Achievement goal profiles and sportspersonship behaviour of high school cricketers.

Laura Singh
University of Cape Town

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Abstract

This study investigated the achievement goal profiles of 55 high school participants between the ages of 13 and 17. The sample was comprised of competitive players (those in A or B teams) and social players. The aim was to determine if the 2x2 achievement goal framework could identify specific goal profiles that defined the different competitive groups, and secondly to see what associated behaviours of sportspersonship their adoption led to. The goal profiles were assessed using the Achievement Goal Questionnaire for Sport (AGQ-S) and sportspersonship was evaluated with Multidimensional Sportspersonship Orientation Scale (MSOS). Cluster analysis was used to uncover four independent goal profiles. Analysis with MANOVA indicated that a profile with high scores for all the goal orientations, adopted by most of the competitive players, had lower scores of sportspersonship. Moderate goal orientations in competitive players, however, did not appear to have this trend. This suggested that although the adoption of certain goal profiles may motivate the individual to succeed they can also foster maladaptive behaviours.

Keywords: achievement goal profiles, achievement, 2x2 achievement goal framework, participants, AGQ-S, sportspersonship

Introduction

The daily actions of people were shaped by the decisions they made. Certain tasks were undertaken at the expense of others resulting in specific patterns of behaviour. A student cheated on a test, because she wanted to beat a classmate, even though she knew it was wrong. A cricketer knew he was out and decided to walk, because he valued the rules of the game, even though it meant he could not produce a good score. The behaviour for each was carried out in a way that maximised gains and minimised losses (Nicholls, 1984). Motivation for the behaviour was different because of the types of gains and losses and the values placed on them. The student and cricketer valued different gains and losses. These motivated each to reach for different end achievements.

Achievement goal theorists researched the motivation behind behaviour using achievement goals. These goals described achievement in two dimensions. They explained the criterion the individual used to define ability or competence (performance/mastery) and combined this with the reasons behind attempting a task (approach/avoidance). Research has uncovered four achievement goals: performance-approach, performance-avoidance, mastery-approach and mastery-avoidance. These two dimensions provided an understanding of the motivations behind the effort used to achieve in any given task.

The adoption of specific achievement goals meant specific motivations were involved. This would result in certain patterns of behaviour. An achievement goal that solely motivated an individual to be better than others, because this was how he defined achievement, may sacrifice moral behaviours in order to achieve. A second cricketer may not have walked because the impact of this deception was outweighed by the gain of doing better than others. This indicated that a strong performance-approach goal was adopted, as this individual was motivated primarily by a desire to show greater ability than others. Thus achievement goals do not specify a precise target, but rather the orientation adopted to achieve that target (Pintrich, 2000).

The Theoretical Framework of Achievement Goals

Achievement goals were first understood by how the individual defined their ability and proficiency of a task (competence), and did not look into the reasons why (Elliot & McGregor, 2001; Nicholls, 1984). Competence could be evaluated either in relation to self standards (mastery orientated) or normative standards (performance orientated). This formed the theory behind the dichotomous model of achievement goals.

Mastery goals were adopted by an individual when they evaluated difficulty and ability in relation to themselves and their own previous accomplishments. Achievement under this goal orientation was seen as refining skills in a task in order to improve personal ability on the task. An individual could achieve by gaining proficiency of the task, regardless of how he performed in comparison to others (Nicholls, 1984). Evaluation was made along self standards.

In contrast, performance goals were adopted by an individual who viewed their competence in comparison to others. The individual relied on external measures of success based on whether they had done better than those around him (Duda & Nicholls, 1992). This goal orientation indicated a more competitive nature. Here the individual could have proficient skills in a certain area but still fail in comparison to other people (Nicholls, 1984). Achievement was dependent on the ability of others as evaluation was made along normative standards.

Later work showed that competence had positive and negative dimensions. It was valenced in terms of approach (positive) or avoidance (negative) (Cury, Elliot, Da Fonseca & Rufo, 2002; Elliot & Harackiewicz, 1996). The approach valence indicated an individual who was motivated by a desire to exhibit high ability. An individual achieved when he did well. With an avoidance valence the individual was motivated by a desire to avoid failing and displaying low ability (Elliot & Harackiewicz, 1996; Nicholls, 1984). An individual achieved when they did not do badly.

Elliot and Harackiewicz's (1996) research determined that there was a third goal orientation. Using this valence their trichotomous model looked more carefully into the reasons behind achievement. The model divided the performance goal into two independent goal orientations. There was now an undivided mastery, performance-approach and performance-avoidance. Performance-approach goals were adopted by individuals who were motivated to do *better* than others. In comparison, performance-avoidance goals were adopted by individuals who were motivated not to do *worse* than others. Performance-approach and performance-avoidance both defined competence along normative standards. However, the reasons behind them were different. This subtle change in thinking meant the motivations were now specific to each goal orientation. This division was able to clarify some of the inconsistencies that had been associated with the performance goal orientation under the dichotomous model (Harackiewicz, Barron, Pintrich, Elliot & Thrash, 2002; Midgley, Kaplan & Middleton, 2001).

Elliot and McGregor (2001) designed the most recent revision to the achievement goal model. Their model included an approach/avoidance division to mastery (see Figure 1). This revision resulted in four distinct goals. The definition of competence (performance and mastery) crossed with valence (approach and avoidance) created a 2x2 framework. Each goal was shown to be independent and related to specific emotional patterns (Conroy, Elliot & Hofer, 2003; Elliot & McGregor, 2001). In the dichotomous and trichotomous model the undivided mastery was assumed to have a positive approach valence (Elliot, 1999). Thus the introduction of the 2x2 framework resulted in a new achievement goal i.e., mastery-avoidance. This model was believed to comprehensively cover competence-based, achievement goals in the most effective way (Conroy et al., 2003; Elliot & McGregor, 2001).

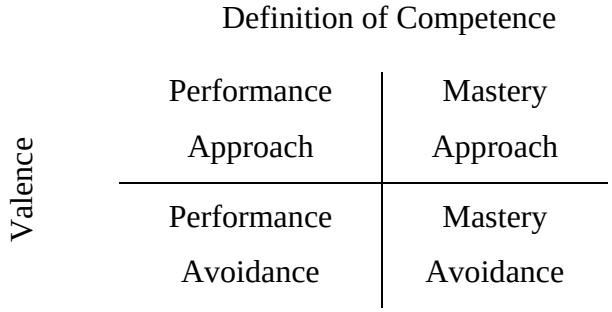

Figure 1. The 2x2 achievement goal framework indicated four independent goal orientations according to work by Elliot and McGregor (2001).

The purpose of this study was to identify the achievement goal orientations of high school cricketers and determine how they related to sportspersonship (SP). The participants were drawn from two population groups: competitive players (those in A or B teams) and social players. The goal profiles were obtained to determine which motivated high achievement (making the A or B team). MANOVA was then used determine whether the adoption of specific goal profiles affected scores of SP. These results would help to determine which achievement goals young athletes should be encouraged to develop in order to motivate success as well as moral sporting conduct at high competitive levels.

2x2 Achievement Goal Framework

The 2x2 framework with its four distinct goals allowed a better understanding of what motivated achievement behaviours. Using this model research has clarified some of the characteristics of adopting each of the four goal orientations.

Performance-approach

In the dichotomous model performance was seen as the more negative goal (Duda & Nicholls, 1992; Nicholls, 1984). Research into the goal orientation generally focussed on the maladaptive qualitites associated with its adoption, even though some findings were inconclusive (Elliot, 1999; Elliot & Harackiewicz, 1996; Elliot & McGregor, 2001; Harackiewicz et al., 2002). The formation of performance-approach resulted in arguments over whether it was an adaptive or maladaptive goal orientation (Midgley et al., 2001).

Studies have shown the performance-approach goal as a predictor of maladaptive qualities such as extreme competiveness and fear of failure (Elliot & Conroy, 2004; Elliot & McGregor, 2001). Fear of failure was the tendency to be apprehensive and anxious in evaluative situations. This type of individual could never fully enjoy the task. This explained the low intrinsic motivation associated with the adoption of this goal. Intrinsic motivation described the motivation to take part in a task because it was interesting and enjoyable, regardless of ability or the end results (Ferrer-Caja & Weiss, 2000). A performance-approach goal adoption had also been related to worried thoughts and anxiety about performance (Cury et al., 2002; Elliot & Conroy, 2004; Elliot & Harackiewicz, 1996).

Harackiewicz et al. (2002) brought in another side of performance-approach goals. Their findings suggested that the data in support of performance-approach goals being purely maladaptive was inconsistent. Instead they suggested that those adopting performance-approach goals viewed competition as a positive challenge. These individuals desired to attain positive outcomes and focussed their emotions on these outcomes (Cury et al., 2002; Elliot, 1999; Pekrun, Elliot & Maier, 2006).

An individual did not possess only one goal orientation, but rather these orientations were present in combination with others. When interacting with high/moderate mastery goals performance-approach showed very positive qualities. The success-focussed behaviour decreased the apprehension felt due to the competitive nature of performance goals and centred attention optimally on the task. Contrary to Midgley et al.'s (2001) findings this facilitated intrinsic motivation almost to the same level as mastery goals (Cury et al., 2002; Epstein & Harackiewicz, 1992).

The argument over performance-approach goals remained unresolved. This goal orientation often came up as being unrelated to both positive and negative attributes (Elliot, 1999; Elliot & Harackiewicz, 1996; Elliot & McGregor, 2001; Harackiewicz et al., 2002). This goal orientation did accurately illustrate that research did not label a goal orientation as

good or bad. Neither did it criticise the adoption of maladaptive goal orientations because achievement was still possibly through negative motivating factors such as fear and anxiety (Elliot & Harackiewicz, 1996; Grant & Dweck, 2003; Harackiewicz et al, 2002; Midgley et al., 2001).

Performance-avoidance

There was less confusion in the literature concerning the performance-avoidance goal orientation. It was classified as the more maladaptive goal (Cury et al., 2002; Elliot & McGregor, 2001). It was associated with fear of failure, anxiety, emotionality, and negative affect. The individual was pre-occupied with the anxiety of failing and task involvement was low. This actively diminished intrinsic motivation and enjoyment of the task (Cury et al., 2002; Elliot & Harackiewicz, 1996). The emotionality and negative affect involved emotions such as shame and hopelessness (Pekrun et al., 2006). This was because the individual did not believe in their abilities and had low perception of their competence (Elliot & Church, 1997). Individuals would attempt tasks they knew they could achieve and avoid difficult tasks because they were afraid of showing low ability or performing worse than others.

Interestingly when performance-avoidance and performance-approach were combined (as in the dichotomous model of performance) the maladaptive aspects for factors such as anxiety and fear of failure were no longer significantly correlated. This showed how important the valence dimension of the 2x2 framework was for clarity on these goals (Conroy, 2001; Harackiewicz, et al., 2002).

Mastery-approach

In the dichotomous model mastery was classified as the healthiest goal orientation to adopt. Literature focussed on mastery goals being associated with adaptive qualitites.

Mastery-approach, when specifically separated from mastery-avoidance, held these adaptive qualities found when mastery goals were studied. It predicted self-determination and personal drive. It was also negatively correlated with anxiety and worry, whilst correlating highly with intrinsic motivation, task involvement and task enjoyment (Cury et al., 2002; Elliot & Church, 1997; Elliot & Harackiewicz, 1996). Task enjoyment was further validated by Pekrun et al. (2006) when they researched the positive affect associated with adopting the mastery-approach goal. An individual adopting ths goal would experience overall satisfaction with the activity regardless of the outcome. With this goal orientation individuals would

attempt a task regardless of the skill of those around them. Individuals would want to improve their own ability in the task and would succeed if this criterion was met.

Mastery-avoidance

The mastery-avoidance goal orientation was the last of the four goals to be introduced (Elliot & McGregor, 2001). Individuals who adopted this goal may practice and train very hard but were usually unsatisfied with their ability. Competence was defined along self standards so even if the individual were to perform better than others, defeat could still be measured by personal criteria. Mastery-avoidance goals possessed similar maladaptive characteristics as those associated with performance-avoidance, such as anxiety, worry, negative emotionality and low perceived ability. Even so it was seen as less maladaptive than the performance-avoidance goal (Elliot & McGregor, 2001; Cury et al., 2002; Pekrun et al., 2006).

Performance	**Approach**
Success was referenced against other people's ability.	Tasks were undertaken to show high ability, the individual desired positive outcomes
An individual was driven to achieve by wanting to do better than others.	
Performance	**Avoidance**
Success was referenced against other people's ability.	The individual wished to avoid negative outcomes and showing low ability
An individual was driven to achieve by a desire not to perform worse than others.	
Mastery	**Approach**
Success was referenced against self-ability.	Tasks were undertaken to show high ability, the individual desired positive outcomes
An individual was driven to achieve by wanting to perform better than they had done previously.	
Mastery	**Avoidance**
Success was referenced against self-ability.	The individual wished to avoid negative outcomes and showing low ability
An individual was driven to achieve by a desire not to perform worse than they had before.	

Figure 2. Summary of the four distinct goal orientations.

Previous Findings

No research into goal profiles, cricket, completive levels or SP had been conducted using the 2x2 achievement goal framework. Therefore most of the research into achievement goals had work with the dichotomous model as a theoretical framework.

Achievement Goal Profiles

An individual did not adopt only one goal orientation but would have a combination of the four. The resulting behaviour was due to the interaction of all. The grouping of the goal orientations adopted in an individual resulted in goal profiles. These goal profiles listed each goal orientation as being high, medium or low in the individual. Though dependent on the individual and the context, in a specific situation similar goal profiles would emerge. Cluster analysis grouped individuals with the similar goal profiles into clusters based on their mean goal orientation scores (Ainley, 1993; Hodge & Petlichkoff, 2000; Smith, Balaguer, & Duda, 2006). For example, under the dichotomous model Smith et al. (2006) found goal four profiles in their research. These were (a) low-performance, low-mastery; (b) high-performance, low-mastery; (c) high-performance, moderate-mastery and (d) moderate-performance, low-mastery.

The pairing affected the expression of each goal orientation and their associated behaviours and emotions. High-performance paired with moderate-mastery produced similar adaptive characteristics to low-performance paired with high-mastery. High performance and high mastery goals indicated the most positive emotions, such as calmness and optimism. These individuals reported high enjoyment of the sport and perception of their ability (Georgiadis, Biddle & Auweele, 2001).

As with the individual goal orientations, certain profiles were more maladaptive than others. These profiles would still result in successful achievements but the behaviours associated were seen as less healthy. Low-mastery, low-performance was seen as the most maladaptive combination as motivation was low under both definitions. In comparison adaptive profiles such as high-mastery, low-performance, had individuals which reported the most enjoyment in sports (Hodge & Petlichkoff, 2000; Smith et al., 2006).

Cricket

Achievement goal models were first applied to children in an academic setting but have now become prominent in various sports settings (Austin & Vancoeuver, 1996; Duda & Nicholls,

1994; Pintrich, 2000). Cricket, however, has not excited much research. This was despite the interesting attributes that this sport possessed. The method of scoring in the game forced a very objective measurement of achievement. Statistics have played an important role in all sports, but they were particular prominent in cricket. Standard match statistics at even the most basic level of the game always included cumulative totals (overall runs and wickets), averages (the rate of scoring, or wicket taking) and even records (e.g., the highest score made). These values were calculated for every individual and for the two teams as a whole (Kimbert & Hansford, 1993). Thus each game provided a precise measurement of how well the individual did in respect to his opponent and his team members. This effectively meant that there were 21 other people against which achievement could be judged.

This also gave cricket a distinctly individual component that was not usually seen in team sports. Individual performance in cricket was very important, and clearly recorded in the scorecards. However, no single individual's performance could win a match. It thus had strong characteristics of both types of sport.

Georgiadis et al.'s (2001) investigated four types of possible profiles under the dichotomous model. The high mastery and high performance profile was indicated to have the most adaptive emotions associated with it. It was seen as the profile that had the greatest motivation to achieve. Low mastery, low performance individuals had the most maladaptive profiles, as their criteria for achievement were not clear. They did not often succeed and did not enjoy the game as much as others did. Low mastery, high performance individuals strove to achieve by predominantly normative standards. They enjoyed competitive situations, but were also correlated with negative emotions such as worry, aggression and fear. The final profile was high mastery, low performance. This indicated satisfaction through personal performances. It correlated with positive emotions (self-discipline, cooperation), as well as negative emotions (worry, apprehension).

Playing levels

Achievement goals appeared to vary in different contexts (Elliot & Harackiewicz, 1996). Nicholls (1984) noted that in neutral, learning-orientated situations, mastery goals were adopted because learning was undertaken for the sake of learning. Mastery goals were, in this way, correlated highly with intrinsic motivation. In these neutral environments the persistence in a task was because of interest and enjoyment in the activity itself (Ferrer-Caja & Weiss, 2000).

The more competitive the environment was, the more likely that performance goals would be adopted. Nicholls (1984) offered three situations when performance goals would be adopted rather than mastery goals: (a) The task tested skills that were important to the individual, (b) competition with others was cultivated, and (c) specific awareness of the individual's ability was created.

Roberts (1992) (as cited in Elliot & Harackiewicz, 1996) and Ames and Archer (1987) referred to mastery and 'competitive goals' as reference to the two goal orientations of the dichotomous model. This illustrated the characteristic competitive nature associated with the performance goal orientations. The literature favoured the adoption of performance goals to lead to high achievement in competitive sports (Boyd & Callaghan, 1994; Georgiadis et al., 2001).

Sportspersonship

SP was used in this research to describe an individual's conduct when taking part in a sport. It was associated with participation that was ethical and moral and maintained the standards of conduct required by the sport (Gano-Overway, Guivernau, Magyar, Waldron, & Ewing, 2005). Vallerand, Deshaies, Cuerrier, Briere, and Pelletier's (1996) research focussed on finding a way to quantify SP. Data obtained from over 1000 athletes in seven various sports indicated five factors that comprised SP. Further research corroborated these findings (Gano-Overway et al., 2005; Goldstein & Iso-Ahola, 2006; Vallerand et al., 1996; Vallerand & Losier, 1994). These were then exemplified in five sections of the Multidimensional Sportspersonship Orientation Scale (MSOS) (Vallerand, Brière, Blanchard & Provencher, 1997). The five areas were (1) Respect for social conventions, (2) respect for the rules and the officials, (3) respect for one's full commitment toward sport participation, (4) respect and concern for the opponent, and (5) negative approach towards the practice of sport.

The manner in which one regarded ability, in relation to self or others, could affect SP behaviour (Boyd & Callaghan, 1994). Gano-Overway et al. (2005) identified mastery as being associated with respect for one's opponent and an interaction between mastery and performance predicted respect for the game. The study highlighted the importance of the mastery goal as a positive predictor of SP.

Research into performance goals suggested that strong performance goals indicated an individual who was motivated to achieve winning results ahead of all other rewards. These individuals showed higher levels of unsporting behaviour. This was displayed as lack of

respect for the game and the individuals involved (Goldstein & Iso-Ahola, 2006; Stornes & Ommundsen, 2004). The performance orientation was correlated with a strong focus on success. This was considered a negative SP trait (Dru, 2003; Gano-Overway et al., 2005). This attitude was especially prominent at high competitive levels. In these situations the greater the emphasis there was on winning, the higher the presentation of unsportsmanlike behaviour (Vallerand et al., 1996). At higher competitive levels there were contextual implications that were not present in a more social context. These "contextual forces" tended to diminish behaviours of SP (Vallerand, Deshaies & Cuerrier, 1997, p.134). When an individual was faced with a choice between winning and maintaining fair play, he would more likely choose winning because of the greater meaning involved with these successes (Gano-Overway et al., 2005).

Relevance/Significance of this Research

There had been no research conducted using the 2x2 achievement goal framework to determine goal profiles. The 2x2 framework introduced the approach and avoidance dimension, creating four separate goal orientations. Cluster analysis with four goal orientations was hoped to produce clearer profiles that could offer better insight into motivation and behaviour. The 2x2 framework had also not been considered in relation to cricket, SP or playing levels.

Cricket had not been examined extensively by any of the frameworks. The researchers in this area were predominantly American and European and would not have had much exposure to this sport. This research focussed on cricket because of its interesting scoring system, which placed great emphasis on an individual's performance within a team game. It had also never been connected to SP.

SP was used as a measure of whether a goal profile was maladaptive or not. The majority of research had used emotions to define a maladaptive goal orientation/profile. The adoption of these profiles was still considered beneficial as high achievement remained possible. This research aimed to draw a line between maladaptive and adaptive goal profiles. The inclusion of SP as a measure of a maladaptive goal profile should result in the goal profile no longer being adopted as it risked the integrity of the game and its players.

In Vallerand and Losier's (1994) research into SP, they determined that motivation would differ in situations that offered greater rewards compared to those with only marginal gains. Unsportsmanlike behaviours often occurred in situations of high competition, where

individuals were motivated to win at all costs. This indicated that there were profiles which would foster high achievement at the expense of ethical sporting conduct. The research hoped to find similar profiles that did not disregard SP. These adaptive profiles should be fostered in teams.

Research Objectives

The research aimed to determine the goal profiles of cricketers at two different playing levels, to answer specific questions about SP.

The method of scoring in cricket allowed numerous normative comparisons to be made. This was expected to foster either strong performance-approach goal orientations (if the individuals were motivated to have the best figures on the scorecard), or strong performance-avoidance goal orientations (if the individuals were motivated to avoid having the worst figures on the scorecard) in both groups.

The dichotomous model indicated that competitive situations would result in performance goals being adopted (Boyd & Callaghan, 1994; Georgiadis et al., 2001; Nicholls, 1984). At social levels it was expected that the participants would not have such high competitive motivations. They participated for the enjoyment of the sport itself, and thus mastery goals with higher intrinsic motivation should be adopted (Nicholls, 1984).

Lastly the research hoped to find goal profiles that fostered high achievement results (playing for the A or B teams) but did not sacrifice integrity and ethical conduct (measured in terms of SP).

The four specific research objectives were to:

1. Determine the goal profiles of participants using the 2x2 achievement goal framework.
2. Determined whether at high competition levels performance goal orientations were dominant.
3. Determined whether at low competition levels mastery goal orientations were dominant.
4. Determine if there was a goal profile that motivated success at high levels of competition whilst still encouraged good sporting conduct.

Research Deign and Method

Design

The research did not directly manipulate any of the variables involved. It first looked descriptively and the goal profiles that emerged. This study was also correlational in nature as

it assessed if pre-existing goal adoption had an effect on SP behaviours. The independent variable, goal profiles, was found to have four levels. The dependent variable, SP, was assessed by the MSOS and had five levels. Data analysis was quantitative as it worked with empirical data collected through questionnaires.

Participants

To examine the affect of the competitive environment on the adoption of goal profiles, two populations of participants were sampled. The competitive players were taken from the A and B teams. These individuals had matches every Saturday and participated in practices two to three times a week. The social players were taken from the lower teams. These individuals usually did not have formal matches against other schools and mostly played amongst themselves. Though some had practices, they were not as strictly enforced as the A and B teams. They mostly played for the fun of socialising and did not expect to take the game much further than high school.

300 questionnaires (Appendix A) were given to three different high schools and 100 to three coaching academies. 63 forms were returned; eight had not been completed fully and were thus not used. The 55 participants that were included were teenage males whose ages ranged between 13 and 17 (mean age = 15; *SD* = 1.32). The sample was from the three coaching academies and consistent mostly of white males from middle class homes (those who had access to coaching facilities outside their high schools). The samples from the three high schools approached were not received in time for data analysis.

Measures and Instruments

Demographic Questionnaire

This section included general questions surrounding the participant personal information and their involvement in cricket. It also clarified the level of competition the participant was currently playing at. This type of information allowed identification of the two population groups.

Achievement Goals Questionnaire for Sport (AGQ-S)

The AGQ-S assessed the achievement goal orientations. It used Elliot and McGregor's (2001) 2x2 achievement goal framework. The answers to the questionnaire were set out along a scale, with seven available answers between 1= Not at all and 7 = Completely like me. In

this way specific feelings about motivation to achieve in the game were assessed (e.g., 'It is important for me to do well in comparison to others').

The MSOS had good internal consistencies (determined by Cronbach alpha): performance-approach $\alpha = .88$; performance-avoidance $\alpha = .87$; mastery-approach $\alpha = .70$; mastery-avoidance $\alpha = .82$. Test-retest reliability was shown as: performance-approach $r = .74$; performance-avoidance $r = .79$; mastery-approach $r = .59$; mastery-avoidance $r = .66$. (Conroy et al., 2003).

Multidimensional Sportspersonship Orientation Scale (MSOS)

This questionnaire was developed by Vallerand et al. (1997). It assessed SP in five areas: (1) Respect for social conventions, (2) respect for the rules and the officials, (3) respect for one's full commitment toward sport participation, (4) respect and concern for the opponent, and (5) negative approach towards the practice of sport. Each area was made up of five questions. The participant rated his answers along a scale from 1= Doesn't correspond at all to 5 = Corresponds to me exactly. High scores indicated adaptive SP behaviour, except with (5) negative approach towards the practice of sport. In this subscale high scores indicated maladaptive SP behaviour. The questions were designed for American sports and had to be reworded slightly in order to make it appropriate for cricket (e.g., 'I obey the referee' was changed to 'I obey the umpire' to avoid confusion) (see Appendix A).

The internal consistencies (Cronbach alpha) were: commitment $\alpha = .74$; social conventions $\alpha = .86$; rules and officials $\alpha = .83$; opponent $\alpha = .78$; negative approach $\alpha = .54$. The test-retest reliability (over a five week period) was shown as: commitment $r = .76$; social conventions $r = .56$; rules and officials $r = .68$; opponent $r = .76$; negative approach $r = .59$.

Procedure

The question battery was drawn up with the three main sections: demographic questions, achievement goal profiles (AGQ-S) and SP (MSOS). These were distributed in two ways. Firstly, meetings were set up with the principals of six Western Cape high schools. Three high schools showed an interest in participating in the research. During the meeting the research was explained and the principals were encouraged to distribute the questionnaires (Appendix A) and assent forms (Appendix B and C) to their students. Assent forms were also signed by the principals (Appendix D). The principals were approached during third term.

This was not cricket season for the schools and it was difficult to assemble the participants without imposing on school time. 100 questionnaires were left with each principal. They were handed out to the participants, who could then complete them at home and return them to the school. No forms had been returned by the time data analysis began.

Secondly, coaching academies were approached. These programmes ran during the final two weeks of the July holidays and lasted for about five days. The coaches were contacted via email or telephone. Three organisations showed interest in supporting the research. The questionnaires were taken to the first practice session. The participants were briefed during a drinks break and the assent forms were handed to them. These forms were taken home and signed. The head coach also signed an assent form. During the remaining days 30 minute sessions were held for the participants who had returned signed assent forms. At these sessions the participants completed the questionnaires in the presence of the researcher. It was found that holding one group session on the last day for all the participants was less time consuming than holding individual sessions each time a assent form was returned. It was also more comfortable for the participant to be amongst friends. The researcher's presence ensured that all concerns could be addressed and that the participants filled out all necessary areas on their own. The availability of the researcher during this time also meant parents could ask questions about the research being conducted. 63 forms were collected in this manner. Eight were not included in the study as the relevant questionnaires had not been completed in full.

All data was recorded in an MS Access database that had already been designed for this purpose. Each participant was given a code for identification and anonymity. The data was then exported to MS Excel for formatting and finally to STATISTICA where the statistical analysis was conducted.

Ethics

As high school participants were used, ethical approval was received from the Western Province Educational Department (Appendix E) before the schools were approached. Informed assent was obtained from the principals and coaches. Separate forms for assent were also signed by the parents and participants. Each form had an explanatory text. The researcher was also available for questions at the time the forms were signed and the questionnaires filled in. Each questionnaire was assigned a code that identified the participant and thus assured anonymity.

Results

Statistical Analysis

MS Access was used to aid data capturing. This data was then formatted in MS Excel before being extracted to STATISTICA. Statistical analysis was conducted using this program.

Descriptive statistics for all the variables involved were analysed. The first objective was to determine the goal profiles that emerged from the data. Cluster analysis, an exploratory data analysis tool, was used to find the goal profiles for this sample. These clusters were labelled in terms of high (mean = 5-7), medium (mean = 3-5) and low (mean = 0-3) based on the mean scores of these goal orientations. These profiles were then separated into competitive players and social players to determine the profiles associated with each playing level.

The final objective used MANOVA to determine goal profile differences with respect to the construct of SP. MANOVA was used instead of ANOVA as there were five levels to the dependent variable (SP). Using multiple ANOVAs would have resulted in a higher type one error rate (falsely rejecting a true null hypothesis) (Hamer, 1997; Meyers, Gamst, & Guarino, 2006). Univariate statistics were run only after a significant multivariate p value was obtained. If the multivariate statistic failed, there would be no need to reject the null hypothesis and the analysis would be terminated at this stage.

The sample size, mean, minimum, maximum and standard deviation were calculated for each of the goal orientations (see Table 1). Standard deviations are shown in parenthesis next to the mean values, and will be recorded as such for the rest of the data.

Table 1

Descriptive Statistics for the Sample

Subscale	Valid *N*	Mean	Minimum	Maximum
Age	55	15.16 (1.32)	13.00	17.00
Map	55	5.99 (0.63)	4.67	7.00
Mav	55	4.30 (1.34)	1.67	6.33
Pap	55	4.30 (1.06)	2.33	6.33
Pav	55	4.67 (1.18)	2.33	6.67

Note. Map = mastery-approach, Mav = mastery-avoidance, Pap = performance-approach, Pav = performance-avoidance.

The table indicated similar high scoring on all four of the goal orientations for the 55 participants. In particular there appeared to be a strong Map score for all participants, with these scores staying in the upper section of possible scores with a range of only 2.33. The Map orientation displayed the highest mean value (5.99) with lowest score variation (*SD* = 0.68). Map's minimum value was close to the average mean of the other goal orientations. It was also the only goal orientation to have scores of 7. The first prediction was clarified with high Pav scores (mean = 4.67) appearing to be the second feature of this sample. This was anticipated due to the competitive nature of cricket scoring, which provided many areas for objective, statistical comparisons to be made. These comparisons appear to lead to some concerns about being the worst player, rather than ambitions to be the best.

The minimum and maximum scores indicated that the full range of the scores was used. The Map scores indicated that the participants had a small range, but the other three goal orientations indicated good use of the range options provided in the AGQ-S.

First Objective: Goal profiles of Cricketers

Cluster analysis was used to combine the individual data into homogenous subgroups (goal profiles) based on similar goal orientation scores. Hierarchical clustering, using joining cluster method, was performed to determine the number of clusters that best described the sample. This method formed a hierarchical tree by joining similar profiles together in a way that maximised between-group variance to form distinct clumps (see Figure 3).

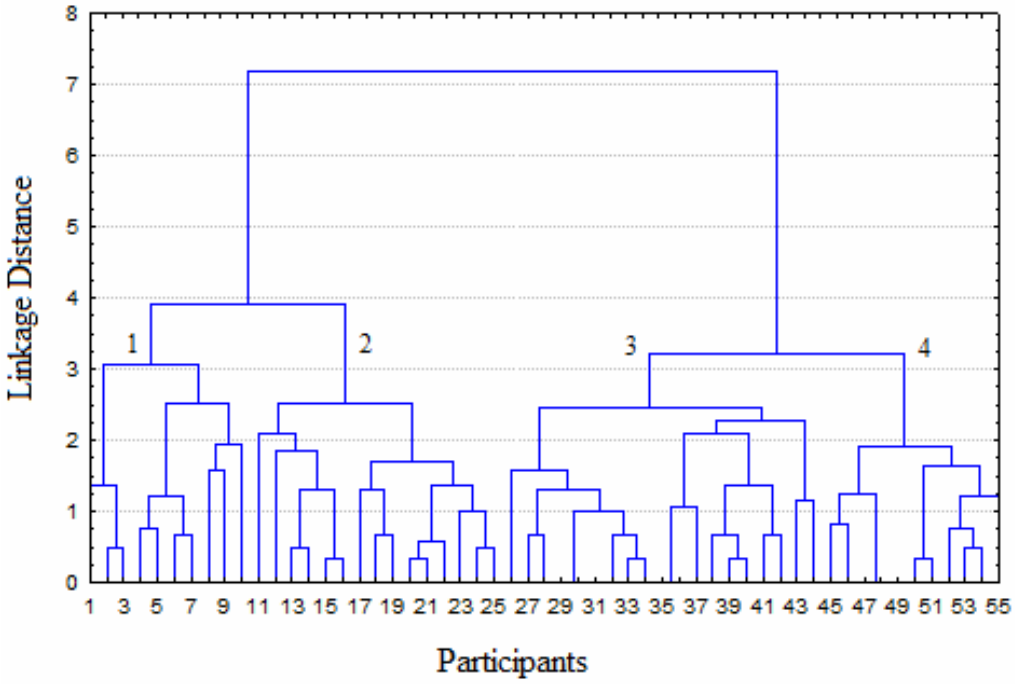

Figure 3. Hierarchical tree diagram indicating two to five possible cluster solutions for this sample (*N* = 55).

Inspection of the hierarchy indicated a possible two to five clusters (see Table 2). It was determined that four clusters fit this data most accurately. This meant that the 55 individual scores could be best characterised by four goal profiles, which explained the sample in the most precise way. The smaller cluster solutions did not provide enough detail about the sample, and the five cluster solution duplicated goal profiles.

Table 2

Goal Profiles in Each of the Possible Cluster Solutions

2 Clusters		3 Clusters		4 Clusters		5 Clusters	
Goal Profiles	*n*	Goal Profiles	*n*	Goal Profiles	*n*	Goal Profiles	*n*
HiHiHiHi	30	HiHiHiHi	30	HiHiHiHi	17	HiHiHiHi	17
HiMeMeMe	25	HiMeMeMe	18	HiHiMeHi	13	HiHiMeHi	13
		HiLoLoMe	7	HiMeMeMe	18	HiMeMeMe	14
				HiLoLoMe	7	HiMeMeMe	5
						HiLoLoMe	6

Note. *n* = the number of participants per goal profile.

The four cluster solution was analysed with k-means clustering. K-means allowed data analysis to be run on a specified ‘k’ number of clusters, in this instance four. The four profiles were labelled with high (Hi), medium (Me) and low (Lo) based on their mean goal

orientations values. The four profiles formed were: HiHiHiHi, HiHiMeHi, HiMeMeMe, HiLoLoMe. Table 3 displays the means and standard deviations for each goal orientation within the profiles.

Table 3

Descriptive Statistics of the Four Profiles

Goal Orientation	HiHiHiHi	HiHiMeHi	HiMeMeMe	HiLoLoMe
Map	6.31 (0.43)	5.59 (0.45)	6.31 (0.50)	5.14 (0.33)
Mav	5.49 (0.57)	5.18 (0.42)	3.31 (0.66)	2.33 (0.69)
Pap	5.45 (0.47)	4.59 (0.41)	3.59 (0.52)	2.76 (0.50)
Pav	5.90 (0.47)	5.10 (0.57)	3.85 (0.56)	3.00 (0.64)

The 2x2 framework determined clear profiles for this population group. The means reflected high Map orientations in all the clusters. Pav scores were seen as the second highest mean score in all the profiles except HiHiMeHi where the scores for Pav and Mav were almost identical. Figure 4 illustrated that an interesting trend emerged. Across each of the profiles, from left to right, there appeared to be a high Map, low Mav and Pap and high Pav in all the clusters. The Map means were all clumped together above 5.0, but the remaining goal orientations appeared to be higher or lower versions of the same trend.

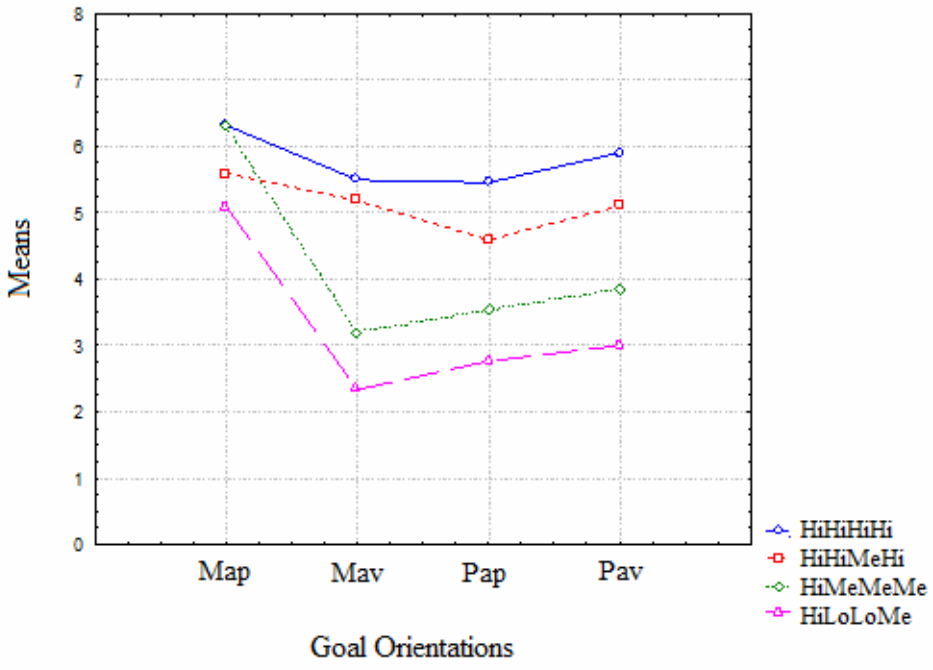

Figure 4. Plot of the means for each profile as determined by k-means clustering.

Second and Third Objectives: Playing levels

Competitive players and social players were then separated, dividing the sample in two (Table 4). There were two profiles that characterised competitive players, HiHiHiHi and HiHiMeHi. HiMeMeMe were adopted by both, but predominantly by social players. HiLoLoMe was only adopted by social players. The competitive players were characterised by overall high scores in all orientations (see Figure 4). The prediction that competitive players would have strong performance goals was upheld. The performance goal orientations were all above 4.5 for the high competitors. In comparison, the social participants' means were all below 4.0. Mav scores were also higher in competitive players. Competitive players had slightly higher Mav orientations than Pap orientations, whereas this finding was reversed in the social players.

Table 4

Goal Profiles of Competitive and Social Players

Profiles	Competitive players	Social Players
HiHiHiHi	15	2
HiHiMeHi	11	2
HiMeMeMe	7	11
HiLoLoMe	0	7
Total	33	22

HiHiHiHi (Cluster 1) was the predominant profile adopted for competitive players. Adoption of this goal profile, as well as HiHiMeHi (Cluster 2) has resulted in greater success in this sport. These two defined achievement by both self and normative standards. HiHiMeHi had a high Mav score that did not follow the trend set out by the other profiles. Its mean Pap score, though classified as medium, was relatively high (mean = 4.59) and the three cluster solution combined this profile with HiHiHiHi. HiMeMeMe (Cluster 3) was the largest cluster overall. Though this profile was adopted by both groups the majority of the cluster was comprised of social players. This cluster indicated strong Map and Pav goal orientations. HiLoLoMe (Cluster 4) this cluster was dominated by a high Map orientation, indicating individuals who were motivated to achieve along self standards. The other orientations followed the same trend of the previous profiles, but with much lower Mav, Pap and Pav means.

Final Objective: MANOVA

MANOVA was used to determine whether the adoption of these goal profiles affected SP behaviour. The null hypothesis was that the goal profiles had no statistically relevant effect on SP. The descriptive statistics for SP was obtained from the MSOS (see Table 5).

Table 5

Descriptive Statistics for MSOS

Subscale	HiHiHiHi	HiLoLoMe	HiMeMeMe	HiHiMeHi
Commitment	4.01 (0.05)	3.40 (0.43)	4.11 (0.34)	3.58 (0.46)
Negative Practice	2.97 (0.36)	2.25 (0.43)	1.94 (0.39)	2.25 (0.34)
Opponent	4.12 (0.26)	3.91 (0.11)	4.59 (0.35)	4.15 (0.38)
Social Conventions	4.19 (0.39)	3.89 (0.11)	4.61 (0.35)	4.09 (0.41)
Rules and Officials	3.56 (0.53)	3.66 (0.40)	3.84 (0.15)	3.63 (0.48)

Note. Commitment = Respect for one's full commitment toward sport participation; Negative Practice = Negative approach toward the practice of sport; Opponent = Respect and concern for the opponent; Social Conventions = Respect for social conventions; Rules and Officials = Respect for the rules and the officials. High scores on the subscales indicated adaptive SP, except for Negative Practice. For this subscale the converse was true.

An overview of the descriptive statistics depicted a substantial difference in the five subgroups. HiMeMeMe indicated very adaptive scores for all the SP subgroups. There were generally low Negative Practice scores for all the clusters except HiHiHiHi. HiHiHiHi also showed the a poor score for Rules and Officials and HiLoLoMe had poor Commitment scores.

MANOVA

MANOVA has several assumptions. The data proved strong on two of the four core assumptions. Importantly the data was independent and normally distributed. The test for homogeneity of covariance (the Box M test) was, however, significant. This was MANOVAs assumption of homoscedasticity using the F distribution (Meyers et al., 2006). The logic was similar to ANOVAs homogeneity of variance, the dependent variable needed to show equal variance across the level of the independent variable. MANOVA was usually robust to this violation, so long as there was no violation of normality. However, the sizes of the four goal

profiles were not equal and therefore the Box M result could not be disregarded (Hamer, 1997; Huberty & Olejnik, 2006).

The Spread vs. Level graphs, plotted means against standard deviations (see Figure 5). They served as a good indication of where the heterogeneity of variance lay.

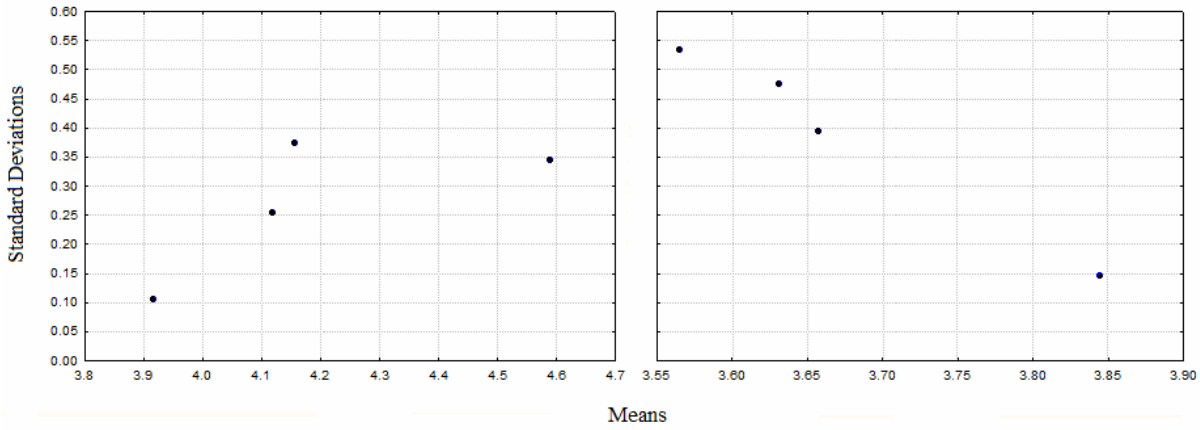

Figure 5. Spread vs. Level graphs indicated that the Opponent (left) and Rules and Officials (right) subgroups to be the cause of the significant Box M statistic.

The plots indicated that two subgroups were a problem: Opponent and Rules and Officials. A correlation between the means and standard deviations affected the Box M results. Outliers contributed too much to the *F* statistic. Small means and small standard deviations may not contribute much, but especially in the Opponent subgroup the data had high means and high standard deviations. It was decided to sacrifice these two subgroups in order to obtain a more accurate *F* statistic with the three remaining subgroups. Rerunning the Box M statistic came back insignificant, indicating homogeneity of covariance matrix (Box M (*df*= 18) = 28.41, *p* = .13). The research could now use the multivariate tests to examine the final hypothesis.

Using Wilks Lambda, the overall multivariate test indicated that SP was significantly affected by the goal profiles ($F(9,119.40) = 10.53$, $p = .01$). At this stage the null hypothesis, that there was no difference amongst SP behaviour with regard to the independent variable, was rejected. Univariate F tests were examined for each of the dependent measures separately to determine the underlying aspects of the significant multivariate effect (see Table 6).

Table 6

MANOVA Output for Each Level of SP

Source	*MS*	*SS*	*F*	*p*
		Commitment		
CLUSTER	3.99	1.33	7.06	.01
Error	9.61	0.19		
Total	13.6			
		Negative Practice		
CLUSTER	9.68	3.23	22.92	.01
Error	7.18	0.14		
Total	16.86			
		Social Conventions		
CLUSTER	3.65	1.22	9.41	.01
Error	6.59	0.13		
Total	10.24			

The univariate tests showed strong significant values for Commitment ($F(3,51) = 7.06$, $p = .01$), Negative Practice ($F(3,51) = 22.92$, $p = .01$) and Social Conventions ($F(3,51) = 9.414$, $p = .01$) at a 5% significance level. 44.25% of the variance in SP could be explained in terms of the independent variable according to Partial Eta Squared. The relationship between these subgroups and the goal profiles could clearly be seen in the All Effects Graph (see Figure 4). This graph illustrated the trends shown in the descriptive statistics and was used to aid interpretation of the analysis. HiMeMeMe had higher Commitment and Social Conventions scores. HiHiHiHi was indicated as having higher Negative Practice than the other groups.

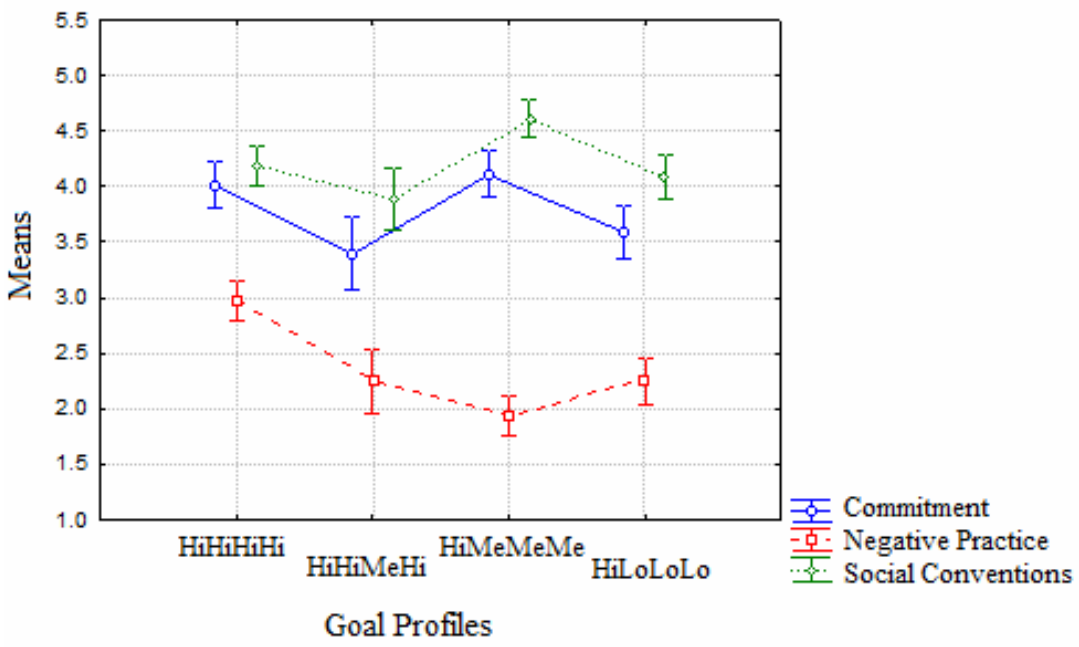

Figure 6. All effects graph indicating the trends of the SP means across the goal profiles. Vertical bars denote 0.95 confidence intervals.

These results indicated HiMeMeMe (comprised of both competitive players and social players) and HiHiMeHi (mostly competitive players) were able to achieve success along the lines of HiHiHiHi, but did not engage in HiHiHiHi's maladaptive SP.

Discussion

Achievement goal profiles were used to provide information on what motivated cricketers to achieve. The research uncovered different profiles for competitive players and social players. These profiles were shown to affect SP behaviour.

The first objective was to identifying the goal profiles, using the 2x2 achievement goal framework. Cluster analysis formed four profiles for this sample. It was possible with a larger sample that a five cluster solution would be possible.

By using the 2x2 framework, the present study was able to uncover more detail than previous research, which had mainly used mastery and performance split. The descriptive statistics clearly showed different scores for avoidance and approach in each of mastery and performance goal orientations. The dichotomous model may have indicated overall high performance goals (by combining Pap and Pav) for the competitive players and low performance goals for social players. The 2x2 framework distinguished that in both groups the Pav scores were high and Pap scores low. Clarity of mastery scores indicated that it was

the approach valence of the mastery goal orientation that was noticeably high for all the participants. The dichotomous model would have produced skewed results for the social players as their very low Mav scores would have brought down high Map scores to give them an overall moderate mastery score. This does not give as much insight as the current results do.

There was a trend of high Map and Pav scores, with lower Mav and Pap across each of the goal profiles. The high Pav scores were attributed to the method of scoring in this sport. Scoring of this kind provided an accurate measurement of achievement for every cricketer in the match. The results suggested that this fostered motivation to avoid being the worst player, rather than created competition to be the best. The sample was of young cricketers, who may not be confident of their abilities yet. A scoring method that highlighted poor ability in comparison to others, would only add to concerns about not performing well. This made avoiding this result a powerful motivator.

The strong Map means indicated that this orientation was the common element for this sport. This meant that although cricket did foster external, social comparisons it also created a high level of internal evaluation and a motivation for personal improvement. The match records also made it easy for cricketers to set goals to improve their batting average or wicket economy and beat past achievements. It was these measuring methods that were assumed to cause a trend of high performance scores, but may now also be seen to result in more positive motivations along self standards. These internal motivations were stronger than those that resulted from external, social comparisons.

The next objectives were to determine if goal profiles differed across competition levels. The initial cluster analysis of four goal profiles appeared to be split into two sections with respect to the mean scores. Those with high mean scores over all orientations (HiHiHiHi, HiHiMeHi) and those with lower mean scores (HiMeMeMe, HiLoLoMe). These two sections roughly separated out the competitive players from the social players. Only HiMeMeMe partially bridged the gap.

Previous literature indicated that performance goals were required for achievement in competitive sports (Boyd & Callaghan, 1994; Georgiadis et al., 2001). HiLoLoMe was the only cluster not adopted by any competitive players. This cluster emphasised the importance of performance goals in competitive situations. HiLoLoMe also had the trend of high Pav, but even with these scores the values for performance goals were much lower than any for the other profiles. External assessments of success were not relied upon as a motivational factor

for these social players. In comparison high performance goals in the competitive players indicated that they were important for successfully achieving in this environment. The performance goals provided the motivation to do well in comparison to others. This was required to be successful in competitive sports.

Interestingly it also appeared to be the higher Mav scores that motivated the competitive players to achieve greater success, making the A and B teams, than the social players. As observed previously, there was a trend within each profile of lower Mav scores. The profiles for the competitive players, however, did not have markedly lower Mav scores in relation to their other goal orientations. This was especially the case with HiHiMeHi, where the Mav score was equivalent to the Pav score.

Mav was associated with high anxiety, worry and fear of failure (Elliot & McGregor, 2001; Cury et al., 2002; Pekrun et al., 2006). These may be required as motivating factors in competitive situations where the individuals needed to be aware of the greater consequences associated with failure. Ideally these more negative emotions should not be motivating athletes, especially at a young age. But this again indicated that the maladaptive emotions identified in previous research did not hinder overall success but could facilitate it. Thelwell and Maynard (1998) indicated that high cognitive anxiety and moderate somatic anxiety led to significantly improved performances in their participants. Other cricketers found that they played better when they felt more tense (Totterdell, 1999).

For social players there was a clear drop in scores from high Map to considerably lower Mav scores. Mav scores were especially low for HiLoLoMe. This indicated that some concern over not performing at one's best was a motivating force for the competitive players especially in comparison to the social players. Even though HiMeMeMe had 7 competitive players this profile appeared to be dominated by a Map and Pav orientation with low Mav scores. This made these 7 cricketers an interesting exception to the trend seen at this playing level.

Thus the two different playing levels were shown to be motivated by different profiles. The profiles indicated similar trends, but the majority of the competitive players were characterised by overall high means for all of the goal orientations. In support of previous findings they appeared to have higher performance goal orientations. High Mav scores in comparison to the other goal orientations in the profile were also out of the ordinary in these individuals. It was possible that the maladaptive entities of this profile were required to acknowledge the seriousness of this environment. It was predicted that strong mastery

goals would be adopted by the social players, due to their more neutral environments (Ferrer-Caja & Weiss, 2000; Nicholls, 1984). These players appeared to be motivated predominately by the Map orientation and had very low Mav scores. This meant they strove for self improvement and to attain personal goals and were not worried as much about poorer personal performances. Though Pav was the second strongest orientation the mean scores were much lower than the Map scores, which dominated these social profiles.

The final aim was to determine whether goal profiles affected SP. It was clear that maladaptive emotions such as anxiety and fear of failure could still result in an individual achieving high success. The individual may ignore the maladaptive emotions and continue with negative strategies because they were still able to win. These profiles were not criticised as the end success usually justified the method of attaining it. This research showed that it was possible to have profiles which motivated high achievement but did not necessarily have to include maladaptive qualities.

In the competitive environments more emphasis was placed on winning than anything else. Research had shown that in these contexts individuals would exhibit poorer SP (Dru, 2003; Gano-Overway et al., 2005; Vallerand et al., 1996; Vallerand et al., 1997). This finding was illustrated by the HiHiHiHi profile. This profile showed significantly poorer scores on the subscale for Negative Practice. This subscale included questions such as: “After a competition, I use excuses for a bad performance”; “When my coach points out my mistakes after a competition, I refuse to admit that I made those mistakes”; “If I make a mistake during a crucial time of the match, I get angry” (Vallerand et al., 1997, question 15, 20, 25).

Though analysis could not be completed on the subscale, the descriptive statistics indicated that they also scored lower on Rules and Officials. This meant that further research, with a larger sample, may uncover that the HiHiHiHi profile had less respect for obeying the rules when motivated to go after victory. In this specific case that meant behaviours such as claiming a grounded catch, not walking when they knew they were out or not respecting the umpire’s decision.

The SP results could be due to the higher performance goal orientations in this profile. The need to show their ability as being greater than others may contributed to the anger they felt when they made a mistake or were criticised. Pintrich (1999) (as cited in Covington, 2000) found that this tendency to save-face after failure was a characteristic of strongly performance orientated individuals. The use of excuses and self-protecting mechanisms meant that the individual could successfully avoid having to deal with negative feedback or

poor ability (Elliot and Harackiewicz, 1996). If success was obtained in the end their behaviour would appear justified.

As noted before, however, all the profiles had relatively high Pav scores. But this suggested a level where it was not maladaptive, and simply part of the game, and then another level where there was a decrease in adaptive behaviour. Pap scores were also particularly high for this profile. These high performance goals would have placed great value on being superior to others, overshadowing other factors.

The Map scores were high for this group. It was possible that the strong performance goals counteracted the high Map orientation (as mastery had counteracted maladaptive performance elements in previous research). This prevented the adaptive qualities of this orientation from coming through. Alternatively the high Mav scores indicated low perceived ability. This would lead to defensive behaviour or even displays of anger when criticised.

In work by Georgiadis et al. (2001) their high mastery, high performance cluster was classified as an adaptive goal profile. They labelled it as the profile that had the greatest motivation to achieve. This reserach was consistent with their findings. HiHiHiHi individuals appeared to be motivated to achieve at all costs. High scores on all the orientations resulted in success-foccussed behaviours (Cury et al., 2002), which caused them to sacrifice good conduct to achieve. Even though the profile was associated with adaptive emotions, the fixation on achievement forfeited adaptive behaviours. This highlighted the fact that SP should contribute to the defining of maladaptive profiles. Using SP rather than emotions allowed justification to foster certain profiles above others because the resulting behaviours were maladaptive.

The other profiles indicated good scores for SP. The HiMeMeMe profile, however, indicated higher scores for Social Conventions and Commitment and slightly lowers score for the Negative Practice subscale. This recommended it to be the ideal profile as it was adopted by competitive players as well as motivated the best SP behaviours (see Figure 6). HiHiMeHi profiles, which were largely adopted by competitive players, also had good scores of SP. But where the HiMeMeMe individuals appeared to be characterised by this behaviour the HiHiMeHi individuals' scores were on par with the other results obtained.

Map scores were dominant especially for HiMeMeMe. In contrast to HiHiHiHi, who took part to win, these high Map scores described an individual who had high intrinsic motivation, and enjoyed the task regardless of the outcome. Because these individuals were motivated by the task itself, how they took part in the task was valued more highly.

Though not as strong as HiHiHiHi, these profiles also had high scores for the maladaptive avoidance goal orientations. High Mav and Pav scores were predicted to have high anxiety and low perception of ability. Being worried about being able to perform well would have indicated this orientation to be a predictor of low SP. Since so little was known about the new Mav orientation, its adoption in this context might not motivate negative playing habits at all when interacting with a high Map orientation. The strong maladaptive qualities of Pav appeared to be similarly tempered. When at lower values it appeared to be a feature of this sport and served as a motivational factor without the negative emotions attached, especially with a strongly dominated Map orientation.

HiLoLoMe indicated the lowest score on the Commitment subscale. This subscale referred to the cricketer's commitment to participating in the game. This was not attributed to poor SP, but rather due to the lack of formal practice sessions that these players had. As social players their training was not as rigorous as the competitive players and thus questions such as "It is important for me to be present at all practices" and "During practices, I go all out" often did not apply to them (Vallerand et al., 1997, questions 18, 23).

The adoption of the HiHiMeHi goal profile and especially the HiMeMeMe goal profile indicated that the individual was motivated to succeed at competitive levels but was still concerned with good SP. These were the types of goal profiles that needed to be fostered by coaches and teaching techniques. By rewarding certain results and not others (i.e., changing the values set for gains and losses), coaches can change motives (Covington, 2000). Future research needs to establish tools that can encourage the adoption of these profiles and the environments that create them. Schools and coaching establishments should teach these techniques to foster the more adaptive goal profiles. This would aim to develop successful athletes with integrity for the game.

In order to clarify the qualities of the adaptive goals, research should also establish the emotions involved with these profiles. Although a lot of research has focussed on emotions, not much involved the 2x2 framework or cricket and none have combined it with behaviours like SP. Cricket presents an interesting study in itself. This research indicated that its players have high Map as well as Pav goal orientations. Previous research indicated these as having strongly contradictory emotions attached to their adoption. Research should clarify these emotions using goal profiles and not just individual orientations. This should be done particularly with respect to anxiety and sport enjoyment. Combined with SP this will help to clarify adaptive goal profiles under emotional and behavioural criteria.

There were several limitations, mostly as a result of the small sample size. The small sample was attributed to the fact that the data was not collected during cricket season. This made it harder to access participants at the high schools, without infringing on school time.

Firstly, it is possible that a larger sample would not have violated the assumptions for MANOVA, allowing analysis of all the levels of SP. MANOVA is also more robust to violations with a larger sample. Secondly, the questions provided were very straightforward. The study relied on the honestly of the individual so that significant results could be determined. High standard deviation scores indicated variability of answers for the Pav orientation as well as some levels of SP. This could be due to some individuals answering honestly, whilst others gave what they thought to be the correct answer. Dishonest answers in a small sample can affect the end results obtained, whilst a larger sample can compensate for this. Finally, this research showed the importance of considering SP as a consequence of certain goal profiles. However the study cannot make any generalisations. Data that includes information on emotions, which is retrieved from a variety of different schools needs to be analysed before decisions on which profiles to adopt are made.

Conclusion

The research conducted illustrated the value of using the 2x2 goal achievement framework to understand motivation in a sporting context. It indicated that these participants were motivated to achieve by primarily mastery-approach and performance-avoidance goals. These were attributed to cricket's scoring system, which cultivated the creation of personal targets and normative comparisons. Profiles were shown to differ across playing levels, indicating that motivation was different in different contexts. The different profiles were associated with different levels of SP. The study was able to identify a profile that motivated achievement in this field at the expense of other virtues, as well as others that did not sacrifice these morals. It is suggested that the latter profiles, which encourage both high achievement and SP, be fostered by coaching systems.

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Appendix A

Questionnaire Battery

DEMOGRAPHIC QUESTIONS

How old are you?

Have you ever competed in a provincial team?

Yes	No

What teams do you/have you play/ed for (school and club level) during high school?

Team (eg. U14A)	**Bowling type**	**Batting Position**	**Year**	**Your age at the time**	**Did you enjoy it?**		
					No	**Not Sure**	**Yes**

How far do you want to take cricket?

High School	University	Professional

Do you think that you have done well over the last year?

No not really	Quite well	Yes, very well.

Do you expect to do well in the coming year?

No not really	Quite well	Yes, very well.

GOAL ORIENTATION: SELF

When I play cricket I feel that…	**Not at all like me**	**Not really like me**	**A little like me**	**Sometimes like me**	**Like me**	**Quite a lot like me**	**Completely like me**
It is important for me to play as well as I possibly can							
I worry than I may not perform as well as I possibly can							
It is important for me to do well compared to others							
I just want to avoid performing worse than others							
I want to perform as well as it is possible for me to perform							
Sometimes I'm afraid that I may not perform as well as I'd like							
It is important for me to perform better than others							
My goal is to avoid performing worse than everyone else							
It is important for me to master all aspects of my game							
I am often concerned that I may not compete as well as I can.							
My goal is to do better than other cricketers							
It is important for me to avoid doing the worst in the team							

For each of the following items, <u>cross</u> the number that best represents the extent to which the item corresponds to you with respect to cricket. A reminder that your <u>honesty</u> is vital for the accuracy of this research. Your answers will be kept anonymous.

Doesn't correspond to me at all 1	Corresponds to me a little 2	Corresponds to me partly 3	Corresponds to me a lot 4	Corresponds to me exactly 5

1. When I lose, I congratulate the opposition.	1	2	3	4	5
2. I trust the umpire's decision.	1	2	3	4	5
3. In competition, I go all out even if we are almost sure to lose.	1	2	3	4	5
4. I aid the opponent if they get hit/injured.	1	2	3	4	5
5. I compete for personal honours, trophies, and medals.	1	2	3	4	5
6. After a defeat, I do not give blame to teammates.	1	2	3	4	5
7. I respect the rules.	1	2	3	4	5
8. I don't give up even after making many mistakes.	1	2	3	4	5
9. I make sure the opposition is treated fairly by the umpire.	1	2	3	4	5
10. I criticize what the coach/captain makes me do.	1	2	3	4	5
11. After a competition, I congratulate opposition players for their good performance.	1	2	3	4	5
12. I only appeal when I am certain it is out.	1	2	3	4	5
13. I think about ways to improve my weaknesses.	1	2	3	4	5
14. I am concerned about injury to the opposition players.	1	2	3	4	5

15. After a competition, I use excuses for a bad performance.	1	2	3	4	5
16. After a win, I acknowledge the opposition's good work.	1	2	3	4	5
17. I respect the umpire even when he or she is not good.	1	2	3	4	5
18. It is important to me to be present at all practices.	1	2	3	4	5
19. I would not claim grounded catches even in important matches.	1	2	3	4	5
20. When my coach points out my mistakes after a match, I refuse to admit that I made those mistakes.	1	2	3	4	5
21. Win or lose, I congratulate my team after the game.	1	2	3	4	5
22. I always walk when I know I'm out.	1	2	3	4	5
23. During practices, I give 100%.	1	2	3	4	5
24. If by misfortune, an opponent forgets his or her equipment, I would lend him my spare one.	1	2	3	4	5
25. If I make a mistake during a crucial time of the match, I get angry.	1	2	3	4	5

Appendix B

Assent Form for Parents

You are being asked to allow your child take part in a research project studying the area of sports psychology with a special interest in cricket. Your child's participation is entirely voluntary. Before you decide whether or not to give assent, read the information below.

Title of Research Study

Achievement Goal Profiles of High School Participants.

Principal Investigator

Laura Singh, SNGLAU003

Department of Psychology

University of Cape Town

Supervisor

Professor Johann Louw

Department of Psychology

University of Cape Town

Purpose of the research

The purpose of this research study is to gain better understanding into how participants define success and what motivates them to play. Much research has been done overseas and in other sports but very little research has been done on participants in South Africa. Success will be measured on how the student defines competence and the data will be analyzed to form goal profiles. These Achievement Goal Profiles allow us to anticipate certain consequences and assume certain antecedents, which can help improve enjoyment of the sport. Building up a collection of these profiles makes research in this area more powerful, which allows us to make more confident predictions about behaviour.

Procedure

The student will be asked to complete some questionnaires. This should not take more than 30 minute and may be carried out at home, so the participate answers all questions by themselves.

Ethics

Ethical approval will be obtained for the study before any data is collected. This particular research has already been carried out in a previous year and the same methods will be employed.

Queries

If you have any questions regarding the student's rights as a research participant, and your rights as the individual granting assent for research participation or if you wish to discuss the information above, please feel free to email me on snglau003@gmail.com or snglau003@mail.uct.ac.za

The results of the research will be presented as part of an Honors research project for the University of Cape Town. Also, the results may be used in a Masters project in the same field of interest. In both instances neither you nor the participants will be identified in any way.

By signing below you acknowledge that you have been informed about this study's purpose, procedures, possible benefits, and risks; and how your child's performance and other data will be collected, used and shared, anonymously, with others. You also voluntarily assent to allow your child to participate in this study. By signing this form, you are not waiving any of your legal rights.

Parent or legal guardian

Name: Signature:

Appendix C

Assent Form for Participant

You are being asked to take part in research on cricket. Your participation is entirely voluntary. Before you decide whether or not to take part, read the information below.

Title of Research Study

Achievement Goal Profiles of High School Participants.

Investigator

Laura Singh

Department of Psychology

University of Cape Town

Supervisor

Professor Johann Louw

Department of Psychology

University of Cape Town

Purpose of the research

The purpose of this research study is to gain better understanding into you define success and what motivates you to play. Not much research has been done on this, which is why your participation is so important. The way you think about success is called an Achievement Goal Profile. Knowing what these are allows us to help improve enjoyment of the sport.

Procedure

You will be asked to complete some questionnaires. This should not take more than 30 minute and may be carried out at home. You must ensure you answer all questions by yourself.

Ethics

Ethical approval will be obtained for the study before any data is collected. This particular research has already been carried out in a previous year and the same methods will be employed.

Queries

If you have any questions please feel free to email me on snglau003@gmail.com or speak to your parents about your concerns.

The results of the research will be presented as a project for the University of Cape Town. You will never be identified and all your personal information will be kept safe.

Please sign below if you wish to participate in this study.

Participant

Name: Signature:

Appendix D

Assent Form for Principal/Coach

Principal/Coach: _____

High School/Academy: _____

By signing below you acknowledge you have been informed about this study's purpose, procedures, possible benefits, and risks; and how the student's data will be collected, used and shared with others. You have received a copy of the relevant forms. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time.

You voluntarily assent to allow your students to participate in this study. You hereby authorize the collection, use and sharing of your student's data. By signing this form, you are not waiving any of your legal rights or giving up the confidentiality agreement made to you or the participants.

_____ _____

Signature of Principal Date

Appendix E

Western Cape Education Department Ethical Approval

Navrae
Enquiries
IMibuzo
Dr RS Cornelissen

Telefoon
Telephone
IFoni
(021) 467-2286

Faks
Fax
IFeksi
(021) 425-7445

Verwysing
Reference
ISalathiso
20080627-0071

Wes-Kaap Onderwysdepartement

Western Cape Education Department

ISebe leMfundo leNtshona Koloni

Miss Laura Singh
2 Longchamp Close
MILNERTON RIDGE
7441

Dear Miss L. Singh

RESEARCH PROPOSAL: GOAL ORIENTATION PROFILES OF HIGH SCHOOL CRICKETERS.

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **14th July 2008 to 30th August 2008**
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
7. Should you wish to extend the period of your survey, please contact Dr R. Cornelissen at the contact numbers above quoting the reference number.
8. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
9. Your research will be limited to the following schools: **SACS, Rondebosch Boys High, Table View High, Wynberg Boy's High, Westerford High and Milnerton High**.
10. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:

    The Director: Research Services
    Western Cape Education Department
    Private Bag X9114
    CAPE TOWN
    8000

We wish you success in your research.

Kind regards.

Signed: Ronald S. Cornelissen
for: **HEAD: EDUCATION**
DATE: 30th June 2008

PLAGIARISM DECLARATION

1. I know that plagiarism is wrong. Plagiarism is using another's work and to pretend that it is one's own.

2. I have used the **American Psychological Association (APA) standard** as the convention for citation and referencing. Each significant contribution to, and quotation in, this **research** from the work, or works of other people has been attributed and has cited and referenced.

3. This **research** is my own work.

4. I have not allowed, and will not allow, anyone to copy my work with the intention of passing it off as his or her own work.

5. I acknowledge that copying someone else's assignment or essay, or part of it, is wrong, and declare that this is my own work

SIGNATURE: _____

DATE: _____