' and attains his peak. In other words, the more challenging the obstacle faced the greater the opportunity for the surfer to discover and extend his true potential. The potential may have always been within him, but until it is manifested in action, it remains a secret hidden from himself. The obstacles are a very necessary ingredient to this process of self discovery.
"A winner goes through a problem: A loser tries to go around it, and never gets past it"

Pat Williams (NBA general manager)

A bring it on! attitude can make a lot of difference in the way you approach a race, a training run, a gym session, or even in your studies. In the first instance, instead of hoping your race opponents stumble, you'll actually wish they get a good start. This desire for a battle right from the gun helps you achieve a better mental state for your own start. You tend to react faster and move better, and by doing so, you make it more challenging for your opponent. You'll be more ready to take a race on, or position yourself for that opportunity. You are building your sense of anticipation and your confidence. You know there is a tough challenge to be overcome, but you are optimistic because you want it. Come on then. Bring it on!

"Conditions at Olympic level are so unforgiving that your preparation must be superior to all others. You must have perfect skills at the back end of your race in the harshest conditions. Without that, you won't have the experience of standing on the podium. An athlete never under performs because they want to. They do it because of circumstance. You have to get the athlete to take responsibility so that rather than the circumstances changing them, they can change circumstance. They will make the environment work for them rather than become victims of that environment."

Bill Sweetenham (Performance Director GB Swimming)

"Athletics is all about confidence. You need to go out there and think 'I'm going to do well'. Once you are self-assured, it is amazing what you can do. It's like who dares wins. My attitude is that you've got to try."

Linford Christie
“Some people might say there is nothing sexy about planning, nothing terribly exciting about setting goals, working toward them, and arriving. But in truth, it's the best feeling in the world. It's the buzz of human accomplishment and the only way any of us can touch greatness. I am propelled down that track, pushed by ten years of desire, hard work and commitment.”

**Michael Johnson**

Why have I been monitoring my diet, my sleep, my hydration, my performance and my feelings in training?

Because awareness is everything. The best athletes are able to systematically evaluate their performance which enables them to draw a line under poorer performances, but be ready to deal with similar situations should they arise in the future. You have spent the last 6 weeks working with your coach to develop your skills in making balanced and honest performance evaluations.

Alongside the daily monitoring work you have been undertaking, this process is about getting ready to think fast and make accurate decisions under pressure. To be effective in pressure situations you need to be able to focus on what you feel and what you want. You also need to be able to express how you feel and what you want verbally.

It sounds easy, but sometimes under stress it’s pretty difficult to clear your head, establish exactly how you feel about a situation and then decide what action to take. Research tells us that when we experience negative emotions, moods, feelings, or anxiety we have difficulty acting on our intentions. Indeed, we can become so preoccupied with, or persist on focussing on failure (real or imagined) or setback, that we become almost paralysed and miss opportunities to act.

Because we struggle to access what we really want, this is called our ‘self-system’, we end up forcing goals. We attempt to do the things we think we should be doing, or what we think other people want us to do, or what someone else is doing. Once we’ve embarked on this forced course it’s very difficult to change direction. For example, the 1500m runner falling behind, but sticking to her coach’s original race plan even when it is apparent the nature of the race has changed and the strategy is no longer effective.

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“When I go to the blocks, I realise that other athletes are scared of me. I am scared of them too, but you have to make them believe they are more scared of you than you are of them. That’s where the confidence comes in. Sometimes I know I’m not really on form but will walk out there and do my drills and runs, really strut my stuff, it works!”

Linford Christie

Success is a chance event without proper goals:

I’ve had frustrated athletes come to me and say they can’t seem to meet their goals. Discussions go something like this:

Me: Did you set specific goals for yourself?

Athlete: Oh yes – I tried it and it didn’t work, so I stopped setting goals.

Me: What were your goals?

Athlete: To get in to the national side and compete at the Olympics.

Me: Oh I see. Did you set short term goals every day that were totally within your control ... like what you are going to do today, in the next hour that will bring you a step closer to being your best?

Athlete: No, not really.

Me: Do you have any specific goals for tomorrow?

Athlete: No.

Terry Orlick, PhD (World renown leader in Sport Psychology)
The goal map to success:

Goal setting is probably the most important planning and evaluation tool you can use in constructing your athletic career. As a serious athlete, you can’t reach your true athletic potential without well-conceived realistic goals. You need a clear picture of where you want to go if you ever want to get there.

In our sessions before Easter we discussed the importance of having a process focus rather than an outcome focus when you perform. Athletes who focus on what they are doing while they are doing it, have a process focus and focus better than those who worry about the race outcome, for example their time or placing. A focus on outcome or future is a focus on an uncontrollable factor. Focus on uncontrollables will raise your stress, lower your confidence and set you up to fail.

So, if goal setting is so wonderful, why doesn’t everyone immediately harness their power? Unfortunately, many athletes either take goal setting for granted or simply don’t understand it well enough to use it effectively.

Why set goals? To identify where you want to be & how to get there.

By making distinctions about the types of goals we use, we can focus & achieve in different areas of performance: You need a goal to motivate you to get out of bed and go training. But once you’re out and running you need a whole new goal to make sure you have a effective session.

WRITE DOWN ALL YOUR ATHLETIC GOALS:
There are three types of goals: Do you have goals across all the categories?

**Outcome Goals:** End result goals
- Making a certain time.
- Getting a placing / winning a medal
- Beating a particular opponent
- Compete at the AAAs
- Being selected for a national squad

**Performance Goal:** Focus on improving on last performance
- Drink 50ml fluid per kilo bodyweight every day
- In gym: clean % of bodyweight
- Increase pace/time by certain %

**Process Goals:** Focus on specific element of techniques i.e. good running
- Maintain driving arms & long stride
- Spend 10 minutes on relaxation exercises every day
- Train with a more skilled athlete
- Before session run through pre-race routine twice on track
- Review session with coach every day
- Complete daily monitoring sheet
- Spend one full hour developing a detailed goal plan for this season
- Put together a collection of my favourite songs on one tape/cd ready for race day.
- Say the first few lines on my favourite song in my head each time I find myself thinking a negative thought, to remind me not to beat myself up.

**Process goals are the key to athletic success.** They involve things you can directly control, like skill development, time invested in practising, number of reps per skill, and all the short-term things you need to do to increase your chances of accomplishing the outcome goals.

Outcome goals are frequently out of your direct control as an athlete. You must learn to think less about what you want to accomplish and more about how you’ll accomplish it.

Take a look at this race goal:
"I'm really going to take the race on today, XXXXXX is going to have a hard time of it – she’s gonna to have to work for everything."

Is this a useful goal?

Can you set a more meaningful & effective goal?
### Set out your goals for 2004

<table>
<thead>
<tr>
<th>Outcome Goals:</th>
<th>Summer 2004</th>
<th>Winter 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>End result goals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i.e. run certain time / pace</td>
<td></td>
<td></td>
</tr>
<tr>
<td>beat certain opponent</td>
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<td></td>
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</table>

<table>
<thead>
<tr>
<th>Performance Goals:</th>
<th>Summer 2004</th>
<th>Winter 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus on performance improvement</td>
<td></td>
<td></td>
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<tr>
<td>Measurable goals</td>
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<td></td>
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<tr>
<td>i.e. Knock % off PB</td>
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<td></td>
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<tr>
<td>Average certain pace</td>
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<table>
<thead>
<tr>
<th>Process Goals:</th>
<th>Summer 2004</th>
<th>Winter 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus on specific element of technique</td>
<td></td>
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</tr>
<tr>
<td>i.e. flowing arms, high hips</td>
<td></td>
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</tr>
<tr>
<td>10 minutes daily relaxation practice</td>
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</tbody>
</table>
The best goals are **SMARTER** goals:

**Specific:** What do you want to achieve? Focus on achievements you have direct control over.
- Use process goals – what skill / technical targets / focus points are going to help you play better?
- Can you find process goals which help you improve your metal game?
- What other personal targets would you like to focus on? Set yourself process goals which will help you to improve off the track i.e. help you get a balance with your training, course work and your free time.

**Measurable:** How are you going to monitor your progress?
- How often in practice did the skill feel good / not feel right?
- How do you judge your pace without the clock?
- How can you tell if your mental skills are improving?

**Acceptable:** Is this goal important to you? On a scale of 1 – 10? (1 = not at all important – 10 = crucial to your success)

**Realistic:** How difficult is the goal? On a scale of 1 – 10? (1 = not difficult – 10 = very difficult)
- How often are you going to review your progress?

**Time based:** How long are you going to give yourself to achieve your target?

**Exciting:** Does the goal inspire you to achieve it?

**Repeatable:** To develop consistency and confidence in your improved ability you will need to demonstrate that you can reach your target and maintain your higher standard of performance. You'll also need to keep a record of your goals so that you review them regularly.

Put your goals through the **SMARTER** test on the next page:
<table>
<thead>
<tr>
<th>My goals</th>
<th>Specific</th>
<th>Measurable</th>
<th>Acceptable (1-10 scale)</th>
<th>Realistic (1-10 scale)</th>
<th>Time based</th>
<th>Exciting</th>
<th>Repeatable &amp; Recordable?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Break goal down</td>
<td>How?</td>
<td>1 = not important, 10 = crucial</td>
<td>1 = not difficult, 10 = v. difficult</td>
<td>How long?</td>
<td>Is it?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The long and short of it:

Changes in your performance won’t happen overnight, it’s going to take time and effort, so it’s important to use both long term and short term goal setting.

**Long term goals** provide the direction to head in as well as a final destination. It helps keep the focus on where you’re ultimately looking to go. In addition, if your progress is not fast enough or it’s ahead of schedule then you can adjust in tune with what your short term actions are telling you.

Short term goals give the important feedback on progress as you move towards your major objectives. They are also more motivating as you see progress more often. It’s only by focusing on the smaller steps that you can build up to your dream goals.

**How long is long?**
- Long term = 1-3 years, or more
- Medium term = 6 months – 1 year
- Short term = 1-5 months

Ideally, goals should then be broken down into weekly & daily aims.

Using Long-medium-short means goals have deadlines. Without a deadline it’s difficult to be disciplined. The goal ‘run in the AAAs’ has no rush, but ‘run in the AAAs 2005’ has more urgency and an entry time as a target to be working at. It all serves to prioritise your efforts.

**The staircase to success:**

Champ!

Now you can organise what needs to happen and when for you to be in that company.

For example:
John Nabor, a 200m backstroke swimmer, had a goal of winning a medal at the Olympics. He worked out that to be in contention he would need to knock 2 seconds of his current time. 2 seconds!!! That’s nearly impossible at this level!!! So he decided to use the staircase and break his goal up into small manageable chunks.

- The Olympics = 2 years away
- So, I have to knock 1 sec off each year.
- = .08 seconds off PB each month
- There’s 4 weeks in a month
- = .02 off time each week
- I can do that!!!
- = John Nabor, Gold at Montreal Olympics.
<table>
<thead>
<tr>
<th></th>
<th>Outcome Goals</th>
<th>Performance Goals</th>
<th>Process Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dream Goal</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Long Term</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Medium Term</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Short Term (NOWI)</strong></td>
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<td></td>
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</tbody>
</table>
Developing your Professional Attitude:

_Ain't no use worryin' bout things beyond your contol,  
cause if they're beyond your control,  
ain't no use worryin'....  
Ain't no use worryin' bout things within your control,  
cause if you got them under control,  
ain't no use worryin'...._

Ed Moses

As part of developing a professional attitude, you’ve already made and discussed a list of controllables and you also know how to deal with the uncontrollables (see the Ed Moses quote above if you’re still not sure!). With so many factors at competition outside of your control there will always be the likelihood of unexpected events disrupting your preparation or the race itself. The professional athlete is the one with the ability to deal with changes to routine in a calm and confident manner.

The most effective way to handle things is to prevent or minimize unexpected incidents. One of the best ways to do this is to use ‘what if?’ scenarios to establish a plan for dealing with problems if they arise.

We’ve discussed some scenarios, but a couple more ‘what ifs?’ are below - how will you handle them? Add in any more you may need to think about.

<table>
<thead>
<tr>
<th>What if?</th>
<th>Action</th>
</tr>
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<td></td>
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<td></td>
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</tbody>
</table>
‘What turns good to great? You’ve got to have all the mental tools. You’ve got to be so focussed. You’ve got to work the hardest, you’ve got to be the toughest.’

Lance Armstrong

What’s in your mental skills toolbox?

Remember the pair of pliers attached to the red tag? Or the spanner with the blue tag? Sure! But can you recall what it said on the tags, or even why the tools had tags on them?! Over the last five months you’ve worked at developing a variety of ‘mental tools’ which you can call upon in training, competition or daily life, especially if you need to ‘fix’ something. Any time you’re faced with a problem, react like a professional by admitting it and reaching in your toolbox. Find the right tool for the job, fix it, learn from it, forget about it and go running.

MY TOOLS

Know how to mentally prepare; Here & Now focus, Support team; Monitor for awareness; Focus on good running; Goal setting: Eating pain; Know what to do with mistakes; Breathing control; I know what I bring to the Party; 10/10 warm up; BRING IT ON!; Hydration & Eating; Uncontrollables; Trusting myself; Balanced Evaluation Skills; Positive Self-talk.

“When everything feels good and you’re playing well, it’s an easy game.

Pete [Sampras] is the one who taught me that. He used to say: Look, if I play well there’s nothing to worry about. No one’s going to beat me”.

Paul Annacone
(former coach to Pete Sampras; currently coach to Tim Henman)

SAY it like you mean it!!

Virtually all athletes (in every sport) talk to themselves at some time during training, before competition and actually during races. Some openly talk to themselves out aloud, while others talk by thinking to themselves. It can be used positively by increasing self-confidence and maintaining concentration (see Pete Sampras above). Unfortunately it can act negatively and produce anxiety if things don’t go to plan. Therefore, it’s vital that you always talk to yourself in a positive and appropriate way.

Self-affirmation is the process of directing self-talk to affirm both the positive abilities and skills of the athlete, as well as the appropriate training and preparation that has gone before. Through the use of self-affirmation you immerse in your conscious mind positive thoughts which are associated with producing excellent performance. Repeated use of such affirmations causes them to be planted in the subconscious mind (especially when you say it like you mean it!) and thus influence your personal perception of ability and skills. This enhanced perception increases confidence before and during competition and ultimately performance is likely to improve.

YOUR positive statements (the ones YOU developed in session 5) were built on solid foundations. Foundations that YOU have built through your physical training efforts and the mental tools that YOU put in your toolbox. You’ve been practising them. You KNOW they are true.
**ACT like you mean it!!**

So you’re saying it like you mean it and you’re believing it too! How about your body language? Do you act like you mean it? Do you even look like you believe it?

‘Psychology is vital – the race starts the second you walk into the competition site. How you walk, how you deport yourself, how you behave in a queue for food: These things are important because they may be saying something to your opponents. The build-up, how you feel, how you make others feel about you – can be just as important as the actual race’.

Seb Coe

Do you hustle back to the start line in-between training reps? Do you just wander out on the track or do you stride out with big bold steps? It’s difficult to think and feel in a way that is contrary to your body language. For example, smiling alters the blood blow to the brain, causing the release of chemicals that produce calming effects. Just like your self-talk; if you act confidently, you’ll become confident and you’ll feel confident. When you feel down, you must consciously start to act ‘as if’, regardless of how dumb you feel doing so. It’s called the *fake-it-‘til-you-make-it* move! You do it until becomes part of you.

‘There is a lot of tension and psychological bullying in the one spot. You’re not allowed music and you’re not allowed your mobile. You’re just there shaking. If you go into the call area negative, you are going to leave negative. If you go in positive, you come out positive’.

Mark Lewis-Francis

Move like a winner. Follow through with your positive thoughts and present a positive image at all times. Keep your head up and your shoulders back. Whether you prefer to move fast & businesslike (Steffi Graf), or slow & unhurried (Michael Johnson), make sure your behaviour says: “I’m in charge of me”.

**Write your positive body language actions in the box below:**

If you’re stuck: Think how a champion should act – what do your favourite athletes do?

Make a commitment to carry yourself this way next time you train.

‘I wasn’t there to be friendly. It was about me – on the track. In those moments it was about no one but me. I’d get on that track and think: I’m going to have this and here’s how I’m going to do it.

Michael Johnson
**Positive Affirmations:**

You’ve already made some affirmations. In fact you may be ready to make them even bolder, or want to add some more. Make a permanent note of them here:

<table>
<thead>
<tr>
<th>I feel ready &amp; confident because:</th>
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Positive achievement reminders:

Another useful self talk strategy is to remind yourself of your achievements and times when you were awesome! The list can contain anything that represented a satisfying personal performance, look for things that are excellent reminders of confidence & attitude, it doesn't have to be races that resulted in wins or PBs.

e.g. I thought quick on my feet at the BUSAs & recovered a good position after a terrible start.
     My fitness test results show that I'm much stronger than last year
     I was the youngest athlete selected for the national squad

<table>
<thead>
<tr>
<th>My personal achievement reminders</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Remember to update this list periodically</em></td>
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<tr>
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Bet that list makes you feel good, doesn’t it!
Proper Preparation & Planning Prevents Poor Performance

'I went back to the Olympic village. Already I was timing how long the bus journey took. A significant part of my preparation for an event is to make myself familiar with the practical details, so that when the time comes I can't suddenly be thrown off course by say, missing a bus or not knowing where the toilet is'.

Sally Gunnell

By thinking about controlled breathing, ‘what ifs’, uncontrollables and what you say & do, you’ve really started to examine your pre-competition management strategies. Having a routine is essential to developing a professional attitude and getting consistent performances. Research at the Olympic games has regularly shown that when athletes have poor performances where they expected to do well, it is often because they had neglected something in their usual preparation immediately before the event. This is often the case when an athlete fails to undertake the same preparation for a ‘lesser’ race/opponent, or when an athlete racing at a new, higher level decides to suddenly change plans and prepare differently. Consistent routines that work are therefore vital as it provides a framework for focussing on what is important.

'I wasn’t superstitious but I used to have my routines. Before the start of a match I practised breathing & stretching exercises, to build up my ability to focus once I was on court. I would always go out onto court with untied shoes too. I had to get a mental and physical sense of the court, the stands, the spectators, the atmosphere. By doing my laces up in the chair. I won a few seconds to take it all in'.

Boris Becker

Getting your routine:

Every athlete needs a routine that makes them comfortable and ready to race. Whatever form your routine takes there are some key elements (listed below) that need to be taken care of. Without these the athlete is gambling on the chance of attaining the ideal performance state. BE PROFESSIONAL. A professional attitude is about planning for success and making things happen It’s not about keeping fingers crossed and hoping you can wing it on the day!

1. The night before:
You’ll need routines for both home & away events. However the more similar you can keep them the more in control you’ll feel when you’re staying away from home. Even if you’re in a hotel far from home you simply follow your plan. You organise your things to be in places where you like them and can grab them in the morning. You also follow a similar routine for eating time arrangements, showering, sorting your equipment bag listening to your walkman, reviewing your race plan, doing some positive self-talk or mental skills practice. Wherever you are you know what to do.
2. **Wake up with a positive state of mind:**
You need a routine to follow on the morning of the race to put you in a positive mood. So what if you feel sluggish, you’ve probably woken up far worse or hung over and still had a great training session before! Stop looking for proof you aren’t good and start looking for proof that you are. Well practised self-talk statements are vital here.

> ‘Everyone has a will to win, but very few have a will to prepare to win’.

_Vince Lombardi_

(American football coach after whom the Superbowl trophy is named)

3. **Equipment check:**
This is a critical and PROFESSIONAL element of the routine. Personal equipment should be set out, checked and packed up so no frantic searches are need on the morning of competition. Many athletes make a list on a small card of everything they need and tape it on the inside of their bag, so they can check thing off as they go in.

4. **Venue familiarisation:**
Just like Sally Gunnell did in her quote, make time for yourself to familiarise yourself with the venue and atmosphere. The time you have in this period many vary greatly so make sure your routine is capable of being adjusted accordingly. See the Boris Becker quote for a great example of how to take it all in as part of a routine. Otherwise familiarise yourself with locations for toilets, changing rooms and food establishments, as well as inspecting the track and warm up areas. This is the time to locate your ‘personal space’ for the event and get settled in.
5. Decision time:
This denotes a specific time when YOU are ready to start thinking about your race. It will probably be approximately 30 mins before the start time. However long you feel is best to get your head ready. Prior to this time it’s often better to avoid thinking about the race too much. Too much thinking too long in advance can be detrimental and can waste a lot of energy. You should have a clear idea of where you want to be and how you want to feel before this time. Talking to other people (not about running), listening to some music or lying down and forgetting about the race can all be very useful. This is why it’s a good idea to have a ‘personal space’ to go to, although make sure it’s in the shade. When you’re ready to start thinking about the race make a COMMITTED & CONSCIOUS decision so. This is the time to follow your pre-race mental routine and turn on your concentration.

Can you answer these 4 questions:

• Where should you stay in the competition site?

• What do you need to be totally prepared? (Equipt / physical / mental)

• Who can assist you with your preparation?

• Who and what can interfere with your preparation?
Sample pre-competition plan

10: The night before:
   Prepare equipment bag and check contents thoroughly.
   Shower and relax (listen to music, read). Spend 20 minutes relaxing with some breathing exercises.

9: About 7:00am:
   Wake up. Say positive self-statements. Run through race tactics.
   Shower & breakfast.

8: Between 9:00 – 10:30am
   Go through competition plan & remind myself how I want to deal with any disruptions.

7: 10:30am
   Go to the competition venue. Report in.
   Familiarise myself with track and warm-up area. Find nearby loos!
   Find my place in the shade to hang out – speak with coach

6: 11:30am
   Double check all my equipment. Have a light snack.
   Enjoy atmosphere with people I want to talk to
   Keep away from anyone who’ll wind me up at this time

5: 90 mins before race start
   Go to warm up area & begin with gentle jogging.
   Soak up atmosphere & conditions so I know what to expect immediately before race. Focus on me and my warm up. Go to loo @ 40-45mins b4

4: 30 minutes before race start
   ZONE TIME! Check how I’m feeling, do breathing exercises.
   Establish if I need to pump up or calm down.
   Final phase of warm up

3: 20 minutes before start
   Final equipment check – spikes, laces, numbers (pins) etc all ok
   Focus on my self talk in call area – head up & ‘in charge’ movements

2: 10 minutes before start
   Remind myself of all the work I’ve done in training
   I’m ready for this, I want this

1: 5-3 minutes
   If time delay repeat routine
   Focussed breathing

0: BANG!! Feel for pace in first 200m-300m: be ready to shift my race strategy sharpish if I feel it’s inappropriate to THIS race
<table>
<thead>
<tr>
<th>Time Before Start</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 (The night before)</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
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<tr>
<td>8</td>
<td></td>
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<tr>
<td>7</td>
<td></td>
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<tr>
<td>6 (90 mins before start)</td>
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<tr>
<td>5 (60 mins)</td>
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<td>4 (30 mins)</td>
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<tr>
<td>3 (20 mins)</td>
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<td>2 (10 mins)</td>
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<tr>
<td>1 (5 mins)</td>
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<tr>
<td><strong>BANG!!</strong></td>
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</tbody>
</table>
What do you attribute your bad races to?

**A**

**POOR PERFORMANCE**
(experience of failure)

**Due to:**

**Bad luck / Difficult race / Poor ability**

**UNCONTROLLABLE & UNAVOIDABLE**

**Thinks:**

'I can't concentrate...'
'My ability sucks whatever I do'
'Why me?'

Broods about misfortune to be in such a tough race - always unlucky

Doesn't figure out what to do next time in a similar situation as still haven't admitted / recognised what actually happened in the last race - too busy considering misfortune & beating self up to learn from a setback.

Goes into next race with the last one still unforgotten and playing on mind - worried

**Bad race:**

More brooding & misery. The cycle continues the athlete feels they have no control and finds is not really enjoying running.

**Good race:**

Will attribute success to luck. Limited idea of what went right & how to replicate success. Lots of doubt & thinking if it was really deserved - will go into next race still worried.

**B**

**Due to:**

**Insufficient effort**
(either in my prep, training or attitude)

**CONTROLLABLE & AVOIDABLE**

**Thinks:**

'I have the potential'
'Just got to keep working at it'
'Failure is feedback - I've trained hard I know I can push through challenges'

Wants to race again & have another go

Sees where poor effort causes problems

Very aware of what most likely caused poor performance & is making efforts to correct it. Admitted, learned & forgotten it. The focus is now on positives.

Goes into next race prepared & looking for the challenge

**Bad race**

Thinks still got work to do, but feels like learning & improving all the time - still wants to race

**Good race**

I learned, I worked, I raised my game & took the opportunities early. Feel they earned success - loving running, can't wait to race again.
Success & failure

Where you attribute the blame for poor performances is a massive factor in the way you approach training, competition and in your attitude. We know winning is an uncontrollable, but success and failure, they’re firmly in our control – not everyone is willing to accept that! Success and failure are both rooted in effort. If you ran with everything and pushed through the pain, you will always be successful. Even if you got beaten, your attitude was to rise to the challenge. If you don’t commit everything to your performance, then it will always be a failure whatever time the clock says, because your attitude sucked!

‘You can lose on any given day. But not to feel good about what you bring to the table is a real tough one. It leaves you real clear on where you are, what you need to do, the effort that’s going to be required to get you back up there’

Andre Agassi

Have you ever moaned about the weather? Cursed your competitors for their underhand race manoeuvres? Wondered why you were just so unlucky? Or questioned if you were good enough?

We all have! But brooding over misfortune and missed opportunity is PASSIVE behaviour! By thinking about any of those areas you’ve decided that you don’t control your own performance and there is nothing you can do!! Whoa, hang on, go back – I don’t control my own performance?!

That’s right! You’re telling yourself that each time you go into a race your performance is entirely down to what everybody else does! That’s crazy.

‘Fear was there. I did think, Oh God this is never going to happen! Then I snapped out of it. I couldn’t allow myself to think like that or it WOULD be over’.

Serena Williams

This passive behaviour can also happen in the middle of a race, despite all your work to get your mind and body ready to race, if something happens and you decide it’s an uncontrollable when you really know it’s a controllable then you’ll end up running part of the race passively wondering if you should make a change and the rest of race kicking yourself for missing the chance.

Sound far fetched? Ever struggled to stop a bad race from becoming a catastrophic one? Your race plan is all sorted and discussed with your coach, you feel good today. Then the race starts and you look to position yourself as planned, but you’re starting to realise that the pace is definitely not what you anticipated…it’s much faster, it could be it’s much slower – if you stay where you are when the field will get stretched and you’ll be in trouble. What do you do?

If you don’t do anything chances are you’ll have a miserable race completely fixated on the fact the other athletes didn’t do what they were supposed to do. It’s the first thing you tell anyone who asks about the race, it will likely preoccupy your thoughts for quite a bit too. Oh course you feel like you had no control, you were expecting everyone else to stick to your race plan! No one who moans about everyone else ever stops to learn anything about themselves that would make them a better athlete.

What happens to you is far less important than how you REACT to what happens to you. In the quotes above both Andre Agassi and Serena Williams demonstrate ACTIVE behaviour in the face of adversity. They accepted that it they controlled their successes and failures, not because they are gifted athletes, but because they accepted responsibility for their actions and decided to make a change. They saw failure as feedback, not as the embodiment of them. If you know your poor
performance is controllable then you know it’s avoidable too – so you look for places to improve.

Accepting failure as avoidable in this race example would have lead you to look at two areas. Firstly, how able are you at feeling and recognising race pace without losing time needing to see the clock to confirm what is already apparent. Can you work on this being able to feel pace in your training reps. Secondly, can you improve on your ability to trust yourself in races and act confidently and decisively when you sense a problem. Brooding and blaming would not have asked these questions and would not drive you to do anything about them in training.

Besides do you smile when you’re reflecting negatively? Admitting weaknesses and taking responsibility actually makes you feel better about yourself and once you’ve learned from a bad situation, it’s so much easier to forget about it.

‘To be a winner......all you need to give is all that you have.'
Appendix 13: Study 1 Data

Statistics

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<th>ASFAIL</th>
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ASFAIL

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ACS failure

Std. Dev = 3.03
Mean = 7.4
N = 101.00
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a Lilliefors Significance Correction

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### Test Statistics(a)

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a Grouping Variable: ASFAIL

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