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Young horse-riders and their parents:

An investigation into the parent-child interaction and the achievement goal profiles of
horse-riders.

Caroline Duff-Riddell

(GRGCAR001)

A dissertation submitted in partial fulfilment of the requirements for the award of the Degree
of MA (Psychological Research)

Faculty of Humanities

University of Cape Town

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COMPULSORY DECLARATION:

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works of other people has been attributed, cited and referenced.

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ABSTRACT

In this study, the goal orientations of female riders between the ages of 7 and 20 and their parents are investigated. Goal orientations were identified by means of the Achievement Goal Questionnaire for Sport (AGQ-S) for: the daughter; the daughter's perceptions of her dominant-parent's goal orientation for the daughter; both parents' goal orientations; and both parents' stated goal orientations for their daughter. The rider's goal orientations were compared with: the rider's perception of her dominant-parent's goal orientation; both parents' goal orientations for the daughter; and both parents' own goal orientations

The comparisons showed that daughters reported higher levels of the avoidant orientations than their parents wanted for them. However, the daughter's levels of the avoidant orientations were the same as that shown by their parents. Further analysis demonstrated that the daughter's perception of what the dominant-parent wants for the daughter's competitive riding, acts as a mediating influence on the effect of the dominant-parent's own goal orientation and the dominant-parent's goal orientation for the daughter, on the daughter's goal orientation. Possible predictive models of the effects of: the dominant-parent's goal orientation; the dominant-parent's goal orientations for the daughter; and the Parent-Initiated-Motivational-Climate; on the daughter's goal orientation were also investigated.

Goal profiles were created for the daughters using cluster analysis. Seven distinct goal profiles emerged from the data. The goal profiles were compared to measures of the rider's Trait-Anxiety (SAS-2), State-Emotion (SES) and Self-Efficacy in competitive horse-riding. The profile that was high in the approach orientations and low in the avoidant orientations emerged as the most emotionally robust profile. It was also the most competitively successful profile. The profiles where the avoidant orientations were high emerged as the most emotionally vulnerable profiles. Furthermore, they did not demonstrate any particular competitive success.

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¹ Figures are differentiated from graphs in that they represent information flows as opposed to graphs which are a pictorial representation of a series of numbers.

CHAPTER 1: INTRODUCTION

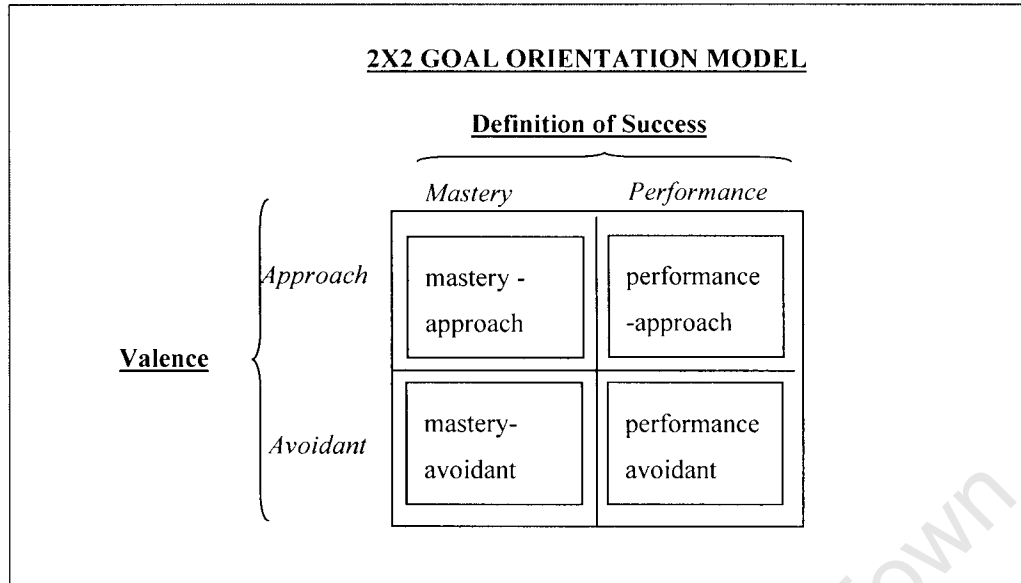
Parents play a significant role in how their children learn about and perceive the world. According to social cognitive theorists, observational learning is the most important form of learning although the roles of reinforcement and self-regulation are also acknowledged. However, motivational theorists have proposed that it is the child's perception of the environment which has the greatest influence over the child's development. This study looks at how parents' beliefs about success influence their children's perceptions of and beliefs about success within the context of both of these theories. Furthermore, how these perceptions and beliefs influence the child's motivational processes and affect in sport is investigated. A further aim of this research is to look at motivational profiles of young riders and how these profiles associate with State-Emotion, Trait-Anxiety and Self-Efficacy in competitive riding.

THEORETICAL FRAMEWORK

The theoretical framework of this research is that of achievement goal theory within which two main constructs are used. The first is the 2x2 goal achievement model proposed by Elliot and McGregor (2001); the second is the Parent-Initiated-Motivational-Climate as described by White and colleagues (White, 1996; White, Duda & Hart, 1992). These two constructs are discussed in more detail in the following sections.

Achievement Goal Orientation

Achievement goal theory has been shown to be an appropriate model for research into motivational processes in education, work and sport (e.g., Duda & Nicholls, 1992; Nicholls, 1984; Roberts, 1992). The basic tenet of achievement goal theory is that the primary motivating force, in an achievement environment (e.g. sport), is the need to demonstrate success or competence. The most recent form of the achievement goal orientation model is the two dimensional (2x2) model proposed by Elliot and McGregor (2001). The first dimension of this model is the definition of success which consists of mastery and performance orientations. The second dimension of the model is valence which consists of approach and avoidant orientations. A diagrammatic illustration of this model is provided in Figure 1.

Figure 1 Diagrammatic representation of the 2x2 achievement goal model

The terms mastery and performance are not used consistently in the literature. Other terms used for mastery are task or learning whilst an alternative term used for performance is ego. Since this study follows on the work of Elliot and McGregor (2001), the terms mastery and performance have been used. Furthermore, since this research focuses on girls, the sportsperson has been referred to as a female.

Mastery goals are those goals in which a person perceives success as a skill learned or improved. Success is self-referenced in that the individual compares herself to her own previous performance. The person who is motivated by mastery goals will see themselves as successful when they are able to perform a new task which was previously not achievable or when they improve on their own previous performance (Duda & Nicholls, 1992; Elliot & McGregor, 2001; Nicholls, 1984).

Performance goals are those goals where success is perceived as being achieved by being better than others or achieving things that others cannot. Success is norm-referenced in that the individual judges her success by comparison with others. Such a person perceives success in terms of beating or outperforming other people in competition (Duda & Nicholls, 1992; Elliot & McGregor, 2001; Nicholls, 1984).

The valence dimension indicates whether the individual views her goals in an approach or an avoidant fashion. When an individual adopts an approach style, achieving success is the

dominant aim. When individuals adopt an avoidant style, they expend more effort on avoiding failure (Elliot & McGregor, 2001).

Parent-Initiated-Motivational-Climate

Within the achievement goal model, a person may be said to have a predisposition towards a certain set of goal orientations. (In this research the term “goal orientation” refers to the participants dispositional tendencies.) However, this dispositional tendency can be overridden by situational factors (Dweck & Leggat, 1988). In the educational domain, Ames and her colleagues (Ames, 1992a; Ames & Archer, 1988) coined the term motivational climate to describe the situational goal structure within the classroom. In their operationalisation of the motivational climate in the classroom, a number of theoretical distinctions between mastery and performance goals were identified. These are described in Table 1.

Table 1 Achievement goal analysis of classroom climate²

<i>Climate dimensions</i>	<i>Mastery goal</i>	<i>Performance goal</i>
Success defined as ...	Improvement, progress	High grades, high normative performance
Value placed on...	Effort/learning	Normatively high ability
Reasons for satisfaction...	Working hard, challenge	Doing better than others
Teacher oriented view...	How students are learning	How students are performing
View of mistakes/errors	Part of learning	Anxiety eliciting
Focus of attention...	Process of learning	Own performance relative to others
Reasons for effort...	Learning something new	High grades, performing better than others
Evaluation criteria	Absolute, progress	Normative

These ideas were incorporated into the construct of a motivational climate which incorporated the “mastery” and “performance” involving climates in the classroom. The mastery involving climate is characterized by understanding the necessity of working hard to attain success and acceptance of mistakes as part of the learning environment. The performance involving climate is characterized by rewards given for demonstrating superior ability and punishment of mistakes in learning (Newton, Duda & Yin, 2000).

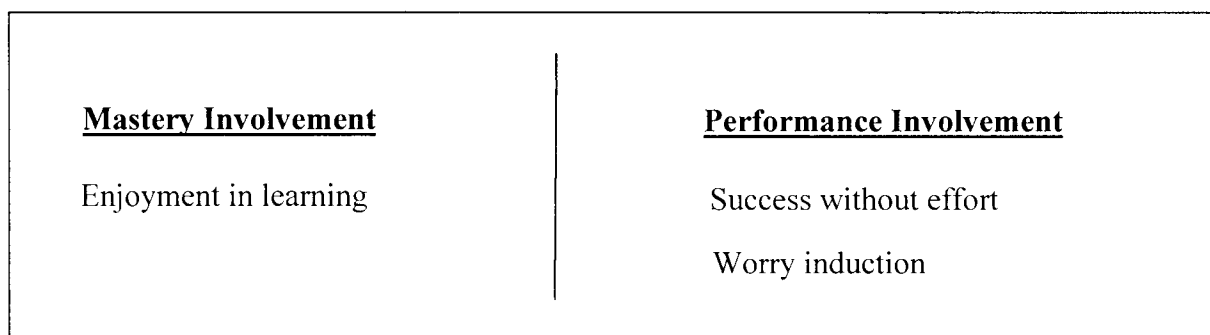
² Copied from Ames & Archer, 1988, p. 261.

Seifriz, Stein and Chi (1992) subsequently extrapolated the idea of the motivational climate into the sport domain with the development of the Perceived Motivational Climate in Sport Questionnaire (PIMCSQ). This was used to research athletes' perceptions of the motivational climate created by the coach. In both sport and education, the motivational climate has been used extensively to explore the environments created by teachers, peers and coaches however, less research has been carried out on the motivational climate created by the parent.

Parents also play an important role in socializing children's beliefs about success and the consequent development of the child's dispositional goal orientation (White, Kavussanu, Tank & Wingate, 2004). When parents evaluate their child's performance, they communicate their beliefs about success to the child. Thus, they influence the development of the child's achievement goal structure. For example, a parent may reward effort even though the child is not placed in a competition, thus endorsing a mastery orientation. On the other hand, the parent may make a big fuss over competitions won where the child has not put in much effort. In particular, the parent may emphasize that the child is simply better than the rest thereby emphasizing the importance of ability over effort. In this case the parent endorses a performance orientation.

White and colleagues (White, Duda & Hart, 1992; White et al., 2004) extended the motivational climate construct by examining the motivational environment created by the parents. In doing so, they created the construct of the Parent-Initiated-Motivational-Climature (PIMC). Figure 2 provides a diagrammatic illustration of the Parent-Initiated-Motivational-Climature.

Figure 2 Diagrammatic representation of the Parent-Initiated-Motivational-Climature



Like the more general motivational climate, the Parent-Initiated-Motivational-Climature (PIMC) is divided into two dimensions, the mastery involving and performance involving climates. The mastery involving dimension includes the idea that the parent encourages

enjoyment in learning and acceptance of mistakes as part of the learning process. The performance involving dimension includes two main aspects. The first, places importance on the existence of ability and the parent emphasizes the notion that success should be achieved without expending a great deal of effort. The second, looks at the extent to which the parent induces worry in the child about making mistakes and meeting the success criteria.

No work appears to have been done to extend the construct of the PIMC to include the valence dimension of the 2x2 achievement goal model.

LITERATURE REVIEW

The literature reviewed in preparation for this research was sourced mainly from peer-reviewed articles in journals. However, in certain areas university texts and masters and doctoral theses were also accessed. Grey literature was not referenced.

Achievement Goal Orientation

According to Duda, Fox, Biddle and Armstrong (1992), mastery orientation is associated with a number of adaptive achievement behaviors such as: (i) choosing appropriately difficult tasks, (ii) exerting full effort, (iii) maintaining intrinsic interest in the activity, (iv) improving and/or sustaining levels of performance, (v) persistence in the face of adversity and (vi) positive association with high levels of intrinsic motivation. On the other hand, high levels of performance orientation have been found to be associated with a number of maladaptive achievement behaviors such as: (i) choosing tasks that are unreasonably easy or difficult, (ii) devaluation of the task, (iii) dropping out of the activity, (iv) holding back in terms of effort expended and (v) feelings of incompetence. These findings have been confirmed by other research (Duda, Chi, Newton, Walling & Catley, 1995; Elliot, 1999; Tank & White, 1996).

Although research shows that the results are consistent within the mastery orientation, they are rather less so within the performance orientation. In the original model proposed by Nicholls (1984), he observed that predicted behaviors would differ depending on whether an individual had high or low levels of Self-Efficacy. For example, individuals with high performance orientation and high levels of Self-Efficacy are likely to choose appropriately demanding tasks to demonstrate their skill against others. However, when individuals with

high performance orientation have low levels of Self-Efficacy, they are likely to show maladaptive behavior in selecting inappropriately difficult tasks. In such situations, the individual may choose tasks that are either very difficult (they will not get shown up as others will also fail) or which are insufficiently challenging (they are sure of doing better than others) (Elliot, 1999).

In order to account for these differences in behavior within performance orientated individuals, the incorporation of the additional dimension of valence was proposed by Elliot (1999). The dimension of valence indicates whether an individual is motivated to adopt an approach or an avoidant orientation (Elliot, 1999; Elliot, et al., 2000; Elliot & McGregor, 2001). In the approach orientation, behavior is motivated by a positive event, for example, success. In the avoidance orientation, behavior is motivated by an unpleasant event, for example, failure. This refers back to the intentional framework of Dennet (1978) where behavior is mooted to be driven by the need to attain success (approach) on the one hand, yet avoid failure on the other (avoidant). In Elliot's (1999) model, there are four possible combinations of goal orientation: (i) mastery-approach (Map), (ii) mastery-avoidant (Mav), (iii) performance-approach (Pap), and (iv) performance-avoidant (Pav). The types of people who might fit into the mastery-avoidant category are perfectionists and people who perceive their abilities to be dwindling. The person who spends long hours practicing at home but never feels good enough to compete exemplifies the mastery-avoidant orientation. Another manifestation of the mastery-avoidant orientation would be the child who refuses to cooperate in the learning environment or develops aches and pains in sport training. These children do not put full effort into learning/training because they are afraid of not meeting the required standards. If they do not succeed in this situation, it was because they were sick, didn't try and so on. These people will differ from those with a mastery-approach orientation in that, instead of focusing attention on how to attain success, they will focus on trying to avoid failure (Elliot & McGregor, 2001). Where a person has a strong performance-approach orientation they may be driven to cheat if they do not see their way to winning through other means such is their need to go out and demonstrate success. On the other hand, the performance avoidant personality will show the maladaptive choice in tasks demonstrated in other research (Duda et al., 1995; Elliot, 1999; White, 1998).

Of particular interest, in this research, is the influence of the parents on the child's development of achievement goal orientation. Research has shown that the parents'

perceptions about success and how it is achieved are influential in the child's development of achievement goals. For example, emphasis on the idea that working hard will achieve success is likely to lead to development of a mastery orientation; the idea that success is dependant on latent ability is more likely to lead to the development of a performance orientation (White, Kavussanu, Tank & Wingate, 2004).

Parental Socialization

Research by White (1998) found that where a child is high in mastery orientation, regardless of the level of performance orientation, the child perceives the parent as encouraging enjoyment in learning. However, where a child demonstrates a high performance orientation and a low mastery orientation, the child perceives both parents as placing high value on ability (i.e. that success should be achieved without undue effort). These children also perceive their fathers as causing them to worry about making mistakes. They also showed the highest levels of Trait-Anxiety in their sport. Where children showed low mastery and low performance orientations, they were inclined to view their mothers as causing them to worry about making mistakes. White's (1999) research was carried out on a combination of boys and girls who competed in a variety of organized team sports. Apart from this research, there appears to very little published work that investigates the motivational climate created by the parent, within the achievement goal model.

There are further findings from Elliot and McGregor (2001) with regard to parental socialization for the different goal orientations. Firstly, for the mastery-approach orientation, no particular effects of parental socialization were found. Thus, it was concluded that mastery-approach aims are an inherent part of human nature (Elliot & McGregor, 2001). Secondly, antecedents of the mastery-avoidant orientation were shown to be grounded in: fear of failure; low self-determination; negative and personal feedback from parents; and parent-induced worry. Thirdly, the performance-approach goal orientation was shown to be associated with conditional approval from both parents and person-based positive feedback from fathers. The adoption of performance-approach goals appears to be an attempt to gain approval from parents and the belief that expression of approval from the parent is dependent on success in the achievement environment. Therefore, we would expect the performance-approach orientation to be associated with certain negative consequences. Finally, the performance-avoidant goal orientation was associated with person-focused negative feedback

from both parents and Worry-Induction from mothers. It was concluded that the pursuit of such goals is probably an attempt to avoid devaluation by one's parents. The outward manifestation of this devaluation would be a decrease in self-worth and failure to perform. It is, therefore, not surprising that the performance-avoidant orientation would be associated with a number of maladaptive consequences (Elliot & McGregor, 2001).

The performance-avoidant goal orientation appears to be the most vulnerable orientation in the achievement environment. The mastery-avoidant orientation, although associated with the same social antecedents as the performance-avoidant orientation, does not lead to the same array of negative consequences. In particular, the adoption of a mastery-avoidant orientation can facilitate the subsequent adoption of mastery-approach and performance-approach goals which the performance-avoidant approach does not (Elliot, 1999; Elliot et al., 2000; Elliot & McGregor, 2001).

The work of Elliot and McGregor (2001) demonstrates the complexity of the relationship between parental influence and a child's achievement goals. This is further complicated by the fact that it is not just what the parent does or wants that influences the child, but also what the child perceives the parent does or wants. The importance of the child's perception and interpretation of reality has been pointed out by many researchers. Children's behavior appears to be more related to the child's perceptions than parent's actual behavior (Duda & Hom, 1993; Nicholls, 1984). This leads to the idea that the child's perception could be acting as a mediating influence between the parent's own goal orientation and the child's goal orientation.

Subsequent research in the dichotomous achievement goal model (i.e. only incorporates the mastery and performance dimensions), has indicated significant correlations between, the child's goal orientation and the child's perceived parent orientation (Collins & Barber, 2005, Duda & Hom, 1993, Ebbeck & Becker, 1994), as well as, the child's beliefs about causes of success and the child's perception of the parents beliefs about causes of success (White, Kavassanu, Tank and Wingate, 2004).

In their research with young male ice-hockey players, Bergin and Habusta (2004) found that the son's goal orientations correlated positively with his perceptions of his parent's goal orientations. However, there was not necessarily correlation between the son's goal orientation and the parents' stated goal orientation for their son. In particular, sons reported

higher performance orientation than the parents reported wanting to see in their sons, and sons reported less mastery orientation than parents reported wanting to see.

Goal Profiles

Most of the abovementioned research examines each goal orientation in isolation. However, the elements of the definition of success dimension (i.e. mastery and performance) have been found to be consistently orthogonal. This means that goal orientations may take on different combinations of goal orientations (i.e., high-mastery/high-performance, high-mastery/low-performance, high-performance/low-mastery and low-performance/low-mastery). These combinations of functioning are referred to as goal profiles (Chi & Duda, 1995; Cumming & Hall, 2004; Roberts, Treasure & Kavussanu, 1996). Notwithstanding the fact that it is not clear whether approach and avoidance are orthogonal, it seems appropriate to research goal orientation by examining goal profiles rather than simply defining an individual as performance or mastery dominant. Previous research has shown that it is not always the level of a performance orientation which leads to detrimental behaviors but how it combines with the levels of mastery orientation (White, 1998).

Different strategies have been used to examine achievement goal profiles. The mean- or median-split method was one of the early methods to be used (e.g. Roberts et al., 1996; White, 1998). The criterion used to decide whether a score belonged in the high or low group was either the mean or the median of the sample as specified by the researcher (Smith, Balaguer & Duda, 2006). Hodge and Petlichkoff (2000) propose the use of cluster analysis as a more appropriate method to identify goal orientation profiles. In this procedure, four goal profiles could be created: high-mastery/high-performance, high-mastery/low-performance, high-performance/low-mastery and low-performance/low-mastery. Cluster analysis creates groups which minimize within-group variance and maximize between-group variance. Thus, the researcher can examine the naturally occurring clusters rather than creating groups from arbitrarily decided upon conditions. This method has the added advantage that clusters are not limited to high or low, and moderate levels of functioning can also be investigated (Carr, 2006; Hodge & Petlichkoff, 2000).

In their study on rugby players, Hodge and Petlichkoff (2000) identified four clusters: low-performance/high-mastery; high-performance/low-mastery; high-performance/moderate mastery; and low-performance/moderate mastery. No extreme group profiles (high-

performance/high-mastery, low-performance/low-mastery) emerged. The main factors contributing to the difference between groups were perceived rugby ability/competence and the importance of perceived rugby ability/competence. In the study by Smith, Balaguer and Duda (2006) on soccer players, similar clusters emerged. Where mastery orientation was relatively lower, less adaptive responses to motivational climate and less enjoyment and satisfaction with sport were reported. However, it was observed that high performance orientation on its own is not maladaptive. Rather, it is in situations where mastery orientation is low in combination with high performance orientation that maladaptive behavior occurs.

A further study by Carr (2006) looked at goal profiles using cluster analysis with the trichotomous model (mastery, performance-approach and performance-avoidant). Four clusters were identified: (i) high mastery; high performance-approach; high performance-avoidant, (ii) high mastery; high performance-approach; low performance-avoidant, (iii) low mastery; high performance-approach; high performance-avoidant; and (iv) high-mastery; low performance-approach; low performance-avoidant. In Carr's (2006) study, there are no moderate levels in the emergent profiles. However, the method used for the cluster analysis was slightly different from that used in previous studies making comparison difficult. This study was interesting in that it was the only one found where both cluster analysis and a trichotomous model was used.

A study done by Van Yperen (2006) identified goal profiles and different dominant achievement goals on a group of college psychology students using the 2x2 model. Slightly more than 30% of the sample had a dominant mastery-avoidant orientation indicating that this is an important group which requires further research.

GAPS IN THE LITERATURE

There is a relative dearth of literature describing research using the 2x2 model. Most of the existing literature is based on the dichotomous and trichotomous models of achievement goal theory. There is also surprisingly little literature on the role of parents within the achievement goal model.

There do not appear to be any documented studies showing either, associations between the child's goal orientations and/or: the child's perception of the parents' goal orientations, or parent's goal orientations for the child, using the 2x2 model. More specifically, there seem to

be no studies which investigate the mediating influence of the child's perceptions of the dominant-parent's goal orientations on the effect the dominant-parent's own goal orientation and the dominant-parent's goal orientation for the child, on the child's goal orientation. Furthermore, there does not appear to be any research investigating how the parent's own goal orientations, the PIMC, and the possible interactions between the two, associate with the child's goal orientations.

There do not, as yet, appear to be any documented studies in the physical domain which create goal profiles using the 2x2 model. Such an investigation could be very revealing in that it could help to explain much of the inconsistency around the findings regarding the performance orientations. For example, a profile which is high in the approach orientations and low in the avoidant orientations would not be possible in the previous models.

There does not appear to be any research on goal orientation in South Africa or on the goal orientations of horse riders. Horse riding is a unique sport in that it is composed of a competing dyad of which one partner is an animal, the horse. Horses have been used for many decades in therapy for physically disabled people and Equine Assisted Psychotherapy is now starting to be used to address self-esteem and confidence problems in children who have experienced intra-family violence (Schultz, Remick-Barlow & Robbins, 2007).

RESEARCH MOTIVATION

Adolescent horse riders will serve as a meaningful population from which to study the relationship between parent and child in sport as it is a sport which requires enormous input (time and finance) from the parents. Unlike other sports, where a lot of the time spent participating in the sport is spent with the coach, this is not necessarily the case in riding. The horses need to be worked every day whereas the child may only have contact with the coach for one or two hours a week. Participation for the rest of the time is usually overseen by the parent(s) who often ends up having more influence on the child than the coach. This is contrary to many other sports (e.g., swimming) where the coach is considered to have the more significant influence on the child (Givven, 2001). Thus, such research may also be of interest to development psychologists in terms of parent-child interactions in specific contexts.

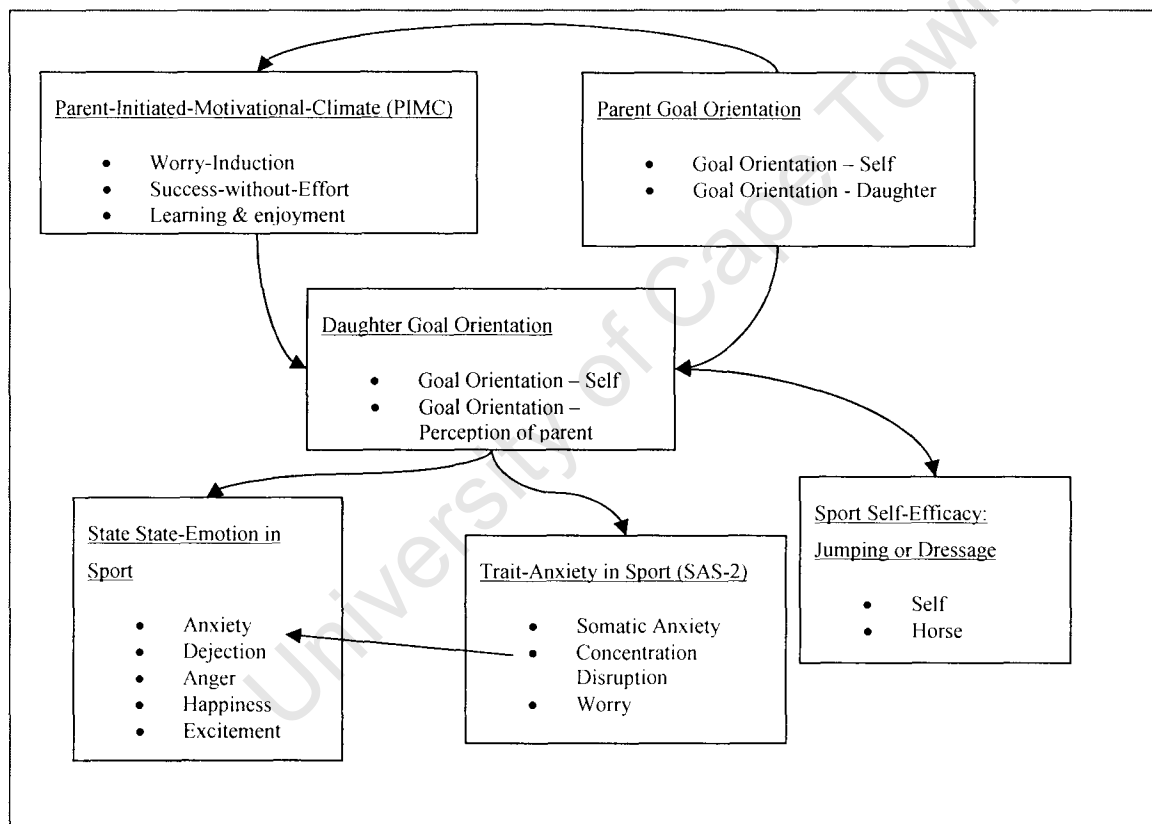
In the world of competitive horse riding, it is not uncommon to see acrimonious arguments between parent and child when either one of them feels that the competition has not been a success. Often, the reason for such arguments is a disagreement about what constitutes success. Sometimes the child leaves the ring weeping because she did not win but the parents are quite happy because they see some improvement from last time (i.e., the child has a performance orientation while the parents have a mastery orientation). On the other hand, the child may be quite content with the performance but the father is furious because he has made an extensive financial outlay and believes that his child should win (i.e., the child has a mastery orientation but the father has a performance orientation). Another scenario may occur where the father has a strong performance-approach orientation and buys his child a very expensive top class horse putting pressure on the child who finds excuses not to compete and may start avoiding riding entirely (i.e., developing avoidant responses). Often the conflict is not so obvious; parents talk as if they are mastery oriented but act in a performance oriented fashion. Such conflict is usually stressful for the child and detracts from her enjoyment of the sport. Research such as this can highlight reasons for these differences to both parents and children, thus enhancing understanding of reasons for discord. Hopefully, this may lead to a more harmonious competitive environment for both child and parent.

Finally, from this research we hope to identify goal orientations and goal profiles which are emotionally robust in the competitive environment. Furthermore, we hope to identify associations between: the child's orientations/profiles; the parents' orientations; and the parent motivational climate; which could lead to the development of predictive models of goal orientation for the rider. From such models further research can be carried out to develop interventions to help parents act in such a way that provides the best support for their children in the competitive environment.

RESEARCH QUESTIONS

The primary area of interest for this research was the interaction between the parents' and daughter's goal orientations in the sport of horse riding. Also investigated were the possible associations between these orientations and the child's perception of self/horse efficacy and the Parent-Initiated-Motivational-Climate (PIMC). The associations between the goal profiles and the child's experience of Trait-Anxiety, State-Emotion and Self-Efficacy in competitive riding were also be investigated. Figure 3 gives an illustration of the information flow assumed in the analysis.

Figure 3: Information flow in analysis



This study is broken into two parts. The first, deals with the parent-daughter interactions in competitive riding. The second, deals with the goal orientations and goal profiles of the riders and their association with Trait-Anxiety, State-Emotion and Self-Efficacy in competitive horse riding.

Questions asked in the first section were:

- i. How do the parents' and daughter's goal orientations and perception of goal orientations compare? Details of the comparisons to be made are outlined in Table 2

Table 2 Goal orientation comparisons to be made

<i>Goal orientation 1</i>	<i>Goal orientation 2</i>
Daughter's own goal orientation	Daughter's perception of the dominant-parent's goal orientation for the daughter
Daughter's own goal orientation	Both parents' goal orientations for the daughter
Daughter's own goal orientation	Both parents' own goal orientation
Daughter's perception of the dominant-parent's goal orientation for the daughter	Both parents' goal orientations for the daughter
Daughter's perception of the dominant-parent's goal orientation for the Daughter	Both parents' own goal orientation

- ii. The relationships amongst the parents' and daughter's goal orientations was compared to test the viability of the daughter's perception of the dominant-parent's goal orientation for the daughter acting as a mediating influence between the effect of the dominant-parent's goal own orientation and goal orientation for the daughter, on the daughter's own goal orientations.
- iii. How can the dominant-parent's own goal orientation, the dominant-parent's goal orientation for the daughter and the Parent-Initiated-Motivational-Climax be used to predict the daughter's goal orientation?

Previous research suggests that the daughter's goal orientation will be positively correlated with her perception of her parents' goal orientations for the daughter, whereas there are mixed findings about the association of the daughter's goal orientations with the parents' goal orientations (Duda & Hom, 1993; White, 1998). However, social cognitive theory suggests

that there will be a stronger association with the parents' own goal profiles than the parents' stated goal aspirations for their daughter.

The second part of this research deals with the development of goal profiles and the association of the goal orientations and goal profiles with Trait-Anxiety, State-Emotion and Self-Efficacy in competitive riding.

Questions asked in the second part were:

- i. How do the daughter's individual goal orientations associate with the Parent-Initiated-Motivational-Climate?
- ii. How do the daughter's goal orientations associate with Trait-Anxiety, State-Emotion and Self-Efficacy in competitive riding?
- iii. What goal profiles are to be found in this sample?
- iv. How do the daughter's goal profiles associate with Trait-Anxiety, State -Emotion and Self-Efficacy in competitive riding?

The aim of asking these questions is to identify those goal profiles which are emotionally robust in the competitive environment. Furthermore, we hope to gain further knowledge about how parents can encourage the development of these profiles.

In accordance with previous research, it is expected that those with a higher performance orientation will experience higher levels of Anxiety (White, 1998) and those with higher mastery orientation to experience greater enjoyment and less anxiety. There does not appear to be any research showing associations of the valence dimension with Trait-Anxiety, State-Emotion or Self-Efficacy in sport.

In essence, the second part of this research, which deals with goal profiles, is a partial replication of the work done by White (1998) on goal orientations, the perception of the Parent-Initiated-Motivational-Climate and Trait-Anxiety. However, there are certain differences in this study. Firstly, the 2x2 goal orientation model is used, rather than the dichotomous model. Secondly, goal profiles will be created using cluster analysis rather than the mean-split method. Thirdly, associations between goal profiles and (i) Trait-Anxiety, (ii) State-Emotion in sport as measured by the State-Emotion in Sport Scale (SES) and

(iii) Self-Efficacy, will be analyzed. Finally, the sample population is drawn from South African, female, horse riders rather than American, adolescent males and females who compete in organized team sports.

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CHAPTER 2: RESEARCH DESIGN AND METHODS

This research is an exploratory exercise based largely on the correlational analysis of quantitative data. The analysis is based on a single test and approximates a cross-sectional design. This is appropriate to the exploratory nature of the research as we are looking to investigate the current situation.

PARTICIPANTS

Data were gathered from 83 females between the ages of 7 and 20 years (mean = 13.82; sd = 2.34), currently competing at horse shows in South Africa, and their parents. Seventy-five mothers and thirty-nine fathers participated in the study.

Only girls were targeted in this study as examination of the WPHS records indicated that less than 2% of the membership under 21 is male.

Due to the fact that horse riding is an expensive sport, most of the participants came from wealthy, middle class homes. The majority of the riders were white and English speaking but there were a few Afrikaans speaking children who participated.

The sample was a convenience sample collected from those participants at national show who were willing to participate.

Originally, it was anticipated that all data would be collected from riders in the Western Province. However, response rates were very low and it was necessary to go to the national children's shows in KwaZulu Natal and Gauteng in order to collect more data. The fact that a fair proportion of the data was collected at these national shows means that the participants were weighted towards the more competitive and wealthier families in the sport. The distribution of participants across the provinces is illustrated in Table 3.

Table 3 Distribution of participants across provinces

<i>Province</i>	<i>N</i>	<i>Percent</i>
Western Province	33	39%
Gauteng	21	25%
KwaZulu/Natal	20	24%
Orange Free State & Northern Cape	5	6%
Mpumalanga	1	1%
Eastern Cape	4	5%
Missing	1	1%

MEASURES AND INSTRUMENTS

A copy of all the measures and instruments used in this research are included in the copy of the question battery in Appendix 1.

Demographic Questionnaire

These questions were aimed at obtaining general information about the child and her riding experience and expectations.

The first question asked was “How old are you? This question was required as the sample population ranges in age from 10 to 19 years and developmental differences may impact on the ability of the children to understand the questions and their responses to the questions. Next, a group of questions relating to the level at which the child rides are asked. This information was asked so that we could try and rank the participating riders in terms of performance. A third type of question relates to the impact of financial issues. Two questions were asked here: “How many ponies are you competing on? Do you think your parents spend a lot of money on your riding?” Finally, some questions were asked surrounding previous provincial team experience. These questions were asked with a view to future research around children competing at provincial level.

Achievement Goal Questionnaire for Sport (AGQ-S)

This questionnaire measures achievement goal orientation in sport on the 2x2 achievement goal model. The questionnaire has four subscales which measure the mastery-approach, mastery-avoidant, performance-approach, and performance-avoidant goal orientations. Each

subscale consists of three questions. The questions are assessed on a 7-point Likert scale ranging from 1 - “not at all like me” to 7 - “completely like me”.

Although this is a relatively recently created questionnaire, acceptable levels of reliability and validity have been established by the creators (Conroy, Elliot & Hofer, 2003). Internal consistency is reported as being above 0.7 for all four subscales: mastery-approach $\alpha = 0.7$; mastery-avoidant $\alpha = 0.82$; performance-approach $\alpha = 0.88$; performance-avoidant $\alpha = 0.87$. Test-retest reliability is reported as follows: mastery-approach $r = 0.59$; mastery-avoidant $r = 0.66$; performance-approach $r = 0.74$; performance-avoidant $r = 0.79$; on a 19 day retest basis (Conroy, Elliot & Hofer, 2003). On average, this is within the 0.68 – 0.8 range recommended for achievement goal instruments by Duda and Whitehead (1998).

Cronbach’s α was calculated for the AGQ-S when used on the data collected for this investigation with the following results: mastery-approach $\alpha = 0.69$; mastery-avoidant $\alpha = 0.84$; performance-approach $\alpha = 0.86$; performance-avoidant $\alpha = 0.84$. Apart from the mastery-approach score of 0.69, these scores are all well above the 0.7 level considered to indicate internal consistency. The mastery-approach score only just missed the 0.7 level so it was considered to have sufficient internal consistency for the purposes of this investigation.

Parent-Initiated-Motivation-Climate (PIMC)

This instrument is a measure of motivational climate created by the parent in sport. The questionnaire has two parts, one where the subject responds to the stem “I feel that my father...” and the other where the subject responds to the stem “I feel that my mother...”. There are three subscales within each section: (i) Enjoyment-in-Learning, (ii) Worry-Induction, and (iii) Success-without-Effort. Each subscale has five questions. The questionnaire is based on a five-point Likert scale ranging from 1 - “strongly disagree” to 5 - “strongly agree”.

Acceptable levels of validity and reliability have been reported by the creators (White, Duda & Hart, 1992). Internal consistency is reported as being above 0.7 for all three subscales: Enjoyment-in-Learning $\alpha = 0.75$; Worry-Induction $\alpha = 0.87$; and Success-without-Effort $\alpha = 0.87$. Test-retest reliability is reported as follows: Enjoyment-in-Learning $r = 0.92$; Worry $r = 0.9$; Success-without-Effort $r = 0.84$.

Internal consistency of the subscales was tested on the data used for this investigation with the following results: Enjoyment-in-Learning $\alpha = 0.62$; Worry-Induction $\alpha = 0.73$; Success-without-Effort $\alpha = 0.73$. These results were obtained by combining the questions for the PIMC for mother and father. The low score in the learning subscale was further investigated by calculating Cronbach's α for the PIMC for the mother and father separately (mother: $\alpha = 0.82$; father: $\alpha = 0.25$). When Cronbach's α was calculated for the other two scales for mother and father separately the values were identical. It would appear then that there is some question about the internal consistency of the PIMC when applied to the fathers in the sample used in this investigation.

Sport Anxiety Scale-2 (SAS-2)

This scale is a measure of multi-dimensional Trait-Anxiety in sport. There are three subscales: (i) Somatic-Anxiety, (ii) Worry, and (iii) Concentration-Disruption. Each subscale has five questions. The SAS-2 was developed with the specific intention of correcting the problems of Sport Anxiety Scale-1 (SAS-1) when used on children. The questionnaire has been extensively tested on children ranging from the age of 9 to 14. The questionnaire is based on a four point Likert scale ranging from 1 - "not at all" to 4 - "very much".

Although this is a relatively recently created measure, acceptable levels of validity and reliability have been reported by the creators (Smith, Smoll, Cumming & Grossbard, 2006). Internal consistency is reported as being above 0.7 for all three subscales: Somatic-Anxiety $\alpha = 0.84$; Worry $\alpha = 0.89$; Concentration-Disruption $\alpha = 0.84$; whole scale $\alpha = 0.91$. Test-retest reliability is reported as follows: Somatic-Anxiety $r = 0.76$; Worry $r = 0.9$; Concentration-Disruption $r = 0.87$; whole scale $r = 0.87$ on a one week retest basis. Construct validity was tested against SAS-1 ($r = 0.9$).

Internal consistency was tested on the data used in this investigation with the following results: Somatic-Anxiety $\alpha = 0.79$; Worry $\alpha = 0.89$; Concentration-Disruption $\alpha = 0.76$.

State-Emotion in Sport Scale (SES)

This scale is a measure of State-Emotion in Sport. There are five subscales: (i) Anxiety, (ii) Dejection, (iii) Anger, (iv) Excitement, and (v) Happiness. The Anxiety and Dejection

subscales have five items each and the other three subscales have four items each. The scale was developed on an undergraduate population. The questionnaire is based on a four point Likert scale ranging from 0 - “not at all” to 4 - “a lot”.

Although this is a relatively recently created measure, acceptable levels of validity have been reported by the creators (Jones, Lane, Bray, Uphill & Catlin, 2005). Internal consistency is reported as being above 0.7 for all five subscales: Anxiety $\alpha = 0.87$; Dejection $\alpha = 0.82$; Anger $\alpha = 0.84$; Excitement $\alpha = 0.81$; Happiness $\alpha = 0.88$. Test-retest reliability was not reported as this scale is a measure of State-Emotion which is not expected to be stable over time. Construct validity was tested against the Brunel Mood Scale with statistically significant results confirming the construct validity of the SES.

Internal consistency was tested on the data used for this investigation and found to be above 0.7 for all five subscales: Anxiety $\alpha = 0.83$; Dejection $\alpha = 0.82$; Anger $\alpha = 0.84$; Excitement $\alpha = 0.73$; Happiness $\alpha = 0.79$.

Perception of Self and Horse Efficacy

This instrument measures the rider's domain specific Self-Efficacy and her perception of her horse's efficacy. It was created by Beauchamp and Whinton (2005) in accordance with Bandura's (1997, 2001) (as cited in Beauchamp & Whinton, 2005) recommendations for assessing domain specific Self-Efficacy. There are three subscales: dressage Self-Efficacy; show-jumping Self-Efficacy; and cross-country Self-Efficacy. For each item on the test, subjects rate their confidence in their abilities “for the level of competition at which you are currently competing...”, on an 11 point Likert scale anchored by 0 - “cannot do at all”, 5 - “moderately certain can do” and 10 - “certain can do”.

The creators of the test reported acceptable internal consistency on both the self and horse scales: Self: dressage $\alpha = 0.95$; show-jumping $\alpha = 0.95$; cross-country $\alpha = 0.96$; Horse: dressage $\alpha = 0.91$; show-jumping $\alpha = 0.92$; cross-country $\alpha = 0.95$. No test-retest reliability has been reported on this instrument (Beauchamp & Whinton, 2005).

As part of an effort to shorten the questionnaire for the children, the cross-country subscale was excluded in this research. Furthermore, the girls were only asked to fill in one of either the jumping or dressage scales. This did not detract from the use of the scale to measure

perception of horse and riding efficacy as the three scales were originally developed to compare how eventing riders differed across the three disciplines. In this study, the girls were asked to pick the discipline in which they felt they were better. Where a child had more than one horse she was asked to fill in the questionnaire with her best horse in mind.

Internal consistency was measured on the data used in this investigation with the following results: Self: dressage $\alpha = 0.92$; show-jumping $\alpha = 0.88$; Horse: dressage $\alpha = 0.76$; show-jumping $\alpha = 0.89$.

PROCEDURE

This section, which describes the procedure used in this research, is divided into two parts. The first, describes the procedure used to collect the data in the field. The second, describes the statistical analyses used with emphasis on the problems encountered and the techniques used to resolve these problems.

Fieldwork

Two sets of questionnaires were used, one for the child and one for the parent. A copy of the full question battery is included in Appendix 1. The child's test battery included the following: demographic questionnaire, AGQ-S (rider's goals), AGQ-S (perception of dominant-parent's goals), PIMC, SAS-2, SES, and the Self-Efficacy questionnaires for rider and horse. There were no open-ended questions. All questions were answered by checking a box or filling in a number. The parents' test battery included the following; AGQ-S (Self) and AGQ-S (for daughter). There were no open-ended questions. All questions were answered by checking a box.

The instructions requested that the questionnaires were answered in the order presented. This was necessary in order to prevent possible priming effects of certain questionnaires. This was of particular importance in the parent questionnaire where parents needed to report their own goal orientation before reporting their goal orientation for their daughter to try and prevent priming effects.

The question battery was distributed in a number of ways:

A letter was placed in the “NewsReview” (the Western Province Horse Society’s (WPHS) monthly newsletter) describing and motivating the research. A mailing list of all families of competing females between the ages of 10 and 19 was obtained from the WPHS and the questionnaires e-mailed to those families (200 questionnaires) with e-mail addresses. Only riders in the Western Cape were contacted through this method. Males were excluded from the study since there are not sufficient competing males to make up a meaningful sample.

Due to the low response of this method (< 10% return even after telephonic follow up), tables were set up at a number of shows to encourage people to participate. Permission was obtained from a number of show holding bodies to set up a desk with the questionnaires where people could come and discuss the research and fill in the questionnaires. The questionnaires took about 45 minutes to complete so it was possible for competitors to complete the survey between classes. This method was also not particularly successful. Although people stopped to find out what we were doing and expressed interest, they rarely stopped to complete forms. People often said they would come back but rarely did.

Finally, the only method to be found effective was to go to horse shows with the question batteries and ask people to complete the questions then and there. When the question batteries were distributed for later return the rate of return was between 5-10% with a fairly high rate of missing or incorrectly filled in data. Collecting the data for this research was probably the most demanding part of the exercise. I needed to travel to Durban twice to attend the national championship shows in order to collect sufficient data. Eventually, in the order of 85% of the questionnaires, were completed as part of a personal one-to-one interview.

Difficulties were encountered in obtaining sufficient data for a number of reasons:

- (i) The research design required that data was collected from the competing child, and at least one of the parents.
- (ii) A lot of parents became quite defensive. Even though I did try to emphasize that this research was not intended as a “parent bashing” exercise, many parents did view it as such.
- (iii) Some people, parents in particular, seemed almost frightened of participating in that they believed they might reveal more of themselves than they wished. This view was impervious to assurances of confidentiality and even anonymity where

this could be arranged. I think that this aspect was aggravated by the fact that I am a well known person in the riding world and have acted in various official capacities (including being a judge) at events.

- (iv) Taking into account ethical issues of collecting data from children, I was loath to apply pressure to the children to participate. Therefore, I took the view that if forms were not returned after two follow up calls I dropped the matter. Similarly, I would only ask twice if I had been asked to come back later. This policy may have lost the study willing participants but it was thought that, as a strategy, it was preferable to either pressurizing the child or becoming a nuisance to the family.

Ethics approval for this research was obtained from the ethics board of the Humanities Faculty of the University of Cape Town. All documentation pertaining to the ethics approval is contained in Appendix 2.

Statistical Analysis

Once all the questionnaires had been completed, the data were captured into a database specially prepared for this purpose. During the capture process, all responses were carefully perused to check for reasonability of answers and indication that the questions had been appropriately understood. Database queries were created and data extracted to spreadsheet for analysis in STATISTICA where statistical analyses were run.

The statistical analyses were divided into three sections.

- (i) The multiple linear regression analyses which were used in an attempt to explore the relationships which exist between the daughter's goal orientation and, the parents' goal orientation and the Parent-Initiated-Motivational-Climate.
- (ii) The ANOVA/MANOVA tests and non-parametric tests which were used to test for equality of means.
- (iii) The cluster analysis techniques used to develop the goal profiles.

The main problems encountered in the statistical analyses were in the ANOVA/MANOVA tests where the data did not adhere to the assumptions of equality of covariance, homogeneity

of variances or normal distribution of the data. In dealing with these problems, the recommendations by Holmes (2005) and Howell (2007) were followed:

- For univariate analyses:
 - In all the ANOVA designs the cell sizes were different. Use of least squares means in the ANOVA test circumvents problems caused by the assumption of equal cell sizes.
 - When the distribution assumption was not met but the homogeneity of variances or was met, the parametric ANOVA test was used as it has been shown to be robust with respect to infraction of the distribution assumption (Howell, 2007).
 - When both assumptions were mildly violated, the ANOVA/MANOVA was used as both these tests have been shown to be robust to minor infractions of these assumptions (Howell, 2007).
 - When deviation from homogeneity of variance assumption was severe (one variance in the group was more than four times one of the others) or the data was severely skewed, then the non-parametric Kruskal-Wallis test was used as recommended by Holmes, (2005).
- For all multivariate analyses, the MANOVA test using Pillai's trace was used. Both Holmes (2005) and Olson (1979) have reported that it is robust with respect to fairly large infractions of both the distribution and variance assumptions. Where the deviation from the assumptions was extreme and the test was still used, the alpha value was reduced to allow for the increased possibility of Type 1 errors. In these cases, it was accepted that the power of the statistical tests was low and the null hypothesis may be retained when it should be rejected (i.e. increased chance of Type 2 error).

A further point of importance concerns the calculation of univariate results after a MANOVA test has been carried out. In this study, where MANOVA tests have been carried out on psychological constructs such as Trait-Anxiety, State-Emotion or the Parent-Initiated-Motivational-Climate, univariate results have also been calculated and reported. However,

Huberty and Olejnik (2006) point out that the statistical power of these tests is likely to be decreased, especially where the variables make up a single construct. In particular, where a significant multivariate result is obtained this should not be discarded when the univariate results are found to be non-significant. The main reason for calculating univariate results is to show in which areas the effects are greatest. Thus, the univariate results are used for their relative rather than their absolute value.

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CHAPTER 3: RESULTS

Due to the fairly extensive questionnaires and statistical analyses, the results section is long. Furthermore, the analysis was not always as straightforward as it could have been as issues such as missing data and data not adhering to the assumptions underlying the statistical tests emerged. In order to facilitate the presentation of the results the way in which they are organized has been summarized below³.

i. Demographic results

The demographic results are presented first with the aim of giving an overview of the characteristics of the sample used in this research. Some of the demographic results are also used in later sections. For example, team membership by goal profile was investigated.

³ Note on abbreviations

Certain abbreviations have been used in describing the results. These may be divided into two groups. The first group includes the goal orientations: (i) Mastery-approach (Map), (ii) Performance-approach (Pap), (iii) Mastery-avoidant (Mav), and (iv) Performance avoidant (Pav). The second group pertains to the person to whom the goal orientation applies: (i) The daughter's own goal orientation (Self); (ii) The daughter's perception of the parent's goal orientation for the daughter (PP); (iii) The dominant-parent's own goal orientation (DPSelf); (iv) the dominant-parent's goal orientation for the daughter (DPDaughter); (v) The mother's own goal orientation (MS); (vi) the mother's goal orientation for the daughter (MD); (vii) The father's own goal orientation (FS); (viii) the father's goal orientation for the daughter (FD). The abbreviations are used in the presentation of the numerical results. However, when the results are explained or discussed the long-hand descriptions are used. When referring to these groups en masse they are referred to as goal orientation groups.

ii. Analysis of parent-daughter interaction

The analysis of the parent-daughter interaction was one of the key features of this research. This interaction was investigated via two theoretical constructs: The 2x2 achievement goal model and the Parent-Initiated-Motivational-Climate (PIMC). The following sections are included under this heading.

a. Introduction of achievement goal results.

Descriptive statistics from the goal orientation questionnaires were calculated for the rider and both parents. A preliminary comparison of these results from the daughter and parents is presented.

b. Introduction of results of Parent-Initiated-Motivational-Climate (PIMC).

Descriptive statistics from the PIMC were calculated for both parents. These were compared to each other and to the daughter's goal orientation

c. Regression analysis

Two regression analyses were carried out in an attempt to add to the understanding of the workings of the parent-daughter relationship in horse riding.

i. Regression analysis 1

The first regression analysis looked at how the daughter's perception of the dominant-parent's goal orientation, the dominant-parent's own goal orientation and the dominant-parent's goal orientation for the daughter, associate with the daughter's goal orientation. In this analysis there was no explicit split between the four goal orientations.

ii. Regression Analysis 2

The second regression analysis was run as four separate regression analyses. Each analysis compared *one* of the rider's goal orientations to: (i) *each* of the dominant-parent's own goal orientations (Map, Mav, Pap and Pav), (ii) each of the dominant-parent's goal orientations for the

daughter (Map, Mav, Pap and Pav), (iii) the PIMC created by the mother (Enjoyment-in-Learning, Worry-Induction, Success-Without-Effort), and (iv) the PIMC created by the father (Enjoyment-in-Learning, Worry-Induction, Success-Without-Effort). In these analyses the split between the four goal orientations was explicit.

iii. Goal profiles

The development of the goal profiles was a second key area of this research. The use of goal profiles was considered appropriate as much of the ambiguity and confusion surrounding achievement goal theory results from insufficient understanding of how the various goal orientations interact together.

a. Development of goal profiles.

Goal profiles were created for the rider using cluster analysis. A preliminary analysis using the hierarchical method was carried out before presenting four-, five-, six- and seven-cluster solutions using k-means analysis. Finally, a seven-cluster solution was chosen and the basic descriptive statistics for this solution are presented.

iv. Investigation into the rider's Trait-Anxiety, State-Emotion and Self-Efficacy in competitive riding.

This final section, the investigation into the rider's State-Emotion, Trait-Anxiety and Self-Efficacy in competitive riding, is the third key area of this research.

a. Descriptive statistics

Descriptive statistics were presented for the rider's reported levels of: Trait-Anxiety (Concentration-Disruption, Somatic-Anxiety and Worry); State-Emotion (Anger, Dejection, State-Anxiety, Happiness and Excitement); and Self-Efficacy in competitive riding.

- b. Association of goal orientations with rider's Trait-Anxiety, State-Emotion and Self-Efficacy in competitive riding.

Descriptive statistics of State-Emotion, Trait-Anxiety and Self-Efficacy in competitive riding were calculated for each goal orientation. After which correlations between the rider's goal orientations and the results from the SAS-2, SES and Self-Efficacy questionnaires were calculated.

- c. Association of Parent-Initiated-Motivational-Climate (PIMC) with the rider's Trait-Anxiety, State-Emotion and Self-Efficacy in competitive riding.

Correlations between the rider's scores on the SES, SAS-2, and Self-Efficacy scales and the PIMC by mother and father were calculated.

- d. Association of the rider's goal profile with Trait-Anxiety, State-Emotion and Self-Efficacy in competitive riding.

Firstly, descriptive statistics for: Trait-Anxiety; State-Emotion; and Self-Efficacy; in competitive riding, by goal profile are presented. Means were then tested using a series of one-way MANOVAs to investigate how: Trait-Anxiety; State-Emotion and Self-Efficacy in competitive riding vary and may be associated with the goal profiles defined by the seven clusters.

DEMOGRAPHIC RESULTS

The demographic questions aim to obtain not only demographic details but also some sense of the competitive environment in the family. Questions were also asked to try to ascertain the extent of resources, in terms of time and money, that are allocated to the child's riding.

Age Group

The distribution of the data by age-group is summarized in Table 4. Although it is acknowledged that the age range is wide and may add extra variance to the results of this study, it was beyond the scope of this research to do a full analysis of the development aspects of the subject.

Table 4 Summary

<i>Age Group</i>	<i>N</i>	<i>Mean</i>
7 -11	13	10.3
12 - 15	55	13.7
16 -20	15	17.3
Overall	83	13.8

Number of Competitive Ponies

This question gave a good indication of the amount of time each child allocates to her riding. One pony would require that the child would spend, on average, five to ten hours a week (excluding competitive events) on her riding. This would increase proportionately with each pony. The number of competitive ponies also gives an indication of the amount of money spent on the sport as a competitive pony costs approximately R4,000 per month to keep.

Table 5 illustrates the breakdown of participants by the number of ponies. Fifty-five percent of participants were competing on two or more ponies which indicates a strong family commitment to the child's riding. Such families may be spending between R8,000 to R12,000 per month on the child's riding, and the child would be spending 15+ hours a week on her riding.

Table 5 Number of competitive ponies

<i>No of Ponies</i>	<i>N</i>	<i>Percent</i>
1	37	44%
2	30	35%
3	17	20%
Missing	1	1%

Parental Support

The next set of questions addressed the issues of how much support was provided by the parents, and the child's perception of the adequacy of this support. The girls were asked how much support they felt each of their parents give their riding. They could choose from three answers: (i) Lots; (ii) A Fair amount; (iii) Little or none. They were then asked whether they

felt that each parent gave them the right amount of support. Again, they could choose from three answers: (i) Too much; (ii) Just right; (iii) Not enough.

The majority of girls answered that both parents gave their riding “lots” of support (mothers: 93%; Fathers: 59%). Mothers appear to be more involved with their daughter’s riding than fathers. Four percent of the girls felt that their mothers gave their riding “a fair amount” of support and in no case were mothers reported as giving “no support”. On the other hand, 11% of fathers were reported as giving no support and 26% of fathers were reported as giving a “fair amount” of support. Where fathers were reported as giving a “fair amount” of support, the nature of that support was often entirely financial. The girls were very aware of this financial support and although their father may never be present, they felt that the extent of the financial support justified a “fair amount” of support.

In general, the girls appear to think that they get the right amount of support from their parents (mothers: 87%; fathers: 71%). Eight percent of mothers were reported as giving “too much” support while 11% of fathers were reported as giving “too much” support. One mother (<1%) was reported as giving not enough support while 14% of fathers were reported as giving not enough support. Approximately 4% of respondents did not answer this question.

Financial Contribution by Parents

The next question asked how much money the girls felt their parents spent on their riding. They were asked to choose from three options: (i) Lots; (ii) Average; and (iii) Not much. The results indicated that the girls are well aware of the money their parents spend on their riding with 74% of the respondents answering “Lots”. Twenty-two percent answered that their parents spent an average amount of money on their riding while only one girl felt that it was “not much” money. Two respondents did not answer this question.

Provincial Teams

The next two questions revolved around provincial team membership. First, the girls were asked if they had ever been a member of a provincial team. The aim of this question was to try and identify the top performing riders in the sample. The results indicated that 51% of respondents had ridden in a provincial team at some time over the last two years. Given that most of the data was collected at the national competitions where the interprovincial

competitions are held, this high percentage of team riders was not a surprise. The next question asked whether the child felt they would be eligible for a team in the coming year. This question was asked with the intention of gauging the rider's sense of expectancy in her riding. Forty-seven percent of the riders felt they had a good chance for team selection in the coming year.

Self-Efficacy and Expectancy

Two further questions were asked in an attempt to add to the assessment of the rider's Self-Efficacy: (i) Have you done well over the past year? (ii) Do you expect to do well in the coming year? These question could be answered as a choice of three options: (i) Very well; (ii) Fairly well; and (iii) Not really. Fifty-one percent of the respondents answered that they had done "really well" in the past year while 36% said that they had done "fairly well". Nine percent said they had not really done well at all. Three respondents did not answer the question. In respect of expectations for the coming year 74% of the respondents said they expected to do really well and 22% expected to do "quite well". Only one respondent said she didn't expect to do well at all. However, this girl was moving out of pony classes and onto a new horse in the coming year.

PARENT-DAUGHTER INTERACTION

The parent-daughter interaction was investigated with reference to two constructs, the 2x2 achievement goal orientation model and the Parent-Initiated-Motivational-Climate (PIMC). In this section six questions were addressed:

- (i) How do the parents' goal orientations associate with the daughter's goal orientation?
- (ii) How do the parents' goal orientations for the daughter associate with the daughter's goal orientation?
- (iii) How do the parents goal orientation compare to the daughter's perception of the dominant-parent's goal orientation for the daughter?

- (iv) Does the daughter's perception of the dominant-parent's goal orientation for the daughter mediate the effect of the dominant-parent's goal orientations on the daughter and if so how does this work?
- (v) How does the PIMC created by the mother compare with that created by the father?
- (vi) How does the PIMC created by both parents impact on the daughter's goal orientation.

The next three sections describe the attempt that was made towards finding answers to these questions.

Achievement Goal Orientation

Means and standard deviations were calculated for all goal orientation in each of the following goal orientation groups:

- (i) The rider's own goal orientation (Self).
- (ii) The rider's perception of the dominant-parent's goal orientation for the daughter's riding (PP).
- (iii) The mother's own goal orientation (MS).
- (iv) The mother's goal orientation with respect to her daughter's riding (MD).
- (v) The father's own goal orientation (FS).
- (vi) The father's goal orientation with respect to his daughter's riding (FD).

These figures are illustrated in Table 6.

Table 6 Descriptive statistics of achievement goal orientations

Group	N	<i>Map</i>		<i>Mav</i>		<i>Pap</i>		<i>Pav</i>		
		Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	
Mother	Daughter	74	6.12	0.98	3.68	1.71	3.36	1.75	2.63	1.67
	Self	75	6.20	1.03	4.15	1.91	3.60	1.88	3.21	1.82
Daughter	Self	83	6.41	0.85	4.69	1.70	3.94	1.90	3.87	2.05
	Perception of Parent	81	6.24	0.97	3.70	1.86	3.41	1.96	3.03	1.84
Father	Daughter	37	5.87	0.98	3.67	1.58	3.85	1.85	2.56	1.82
	Self	39	5.96	1.10	4.20	1.77	4.42	1.94	3.20	1.82

The most outstanding feature of these figures was the high average Map score for all parties (highest: 6.41 for Self; lowest: 5.87 for FD). The standard deviations for Map were all fairly small with all, except those for MS and FS, being below one. The scores were lower for the other goal orientations with the mean for Mav (High: Self = 4.69, Low: FD = 3.67) and Pap (High: FS = 4.42, Low: MD = 3.36) at similar levels and those for Pav a little lower (High: Self = 3.87, Low: FD = 2.56). The standard deviations for these orientations were substantially larger (range from 1.58 to 2.05) than those reported for Map.

The implication of these results is that, on average, this sample showed a higher level of mastery-approach orientation than the other orientations and furthermore, there was little variation in these scores. The average scores reduced for each of: the mastery-avoidant; performance-approach; and performance-avoidant orientations respectively. The spread of these scores was greater than that for the mastery-approach scores but similar to each other. The daughter showed the highest scores in all orientations except in the Pap orientation, where the father reported the highest meant score for his own Pap orientation.

Formal statistical methods were used to test whether there is numerical evidence to support the hypothesis that there is a difference between the daughter's and the parents' goal orientations. These tests are described below.

Hypotheses

The statistical tests aimed to answer the following questions in each goal orientation:

- (i) Is the daughter's goal orientation the same as the orientation both parents' want for her?

- (ii) Is the daughter's goal orientation the same as both parents' own orientation?
- (iii) Does the daughter think she is showing the goal orientation she thinks the dominant-parent wants for her?
- (iv) Is the daughter's perception of the dominant-parent's goal orientations for her the same as the parent's own goal orientations?
- (v) Is the daughter's perception of the dominant-parent's goal orientations for her the same as the parents' goal orientations for the daughter?

These questions were formally stated in the following hypotheses.

$$\begin{array}{ll}
 {}^1H_0: \mu_{\text{self}} = \mu_{\text{MD}} = \mu_{\text{FD}} & {}^1H_1: \text{Not}(\mu_{\text{self}} = \mu_{\text{MD}} = \mu_{\text{FD}}) \\
 {}^2H_0: \mu_{\text{self}} = \mu_{\text{MS}} = \mu_{\text{FS}} & {}^2H_1: \text{Not}(\mu_{\text{self}} = \mu_{\text{MS}} = \mu_{\text{FS}}) \\
 {}^3H_0: \mu_{\text{self}} = \mu_{\text{PP}} & {}^3H_1: \mu_{\text{self}} \diamond \mu_{\text{PP}} \\
 {}^4H_0: \mu_{\text{PP}} = \mu_{\text{MS}} = \mu_{\text{FS}} & {}^4H_1: \text{Not}(\mu_{\text{PP}} = \mu_{\text{MS}} = \mu_{\text{FS}}) \\
 {}^5H_0: \mu_{\text{PP}} = \mu_{\text{MD}} = \mu_{\text{FD}} & {}^5H_1: \text{Not}(\mu_{\text{PP}} = \mu_{\text{MD}} = \mu_{\text{FD}})
 \end{array}$$

These hypotheses were tested using a series of one-way MANOVAs which are described below.

Assumptions

Prior to running the MANOVA test, the covariance matrices were tested for equality using the Box-M test in STATISTICA. The results of the Box M test for all the comparisons are summarized in Table 7. The results of all the Box M tests were non-significant (at the 5%) level indicating that the assumption of equality of covariances is acceptable.

Table 7 Summary of Box M test results

<i>Hypothesis</i>	<i>Box M</i>	<i>Chi-Sqr.</i>	<i>df</i>	<i>p</i>
¹ H:Self = MD = FD	25.076	21.681	20	0.3581
² H:Self = MS = FS	17.453	15.089	20	0.7712
³ H:Self = PP	5.136	4.983	10	0.8923
⁴ H:PP = MD = FD	18.831	16.281	20	0.6990
⁵ H:PP = MS = FS	14.882	12.867	20	0.8830

The data was also checked for adherence to the assumption that the data was normally distributed. In the Mav, Pap and Pav orientations, the data were sufficiently normally distributed to run the MANOVA tests. However, in the Map orientation, the data was negatively skewed which may have caused some distortion in the results. Given that the ANOVA/MANOVA family of statistical tests is known to be fairly robust with respect to contravention of the normal assumption (particularly when the Pillai's trace statistic is used), it was decided to continue with the MANOVA test (Olson, 1976). However, it was also decided that the univariate Map results would be confirmed using a Kruskal-Wallis test.

Test

Significant results on the MANOVA tests were obtained (at the 5% level) for ¹H and ³H indicating that there are significant differences between:

- (i) The daughter's goal orientation and the goal orientation her parents' want for her.
- (ii) The daughter's perception of what she thinks her parents' want for her and her own stated goal orientations.

For the remaining hypotheses, the results were non-significant. This implies that:

- (i) The mean levels of the daughter's goal orientations are the same as the mean levels of her parents stated goal orientations.
- (ii) The mean levels of the daughter's perceptions of the parents' goal orientation for her are the same as the mean levels of the parents' goal orientations for the daughter.
- (iii) The mean levels of the daughter's perceptions of the parents' goal orientations for her are the same as the mean levels of her parents' own stated goal orientations.

The full MANOVA results are summarized in Table 8.

Table 8 Summary of MANOVA results on comparison of goal orientation means by group

	Test	Value	F	Effect df	Error df	p
¹ H:Self = MD = FD	Wilks	0.8106	3.8745	8	280	0.0002***
	Pillai's	0.1931	3.7672	8	282	0.0003***
² H:Self = MS = FS	Wilks	0.9033	1.8255	8	280	0.0722
	Pillai's	0.0989	1.8330	8	282	0.0709
³ H:Self = PP	Wilks	0.9275	2.7535	4	141	0.0304*
	Pillai's	0.0725	2.7535	4	141	0.0304*
⁴ H:PP = MD = FD	Wilks	0.9333	1.2282	8	280	0.2823
	Pillai's	0.0674	1.2288	8	282	0.2819
⁵ H:PP = MS = FS	Wilks	0.9334	1.2268	8	280	0.2831
	Pillai's	0.0673	1.2268	8	282	0.2830

The univariate results for ¹H were calculated and are summarized in Table 9.

Table 9 Summary of univariate results on ¹H

	Multiple R	Multiple R ²	Adjusted R ²	SS Model	df Model	MS Model	SS Residual	df Residual	MS Residual	F	p
Map	0.1575	0.0248	0.0112	2.9902	2	1.495	117.607	143	0.8224	1.8179	0.1661
Mav	0.2800	0.0784	0.0655	36.1684	2	18.084	425.167	143	2.9732	6.0824	0.0029**
Pap	0.1972	0.0389	0.0254	18.6326	2	9.316	460.479	143	3.2201	2.8931	0.0587
Pav	0.3633	0.1320	0.1199	71.9547	2	35.977	473.163	143	3.3088	10.8731	0.0000**

The univariate results indicated significant differences (at the 5% level) on the avoidant orientations but not for the approach orientations. This implies that the daughter shows statistically significantly higher avoidant orientations than that which her parents' want for her.

Univariate results were also calculated for ³H and are summarized in Table 10.

Table 10 Summary of univariate results on ³H

	Multiple R	Multiple R ²	Adjusted R ²	SS Model	df Mod	MS Model	SS Residual	df Res	MS Residual	F	p
Map	0.0837	0.0070	0.0001	0.8798	1	0.8798	124.673	144	0.8658	1.0161	0.3151
Mav	0.2357	0.0555	0.0490	27.4734	1	27.4734	467.101	144	3.2438	8.4696	0.0042**
Pap	0.1482	0.0220	0.0152	11.8912	1	11.8912	529.647	144	3.6781	3.2330	0.0743
Pav	0.2139	0.0458	0.0391	26.3288	1	26.3288	548.898	144	3.8118	6.9072	0.0095**

The results of the univariate results on ³H are similar to those of ¹H in that significant results (at the 5%) level were obtained on the avoidant orientations. Thus, we could say that the daughter's avoidant orientations are significantly higher than those that she perceives her parents want for her.

Given the degree to which the Map data was skewed to the left, it was decided to re-test this orientation using the non-parametric Kruskal-Wallis ANOVA test. The results of this exercise indicated that the only significant result ($H(5, N = 389) = 15.5274; p = 0.0083$) arose from the comparison between the daughter and the father's goal orientation for the daughter. Inspection of the means showed a higher level of mastery-approach orientation was reported for the daughter than that which her father wanted for her. All the other results were non-significant (at the 5% level).

Conclusion

A significant differences was reported between Self and, FD and MD, indicating that the daughter's reported goal orientations were different from those which the parents report wanting for their daughter. On the other hand, there was no significant difference reported between Self and, MS and FS, indicating that the daughter's reported goal orientations are set at the same average level as those goal orientations which the parents report for themselves. The implication of these results is that the daughter is adopting a set of goal orientations which is closer to those of the parents' goal orientations rather than the goal orientations which the parents want for her.

No significant difference was reported between PP and, MD and FD, indicating that the daughter's perception of the goal orientations her parents want for her is the same as the actual goal orientations which her parents report they want for her. There was however, a significant difference between PP and Self indicating that the daughter reported a different level of goal orientation for herself than that which she thinks her parents want for her. Thus, it appears that the daughter has a good idea of the goal orientations that the parents want for her but she still reports a different (higher) set of goal orientations for herself.

Where the daughter's individual goal orientations were different from those of either: her parents' goal orientations for the daughter or her own perception of the dominant-parent's goal orientations for her, the effects were greatest in the avoidant orientations and least in the mastery-approach orientation.

The Parent-Initiated-Motivational-Climate (PIMC)

All participants completed the PIMC for their mothers but only 77 completed it for their fathers. Where the form was not completed for the father, the father was either deceased or lived apart from the family.

Means, standard deviations, minimum and maximum values were calculated for the three subscales (Enjoyment-in-Learning, Success-without-Effort and Worry-Induction) of the PIMC as answered by the participants for both mother and father. Table 11 summarizes these statistics.

Table 11 Descriptive statistics for the Parent-Initiated-Motivational-Climate

		<i>N</i>	<i>Mean</i>	<i>Std.Dev.</i>	<i>Minimum</i>	<i>Maximum</i>
Mother	Enjoyment-in-Learning	80	4.39	0.56	3.00	5.00
	Success-without-Effort	80	2.30	0.87	1.00	4.75
	Worry-Induction	80	1.86	0.92	1.00	4.20
Father	Enjoyment-in-Learning	77	4.21	0.67	2.00	5.00
	Success-without-Effort	77	2.60	0.96	1.00	4.75
	Worry-Induction	77	2.31	0.86	1.00	4.33

The mean value of the PIMC (Enjoyment-in-Learning) created by the mother ($\mu = 4.39$, $sd = 0.56$) was higher than that for father ($\mu = 4.21$, $sd = 0.67$). For the other two subscales, Success-without-Effort and Worry-Induction, the mean score for the fathers (Success-without-Effort: $\mu = 2.6$, $sd = 0.96$; Worry-Induction: $\mu = 2.30$, $sd = 0.87$) was higher than that for mothers (Success-without-Effort: $\mu = 2.30$, $sd = 0.87$; Worry-Induction: $\mu = 1.86$, $sd = 0.92$).

To test whether these differences are statistically significant, a one way MANOVA test on the means was carried out.

Hypotheses

The questions which the statistical test was intended to answer are listed below:

- (i) Is the mean score for the mother on PIMC (Enjoyment-in-Learning) equal to, or greater than, the mean score for the father on PIMC (Enjoyment-in-Learning)?
- (i) Is the mean score for the mother on PIMC (Success-without-Effort) equal to, or less than, the mean score for the father on PIMC (Success-without-Effort)?

- (ii) Is the mean score for the mother on PIMC (Worry-Induction) equal to, or less than, the mean score for the father on PIMC (Worry-Induction)?

The questions were formally stated as the following hypotheses:

learning H_0 :	$\mu_{\text{mother}} = \mu_{\text{father}}$	learning H_1 :	$\mu_{\text{mother}} > \mu_{\text{father}}$
success H_0 :	$\mu_{\text{mother}} = \mu_{\text{father}}$	success H_1 :	$\mu_{\text{mother}} < \mu_{\text{father}}$
worry H_0 :	$\mu_{\text{mother}} = \mu_{\text{father}}$	worry H_1 :	$\mu_{\text{mother}} < \mu_{\text{father}}$

Assumptions

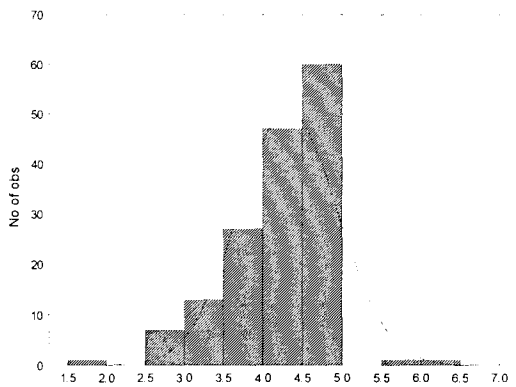
The data was tested for equality of covariance matrices and for normal distribution of the data.

- (i) Equality of covariance matrices.

The Box M test ($\chi^2 = 12.74$; $p = 0.04731$) was used to test this assumption and it was found that, at the 5% level, the assumption of equality of covariance matrices could not be upheld. According to Olson (1979), the Pillai's trace statistic in the MANOVA analysis is reasonably robust with respect to contravention of this assumption.

- (ii) Normal distribution of data.

In order to assess the viability of the assumption of normalness of the data, histograms and p-plots of the data were examined. The histograms indicated deviation from the normal distribution in the Enjoyment-in-Learning sub-scale which was skewed to the left. Graph 1 shows the histogram of the Enjoyment-in-Learning data.

Graph 1 Histogram of PIMC (Enjoyment-in-Learning)

It was, therefore, decided to examine the p-plot for this data as well (see Appendix 5). This indicated that, although there was some deviation from the normal distribution, this was mostly at the extreme values. Both the Success-without-Effort and the Worry-Induction scales showed less deviation from the normal distribution than the Enjoyment-in-Learning subscale. Therefore, given the robustness of the MANOVA test to contravention of the assumption of a normal distribution, it was decided to continue with the test. However, it was also decided that the univariate results would be confirmed using a Kruskal-Wallis test.

Tests

The results of the MANOVA (Pillai's trace = 0.07686; $F(153,30) = 4.246$; $p = 0.0065$) indicated a significant difference between the PIMC created by mothers and fathers.

Univariate results were calculated in order to obtain more specific results with respect to the subscales of the PIMC. These results are summarized in Table 12.

Table 12: Univariate results on comparing PIMC created by mothers and fathers

	Multiple <i>R</i>	Multiple R^2	Adjusted R^2	<i>F</i>	<i>p</i>
Enjoyment-in-Learning	0.15	0.02	0.02	3.43	0.0330*
Success-without-Effort	0.16	0.03	0.02	4.30	0.0199*
Worry-Induction	0.25	0.06	0.06	10.09	0.0009**

While significant univariate results were reported on all three subscales of the PIMC, no conclusions were drawn until these results were confirmed by the Kruskal-Wallis ANOVA.

Kruskal-Wallis ANOVA

The results for Success-without-Effort ($H(1, N = 157) = 4.766$; $p = 0.015$) and Worry-Induction ($H(1, N = 157) = 13.941$; $p = 0.0001$) were upheld as being significant at the 5% level. However, the Enjoyment-in-Learning results ($H(1, N = 157) = 1.481$; $p = 0.1115$) casts doubt over the univariate result that mothers emphasize enjoyment in the learning environment more than do fathers.

Conclusion

From the results of the MANOVA test, it appears that the mothers in this sample emphasize enjoyment in the learning environment more than do the fathers. On the other hand, the fathers are more inclined to emphasize success without effort than are the mothers. Fathers are also more likely to induce worry in their daughters in the competitive environment than are the mothers.

However, when the tests were re-run on the non-parametric Kruskal-Wallis test the significant results for Enjoyment-in-Learning were not confirmed. Therefore, given the extent to which the Enjoyment-in-Learning scores deviated from the normal distribution, the significant result for Enjoyment-in-Learning given by the MANOVA should be discarded for this sample.

Correlations with goal orientations

Correlations of the four goal orientations with the Parent-Initiated-Motivational-Climate (PIMC) subscales, were calculated in an effort to ascertain the association between goal orientation and PIMC. These correlations are summarized in Table 13.

Table 13 Correlations between goal orientation and the PIMC

Goal Orientation	PIMC: Mother			PIMC: Father		
	Enjoyment in Learning	Success w/o Effort	Worry Induction	Enjoyment in Learning	Success w/o Effort	Worry Induction
Map	.29*	.00	-.03	.18	-.06	-.03
Mav	-.04	-.08	.45**	.08	-.04	.21
Pap	-.02	.05	.158	.05	.05	-.03
Pav	-.04	.14	.25*	.07	.08	.10

Learning and the Map orientation. No similar significant result was found for the Mav orientation.

The other two significant results both came from the Worry-Induction subscale and were the correlations with the avoidant orientations: Mav ($r = 0.29$; $p = 0.017$) and Pav ($r = 0.29$; $p = 0.017$). There was no significant result between Worry-Induction and Pap.

There were no significant results in the correlations between goal orientation and Success-without-Effort.

Conclusion

Statistical testing on the correlations did not support the idea that Enjoyment-in-Learning is associated with the mastery orientation. These results imply that an environment where Enjoyment-in-Learning is encouraged is associated with the mastery-approach orientation but not with the mastery-avoidant orientation.

These tests provided support for Worry-Induction being associated with the avoidant orientation rather than with the performance orientation. There was no statistical evidence to support the hypothesis that emphasis on Success-without-Effort was significantly associated with any of the orientations.

Pattern Analysis

In an attempt to answer the third and fourth questions stated above, the correlations, were analyzed in more detail. This analysis was split into separate sections for the mother and father.

Mother

The mother's scores on promotion of Enjoyment-in-Learning showed a small positive correlation ($r = 0.29$) with Map and no correlations with Mav, Pap and Pav.

No significant trends emerged in the Success-without-Effort subscale.

On the Worry-Induction subscale, positive and significant correlations were reported with both the avoidant goal orientations Mav and Pav ($r = 0.45$; $r = 0.25$). A small positive

correlation was reported with Pap ($r = 0.15$). There was no correlation between Worry-Induction and the Map orientation.

The implications of these results are that where the mother creates a climate where enjoyment is encouraged and mistakes are treated as part of the process during learning, the daughter is more likely to demonstrate a high mastery-approach orientation. However, where the mother does not encourage enjoyment and/or punishes mistakes during learning, the daughter is more likely to demonstrate a mastery-avoidant orientation. There is an indication that the performance orientations are independent of the learning environment created by the mother.

Where the mother creates an environment which includes Worry-Induction, the daughter is more likely to demonstrate an avoidant orientation in both the mastery and the performance orientations. In such an environment, the daughter also seems to be more likely to score higher in the performance-approach orientation.

Father

None of the correlations between the father's PIMC scores and the daughter's goal orientations were significant at the 5% level but the patterns showed similar trends to those shown for the mother.

Regression Analyses

In the regression analyses, we attempt to answer the question: "How do: the dominant-parent's own goal orientations; the dominant-parent's goal orientation for the daughter; and the Parent-Initiated-Motivational-Climate (PIMC) for both mother and father; impact on each of the daughter's four goal orientations?" A combination of correlational and regression analysis was used in an attempt to facilitate a better understanding of the parent-child relationship in competitive riding. However, before the regression analyses could be carried out, the data needed to be filtered and manipulated to allow for missing data. The next section describes the data adjustments made.

Preparation of data for regression analyses

A total of 83 questionnaires were collected: thirty-one had complete answers for the rider and both parents; forty questionnaires were fully completed by only mother and daughter; and five were completed by only the father and the daughter.

There were three questionnaires where the rider had not completed the perception of parent (PP) portion, and one case where the PP measure was completed by the daughter but not the goal orientation for herself (Self). These cases were excluded from all further analyses.

There were two forms which included the father's goal orientation for himself (FS) but not the father's goal orientation for his daughter (FD). There was a mother's contribution in these cases so the father's contribution was discarded and these cases were treated as mother-only contributions.

After these exclusions, there were 75 research entities available for use. There were 30 where both parents had participated (BOTH)⁴, 40 where only the mother had participated (MOTHER) and five where only the father had participated (FATHER). Means and standard deviations of all the goal orientations are reported in Table 14.

Table 14 Descriptive Statistics broken down by form group and goal orientation group

<i>Forms</i>	<i>Group</i>	<i>N</i>	<i>Map Mean</i>	<i>Std Dev</i>	<i>Mav Mean</i>	<i>Std Dev</i>	<i>Pap Mean</i>	<i>Std Dev</i>	<i>Pav Mean</i>	<i>Std Dev</i>
MOTHER	MD	40	6.15	0.95	3.64	1.70	3.55	1.83	2.59	1.67
MOTHER	MS	40	6.19	0.99	4.27	1.99	3.93	1.89	3.36	1.95
MOTHER	PP	40	6.36	0.91	3.67	1.88	3.48	2.10	3.16	1.96
MOTHER	Self	40	6.44	0.77	4.55	1.79	4.04	2.03	3.90	1.98
BOTH	FD	30	5.83	1.02	3.80	1.59	3.87	1.83	2.70	1.92
BOTH	FS	30	5.88	1.21	4.33	1.86	4.54	2.00	3.24	1.85
BOTH	MD	30	6.20	0.99	3.76	1.83	3.04	1.66	2.47	1.69
BOTH	MS	30	6.39	0.88	4.12	1.91	3.26	1.97	3.02	1.74
BOTH	PP	30	6.12	1.07	4.10	1.87	3.19	1.80	2.81	1.79
FATHER	FD	5	5.73	0.72	3.00	1.56	3.60	1.53	1.80	1.12
FATHER	FS	5	5.93	0.64	3.73	1.67	4.67	1.18	3.73	2.02
FATHER	PP	5	6.20	1.07	2.60	1.48	2.80	1.85	2.60	1.32
FATHER	Self	5	6.07	1.19	3.67	1.75	3.60	1.62	3.07	1.42

⁴ BOTH, MOTHER and FATHER are the abbreviations used for these groups in the tables an statistical analyses. Where these groupings are referred to en masse they have been referred to as "form groups".

Given the paucity of data, it was decided to combine the data in order to maximize the power of the statistical analyses. Before this was done, the mean goal orientation score (for each goal orientation) of each goal orientation group across the form groups, was checked for equality using a one way MANOVA test.

Hypotheses⁵

The following hypotheses were tested:

$${}^1H_0: {}^{\text{self}}\mu_{\text{both}} = {}^{\text{self}}\mu_{\text{Father}} = {}^{\text{self}}\mu_{\text{Mother}}$$

$${}^1H_1: {}^{\text{self}}\mu_{\text{both}} \diamond {}^{\text{self}}\mu_{\text{Father}} \diamond {}^{\text{self}}\mu_{\text{Mother}}$$

$${}^2H_0: {}^{\text{MS}}\mu_{\text{both}} = {}^{\text{MS}}\mu_{\text{Mother}}$$

$${}^2H_1: {}^{\text{MS}}\mu_{\text{both}} \diamond {}^{\text{MS}}\mu_{\text{Mother}}$$

$${}^3H_0: {}^{\text{MD}}\mu_{\text{both}} = {}^{\text{MD}}\mu_{\text{Mother}}$$

$${}^3H_1: {}^{\text{MD}}\mu_{\text{both}} \diamond {}^{\text{MD}}\mu_{\text{Mother}}$$

$${}^4H_0: {}^{\text{FS}}\mu_{\text{both}} = {}^{\text{FS}}\mu_{\text{Father}}$$

$${}^4H_1: {}^{\text{FS}}\mu_{\text{both}} \diamond {}^{\text{FS}}\mu_{\text{Father}}$$

$${}^5H_0: {}^{\text{FD}}\mu_{\text{both}} = {}^{\text{FD}}\mu_{\text{Father}}$$

$${}^5H_1: {}^{\text{FD}}\mu_{\text{both}} \diamond {}^{\text{FD}}\mu_{\text{Father}}$$

Assumptions

Equality of covariance matrices was tested using a Box M test ($\chi^2 = 31.12$; $p = 0.3172$). The results indicated that, at the 5% level, the assumption of equality of covariance was acceptable within this dataset. The assumption of a normal distribution of the data was tested by inspection of a normal p-plots of the data for each of the goal orientations (see Appendix 5). Although there was some indication that the data may deviate slightly from a normal distribution this was not sufficient to cast doubt on the results of the MANOVA analysis which is known to be fairly robust with respect to deviations from this assumption (Howell, 2007).

Test

The testing of these hypotheses was complicated by the fact that there were missing cells in the design. In order to deal with this, a MANOVA analysis was carried out using the least

⁵ The symbol ${}^{\text{self}}\mu_{\text{both}}$ refers to the mean goal orientation for the daughter (self) from the group (both) in which both parents had completed the goal orientation questionnaires.

squares method, with sigma restricted parameterization and the effective hypothesis decomposition.

This analysis indicated a non-significant result (Wilks' $\lambda = 0.9745$; $F(24, 1197.8)$; $p = 0.9977$) at a 5% confidence level.

Conclusion

No significant differences in the goal orientation of means across the form groups was reported. Therefore the data may be combined without concern that results may be disguised by heterogeneity of data.

Once the data was combined as described above, the problem of missing data from either one of the parents still complicated further analyses. It was decided to introduce the notion of a dominant-parent (DP). In the remaining analyses, the goal orientations used for the parent will be the goal orientation of the DP. The process through which the DP was identified is described below.

Definition of dominant-parent⁶

The DP was assumed to be that parent identified by the rider as being most involved in her riding. Where the rider identified both parents as being equally influential, one of two options was chosen. If only one parent had completed the questionnaire, that parent was identified as the DP. If both parents had completed the questionnaire the mother was selected as the DP. The reason for selecting the mother in the latter case is twofold: firstly, the mother is usually the parent who is involved in the daily fetching and carrying; secondly, the riders often took the position that their fathers paid for the horses and that was a significant contribution. Since our investigation is into the emotional contribution of the parents, it was thought that selecting the mother for this analysis would not introduce any significant bias into the results.

⁶ Note regarding use of pronoun for the dominant-parent The dominant-parent may be the mother or the father of the child. However, when referring to the dominant-parent the female pronouns of "her" and "hers" has been used. This has been done to facilitate flow of discussion which sometimes gets quite involved.

There were two cases where the parent who was identified as the being the parent most involved in the daughter's riding had not completed the forms but the other parent had done so. These two cases were excluded from this analysis. The final data set consisted of 73 riders of which 66 were compared to the mother as the dominant-parent and seven were compared to the father as the dominant-parent. Means and standard deviations of all goal orientations are summarized in Table 9.

Table 15 Descriptive statistics of goal orientations for each goal orientation group

Goal Orientation	N	Goal Orientation Group							
		PP		Self		DPDaughter		DPSelf	
		Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
Map	73	6.25	1.00	6.41	0.86	6.16	0.95	6.23	0.94
Mav	73	3.76	1.88	4.63	1.71	3.63	1.72	4.11	1.94
Pap	73	3.35	1.96	3.92	1.88	3.29	1.71	3.71	1.93
Pav	73	3.00	1.86	3.85	2.04	2.45	1.55	3.23	1.83

Regression Analysis 1

The aim of the first regression analysis was to investigate how the daughter's perception of the dominant-parents' goal orientations for the daughter (PP), the dominant-parent's stated goal orientations for the daughter (DPDaughter)⁷ and the dominant-parent's own goal

⁷ Note on abbreviations

The abbreviations have been combined in this section to prevent the results section from becoming too complex. The format used to combine the abbreviations is described below.

Goal orientation variables: The first two letters indicate who filled in the questionnaire (e.g. DP for dominant-parent). The next three letters indicate the goal orientations (e.g. Map for mastery-approach). The final letter indicates who the goal orientation applies to (e.g. D for daughter or S for the same person who filled in the questionnaire). For example, the dominant-parent's mastery-avoidant orientation for the daughter will be shortened to DPMavD.

PIMC variables: The last letter indicates whether variable is the mother's (M) or the father's the PIMC score. The first section is an abbreviations for the subscale of the PIMC the variable represents (Success-without-effort: Success; Enjoyment-in-Learning: Learning; Worry-Induction: Worry). For example, the mother's Worry-Induction will be shortened to WorryM.

orientations (DPSelf), impact on the daughter's goal orientations. In particular, the feasibility of PP as a mediating influence between the effect of DPDaughter and DPSelf, on Self were investigated.

For each goal orientation, correlations between the rider's goal orientation and her perception of her dominant-parent's goal orientation for her riding (Map: $r = 0.47$, $p = 0.0001$; Mav: $r = 0.28$, $p = 0.013$; Pap: $r = 0.68$, $p = 0.0001$; Pav: $r = 0.68$, $p = 0.0001$) were calculated. These results indicated small, but statistically significant correlations, in all four goal orientations. These results corroborate the findings of Collins and Barber (2005) that a child's achievement goal orientation correlates with her perceptions of her parent's achievement goal orientation and furthermore, that this holds for Elliot and McGregor's (2001) 2x2 model of achievement goal theory.

Correlations were also calculated amongst: the rider's goal orientations (Self); the daughter's perception of her dominant-parent's orientation for her riding (PP); the dominant-parent's own goal orientation (DPSelf); and the dominant-parent's stated goal orientation for the daughter's riding (DPDaughter). These correlations were calculated using the combined data from all four goal orientations. Significant positive correlations were shown across all variables. These results are reported in Table 16.

Table 16 Correlations for goal orientations

	<i>PP</i>	<i>Self</i>	<i>DP Daughter</i>
Self	.74 $p=0.001$		
DPDaughter	.47 $p=.0001$.44 $p=.0001$	
DPSelf	.45 $p=.0001$.39 $p=.0001$.71 $p=0.001$

The strongest correlation reported was between the goal orientation of the rider herself (Self) and her perception of the dominant-parent's goal orientation (PP) for her competitive riding ($r = 0.74$; $p = 0.001$). It was also observed that PP had a stronger correlation with DPSelf

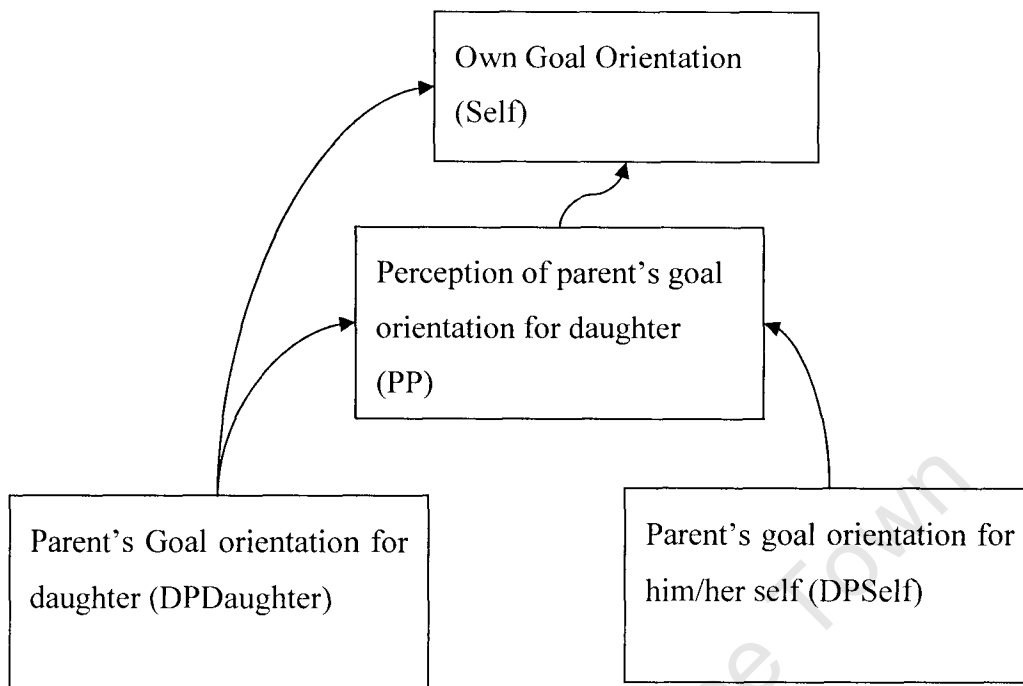
($r = .45$; $p = 0.0001$) than did Self ($r = .3906$; $p = 0.0001$). These results imply that the association between the daughter's perception of the dominant-parent's goal orientation for her are more strongly correlated with both (for self and daughter) the dominant-parent's goal orientations than her own goal orientations.

The above results suggest that the daughter's perception of the dominant-parent's goal orientation for the daughter (PP) mediates the effect of the dominant-parents own goal orientations (DPSelf) and goal orientation for the daughter (DPDaughter), on the daughter's goal orientations (Self). Partial correlations were calculated with the effect of PP partialled out. This revealed a small but significant partial correlation between the Self and DPDaughter. The partial correlation between Self and DPSelf was not significant at the 5% level. These results are summarized in Table 17.

Table 17 Partial correlations between Self, DPDaughter and DPSelf with the effect of PP partialled out

	<i>Self</i>	<i>DP Daughter</i>
DPDaughter	.1597 $p = .006$	
DPSelf	.0987 $p = .093$.6206 $p = 0.00$

A possible interpretation of these results is that the effect of dominant-parent's own goal orientation (DPSelf) on the daughter's goal orientation (Self), is fully mediated by the daughter's perception of the dominant-parent's goal orientation for the daughter (PP). On the other hand, the effect of dominant-parent's goal orientation for the daughter (DPDaughter), on the daughter's goal orientation (Self) is only partially mediated by the daughter's perception of the dominant-parent's goal orientation for the daughter (PP). Figure 4 illustrates the possible workings of this mediation.

Figure 4 Possible causal model for rider's goal orientation

In accordance with recommendations by Baron and Kenny (1986), three regression analyses were calculated in order to test for the relevance of this model. First, PP was regressed against DPSelf and DPDaughter. Second, Self was regressed against DPSelf and DPDaughter and third, Self was regressed against DPSelf, DPDaughter and PP. Within these regressions, four conditions needed to be fulfilled in order for PP to be considered a mediating variable:

- (i) Both DPDaughter and DPSelf should be significant contributors to PP in the first regression equation.
- (ii) Both DPDaughter and DPSelf should be significant contributors to Self in the second regression equation.
- (iii) PP must be a significant contributor to Self in the third regression equation.
- (iv) The effect of DPDaughter and DPSelf should be less in the third regression equation than in the second.

In the first regression equation (PP against DPSelf and DPDaughter) a significant model emerged ($F_{2,289} = 47.99$, $p = 0.0001$, $\text{Multiple-R}^2 = 0.2493$). The beta values and significance of the variables are reported in Table 18.

Table 18 Regression equation 1: PP Regressed against DPSelf and DPDaughter

	<i>Beta</i>	<i>p-level</i>
DPDaughter	0.3039	0.0001
DPSelf	0.2367	0.0010

DPDaughter and DPSelf were both significant variables in the regression equation, thus fulfilling the first test for PP as a mediating variable. Also of interest is that DPSelf and DPDaughter account for 25% of the variability in PP.

In the second regression equation (Self against DPSelf and DPDaughter), a significant model emerged ($F_{2,289} = 37.88$, $p = 0.0001$, Multiple- $R^2 = 0.2077$). The beta values and significance of the variables are reported in Table 19.

Table 19 Regression equation 2: Self regressed against DPSelf and DPDaughter

	<i>Beta</i>	<i>p-level</i>
DPDaughter	0.3290	0.0001
DPSelf	0.1600	0.0299

Once again, the required conditions were fulfilled as DPSelf and DPDaughter were both significant variables in the regression equation. It may also be observed that only 20% of the variability in Self is explained by the variability in DPDaughter and DPSelf.

In the third regression equation (Self against PP, DPSelf and DPDaughter) a significant model emerged ($F_{2,288} = 118.88$, $p = 0.0001$, Multiple- $R^2 = 0.5532$). The beta values and significance of the variables are reported in Table 20.

Table 20 Regression equation 3: Self regressed against PP, DPSelf and DPDaughter

	<i>Beta</i>	<i>p-level</i>
PP	0.6784	0.0001
DPDaughter	0.1228	0.0317
DPSelf	-0.0005	0.9923

In the third regression equation, PP was not only a significant contributor to the regression equation but also the most powerful contributor. This fulfills the third condition for the test of PP as a mediating variable. In this regression equation, 55% of the variability in Self was explained by variability in PP, DPSelf and DPDaughter. This implies that although there was

strong evidence for PP acting as a mediating influence on DPDaughter and DPSelf, it does not fully mediate the effect of both these variables.

The fourth condition was also fulfilled in that in both DPSelf and DPDaughter had larger beta values and smaller p-values in the second equation than in the third equation. In fact, DPSelf made such a small contribution to the third regression equation it may be said that DPSelf is completely mediated by PP. However, the beta value of 0.1228 for DPDaughter implies that DPDaughter is not fully mediated by PP.

These results confirm the expectations created by the analysis of the partial correlations that the daughter's perception of the dominant-parent's goal orientations for her (PP) acts as a mediating variable on the effect of the dominant-parent's goal orientations (DPSelf) and the dominant-parent's goal orientations for the daughter (DPDaughter), on the goal orientations of the daughter (Self).

Regression Analysis 2

The second set of regression analyses were carried out on each individual goal orientation in order to ascertain how the dominant-parent's goal orientations and the Parent-Initiated-Motivational-Climate (PIMC) may be deemed to impact on the daughter's goal orientation. The predictor variables used were (i) all the goal orientations of the dominant-parent for herself, (ii) all the goal orientations that the dominant-parent indicated for her daughter, and (iii) the three subscales of the PIMC for both mother and father. The variable names and their full description are listed in Table 21.

Before carrying out the regression analysis, correlations between the predictor variables were calculated to test the extent of possible multi-collinearity amongst the predictor variables. Interest was focused particularly on the correlations between:

- The dominant-parent's goal orientations (DPSelf) and her goal orientations for the daughter (DPDaughter).
- The mother and father's PIMC scores.

These two sets of variables were of particular interest as a certain amount of correlation was expected between these two sets of pairs of predictor variables.

Table 21 Depicter variables used in the regression analysis

<i>Variable Name</i>	<i>Variable description</i>
DPMaP _S	The dominant-parent's own mastery-approach orientation
DPMaV _S	The dominant-parent's own mastery-avoidant orientation
DPPaP _S	The dominant-parent's own performance-approach orientation
DPPaV _S	The dominant-parent's own performance-avoidant orientation
DPMaP _D	The dominant-parent's mastery-approach orientation for the daughter
DPMaV _D	The dominant-parent's mastery-avoidant orientation for the daughter
DPPaP _D	The dominant-parent's performance-approach orientation for the daughter
DPPaV _D	The dominant-parent's performance-avoidant orientation for the daughter
Worry _M	Worry-Induction from the mother
Learning _M	Enjoyment-in-Learning encouraged by the mother
Success _M	Success-without-Effort emphasized by the mother
Worry _F	Worry-Induction from the father
Learning _F	Enjoyment-in-Learning encouraged by the father
Success _F	Success-without-Effort emphasized by the father

The correlations between the dominant-parent's goal orientation and the dominant-parent's goal orientations for the daughter are summarized in Table 22.

Table 22 Correlations between dominant-parent's own goal orientation and their goal orientation for their daughter

	<i>DPMaP_S</i>	<i>DPMaV_S</i>	<i>DPPaP_S</i>	<i>DPPaV_S</i>
DPMaP _D	.66	-.07	.21	-.08
	p=.000	p=.552	p=.095	p=.518
DPMaV _D	-.07	.33	.11	.12
	p=.595	p=.006	p=.398	p=.329
DPPaP _D	-.06	.12	.53	.41
	p=.639	p=.347	p=.000	p=.001
DPPaV _D	-.21	.30	.29	.60
	p=.091	p=.012	p=.016	p=.000

Significant correlations (at the 5% level) were reported between:

- The dominant-parent's Map orientation for the daughter and the dominant-parent's own Map orientation.

- The dominant-parent's Mav orientation for the daughter and the dominant-parent's own Mav orientation.
- The dominant-parent's Pap orientation for the daughter and the dominant-parent's own Pap orientation.
- The dominant-parent's Pav orientation for the daughter and the dominant-parent's own Pav orientation.

These results were expected as it has already been shown that there is a significant correlation between the parents' own orientations and their orientations for their daughter. In addition to this, but less expected, a significant correlation (at the 5% level) was reported between the dominant-parent's own Mav orientation and the dominant-parent's Pav orientation for the daughter.

The correlations between the mother's and father's PIMC scores are summarized in Table 23.

Table 23 Correlations between PIMC for the mother and PIMC for the father

	<i>LearningM</i>	<i>SuccessM</i>	<i>WorryM</i>
LearningF	.34 p=.01	.01 p=.94	-.00 p=.993
SuccessF	-.05 p=.675	.6633 p=.00	.19 p=.127
WorryF	-.16 p=.209	.25 p=.045	.41 p=.001

Significant correlations (at the 5% level) were reported between

- Enjoyment-in-Learning for the mother and the father.
- Success-without-Effort for the mother and father.
- Worry-Induction for the mother and father.

These results are consistent with the intuitive expectation that there will be some inter-dependence between the PIMCs created by the mother and father.

No other significant correlations were reported.

These correlations may render either the dominant-parent's own goal orientation or the dominant-parent's goal orientation for the daughter (DPDaughter), superfluous in the regression analysis. Similarly, either the mother's PIMC scores or the Father's PIMC scores may also be rendered redundant. However, we are particularly interested in how these pairs of predictor variables interact as we know the parents show a similar shape of goal orientation in their own goal orientation to that for their daughter, but that the levels are different. We also know that there are significant differences in the levels of the PIMC scores between the two parents. Therefore, the decision was made to accept tolerance levels as low as 0.30 as long as the Multiple-R² statistic was increased by at least 5% by the addition of the variable to the regression equation.

Mastery-approach orientation (Map)

Using the forward stepwise method, with a limit of 0.3 on the tolerance, a significant model emerged ($F_{5,60} = 3.8388$, $p = 0.0044$, Multiple $R^2 = 0.2424$). Significant variables are shown in Table 24.

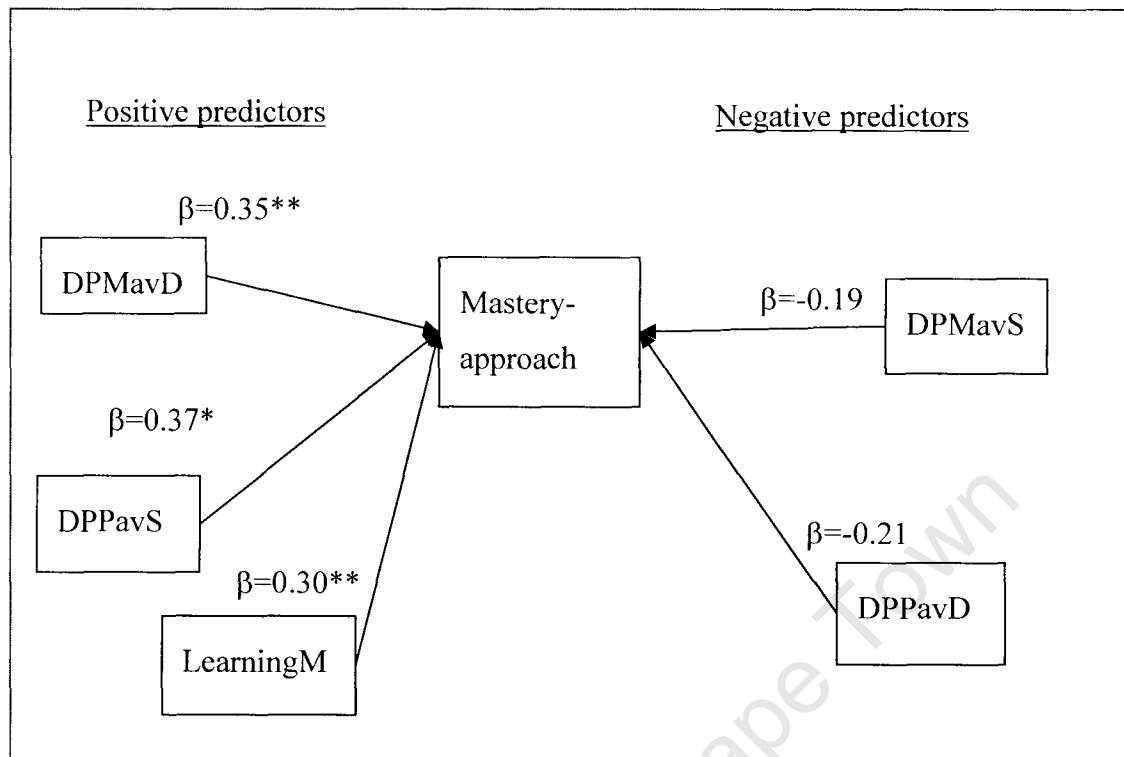
Table 24 Regression analysis on Map

	<i>Beta</i>	<i>p-level</i>
DPMavD	0.3511	0.0055
LearningM	0.3035	0.0098
DPPavS	0.3708	0.0199

Although included in the model, DPPavD and DPMavS were not significant predictors in this model.

Figure 5 gives a diagrammatic illustration of the regression model with all variables and their beta-values included.

Figure 5 Variables in regression equation for the mastery-approach orientation



The largest contributor to the rider's level of mastery-approach orientation, was the dominant-parent's own performance-avoidant orientation. This was surprising as the performance-avoidant orientation is the diametric opposite to the mastery-approach orientation. The expectation was for there to be no influence or a negative influence on the daughter's level mastery-approach orientation. This implies that, where a parent defines success (for herself) in terms of beating others but places a large emphasis on avoiding failure, the daughter will show a higher level of mastery-approach orientation.

The dominant-parent's mastery-avoidant orientation for the daughter was the next largest contributor to the daughter's mastery-approach orientation. This implies that when a parent defines success (for the daughter) in terms of personal improvement and places an emphasis on avoiding failure, the daughter is likely to demonstrate higher levels of mastery-approach orientation. However, when the parent exhibits this orientation herself, the daughter is likely to show lower levels of mastery-approach orientation.

The encouragement of Enjoyment-in-Learning by the mother also shows a positive association with the daughter's mastery-approach orientation. This implies that, where a

mother creates an environment where learning is fun, the daughter is more likely to demonstrate higher levels of mastery-approach orientation.

MavS and PavD showed smaller, negative contributions to the daughter's mastery-approach orientation. These two variables were correlated to the largest contributors, MavD and PavS respectively and this made it difficult to interpret these results with accuracy. Therefore, it appears that the only clear conclusion we can draw from these results is that, when the mother encourages the daughter to have fun and enjoy learning, this will be associated with a strong Map orientation in the daughter.

Mastery-avoidant orientation (Mav)

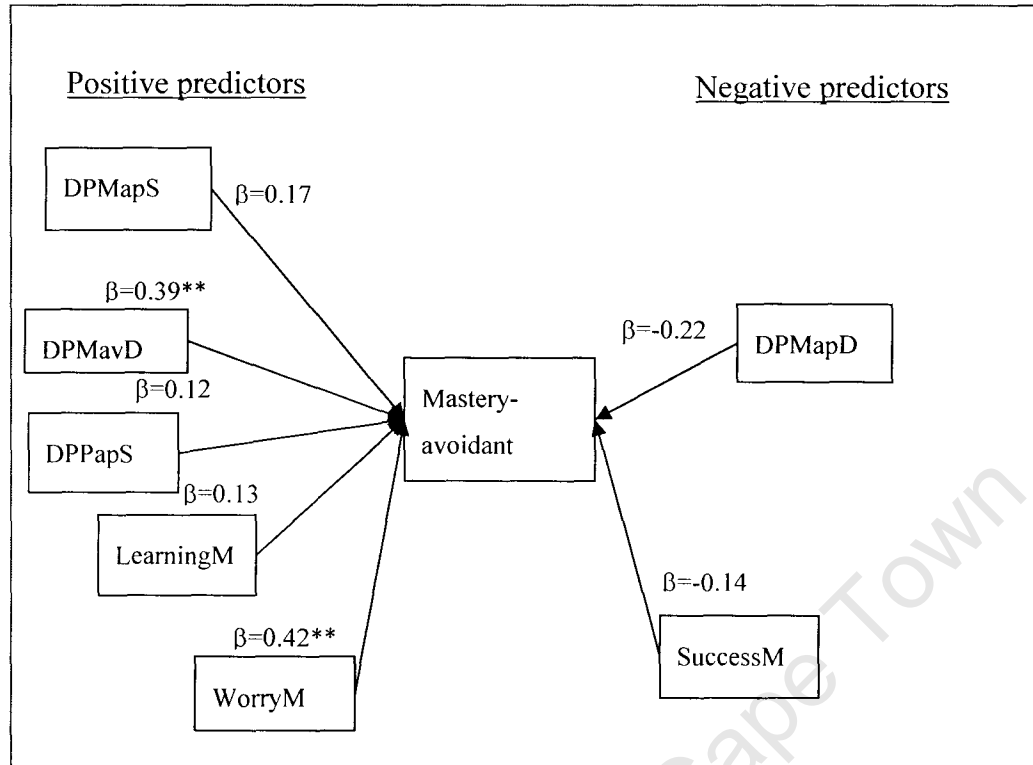
Using the forward stepwise method, with a limit of 0.3 on the tolerance, a significant model emerged ($F_{7,58} = 6.2336$, $p = 0.0001$, Multiple- $R^2 = 0.4293$). Significant variables are shown in Table 25.

Table 25 Regression analysis on Mav

	<i>Beta</i>	<i>p-level</i>
DPMavD	0.3939	0.0003
WorryM	0.4234	0.0003

Although included in the model, DPMavD, SuccessM, DPMavS, LearningM and DPPavS were not significant predictors in this model.

Figure 6 gives a diagrammatic illustration of the regression model with all variables and their beta-values included.

Figure 6 Variables in regression equation for the mastery-avoidant orientation

The strongest positive contribution to the young rider's mastery-avoidant orientation was Worry-Induction by the mother. There was also a positive contribution to the mastery-avoidant orientation by the PIMC subscale, Enjoyment-in-Learning for the mother. This indicates that an enjoyable learning environment where fun is encouraged is probably promoting the mastery definition of success. On the other hand, worry may cause the rider to be afraid of failure, who then adopts a strong avoidant approach. The mother's emphasis on Success-without-Effort is a negative contributor to the daughter's level mastery-avoidant orientation. This is expected as, success achieved without the effort made to master the requisite skills, is contrary to the idea of mastery development. These results are consistent with earlier findings in this study.

The other significant variable in the regression equation was DPMaV D. This implies that where a parent wants a higher level of mastery-avoidant orientation for the daughter, the daughter will be inclined to show a higher level of mastery-avoidant orientation. This is expected and logical as it is simply saying that when the dominant-parent wants higher level

of mastery-avoidant orientation for the daughter, the daughter is likely to demonstrate higher levels of mastery orientation.

The DPPapS variable was also a positive contributor to the daughter's level of mastery-avoidant orientation. This is interesting as it is the apparently diametric opposite of the mastery-avoidant orientation. However, on further consideration, it is possible that when the following conditions occur:

- (i) The dominant-parent defines success for herself as demonstrating superiority over others;
- (ii) The dominant-parent is strongly driven to achieve such success;
- (iii) There is a PIMC with high levels of Worry-Induction;

The daughter may feel pressurized to meet those standards that the parent sets for herself. Furthermore, as a result of the worry inducing environment she worries about being unable to meet the parent's expectations and thus develops avoidant tendencies.

This reasoning suggests that, when a parent demonstrates high levels of performance-approach orientation, Worry-Induction by the mother may be a moderating variable between the dominant-parent's goal orientation and the daughter's goal orientation.

The DPMaP variable was also a positive contributor to the daughter's level of mastery-avoidant orientation while the DPMaD is a negative contributor. This implies that when the dominant-parent demonstrates a strong mastery-*approach* orientation for herself then the daughter is likely to show higher levels of the mastery-*avoidant* orientation. On the other hand, when the dominant-parent wants the daughter to show a stronger mastery-*approach* orientation then the daughter is likely to show lower levels of mastery-*avoidant* orientation.

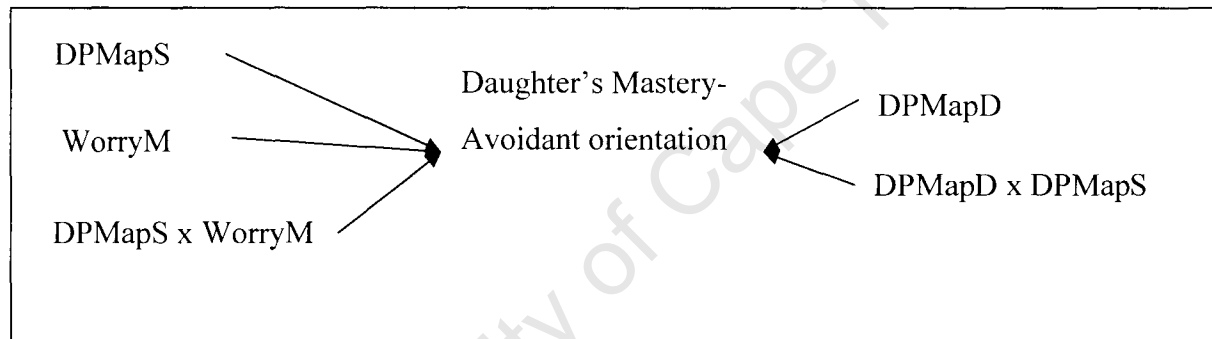
The reasons for this are not immediately intuitive and may once again be explained through the moderating effects of the various depictor variables. A similar reasoning to that applied with the DPPapS may be applied to the DPMaP but, in this case, there are two possible moderating variables: DPMaD and WorryM.

A possible way in which such a mechanism may work could be as follows. When the dominant-parent has a very strong mastery-*approach* orientation she demonstrates behaviors

and expectations for her daughter in terms of that orientation. If the mother then creates an environment in which the daughter worries about meeting the parents expectations, then the daughter worries about not meeting the parent's expectations and develops avoidant tendencies. Thus, WorryM acts as a moderating variable with DPMaP S to cause higher levels of mastery-avoidant orientation in the daughter. On the other hand, if the dominant parent also shows that she wants the daughter also to show high levels of mastery-approach orientations then DPMaP D may also act as a moderating variable on DPMaP S causing lower levels of mastery-avoidant orientation in the daughter.

These ideas are illustrated in Figure 7.

Figure 7 Possible moderating effects of WorryM and DPMaP D on the effects of DPMaP S on the daughter's Mav goal orientation



These results do not prove that such interactions do exist, they merely suggest that they *may* exist. Further statistical analysis is required in order to confirm WorryM and DPMaP D as moderating variables but this is beyond the scope of this investigation.

Performance-approach orientation (Pap)

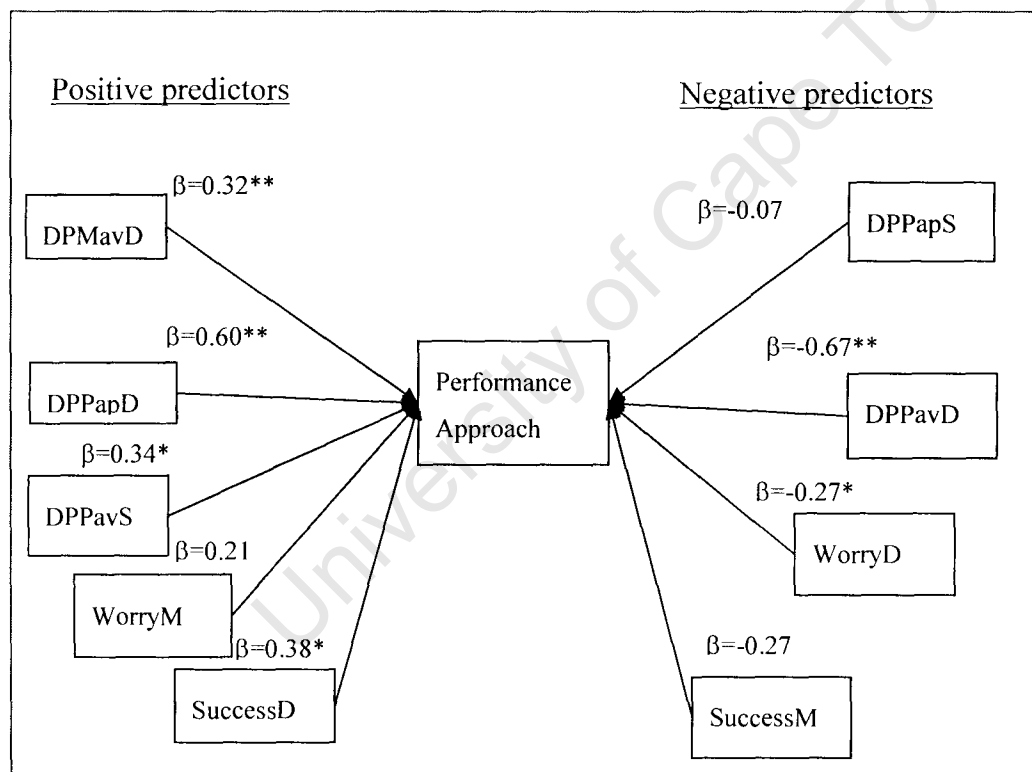
Using the forward stepwise method, with a limit of 0.3 on the tolerance, a significant model emerged ($F_{9,56} = 6.2336$, $p = 0.0032$, Multiple- $R^2 = 0.3421$). Significant variables are shown in Table 26.

Although included in the model, SuccessM, WorryM and DPPaP S were not significant predictors in this model.

Table 26 Regression analysis on Pap

	<i>Beta</i>	<i>p-level</i>
DPPavD	-0.6973	0.0003
DPPapD	0.6252	0.0008
DPMavD	0.3261	0.0095
DPPavS	0.3700	0.0287
SuccessD	0.3712	0.0375
WorryD	-0.2809	0.0446

Figure 8 gives a diagrammatic illustration of the regression model with all variables and their beta-values included.

Figure 8 Variables in regression equation for the performance-approach orientation

The largest contributor to a performance-approach orientation in young riders was the negative one of the dominant-parent wanting a performance-avoidant orientation for the daughter. This means that when the dominant-parent emphasizes that she wants the daughter to show high levels of performance-avoidant approach, the daughter is likely to show lower levels of performance-approach orientation. Thus, although both approaches are

characterized by the performance definition of success, the dominant-parent's need for the daughter to avoid failure may impede the development of a strong approach orientation in the daughter.

The strongest *positive* contributor to the performance-approach orientation in the daughter was the parent's desire for a performance-approach orientation for the daughter. This is a straightforward result and was expected.

A further significant, positive contributor to the daughter's performance-approach orientation was the dominant-parent's performance-avoidant orientation (DPPavS). This means that when the dominant-parent shows a strong performance-avoidant orientation herself, the daughter is more likely to show higher levels of performance-approach orientation. This could be interpreted as the impact of the parent's emphasis on the performance definition of success encouraging a performance definition of success in the daughter. However, the dominant-parent's emphasis on avoidance of failure for herself does not appear to be sufficient to prevent the daughter showing a strong performance-approach orientation.

Less expected, was the significant, positive contribution of the parent's desire for a mastery-avoidant orientation (DPMavD) for the daughter, as the mastery-avoidant orientation is the most different to the performance-approach orientation. A possible reason for this may be found in examination of the 6-cluster goal orientation profiles where the HiHiHiHi was the largest cluster. Thus, a high score in any orientation may be indicative of a high score in other orientations (see later section on goal profiling).

Further interesting contributions to the performance-approach orientation come from the Parent-Initiated-Motivational-Climate (PIMC). The contributions from the mother and the father worked in opposite directions for the same subscale of the PIMC. For example, Worry-Induction from the mother was a positive contributor to the performance-approach orientation while Worry-Induction from the father was a negative contribution to the performance-approach orientation. A similar feature was shown for the PIMC subscale Success-without-Effort. The father's input showed a positive impact on the performance-approach orientation while the mother's input showed a negative impact. Since we know that there is a fair amount of collinearity between the PIMC scores from the mother and father the regression analysis was rerun excluding the PIMC from the mother.

A significant model emerged ($F_{5,60} = 3.1970$, $p = 0.0039$, $\text{Multiple-}R^2 = 0.2461$). Significant variables are shown in Table 27 Regression analysis on Pap excluding the PIMC from the mother

Table 27 Regression analysis on Pap excluding the PIMC from the mother

	<i>Beta</i>	<i>p-level</i>
DPPavD	-0.6131	0.0012
DPPapD	0.4299	0.0123
DPPavS	0.4253	0.0131
DPMavD	0.2676	0.0255
DPPapS	-0.0831	0.5942

Although DPPapS was included in the model, it was not a significant predictor in the model.

This recalculated model does not include any of the variables from the PIMC even though those for the father were still available for selection. This implies that the mother's PIMC contribution in the previous model may be acting as a moderating variable on the contribution from the father. However, the $\text{Multiple-}R^2$ statistic has dropped from 0.34 to 0.25 indicating a substantial drop in the amount of variance explained by the new model.

The remaining variables in the model are the same as before.

Performance avoidant orientation (Pav)

Using the forward stepwise method, with a limit of 0.3 on the tolerance, a significant model emerged ($F_{9,56} = 6.2336$, $p = 0.0032$, $R^2 = 0.3421$). Significant variables are shown in Table 28.

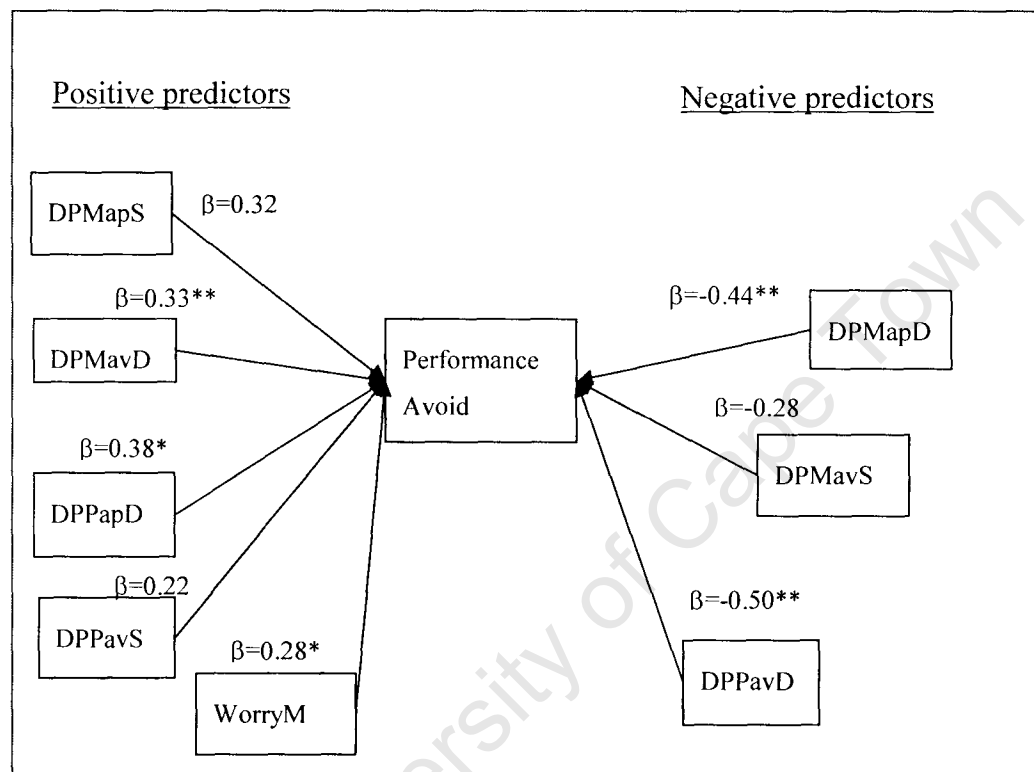
Table 28 Regression analysis on Pav

	<i>Beta</i>	<i>p-level</i>
DPPavD	-0.5036	0.0058
DPMavD	0.3329	0.0088
DPMapD	-0.4370	0.0096
DPPapD	0.3773	0.0188
WorryM	0.2781	0.0241

Although included in the model, DPMavS, DPMavD and DPPavS were not a significant predictors in this model.

Figure 9 gives a diagrammatic illustration of the regression model with all variables and their beta-values included.

Figure 9 Variables in regression equation for the performance avoidant orientation



The largest contributor to the performance-avoidant orientation of the young riders was the *negative* impact of the dominant-parent's desire for a performance-avoidant orientation in the daughter (DPPavD). This was unexpected as, in the previous orientations, a desire on the part of the dominant-parent for a particular orientation in the daughter was usually accompanied by the daughter showing higher levels of that orientation. Furthermore, the results reported in the first regression analysis exercise, indicated a positive correlation between the daughter's goal orientation and the dominant-parent's goal orientation for the daughter, *in the same goal orientation*.

This finding was sufficiently unexpected that the regression analysis was repeated excluding the DPPavS variable which was known to be strongly correlated with the DPPavD variable.

However, this exercise did not provide sufficient new information or clarity to justify using it in place of the first one. It is described in detail at the end of this section.

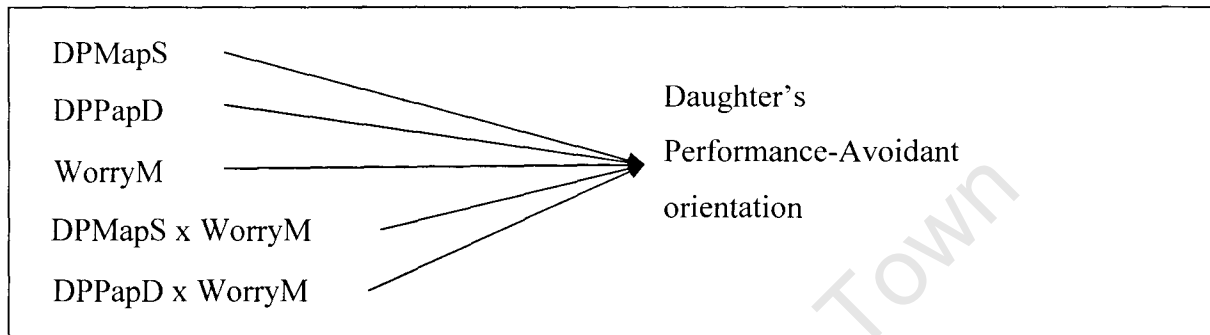
A further large predictor for the performance-avoidant orientation was the negative impact of the dominant-parent's desire for a mastery-approach orientation for the daughter (DPMaD). This result was expected as the mastery-approach orientation is considered the strongest orientation while the performance-avoidant orientation is considered the most vulnerable orientation. Thus, it appears that, where a parent shows a strong desire for the daughter to demonstrate a mastery-approach orientation, the daughter is likely to show lower levels of performance-avoidant orientation.

Statistically significant contributions to the daughter's Pav goal orientation were also made by DPMaD, DPPaD and WorryM. The strongest of these was the dominant-parent's desire for the daughter to demonstrate a strong mastery-approach orientation (DPPaD). Once again, this is a result, the reasons for which, are not immediately intuitively obvious. If the question "Why does the dominant-parent's desire for the daughter to show a strong performance-approach orientation lead to the daughter showing a strong performance-avoidant orientation?" is asked, the answer may lie in the presence of a motivational climate in which worry is induced by the mother. For example, where the dominant-parent demonstrates that she wishes for the child to go out and demonstrate success in a competitive environment by beating her competitors but, at the same time causes the daughter to become worried about not achieving the required standard, the daughter is likely to develop avoidant tendencies, thus showing a strong performance-avoidant orientation. The suggestion here is that the Worry-Induction by the mother may have a moderating effect on the dominant-parent's desire for the daughter to demonstrate a performance-approach orientation.

The dominant-parent's own mastery-approach orientation (DPMaS) is also a positive, albeit non-significant, contributor to the daughter's performance-avoidant orientation which is unexpected. Again, the idea of using the worry inducing environment as a moderating influence on the effect of parent's goal orientation on the daughter's goal orientation may be used. The reasoning, in this case would be as follows. Where the dominant-parent demonstrates a strong mastery-approach orientation herself, but the mother causes the daughter to worry about making mistakes and not meeting perceived parental standards, the daughter will develop avoidant tendencies. Why the definition of success is highly performance oriented is less clear.

A diagrammatic illustration of the possible workings of the dominant-parent's own approach orientations and Worry-Induction caused by the mother are illustrated in Figure 10. Further statistical analysis is required in order to confirm WorryM as a moderating variable but this is beyond the scope of this investigation.

Figure 10 Possible moderating impact of WorryM on the effects of DPPapS and DPMaP S on the daughter's Pav goal orientation



Regression equation on Pav excluding DPPavS

A significant model emerged from this exercise ($F_{7,58} = 3.1150$, $p = 0.0074$, $R^2 = 0.2732$). Significant variables are shown in Table 29.

Table 29 Regression analysis on Pav excluding DPPavS

	<i>Beta</i>	<i>p-level</i>
WorryM	0.3129	0.0103
DPPaP D	0.4051	0.0118
DPMaP D	-0.4124	0.0143
DPPavD	-0.4076	0.0146
DPMavD	0.3005	0.0160

Although included in the model, DPMavS and DPMaP S were not significant predictors in this model.

In this regression model, although the contribution is somewhat reduced (from -0.50 to -0.41), DPPavD is still a significant negative contributor to the daughter's Pav goal orientation. Thus, there is some suggestion that DPPavS is, in some way, perhaps a moderating variable on DPPavD but this effect appears to be quite small. However, there is

also quite a marked reduction in the Multiple-R² (from 0.30 to 0.27) statistic, which means a 10% reduction in the amount of variance explained by the new model. Given the above, the new model does not really seem to be an improvement on the first one in terms how well variation in the daughter's goal orientation is explained. Further regression analyses were carried out removing the DPMaP and the DPMaV variables but none of these exercises proved to be any improvement on the original regression model. The decision was therefore keep the results based on the original regression model.

Regression Analyses: Conclusion

In this section, regression analyses have been used to:

- i) Show that the daughter's perception of the dominant-parent's goal orientations for her, acts as a mediating variable on the effect of the dominant-parent's goal orientation for herself and the daughter, on the daughter's goal orientation.
- ii) Investigate how the dominant-parent's goal orientations for herself and the daughter, along with the Parent-Initiated-Motivational-Climate for both the mother and the father may influence the daughter's goal orientations.

We now move on to a deeper investigation into the goal orientations reported by the riders. This investigation is carried out by finding goal profiles which emerge naturally in this body of data.

GOAL PROFILES

The idea of goal profiles works on the underlying assumption that the various goal orientations are more or less independent. However, in the 2x2 model we do expect there to be some correlation between certain goal orientations. For example, we would expect there to be some correlation between the Map and the Mav orientations since they both assume a certain level of mastery orientation. Therefore, the idea of orthogonality is not as clear cut in the 2x2 model as it is for the dichotomous model. This does not mean that goal profiles cannot be established for the 2x2 models, it simply means that certain profiles are more likely to emerge than others. The zero-order correlations between the goal orientations of the riders

were calculated in order to investigate multi-collinearity among the goal orientations. These correlations are reported in Table 30.

Table 30 Zero order correlations between goal orientations

	<i>Map</i>	<i>Mav</i>	<i>Pap</i>
<i>Mav</i>	.22 p=.043		
<i>Pap</i>	.34 p=.002	.19 p=.079	
<i>Pav</i>	.18 p=.111	.34 p=.002	.65 p=.000

Small but significant correlations were reported between the following pairs of goal orientations:

- (i) The orientations characterized by the mastery definition of success (*Map* and *Mav*).
- (ii) The approach orientations (*Map* and *Pap*).
- (iii) The avoidant orientations (*Mav* and *Pav*).
- (iv) The orientations characterized by the performance definition of success (*Pap* and *Pav*).

This was expected as there was some commonality between each of these pairs of orientations (i.e. they both contain either the same definition of success or valence). Although these correlations are deemed statistically significant at the 5% level, it does not preclude the possibility of a participant scoring High in *Map* and Low in *Mav* or high in *Map* but low in *Pap* for example. On the other hand, the correlations between: (i) *Map* and *Pav* and (ii) *Mav* and *Pap* were non-significant, at the 5% level, indicating independence between these two pairs of orientations.

Cluster Analysis

The cluster analysis was carried out on non-standardized data. Although most goal profiling carried out is done on standardized data, this is not necessary where all the variables in the cluster analysis are measured on the same scale (Romesburg, 1984). In this exercise, all the

were calculated in order to investigate multi-collinearity among the goal orientations. These correlations are reported in Table 30.

Table 30 Zero order correlations between goal orientations

	<i>Map</i>	<i>Mav</i>	<i>Pap</i>
<i>Mav</i>	.22 p=.043		
<i>Pap</i>	.34 p=.002	.19 p=.079	
<i>Pav</i>	.18 p=.111	.34 p=.002	.65 p=.000

Small but significant correlations were reported between the following pairs of goal orientations:

- (i) The orientations characterized by the mastery definition of success (*Map* and *Mav*).
- (ii) The approach orientations (*Map* and *Pap*).
- (iii) The avoidant orientations (*Mav* and *Pav*).
- (iv) The orientations characterized by the performance definition of success (*Pap* and *Pav*).

This was expected as there was some commonality between each of these pairs of orientations (i.e. they both contain either the same definition of success or valence). Although these correlations are deemed statistically significant at the 5% level, it does not preclude the possibility of a participant scoring High in *Map* and Low in *Mav* or high in *Map* but low in *Pap* for example. On the other hand, the correlations between: (i) *Map* and *Pav* and (ii) *Mav* and *Pap* were non-significant, at the 5% level, indicating independence between these two pairs of orientations.

Cluster Analysis

The cluster analysis was carried out on non-standardized data. Although most goal profiling carried out is done on standardized data, this is not necessary where all the variables in the cluster analysis are measured on the same scale (Romesburg, 1984). In this exercise, all the

variables included in the clusters are goal orientations measured on the same 1 to 7 Likert scale.

There are also certain drawbacks to using standardized data. The first, being that the meaning of the levels of the goal orientations is lost. For example, where a cluster is labeled as being high in an orientation, the high is relative to the mean of the group when the data is standardized. A second problem is that when scores are tightly grouped in a variable, standardization will force an artificial spread on the orientation. This is particularly pertinent to this sample where the mastery-approach scores are very tightly grouped and that grouping is a genuine characteristic of the sample. Therefore, it was decided to keep the data in its unstandardized form.

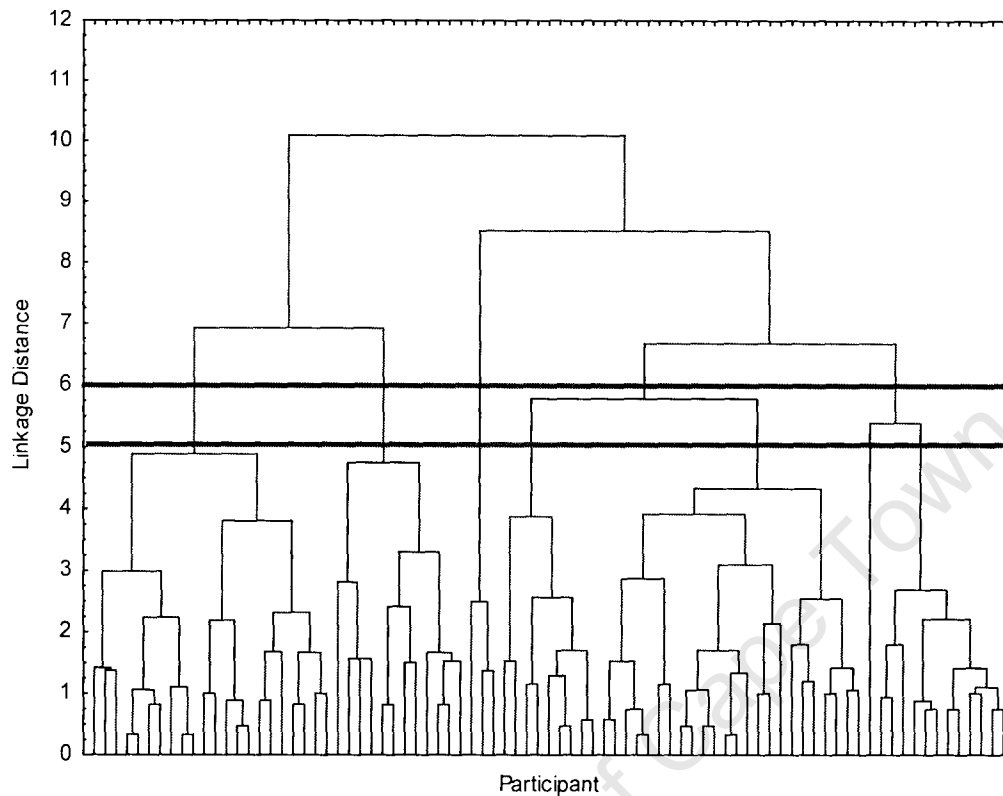
The cluster analysis exercise was initially carried out on the daughter's own goal orientation using the hierarchical method of cluster analysis. The aim of this exercise was to estimate the number of clusters to use in the subsequent K-means clustering method.

Hierarchical Cluster Analysis

The hierarchical cluster analysis was carried out twice. First, the complete linkage method was used and then Ward's method was used. In the complete linkage method the clusters are defined by finding the greatest distance between two objects in different clusters. The method is particularly useful where distinct clusters form in the data. The tree diagram resulting from the hierarchical cluster analysis using the complete linkage is shown in Graph 2.

The tree diagram in Graph 2 indicated somewhat ambiguous results with regard to how many clusters naturally occur in this data set. If a line was drawn through linkage distance six, then five clusters are indicated. If a line was drawn through linkage distance five, then seven clusters are indicated of which two were very small. By drawing a line through linkage distance 4.5, nine clusters were indicated. At this level the number of clusters started increasing rapidly. This indicated that the number of clusters naturally occurring in this data was between 4 and 9. Since this is a rather broad range, the hierarchical method was rerun using Ward's method as the linkage rule.

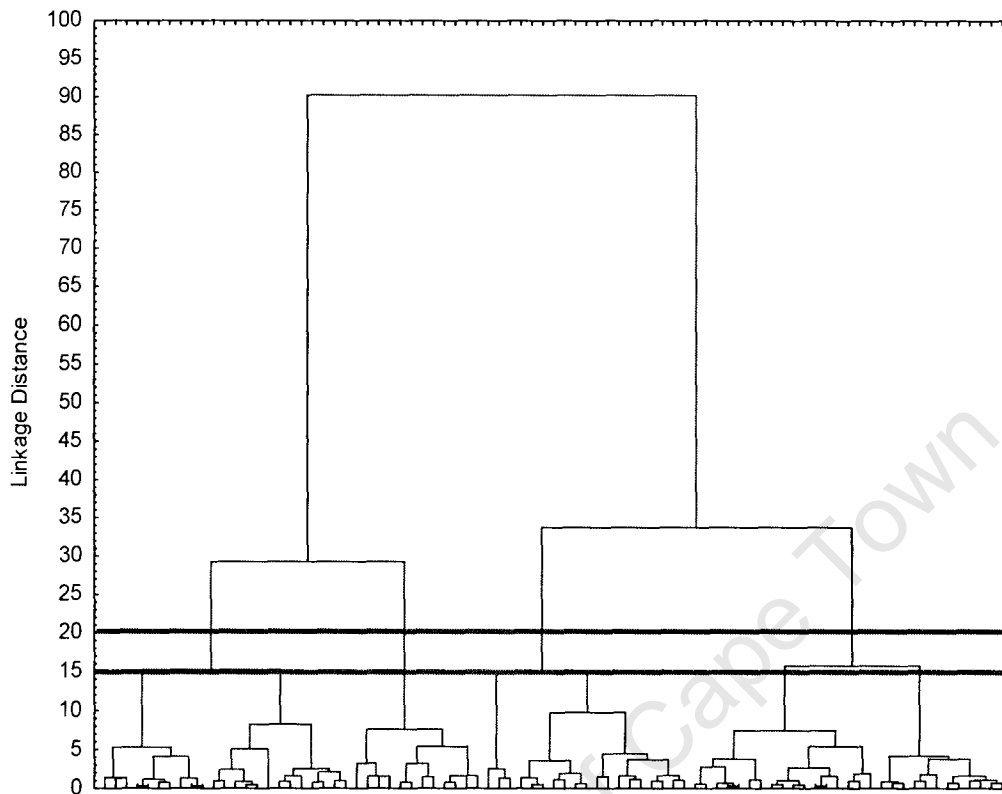
Graph 2 Tree diagram of hierarchical cluster analysis on group “Self” using the complete linkage method



Ward's method uses an analysis of variance method in order to assess the distances between clusters. The implication of this is that it attempts to minimize within-cluster differences while maximizing between-cluster differences. This method is considered to be very efficient in identifying clusters however, it does tend to create a larger number of small clusters. The tree diagram for the hierarchical analysis of the daughters' own goal orientation using Ward's method is shown in Graph 3.

The line drawn through linkage distance 20 suggested four clusters in the data. The line drawn through linkage distance 15, indicated seven clusters and when the line was drawn through linkage distance ten, eight clusters were indicated.

Graph 3 Tree diagram of hierarchical cluster analysis on group “Self” using Ward’s method



K-means cluster analysis

At this stage, no definitive number of clusters was indicated. In an effort to ascertain the optimum number of clusters the k-means cluster analysis was run a number of times with a starting number of clusters ranging from four to seven. This was done for both the daughter’s own goal orientations (Self) and the daughter’s perception of their dominant-parent’s goal orientation for the daughter (PP).

The resultant clusters emerging from these runs were labeled in the form “HiMLoHi” (say) where this would indicate Hi Map, M Mav, Lo Pap and Hi Pav. The labels were defined as follows: (i) Hi: >5 and ≤ 7 ; (ii) M: >3 and ≤ 5 ; (iii) Lo ≥ 1 and ≤ 3 .

The clusters that emerged from this exercise are summarized in Table 31.

Table 31 Summary of emerging clusters

<i>Analysis of Clusters to estimate number of clusters (Self)</i>							
4 Cluster Solution		5 Cluster Solution		6 Cluster Solution		7 Cluster Solution	
Description	No of Members	Description	No of Members	Description	No of Members	Description	No of Members
HiHiHiHi	24	HiHiHiHi	31	HiHiHiHi	24	HiHiHiHi	13
HiHiLoLo	19	HiHiLoLo	10	HiMLoLo	10	HiHiLoLo	10
HiLoLoLo	21	HiLoLoLo	12	HiLoLoLo	13	HiLoLoLo	12
HiHiMHi	19	HiHiMM	19	HiHiMHi	19	HiHiMHi	15
		HiLoHiM	11	HiLoHiLo	5	HiLoHiLo	5
				HiHiMLo	12	HiMHiHi	11
						HiHiMLo	17

<i>Analysis of Clusters to estimate number of clusters (PP)</i>							
4 Cluster Solution		5 Cluster Solution		6 Cluster Solution		7 Cluster Solution	
Description	No of Members	Description	No of Members	Description	No of Members	Description	No of Members
HiHiHiHi	18	HiHiHiHi	16	HiHiHiHi	15	HiHiHiHi	15
HiHiLoLo	21	HiHiLoLo	13	HiMLoLo	19	HiHiLoLo	11
HiLoLoLo	23	HiLoLoLo	23	HiLoLoLo	17	HiLoLoLo	12
HiLoHiM	19			HiLoHiLo	10	HiLoHiLo	9
		HiLoHiLo	11	HiLoHiLo	10		
		HiMMM	18	HiMMM	16		
				HiLoHiHi	4		
						HiLoHiM	9
						HiHiMM	16
						MLoLoLo	11

From these results, there appeared to be three very robust clusters: HiHiHiHi; HiHiLoLo; and HiLoLoLo; which remained stable in the 4-, 5-, 6- and 7-cluster solutions for both Self and PP. In the 5-, 6- and 7-cluster solutions, a fourth fairly stable cluster emerged in PP, the HiLoHiLo cluster. The equivalent of this cluster emerged in the 4-cluster run as HiLoHiM. This cluster was less stable in the Self run and only appears in the 6- and 7-cluster solution. However, the 5-cluster solution produce a similar cluster in the HiLoHiM profile

In the 5- and 6-cluster solution, a further cluster emerged in PP, the HiMMM. However, it broke up in the 7-cluster solution. Whether this was a genuine cluster or simply an extra cluster in which members that did not fit into the more extreme clusters, is open for debate. This profile did not emerge at all in Self. In Self there appeared to be a cluster which revolved around a HHMM type trend with the levels for Pap and Pav fluctuating between M and Hi. These observations indicated some sort of fifth cluster even if, at this stage, it is not

terribly well defined. It was, therefore, decided that the 4-cluster solution be discarded in favor of a solution with more clusters.

In the 6-cluster solution for PP, a HiLoHiHi cluster, containing only four members and that is not retained in the 7-cluster solution, emerged. It was, therefore, thought that this should not be considered a genuine cluster and the 6-cluster solution was thought not to be viable for PP. However, in the Self runs, quite a different picture emerged. From the 5-cluster solution to the 6-cluster solution the HiHiLoLo profile is lost but re-emerged in the 7-cluster solution. In the 6- and 7-cluster solutions the HiLoHiLo profile became more stable occurring in both solutions with the same number of members. In the 7-cluster solution the large HiHiHiHi (24 members) cluster broke up into a HiHiHiHi (13 members) and HiMHiHi (11 members) profile.

Given the above, either the 5- or the 7-cluster solution appeared to be the most appropriate. The 5-cluster solution identified the four apparently stable clusters HiHiHiHi, HiHiLoLo, HiLoLoLo and HiLoHiLo/HiLoHiM in both PP and Self. The fifth cluster in PP, HiMMM, may either be a genuine cluster in its own right or be acting as a catch all for other smaller clusters which are not clearly evident in this data set. It was, therefore, believed that the 5-cluster solution was appropriate for PP. However, for Self it appears as if the clusters emerging through the 6- and 7-cluster solutions are genuine and that the 7-cluster solution should be retained.

A MANOVA (Pillai's trace = 2.39: $p = 0.0001$) run on all four orientations of the 7-cluster solution indicated that there were significant differences between the clusters. The univariate results (Map : $F = 10.223$, $p = 0.001$; Mav: $F = 40.49$, $p = 0.001$; Pap: $F =$, $p = 0.0001$; Pav: $F = 63.4$, $p = 0.001$) of the cluster showed significant differences (at the 5% level) in each of the four goal orientations. Further investigations using the Unequal N (see Appendix 6 for detailed results), Honestly Significant Difference test indicated that, where an orientation is labeled "Hi" in a cluster, it is significantly different (at the 5% level) from labels other than "Hi" for that orientation in any of the other clusters. Similarly, the "M" and "Lo" labels were significantly different from labels that were "M" or "Lo" respectively.

Finally, the Euclidean distances between the clusters were calculated for the 7-cluster solution. These were inspected for evidence that any two clusters may be so close together as to be considered a single entity. These distances are summarized in Table 32.

Table 32 Euclidean distances between clusters

	<i>HiHiHiHi</i>	<i>HiMHiHi</i>	<i>HiLoHiLo</i>	<i>HiHiMHi</i>	<i>HiLoLoLo</i>	<i>HiHiMLo</i>
<i>HiMHiHi</i>	1.42					
<i>HiLoHiLo</i>	2.90	1.82				
<i>HiHiMHi</i>	1.13	1.35	2.83			
<i>HiLoLoLo</i>	3.77	2.73	2.34	2.97		
<i>HiHiMLo</i>	2.30	1.89	2.09	1.63	2.03	
<i>HiHiLoLo</i>	3.43	2.89	2.91	2.50	1.65	1.31

Most of the clusters were separated by a Euclidean distance of greater than two, with only four being less than 1.5. These all applied to pairs of clusters which only showed differences in one orientations where it makes sense for the Euclidean distance to be small

Notwithstanding the above, probably a more important affirmation of the existence of the seven distinct clusters is found:

- (i) By inspection of the mean plot graph (Graph 4) which illustrates seven quite distinct profiles.
- (ii) From the fact that seven distinct names emerged from the naming conventions which were chosen independently of the statistical findings of the data.

After running this exercise, it was believed that there was little to be gained and much complexity to be encountered, by creating goal profiles for PP, MD, MS, FD and FS. It was therefore decided that goal profiles would only be created for the rider's beliefs about her own goal orientations (Self).

Goal Profiles

The 7-cluster solution gave rise to the following clusters: (i) *HiHiHiHi* (n = 13), (ii) *HiMHH* (n = 11), (iii) *HiLoHiLo* (n = 5), (iv) *HiHiMHi* (n = 15), (v) *HiLoLoLo* (n = 12), (vi) *HiHiMLo* (n = 17) and (vii) *HiHiLoLo* (n = 17).

Descriptive Statistics

The means of these profiles are illustrated graphically in Graph 4 A summary of the means and standard deviations, for each cluster, are reported in Table 33.

Graph 4 Mean plot graph for seven-cluster solution on Self

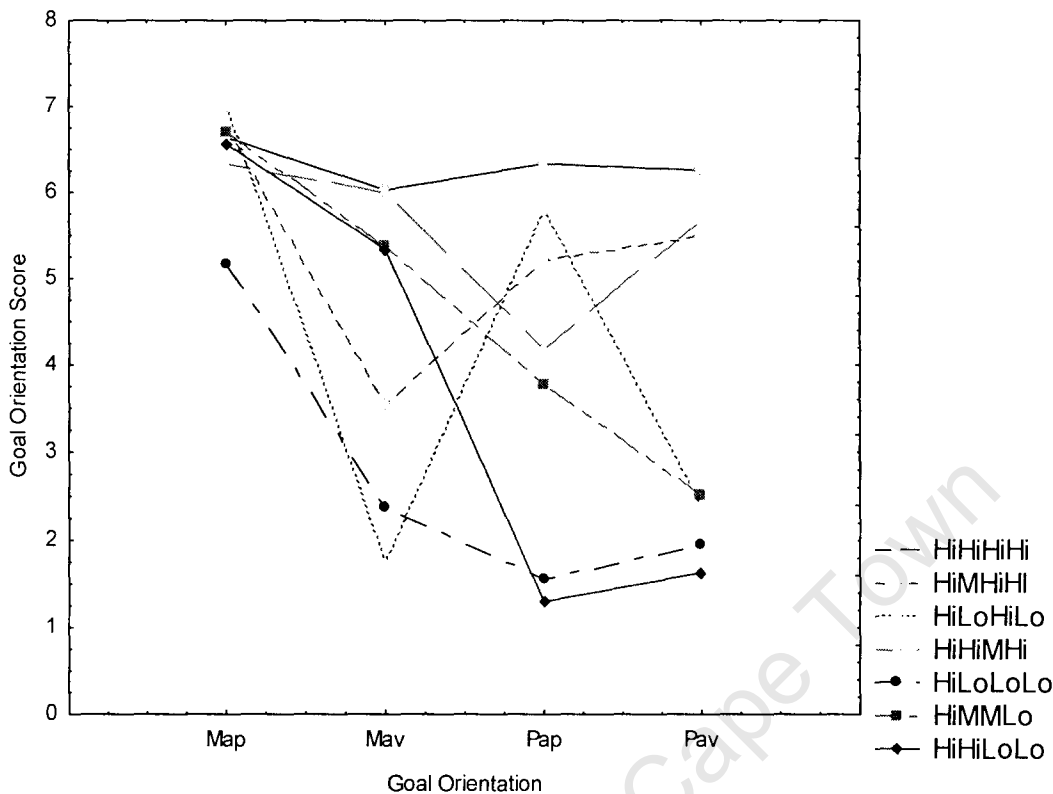


Table 33 Detailed cluster means and standard deviation for 7 cluster solution (Self)

	HiHiHiHi (N = 13)		HiMHiHi (N = 11)		HiHiMHi (N = 15)		HiLoHiLo (N = 5)		HiLoLoLo (N = 12)		HiHiMLo (N = 17)		HiHiLoLo (N = 10)	
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
Map	6.64	0.37	6.76	0.30	6.33	0.78	7.00	0.00	5.17	1.36	6.71	0.37	6.57	0.39
Mav	6.03	0.64	3.55	0.50	6.00	0.56	1.73	0.64	2.38	0.84	5.36	1.24	5.33	0.99
Pap	6.33	0.58	5.21	0.97	4.18	0.73	5.80	1.26	1.56	0.50	3.76	0.99	1.30	0.29
Pav	6.26	0.72	5.48	0.70	5.67	0.85	2.40	1.30	1.94	1.05	2.51	0.87	1.63	0.81

The HiHiHiHi profile showed means of greater than six for all four goal orientations. In comparison to this, the HiMHiHi profile showed a mean of greater than six for the Map orientation but means towards the lower end of the “Hi” range for the Pap and Pav orientations. The Mav orientation showed a mean of 3.55, which is towards the lower end of the “M” range, indicating that the HiMHiHi profile is indeed a distinctly different profile to the HiHiHiHi profile. The HiHiMHi profile showed means of greater than six for both the mastery orientations (i.e. Map and Mav). However, the mean for the Pap orientation (Mean: = 4.18) was towards the higher end of the “M” range.

The HiLoHiLo profile showed a mean of seven for the Map orientation which indicated that every member of this profile attained the full score of seven for the Map orientation. The mean for the Mav orientation was 1.73 which was the second lowest score for the Mav orientation across all the profiles. This indicates that the members of this profile have a very strong Map orientation and a very weak Mav orientation. In the performance orientations however, the means (Pap: Mean = 5.8; Pav: Mean = 2.4) are more in the middle of the “Hi” and “Lo” ranges.

The HiLoLoLo profile had the lowest mean Map score (Map: Mean = 5.18) of all the profiles. However the standard deviation of the Map orientation (Map: sd = 1.36) was also the greatest across the profiles indicating a fairly wide spread of scores in the Map orientation of this profile. The mean score for the Mav orientation was at the higher end of the “Lo” range (Mav: Mean = 2.38). In the performance orientations, the means (Pap: Mean = 1.56; Pav: Mean = 1.94) were in the lower half of the “Lo” range and were the second lowest across all the profiles.

The HiHiLoLo profile showed the lowest means for the performance orientations across all the profiles (Pap: Mean = 1.3; Pav: Mean = 1.63). This profile also showed the lowest mean for the Mav (Mean = 5.33) orientation across the profiles *in which the Mav orientation was rated as high*. The mean for the Map orientation in this profile was 6.57.

The HiHiMLo profile showed means which decreased gently down the goal orientations (Map: Mean = 6.71; Mav: Mean = 5.36; Pap: Mean = 3.76; Pav: Mean = 2.51).

Interpretation of Goal Profiles

The HiHiHiHi profile incorporates riders who scored high in all four goal orientations. These riders place high emphasis on both the mastery and performance definition of success. Furthermore, while they work towards achieving the required success they also consider it important to avoid failure.

The HiMHiHi profile is similar to the HiHiHiHi but there is less emphasis placed on avoiding personal failure in mastery pursuits. For example, such a person may be prepared to risk failure in attempting to learn something new but is less likely to risk failure within the competition environment.

The HiLoHiLo profile is made up of athletes who define success in terms of both mastery and performance goals. These athletes are driven by the need to improve their skills as well as by the need to demonstrate their skills against others in competition. The fact that they are high in both Map and Pap indicates their tendency to work towards achieving success. On the other hand these athletes will not expend much effort in attempting to avoid failure.

The HiHiMHi profile is similar to the HiHiHiHi in that members will define success in terms of both mastery and performance goals. They are also high the avoidant orientation in that they consider it important to avoid failure in attempting to achieve their goals whether they be defined in terms of mastery or performance goals. However, in the performance dimension these riders show a stronger tendency to avoid failure rather than to expend energy in moving towards success. There is no such differentiation in the mastery dimension where both the approach and avoidant tendencies are high. These riders will not consider it very important to demonstrate success in the competitive environment but will consider it extremely important to avoid failure in this environment. This profile is of particular interest in that it is the only profile where the avoidant tendency is so much stronger than the approach tendency that it justified classification at a separate level.

The HiLoLoLo profile incorporates riders who appear to define success in terms of mastery goals only. The high Map orientation indicates a strong tendency to drive towards their goals while the low Mav score indicates a low tendency to avoid failure. The low Pap and Pav scores indicate that success for these riders is not defined in terms of showing superiority over other riders.

The next profile defined in this investigation was the HiHiLoLo which is the classic high mastery, low performance profile which governed the original thinking around achievement goal orientation. These riders define success firmly in terms of self-referenced mastery goals and not in terms of demonstrating superiority over others. Within the mastery orientation, these riders demonstrate a strong tendency to work towards their achievement goals but at the same time also consider it important to avoid failure. Since success is not defined in terms of competitive success, the drive to both achieve success and avoid failure in the competitive arena is low.

The HiHiMLo profile is similar to the HiHiLoLo but there is a slightly greater drive to demonstrate success in terms of performance goals. These riders will be more driven to

demonstrate their prowess over others but will not be overly concerned about avoiding failure in the competitive environment.

STATE-EMOTION, TRAIT-ANXIETY AND SELF-EFFICACY IN COMPETITION

In this final section, the young female rider's experience of State-Emotion, Trait-Anxiety and Self-Efficacy in competitive riding is analyzed. First, Trait-Anxiety in competitive riding is examined. Then the state versions of Anger, Anxiety, Dejection, Happiness and Excitement in competitive riding are addressed. Finally, the girls' sense of Self-Efficacy in competitive riding is examined.

Descriptive statistics were calculated for all the abovementioned constructs. Then they were compared to:

- (i) The Parent-Initiated-Motivational-Climate (PIMC).
- (ii) The rider's goal orientations.
- (iii) The rider's goal profiles.

Descriptive Statistics

Means, standard deviations and minimum and maximum values were calculated for all subscales of the SAS-2, SES and Self- and Horse-Efficacy scales. These are summarized in Table 34. The Trait-Anxiety subscale in the Trait-Anxiety scale is simply the total of the three subscales. The basic Self- and Horse-efficacy values in the efficacy scale were created from the maximum of the dressage or jumping value.

Since the SES instrument is a fairly new one and one which has not been tested rigorously on children, correlations were run between the Anxiety scale and the SES. Overall Trait-Anxiety correlations ($r = 0.30$; $r = 0.59$; $r = 0.38$), with the Anger, Anxiety and Dejection subscales of the SES, were positive and significant at the 5% level. On the other hand, correlations ($r = -0.13$; $r = -0.05$) with Excitement and Happiness were small, negative and non-significant (at the 5% level). These findings make intuitive sense and support confidence in the external validity of the SES.

An interesting feature of this analysis was that, while the Concentration-Disruption and Worry subscales of the Trait-Anxiety scale, both correlated positively and significantly with all three of the negative State-Emotions in the SES, Somatic-Worry was not significantly correlated with either Anger or Dejection. The implication of this is that when the athlete's anxiety takes the form of Concentration-Disruption or Worry there is more likelihood of associated Anger and Dejection experienced in competitive riding. However, when the anxiety is primarily somatic, there is less likely to be associated Anger and Dejection experienced by the rider. These correlations are summarized in Table 35.

Table 34 Descriptive statistics for Anxiety, State-Emotion and Self-Efficacy

Scale	Sub Scale	N	Mean	Std.Dev.	Minimum	Maximum
Trait-Anxiety in Sport	Concentration-Disruption	83	1.43	0.53	1.00	3.00
	Somatic	83	2.00	0.70	1.00	4.00
	Worry	83	2.22	0.89	1.00	4.40
	Trait-Anxiety	83	5.65	1.70	3.00	10.00
State-Emotion in Sport	Anger	83	0.74	0.83	0.00	3.50
	Anxiety	83	1.76	0.94	0.00	4.00
	Dejection	83	0.81	0.82	0.00	3.40
	Excitement	83	3.24	0.74	0.50	4.00
	Happy	83	3.23	0.76	1.00	4.00
Self-Efficacy in Sport	Horse Dressage	40	8.16	1.33	4.44	10.00
	Horse Jump	55	8.23	1.28	3.70	10.00
	Self Dressage	40	7.89	1.33	5.20	10.00
	Self Jump	57	7.92	1.25	5.00	10.00
	Self	80	8.03	1.22	5.00	10.00
	Horse	79	8.37	1.17	3.70	10.00

Table 35 Correlations between Trait-Anxiety and State Emotion in competitive riding

	<i>Anger</i>	<i>Anxiety</i>	<i>Dejection</i>	<i>Excitement</i>	<i>Happy</i>
Concentration-Disruption	0.25*	0.35*	0.37*	-0.09	-0.06
Somatic-Anxiety	0.13	0.50*	0.13	-0.09	0.04
Worry	0.32*	0.53**	0.41*	-0.13	-0.11
Trait-Anxiety	0.30*	0.59**	0.38*	-0.13	-0.05

Association between State-Emotion in Competitive Riding with the Parent Initiated Motivational Climate (PIMC)

Correlations were calculated between the PIMC (for mothers and fathers) and: Trait-Anxiety; State-Emotion; and Self-Efficacy of the daughter. These correlations are summarized in Table 36.

Looking at the overall picture, it appears as if the motivational climate initiated by the mother had a more significant impact on the child's experience of Anxiety, State-Emotion and Self-Efficacy in her riding than that of the father. In this data set, this is not surprising as: 77.11% of participants stated their mother as being most involved in their riding; 13.25% stated that both parents were equally involved; and only 9.65% stated the father as being most involved in their riding.

Table 36 Correlations between PIMC and Trait-Anxiety, State-Emotion and Self-Efficacy in competitive riding

		<i>Trait-Anxiety</i>			<i>SES</i>					<i>Efficacy</i>	
		Concentration-Disruption	Somatic	Worry	Trait-Anxiety	Anger	Anxiety	Dejection	Excitement	Happy	Efficacy
Mother	Learn	-0.08	-0.27*	-0.17	-0.23	-0.07	0.02	-0.08	0.32*	0.36*	0.30*
	Success	0.09	0.27*	0.13	0.21	0.10	-0.02	0.15	-0.06	0.13	-0.16
	Worry	0.19	0.31*	0.44*	0.42*	-0.02	0.18	0.07	-0.15	-0.17	-0.32*
Father	Learn	0.08	-0.14	0.06	0.00	-0.01	0.12	0.08	0.04	0.11	0.04
	Success	0.08	0.18	0.09	0.15	-0.02	-0.10	0.05	-0.13	0.06	-0.05
	Worry	0.31*	0.19	0.40*	0.39*	0.13	0.17	0.25*	-0.10	-0.13	-0.25*

Mother: Enjoyment-in-Learning

The PIMC (Enjoyment-in-Learning) scores for the mother were significantly correlated with the Somatic-Anxiety subscale of the Trait-Anxiety scale; the Excitement and Happiness subscales of the SES; as well as Self-Efficacy..

There were also indications of some (albeit non-significant) negative correlation between the PIMC (Enjoyment-in-Learning) scores for the mother and the Worry subscale of the Trait-Anxiety scale and the overall Trait-Anxiety scale. Although these correlations were non-significant, they do show a negative association between PIMC (Enjoyment-in-Learning) and Worry and overall Trait-Anxiety.

These results indicate that, when mothers emphasize enjoyment in learning as a primary goal in their daughter's riding, Trait-Anxiety in competitive riding and more specifically Somatic-Anxiety, is reduced. Such an environment also appears to be associated with the rider's Happiness and Excitement in competitive riding. This environment is also associated with higher Self-Efficacy in competitive riding.

Mother: Success-without-Effort

The PIMC (Success-without-Effort) for the mother only showed a significant correlation with the Somatic-Anxiety subscale of the Trait-Anxiety scale. However, positive (albeit non-significant) correlations were also shown with the Worry subscale of the Trait-Anxiety scale and overall Trait-Anxiety. There were no significant correlations between PIMC (Success-without-Effort) for the mother, and the daughter's experience of State-Emotion in her riding. However, a small positive correlation was shown with Dejection. There was a small negative but non-significant correlation between PIMC (Success-without-Effort) and the rider's Self-Efficacy in her riding.

The implications of these results are that, when the mother attaches importance to the existence of innate ability and expects her daughter to succeed without putting much effort into her riding, the daughter shows higher levels of Trait-Anxiety with respect to competitive riding. The anxiety experienced is most likely to take the form of Somatic-Anxiety. For example, the daughter may take on bodily symptoms such as feeling weak or bilious before competing. The daughter is also likely to show lower levels of Self-Efficacy. This investigation showed no significant associations between the mother's emphasis on Success-without-Effort and the daughter's experience of State-Emotion in competitive riding.

Mother: Worry-Induction

The PIMC (Worry-Induction) scores for the mother showed a significant positive correlation with the overall Trait-Anxiety score. Significant correlations (at the 5% level) were also indicated with the Somatic-Anxiety and Worry subscales of the Trait-Anxiety scale. The correlation with the Concentration-Disruption subscale of the Trait-Anxiety scale was also positive, albeit non-significant.

There were no significant correlations with the subscales of the SES. However, Worry-Induction from the mother showed negative correlations with Excitement and Happiness

Worry-Induction by the mother also showed a negative and significant correlation (at the 5% level) with the daughter's Self-Efficacy in competitive riding.

The implications of these findings are that, when the mother creates an environment where the daughter worries about not meeting parental expectations and possible punishment of mistakes, the daughter is likely to experience higher levels of Trait-Anxiety about competitive riding. There is some indication that such an environment may also be associated with a reduction of Excitement and Happiness experienced by the daughter in her riding. Furthermore, the daughter will have lower levels of Self-Efficacy in her riding.

Father

The PIMC provided by the father showed far fewer significant results with the daughter's experience of Trait-Anxiety, State-Emotion and Self-Efficacy in competitive riding. There were no significant correlations with the Enjoyment-in-Learning and Success-without-Effort subscales of the PIMC.

On the other hand, the PIMC (Worry-Induction) scores for the father were significantly and positively correlated with the daughter's overall level of Trait-Anxiety in competitive riding. Significant correlations were also shown with the Concentration-Disruption and Worry scale of the Trait-Anxiety scale.

A significant positive correlation (at the 5% level) with the Dejection subscale of the SES scale was also reported. There were no other significant correlations with the other subscales of the SES. The PIMC (Worry-Induction) score for fathers showed a significant negative correlation with the daughter's Self-Efficacy in her riding.

The implications of these findings are that, where a father creates a motivational environment which causes his daughter to worry about her competitive riding, the daughter is likely to experience: (i) high levels of Trait-Anxiety; (ii) higher levels of Dejection; and (iii) lower levels of Self-Efficacy in competitive riding.

At first reading, there appears to be a contradiction between these findings and those from the earlier analysis where fathers were shown to cause a more worry inducing motivational climate and emphasis Success-without-Effort more than do mothers. These earlier findings may have lead us to believe that the PIMC created by the fathers would have higher

associations with Trait-Anxiety, Dejection and Anger than the PIMC created by the mother. However, it should be kept in mind that the mother is generally by far the more significant partner in creating the PIMC for the child. Therefore, when the mother does create a worry inducing environment or emphasizes success without effort, this will have a greater impact on the child's experience of State-Emotion, Trait-Anxiety and Self-Efficacy in competitive riding.

These results only show association not causality. In order to show causality we would need to create a predictive model and then set up an experiment to test the predictive model.

Association with the Rider's Goal Orientations

The earlier investigation into goal orientation revolved around the relationships amongst: the rider's goal orientation; her perception of her parents' orientation; the parents' own goal orientations; and the parents' goal orientations for the daughter. This investigation looks only at the rider's goal orientation and the relationships which exist between goal orientation and Self-Efficacy; State-Emotion; and Trait-Anxiety in competitive riding.

Goal Orientation: Association with Trait-Anxiety and Self-Efficacy

Correlations between the goal orientations and Trait-Anxiety and Self-Efficacy in competitive riding were calculated. These correlations are summarized in Table 37.

Table 37 Correlations between goal orientations and Trait-Anxiety and Self-Efficacy in competitive riding

Goal Orientation	<i>Trait-Anxiety</i>			<i>Self-Efficacy</i>
	Concentration-Disruption	Somatic	Worry	Self-Efficacy
Map	-0.05	0.05	0.04	0.26*
Mav	0.34*	0.30*	0.64*	-0.14
Pap	0.16	0.14	0.16	-0.02
Pav	0.32*	0.22*	0.31*	-0.25*

Both the avoidant orientations (Mav and Pav) indicated positive correlations (significant at the 5% level), with all three subscales of the Trait-Anxiety scale. The Mav orientation indicated a much higher correlation with Worry, the correlation being almost twice that of the correlation with Concentration-Disruption and Somatic-Anxiety.

The Map orientation showed no correlation with Trait-Anxiety in competitive riding. The Pap orientation showed small positive, albeit non-significant, correlations with all three subscales of the Trait-Anxiety scale.

The Map orientation showed a small but significant positive correlation (at the 5% level) with Self-Efficacy in competitive riding. The avoidant orientations, Mav and Pav, both showed small negative correlations with Self-Efficacy. However, only the Pav correlation was significant at the 5% level. The Pap orientation showed no correlation with Self-Efficacy.

The implications of the above results are that riders with high avoidant orientations are more prone to experience anxiety in competitive riding than those with higher approach orientations. Furthermore, where a rider has a high Pap orientation she will be more likely to experience anxiety in competitive riding than where a rider is high in the Map orientation.

The Map orientation was the only goal orientation which indicated a strong positive association with Self-Efficacy. Both the avoidant orientations displayed a negative association with Self-Efficacy. The Pap orientation appeared to be neutral with respect to Self-Efficacy. These findings are consistent with the proposals of Nicholls (1989) which stated that the negative aspects of the performance orientation are a result of low Self-Efficacy. These results indicate that the Mav orientation proposed by Elliot and McGregor (2001) is also characterized by low Self-Efficacy.

Goal orientations: Associations with State-Emotion

Correlations between the goal orientations and all five subscales of the SES were calculated. These correlations are summarized in Table 38.

The Map orientation showed positive and significant correlations (at the 5% level) with Excitement and Happiness in competitive riding. It was the only orientation to show a significant correlation with Excitement and Happiness.

Table 38 Correlations between goal orientation and State-Emotion

Goal Orientation	SES				
	Anger	Anxiety	Dejection	Excitement	Happy
Map	0.12	0.11	0.11	0.42*	0.25*
Mav	0.24*	0.36*	0.33*	0.06	0.06
Pap	0.14	0.18	0.21	0.08	0.10
Pav	0.26*	0.32*	0.32*	-0.02	0.08

The avoidant orientations (Mav and Pav) both showed positive correlations with Anger, Anxiety and Dejection which were significant at the 5% level. Although the approach orientations (Map and Pap) showed small positive correlations with Anger, Anxiety and Dejection none of these figures were significant at the 5% level.

These figures suggest that the riders exhibiting higher avoidant orientations are more likely to experience the negative emotions of Anger, Anxiety and Dejection in their riding than those riders who demonstrate a stronger approach orientation. On the other hand, riders with a mastery-approach orientation are more likely to experience Excitement and Happiness in competitive riding. The Pap orientation appears to be neutral with respect to State-Emotion in competitive riding.

Trait-Anxiety, State-Emotion and Self-Efficacy in competitive riding by goal profile

The final investigation carried out in this research was an examination of the association between goal profile and: Trait-Anxiety; State-Emotion; and Self-Efficacy; in competitive riding. First, the descriptive statistics grouped by goal profile are presented. Second, the results and discussion surrounding tests of the underlying assumptions of the intended statistical tests are presented. Finally, the actual test results and conclusions are presented.

Descriptive statistics

Descriptive statistics, grouped by the goal profiles emerging from the 7-cluster solution, were calculated for Trait-Anxiety, State-Emotion and Self-Efficacy in competitive riding. Also calculated, were means and standard deviations of age by goal profile and the percentage of team membership, for each goal profile.

Age

The average age and standard deviation were calculated for each profile. These results are summarized in Table 39.

Table 39 Average age by goal profile

<i>CLUSTER</i>	<i>Mean</i>	<i>Standard Deviation</i>
HiHiHiHi	12.8	0.7
HiMHiHi	14.2	0.8
HiLoHiLo	14.0	1.0
HiHiMHi	13.4	0.6
HiLoLoLo	13.3	0.7
HiMMLo	15.0	0.6
HiHiLoLo	13.6	0.8

The HiHiHiHi goal profile showed the lowest average age of 12.8 years while the HiMMLo profile showed the highest average age of 15 years. This implies a range of 2.2 years. This range appeared sufficiently wide to warrant testing the means for equality across the goal profiles. A one-way ANOVA test ($F(6,66) = 1.282$; $p = 0.2777$) indicated that there were no significant differences in average age across goal profiles. The statistical analysis is described in more detail below.

Hypothesis

$$H_0: \mu_{\text{HiHiHiHi}} = \mu_{\text{HiMHiHi}} = \mu_{\text{HiLoHiLo}} = \mu_{\text{HiHiMHi}} = \mu_{\text{HiLoLoLo}} = \mu_{\text{HiMMLo}} = \mu_{\text{HiHiLoLo}}$$

$$H_1: \text{NOT } (\mu_{\text{HiHiHiHi}} = \mu_{\text{HiMHiHi}} = \mu_{\text{HiLoHiLo}} = \mu_{\text{HiHiMHi}} = \mu_{\text{HiLoLoLo}} = \mu_{\text{HiMMLo}} = \mu_{\text{HiHiLoLo}})$$

Assumptions

Levene's test was carried out to test the data for homogeneity of variance. The result ($F(6,66) = 1.2821$; $p = 0.2777$) was non-significant, at the 5% level, indicating that the variances are equal.

A histogram of the ages was examined and they appeared to be a good approximation to the normal distribution.

Test

Details of the ANOVA results are illustrated in Table 40.

Table 40 ANOVA test results for age by goal profile

	SS	df	MS	F	p
Age	336.7	6	6.540	1.2821	0.2777

Conclusion

The p-value of 0.2777 indicated a non-significant result at the 5% level. This means that there is insufficient evidence to reject the null hypothesis (i.e. the average ages across the goal profiles may be considered to be the same).

A Multiple-R² of 0.1044 implies that age accounts for approximately 10% of the variation in goal profile.

Provincial team membership

Riding is a competitive sport where performance is often measured in terms of a child's ability to obtain a place on a provincial team. Team membership has, therefore, been used as a tool for identifying the "elite" riders in this sample. The proportion of members in each profile which had been members of teams in the last two years was calculated in an attempt to see if there were any observable difference amongst the percentage team membership across the profiles. These figures are summarized in Table 41.

Table 41 Proportion of members in provincial teams over the last two years

CLUSTER	Team Yes	Team No
HiHiHiHi	45.45%	54.55%
HiMHiHi	44.44%	55.56%
HiLoHiLo	100.00%	0.00%
HiHiMHi	28.57%	71.43%
HiLoLoLo	18.18%	81.82%
HiMMLo	86.67%	13.33%
HiHiLoLo	37.50%	62.50%

Overall, 51% of the girls in the sample had been members of some provincial team over the last two years. In the HiLoHiLo goal profile, 100% of its members reported that they had

ridden in teams over the last two years. The HiMMLo profile reported the next highest proportion of 86.67%. The lowest proportion of team members was reported in the HiLoLoLo (18.18%) profile followed by the HiHiMHi (28.57%) profile.

Trait-Anxiety (SAS-2)

Means and standard deviations were calculated for the Worry, Concentration-Disruption, and Somatic-Anxiety subscales of the SAS-2, for all seven of the goal profiles. These figures are summarized in Table 42.

Table 42 Descriptive statistics for Trait-Anxiety by goal profile

Cluster	N	<i>Concentration-Disruption</i>		<i>Somatic-Anxiety</i>		<i>Worry</i>	
		Mean	Std dev	Mean	Std dev	Mean	Std dev
HiHiHiHi	13	1.66	0.65	2.35	0.85	2.89	0.94
HiLoLoLo	11	1.25	0.34	1.58	0.35	1.44	0.36
HiMHiHi	11	1.27	0.47	2.18	0.75	1.84	0.54
HiHiMLo	17	1.28	0.43	2.04	0.72	2.25	0.88
HiHiLoLo	10	1.34	0.34	1.94	0.61	2.16	0.73
HiHiMHi	15	1.83	0.62	2.08	0.65	2.85	0.72
HiLoHiLo	5	1.20	0.28	1.40	0.47	1.32	0.30
All Groups	82	1.44	0.53	2.00	0.70	2.23	0.89

The highest level of Concentration-Disruption was shown by riders in the HiHiMHi profile (Mean = 1.83; sd. = 0.62). The standard deviation for this profile was the second largest indicating a fair amount of variability in the results. The second highest level of Concentration-Disruption was experienced by the HiHiHiHi profile (Mean = 1.66; sd. = 0.65) and this group showed the highest standard deviation. Thus, it appears that although these two groups showed the highest average scores in Concentration-Disruption, there was a lot of variability in these scores. The riders in the HiLoHiLo profile (Mean = 1.20; sd. = 0.20) showed the lowest mean levels of Concentration-Disruption and also showed the lowest variability in the scores. All the other profiles scored means of between 1.25 and 1.34 with standard deviations ranging from 0.34 to 0.47.

The highest level of Somatic-Anxiety was shown by the riders in the HiHiHiHi profile (Mean = 2.35; sd. = 0.85) who also showed the highest degree of variation in the scores. The lowest average level of Somatic-Anxiety was shown by the HiLoHiLo profile (Mean = 1.40; sd. = 0.47) which also showed the second lowest variability in scores. The lowest variability

in scores was shown by the HiLoLoLo profile (mean = 1.58; sd. = 0.35) which showed the second lowest mean level of Somatic-Anxiety. The remaining profiles showed means ranging from 1.94 to 2.18 and standard deviations ranging from 0.61 to 0.75.

The highest level of Worry was shown by the HiHiHiHi profile (mean = 2.89; sd. = 0.94), closely followed by the HiHiMHi profile (mean = 2.87; sd. = 0.72). The HiHiHiHi profile showed the most variability in scores followed by the HiHiMLo profile (mean = 2.25; sd. = 0.88). This profile showed the next highest mean level of Worry after the previous two goal profiles. The HiLoHiLo profile (mean = 1.32; sd. = 0.30) showed the lowest mean level of Worry and also showed the least variation in scores. The remaining profiles showed mean scores ranging from 1.44 to 2.16 and standard deviations ranging from 0.36 to 0.73.

Overall, it appears that the riders in the HiHiHiHi and HiHiMHi profiles demonstrated the highest levels of Trait-Anxiety. These two profiles also demonstrated an impressive amount of variability in the results. The HiLoHiLo profile clearly showed the lowest levels of Trait-Anxiety as well as the lowest levels of variability. This is particularly impressive since it is also the smallest goal profile and so higher levels of variability may be expected simply by virtue of the small sample size.

State-Emotion in Competitive Riding

Means and standard deviations were calculated for all five subscales of the SES, for all seven goal profiles. These figures are summarized in Table 43.

Table 43 Descriptive statistics for State-Emotion in competitive riding by goal profile

Cluster	<i>Anger</i>		<i>Anxiety</i>		<i>Dejection</i>		<i>Excitement</i>		<i>Happiness</i>	
	Mean	Std dev	Mean	Std dev	Mean	Std dev	Mean	Std dev	Mean	Std dev
HiHiHiHi	1.10	1.15	2.14	0.90	1.12	0.99	3.37	0.54	3.23	0.79
HiLoLoLo	0.41	0.89	0.89	0.77	0.38	0.48	2.89	0.96	2.95	0.95
HiMHiHi	0.70	0.58	1.95	0.86	0.80	0.72	3.20	0.86	2.93	0.90
HiHiMLo	0.75	0.60	1.66	0.84	0.73	0.69	3.57	0.52	3.38	0.75
HiHiLoLo	0.50	0.70	1.82	0.97	0.60	0.57	3.38	0.44	3.38	0.64
HiHiMHi	1.00	0.93	2.31	0.71	1.27	1.09	2.85	0.87	3.20	0.51
HiLoHiLo	0.50	0.59	1.16	1.06	0.40	0.47	3.40	0.65	3.60	0.76
All Groups	0.75	0.83	1.78	0.94	0.82	0.82	3.23	0.74	3.22	0.76

The highest level of Anger was shown by the HiHiHiHi profile (mean = 1.10; sd = 1.15) with next highest being shown by the HiHiMHi profile (mean = 1.00; sd. = 0.93). The lowest Anger scores were shown by the HiLoLoLo profile (mean = 0.41; sd. = 0.89) followed by the HiHiLoLo (mean = 0.50; sd. = 0.7) and the HiLoHiLo (mean = 0.50; sd. = 0.59) profiles.

The highest level of Anxiety was shown by the HiHiMHi profile (mean = 2.31; sd. = 0.71) followed by the HiHiHiHi profile (mean = 2.14; sd. = 0.90). The lowest level of State-Anxiety was shown by the HiLoLoLo profile (mean = 0.89; sd. = 0.77). The remaining profiles showed mean Anxiety scores ranging from 1.16 to 1.19.

The highest level of Dejection was shown by the HiHiMHi profile (mean = 1.27; sd. = 0.99) followed by the HiHiHiHi profile (mean = 1.12; sd. = 0.99). The lowest level of state Anxiety was shown by the HiLoLoLo profile (mean = 0.38; sd. = 0.48), closely followed by the HiLoHiLo profile (mean = 0.40; sd. = 0.47). The remaining profiles showed mean Anxiety scores ranging from 0.60 to 0.80.

The highest level of Excitement in competitive riding was shown by the HiHiMLo profile (mean = 3.57; sd. = 0.52). The lowest level of Excitement in competitive riding was shown by the HiHiMHi profile (mean = 2.85; sd. = 0.87) with the HiLoLoLo profile (mean = 2.89; sd. = 0.96) showing the next lowest level of Excitement. The remaining profiles showed means scores of Excitement ranging from 3.20 to 3.40. This result is of particular interest as the only difference between the goal profiles showing the highest and lowest levels of excitement is the level of the Pav orientation (high Pav→ high excitement; low Pav→ low excitement).

The highest level of Happiness in competitive riding was shown by the HiLoHiLo profile (mean = 3.60; sd. = 0.76). The lowest level of Happiness was shown by the HiHiMHi profile (mean = 3.20; sd. = 0.51), closely followed by the HiHiHiHi profile (mean = 3.23; sd. = 0.79). The remaining profiles showed means scores of Excitement ranging from 2.93 to 3.38.

Overall, the highest levels of Anger, Anxiety and Dejection in competitive riding were shown by either the HiHiHiHi or HiHiMHi profiles with the other taking second place. The lowest scores in these subscales were shown by either the HiLoHiLo or the HiLoLoLo profiles. The HiHiMHi profile scored one of the lowest two spots in Excitement and Happiness and the HiHiHiHi profile scored the second lowest in Happiness and Excitement.

The implication of these findings is that the HiHiHiHi and HiHiMHi profiles were the most emotionally vulnerable goal profiles in this sample. On the other hand, the HiLoHiLo goal profile appeared to be the most emotionally robust goal profile. This profile consistently showed one of the lowest scores in the Anger, Anxiety and Dejection subscales and the highest score in Happiness subscale. The HiLoLoLo profile also appeared to be a fairly emotionally robust profile, as it showed low levels of Anxiety, Anger and Dejection. However, riders in this profile did not exhibit the high levels of Excitement and Happiness in competitive riding shown by the HiLoHiLo profile.

Self-Efficacy

Mean levels and standard deviations of Self-Efficacy were calculated for all seven of the goal profiles. These figures are summarized in Table 44.

Table 44 Descriptive statistics for Self-Efficacy by goal profile

<i>Cluster</i>	<i>N</i>	<i>Mean</i>	<i>Std dev</i>
HiHiHiHi	13	7.22	2.39
HiLoLoLo	11	7.94	1.44
HiMHiHi	11	7.26	2.58
HiHiMLo	17	8.19	1.35
HiHiLoLo	10	8.60	0.49
HiHiMHi	15	6.78	2.26
HiLoHiLo	5	9.36	0.51
All Groups	82	7.74	1.94

The highest mean level of Self-Efficacy was shown by the HiLoHiLo goal profile (mean = 9.36; sd. = 0.51). This profile also showed the second lowest standard deviation in scores. The lowest level of variability in score was shown by the HiHiLoLo goal profile (mean = 8.6; sd. = 0.49) which also showed the second highest level of Self-Efficacy. The lowest level of Self-Efficacy was shown by the HiHiMHi goal profile (mean = 6.78; sd. = 0.2.26). This profile also showed a fair amount of variability in score. The highest variability was shown by the HiMHiHi goal profile (mean = 7.26; sd. = 2.58) followed by the HiHiHiHi goal profile (mean = 7.22; sd. = 2.39). These profiles showed the third and second lowest (respectively) mean Self-Efficacy scores. The remaining goal profiles showed mean Self-Efficacy scores ranging from 7.94 to 8.19 with standard deviations ranging from 1.35 to 2.26.

Once again, it appears that the HiLoHiLo profile emerges as the most robust goal profile and the HiHiHiHi and HiHiMHi (this time joined by the HiMHiHi profile) profiles emerging as being more vulnerable with regards to Self-Efficacy in the competitive riding environment.

The descriptive statistics have revealed a number of impressive features regarding the associations between goal profile and the riders' experience of State-Emotion, Trait-Anxiety and Self-Efficacy in competitive riding. The next section applies formal statistical tests to these differences in order to supply numerical evidence that these differences actually exist rather than simply emerge by chance.

Analysis of means

The aim of the statistical tests was to examine the observations about the means in the previous sections in order to ascertain whether there was sufficient numerical evidence that the patterns emerging are genuine or simply random effects. This section is divided into three parts:

- i. The analysis of riders' Trait-Anxiety in competitive riding.
- ii. The analysis of the riders' State-Emotion in competitive riding.
- iii. The analysis of the riders' sense of Self-Efficacy in competitive riding.

Within each part, the data is first tested for its ability to meet the assumptions underling the tests to be used, then the results of the statistical tests and conclusions are presented.

Trait-Anxiety

The analysis of the mean levels of Trait-Anxiety in competitive riding by goal profile was carried out using a one-way MANOVA test.

Hypotheses

The following hypotheses were tested.

The main hypothesis tested was the multivariate hypothesis.

$$H_0: \mu_{HHHH} = \mu_{HMHH} = \mu_{HLHL} = \mu_{HHMH} = \mu_{HLLL} = \mu_{HiMML} = \mu_{HHLL} = \mu$$

$$H_1: \sim (\mu_{HHHH} = \mu_{HMHH} = \mu_{HLHL} = \mu_{HHMH} = \mu_{HLLL} = \mu_{HiMML} = \mu_{HHLL} = \mu)$$

Where ${}^{\text{SAS}}\mu_{\text{HiHiHiHiHi}}$ is the 3-vector of all the subscales of the SAS-2 scale for the HiHiHiHiHi goal profile. ${}^{\text{SAS}}\mu$ is the 3-vector of the means of all the subscales of the SAS-2 scale for the whole dataset.

The univariate results test the following hypotheses.

The first hypothesis relates to the Concentration-Disruption subscale of the SAS-2 scale. The null hypothesis states that the mean levels of Concentration Disruption are equal in all goal profiles. The alternate hypothesis states that not all the mean levels of Concentration Disruption are the same across goal profiles.

$${}^{\text{con}}H_0: {}^{\text{con}}\mu_{\text{HiHiHiHiHi}} = {}^{\text{con}}\mu_{\text{HiMHiHiHiHi}} = {}^{\text{con}}\mu_{\text{HiLoHiLo}} = {}^{\text{con}}\mu_{\text{HiHiHiMH}} = {}^{\text{con}}\mu_{\text{HiLoLoLo}} = {}^{\text{con}}\mu_{\text{HiMMLo}} = {}^{\text{con}}\mu_{\text{HiHiLoLo}}$$

$${}^{\text{con}}H_1: \sim ({}^{\text{con}}\mu_{\text{HiHiHiHiHi}} = {}^{\text{con}}\mu_{\text{HiMHiHiHiHi}} = {}^{\text{con}}\mu_{\text{HiLoHiLo}} = {}^{\text{con}}\mu_{\text{HiHiHiMH}} = {}^{\text{con}}\mu_{\text{HiLoLoLo}} = {}^{\text{con}}\mu_{\text{HiMMLo}} = {}^{\text{con}}\mu_{\text{HiHiLoLo}})$$

The second hypothesis relates to the Worry subscale of the SAS-2 scale. The null hypothesis states that the mean levels of Worry are equal in all goal profiles. The alternate hypothesis states that not all the mean levels of Worry are the same across goal profiles.

$${}^{\text{wor}}H_0: {}^{\text{wor}}\mu_{\text{HiHiHiHiHi}} = {}^{\text{wor}}\mu_{\text{HiMHiHiHiHi}} = {}^{\text{wor}}\mu_{\text{HiLoHiLo}} = {}^{\text{wor}}\mu_{\text{HiHiHiMH}} = {}^{\text{wor}}\mu_{\text{HiLoLoLo}} = {}^{\text{wor}}\mu_{\text{HiMMLo}} = {}^{\text{wor}}\mu_{\text{HiHiLoLo}}$$

$${}^{\text{wor}}H_1: \sim ({}^{\text{wor}}\mu_{\text{HiHiHiHiHi}} = {}^{\text{wor}}\mu_{\text{HiMHiHiHiHi}} = {}^{\text{wor}}\mu_{\text{HiLoHiLo}} = {}^{\text{wor}}\mu_{\text{HiHiHiMH}} = {}^{\text{wor}}\mu_{\text{HiLoLoLo}} = {}^{\text{wor}}\mu_{\text{HiMMLo}} = {}^{\text{wor}}\mu_{\text{HiHiLoLo}})$$

The third hypothesis relates to the Somatic-Anxiety subscale of the SAS-2 scale. The null hypothesis states that the mean levels of Somatic-Anxiety are equal in all goal profiles. The alternate hypothesis states that not all the mean levels of Anxiety are the same across goal profiles.

$${}^{\text{anx}}H_0: {}^{\text{anx}}\mu_{\text{HiHiHiHiHi}} = {}^{\text{anx}}\mu_{\text{HiMHiHiHiHi}} = {}^{\text{anx}}\mu_{\text{HiLoHiLo}} = {}^{\text{anx}}\mu_{\text{HiHiHiMH}} = {}^{\text{anx}}\mu_{\text{HiLoLoLo}} = {}^{\text{anx}}\mu_{\text{HiMMLo}} = {}^{\text{anx}}\mu_{\text{HiHiLoLo}}$$

$${}^{\text{anx}}H_1: \sim ({}^{\text{anx}}\mu_{\text{HiHiHiHiHi}} = {}^{\text{anx}}\mu_{\text{HiMHiHiHiHi}} = {}^{\text{anx}}\mu_{\text{HiLoHiLo}} = {}^{\text{anx}}\mu_{\text{HiHiHiMH}} = {}^{\text{anx}}\mu_{\text{HiLoLoLo}} = {}^{\text{anx}}\mu_{\text{HiMMLo}} = {}^{\text{anx}}\mu_{\text{HiHiLoLo}})$$

Assumptions

The assumptions which were tested were:

- (i) The equality of covariance matrices (MANOVA) using the Box-M test.
- (ii) Homogeneity of variance (ANOVA) using Levene's test.

- (iii) Correlations of means with standard deviations using Pearson's correlation coefficient.
- (iv) Normal distribution of data inspection of histograms and normal p-plots.

The Box M statistic was calculated to test for equality of covariance matrices. The results (Box M(df = 36) = 68.09; $p = 0.01$) indicated that there was sufficient numerical evidence to refute the assumption that the covariance matrices are equal.

Histograms of the data were inspected and both the Somatic-Anxiety and Worry subscales were found to adhere sufficiently well to the normal distribution. However, the Concentration-Disruption subscale was distinctly skewed to the left.

Notwithstanding findings that Pillai's trace is fairly robust with respect to contravention of equality of covariance matrices (Olsen, 1979), the evidence against the assumption was sufficiently great to cause concern about the increased possibility of a Type 1 error. With this in mind the results were analyzed with a reduced $\alpha = 2.5\%$.

Levene's test was carried out to test for homogeneity of variances. These results are summarized in Table 45. Non-significant results were reported for the Concentration-Disruption and Somatic-Anxiety subscales. However, a significant result ($F = 2.274$; $p = 0.0453$) was reported on the Worry subscale.

Table 45 Levene's test for Trait-Anxiety subscales by goal profile

	<i>MS Effect</i>	<i>MS Error</i>	<i>F</i>	<i>p</i>
Concentration-Disruption	0.1383	0.0782	1.7685	0.1171
Somatic-Anxiety	0.2382	0.1462	1.6297	0.1507
Worry	0.3723	0.1637	2.2740	0.0453

Since the distribution of the Worry data was more or less normal and the deviation from homogeneity of variance did not appear extreme (no single sd. more than 4x any other sd.), univariate results were calculated using the parametric ANOVA. On the Somatic-Anxiety subscale, both assumptions were sufficiently met for the parametric ANOVA test. On the Concentration-Disruption subscale the homogeneity of variance assumption was met but there was indication that the data was sufficiently skewed to cast doubt on the validity of the

ANOVA univariate results. Consequently this result was confirmed using the non-parametric Kruskal-Wallis ANOVA.

Tests

The results of the MANOVA (Pillai's trace = 0.5731; $F(18, 207) = 2.9516$; $p = 0.0001$) indicated that there is numerical evidence, at the 2.5% level, that goal orientation profile is associated with the Trait-Anxiety in sport construct. The results of the multivariate analysis are summarized in Table 46

Table 46 MANOVA results on Trait-Anxiety by goal profile

<i>Test</i>	<i>Value</i>	<i>F</i>	<i>Effect df</i>	<i>Error df</i>	<i>p</i>
Wilks	0.4961	3.23	18	206.96	0.00002
Pillai's Trace	0.5731	2.95	18	225.00	0.00009

The univariate results are illustrated in Table 47.

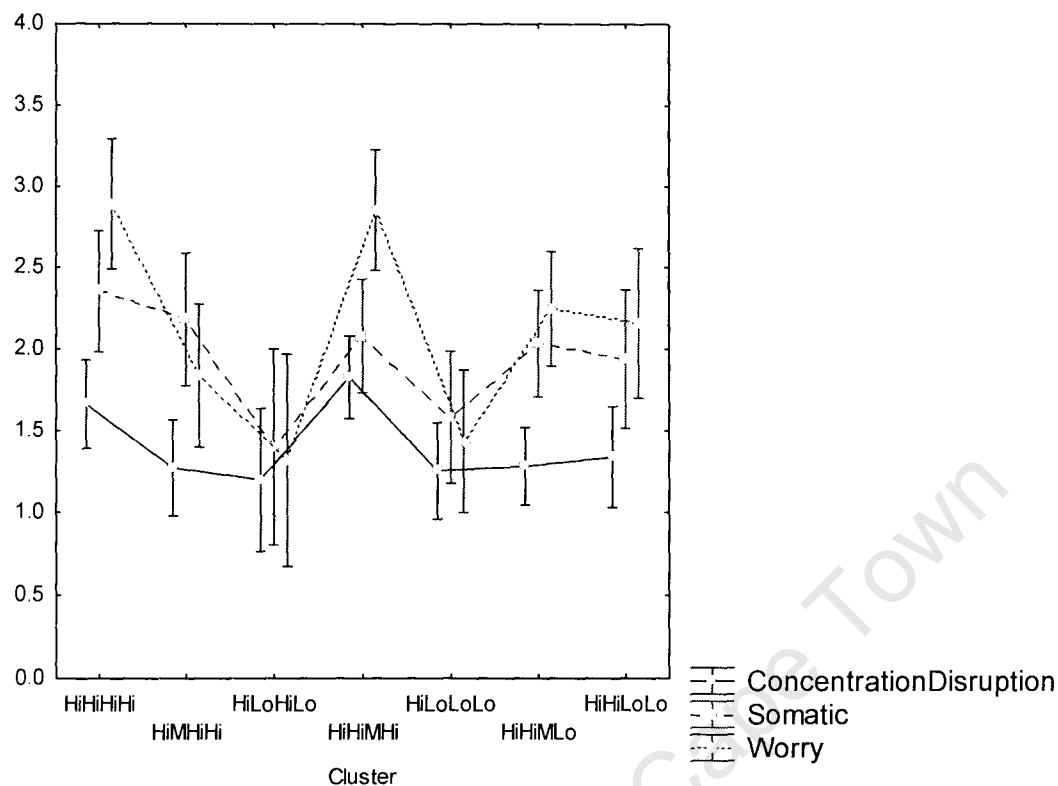
Table 47 Results of univariate analysis on sub scales of Trait-Anxiety in sport

	<i>Multiple R²</i>	<i>SS</i>	<i>df</i>	<i>F</i>	<i>p</i>
Concentration-Disruption	0.4417	18.058	75	3.03	0.0104
Somatic-Anxiety	0.3836	90.0119	75	2.16	0.0567
Worry	0.6169	39.6518	75	7.68	0.0001

The Kruskal-Wallis result for Concentration Disruption ($H(6,82) = 14.862$; $p = 0.0214$) confirmed the significant result of the parametric ANOVA test.

The effect size (Multiple- $R^2 = 0.6169$) for the Worry subscale indicates that a substantial amount of the variability in the Worry score is associated with the goal profile to which the participant belongs. Concentration Disruption (Multiple- $R^2 = 0.4419$ and Somatic Anxiety (Multiple- $R^2 = 0.3836$) showed smaller effect sizes. However, these figures still indicate that a fairly impressive proportion of the variability in the Trait-Anxiety subscales may be considered a function of goal profile.

A graphical illustration (Graph 5) of the means across the goal orientation was examined in order to gain further information about how the association between goal orientation profile and Trait-Anxiety may be manifesting.

Graph 5 Graphical illustration of Trait-Anxiety across goal orientation profiles

These results provide numerical evidence which confirms the observations that the HiLoHiLo and HiLoLoLo goal orientation profiles are the more robust competition profiles with respect to experience of Trait-Anxiety in competitive riding. On the other hand, the HiHiHiHi and the HiHiMHi goal profiles appear to be the vulnerable profiles showing higher levels of Anxiety, Anger and Dejection in competition.

State-Emotion-in-Sport

The analysis of the mean levels of State-Emotion in competitive riding by goal profile was carried out using a one-way MANOVA test.

Hypotheses

The following hypotheses were tested.

The main hypothesis tested is the multivariate hypothesis which aimed to answer the question of whether the mean levels of emotion are the same across all the goal profiles. This is formalized in the following hypotheses.

$${}^{\text{SES}}H_0: {}^{\text{SES}}\mu_{\text{HHHHH}} = {}^{\text{SES}}\mu_{\text{HMHMH}} = {}^{\text{SES}}\mu_{\text{HLHL}} = {}^{\text{SES}}\mu_{\text{HHMH}} = {}^{\text{SES}}\mu_{\text{HLLL}} = {}^{\text{SES}}\mu_{\text{HiMML}} = {}^{\text{SES}}\mu_{\text{HHLL}} = {}^{\text{SES}}\mu$$

$${}^{\text{SES}}H_1: \sim ({}^{\text{SES}}\mu_{\text{HHHHH}} = {}^{\text{SES}}\mu_{\text{HMHMH}} = {}^{\text{SES}}\mu_{\text{HLHL}} = {}^{\text{SES}}\mu_{\text{HHMH}} = {}^{\text{SES}}\mu_{\text{HLLL}} = {}^{\text{SES}}\mu_{\text{HiMML}} = {}^{\text{SES}}\mu_{\text{HHLL}} = {}^{\text{SES}}\mu)$$

Where ${}^{\text{SES}}\mu_{\text{HHHHH}}$ is the 5-vector of the means of all the subscales of the SES scale for the HiHiHi profile. ${}^{\text{SES}}\mu$ is the 5-vector of the means of all the subscales of the SES scale for the whole dataset.

The univariate results test the following hypotheses:

The first hypothesis relates to the Anger subscale of the SES scale. The null hypothesis states that the mean levels of anger are equal in all goal profiles. The alternate hypothesis states that not all the mean levels of anger are the same across goal profiles.

$${}^{\text{ang}}H_0: {}^{\text{ang}}\mu_{\text{HiHiHiHiHi}} = {}^{\text{ang}}\mu_{\text{HiMHiHiHi}} = {}^{\text{ang}}\mu_{\text{HiLoHiLo}} = {}^{\text{ang}}\mu_{\text{HiHiMH}} = {}^{\text{ang}}\mu_{\text{HiLoLoLo}} = {}^{\text{ang}}\mu_{\text{HiMMLo}} = {}^{\text{ang}}\mu_{\text{HiHiLoLo}}$$

$${}^{\text{ang}}H_1: \sim ({}^{\text{ang}}\mu_{\text{HiHiHiHiHi}} = {}^{\text{ang}}\mu_{\text{HiMHiHiHi}} = {}^{\text{ang}}\mu_{\text{HiLoHiLo}} = {}^{\text{ang}}\mu_{\text{HiHiMH}} = {}^{\text{ang}}\mu_{\text{HiLoLoLo}} = {}^{\text{ang}}\mu_{\text{HiMMLo}} = {}^{\text{ang}}\mu_{\text{HiHiLoLo}})$$

The second hypothesis relates to the Dejection subscale of the SES scale. The null hypothesis states that the mean levels of Dejection are equal in all goal profiles. The alternate hypothesis states that not all the mean levels of Dejection are the same across goal profiles.

$${}^{\text{dej}}H_0: {}^{\text{dej}}\mu_{\text{HiHiHiHiHi}} = {}^{\text{dej}}\mu_{\text{HiMHiHiHi}} = {}^{\text{dej}}\mu_{\text{HiLoHiLo}} = {}^{\text{dej}}\mu_{\text{HiHiMH}} = {}^{\text{dej}}\mu_{\text{HiLoLoLo}} = {}^{\text{dej}}\mu_{\text{HiMMLo}} = {}^{\text{dej}}\mu_{\text{HiHiLoLo}}$$

$${}^{\text{dej}}H_1: \sim ({}^{\text{dej}}\mu_{\text{HiHiHiHiHi}} = {}^{\text{dej}}\mu_{\text{HiMHiHiHi}} = {}^{\text{dej}}\mu_{\text{HiLoHiLo}} = {}^{\text{dej}}\mu_{\text{HiHiMH}} = {}^{\text{dej}}\mu_{\text{HiLoLoLo}} = {}^{\text{dej}}\mu_{\text{HiMMLo}} = {}^{\text{dej}}\mu_{\text{HiHiLoLo}})$$

The third hypothesis relates to the Anxiety subscale of the SES scale. The null hypothesis states that the mean levels of Anxiety are equal in all goal profiles. The alternate hypothesis states that not all the mean levels of Anxiety are the same across goal profiles.

$${}^{\text{anx}}H_0: {}^{\text{anx}}\mu_{\text{HiHiHiHiHi}} = {}^{\text{anx}}\mu_{\text{HiMHiHiHi}} = {}^{\text{anx}}\mu_{\text{HiLoHiLo}} = {}^{\text{anx}}\mu_{\text{HiHiMH}} = {}^{\text{anx}}\mu_{\text{HiLoLoLo}} = {}^{\text{anx}}\mu_{\text{HiMMLo}} = {}^{\text{anx}}\mu_{\text{HiHiLoLo}}$$

$${}^{\text{anx}}H_1: \sim ({}^{\text{anx}}\mu_{\text{HiHiHiHiHi}} = {}^{\text{anx}}\mu_{\text{HiMHiHiHi}} = {}^{\text{anx}}\mu_{\text{HiLoHiLo}} = {}^{\text{anx}}\mu_{\text{HiHiMH}} = {}^{\text{anx}}\mu_{\text{HiLoLoLo}} = {}^{\text{anx}}\mu_{\text{HiMMLo}} = {}^{\text{anx}}\mu_{\text{HiHiLoLo}})$$

The fourth hypothesis relates to the Happiness subscale of the SES scale. The null hypothesis states that the mean levels of Happiness are equal in all goal profiles. The alternate hypothesis states that not all the mean levels of Happiness are the same across goal profiles.

$${}^{\text{hap}}H_0: {}^{\text{hap}}\mu_{\text{HiHiHiHiHi}} = {}^{\text{hap}}\mu_{\text{HiMHiHiHi}} = {}^{\text{hap}}\mu_{\text{HiLoHiLo}} = {}^{\text{hap}}\mu_{\text{HiHiMH}} = {}^{\text{hap}}\mu_{\text{HiLoLoLo}} = {}^{\text{hap}}\mu_{\text{HiMMLo}} = {}^{\text{hap}}\mu_{\text{HiHiLoLo}}$$

$${}^{\text{hap}}H_1: \sim (\mu_{\text{HiHiHiHi}}^{\text{hap}} = \mu_{\text{HiMHiHi}}^{\text{hap}} = \mu_{\text{HiLoHiLo}}^{\text{hap}} = \mu_{\text{HiHiMH}}^{\text{hap}} = \mu_{\text{HiLoLoLo}}^{\text{hap}} = \mu_{\text{HiMMLo}}^{\text{hap}} = \mu_{\text{HiHiLoLo}}^{\text{hap}})$$

The last hypothesis relates to the Excitement subscale of the SES scale. The null hypothesis states that the mean levels of Excitement are equal in all goal profiles. The alternate hypothesis states that not all the mean levels of Excitement are the same across goal profiles.

$${}^{\text{exc}}H_0: \mu_{\text{HiHiHiHi}}^{\text{exc}} = \mu_{\text{HiMHiHi}}^{\text{exc}} = \mu_{\text{HiLoHiLo}}^{\text{exc}} = \mu_{\text{HiHiMH}}^{\text{exc}} = \mu_{\text{HiLoLoLo}}^{\text{exc}} = \mu_{\text{HiMMLo}}^{\text{exc}} = \mu_{\text{HiHiLoLo}}^{\text{exc}}$$

$${}^{\text{exc}}H_1: \sim (\mu_{\text{HiHiHiHi}}^{\text{exc}} = \mu_{\text{HiMHiHi}}^{\text{exc}} = \mu_{\text{HiLoHiLo}}^{\text{exc}} = \mu_{\text{HiHiMH}}^{\text{exc}} = \mu_{\text{HiLoLoLo}}^{\text{exc}} = \mu_{\text{HiMMLo}}^{\text{exc}} = \mu_{\text{HiHiLoLo}}^{\text{exc}})$$

Assumptions

The assumptions which were tested were:

- (i) Equality of covariance matrices using the Box M test
- (ii) Normal distribution of data was tested by inspection of histograms and normal p-plots.

The Box M test statistic could not be calculated due to singularity of the covariance matrix. This problem was tracked down to the Anger variable which was removed. The Box M test was run for the remaining variables (Box M(df = 60) = 90.74; p = 0.082) from which a non-significant result was returned. Thus, we may assume that the covariances for the remaining variables are equal.

The data were also tested for adherence to the normal distribution. There was some indication that the data was skewed to the left in the Happiness and Excitement variables, and slightly skewed to the right in the Dejection variable (see Appendix 3). However, the ANOVA/MANOVA test is known to be reasonably robust; with respect to this assumption, particularly where Pillai's trace is used, so it was decided to continue with the analysis (Holmes, 2005; Olson, 1979).

Homogeneity of variances was tested using Levene's test. Significant results were reported for the Anger subscale (F = 2.321; p = 0.0414) and the Dejection subscale (F = 2.771; p = 0.0173). The deviation from homogeneity is small enough in the anger subscale to continue with the ANOVA test. However, the deviation from homogeneity on the Dejection subscale appears to be sufficiently large to justify using the Kruskal-Wallis test particularly given the degree to which the data was skewed.

Table 48 Levene's test on State-Emotion by goal profile

	<i>MS Effect</i>	<i>MS Error</i>	<i>F</i>	<i>p</i>
Anger	0.5369	0.2313	2.3212	0.0414
Anxiety	0.1323	0.2078	0.6364	0.7007
Dejection	0.4832	0.1744	2.7713	0.0173
Excitement	0.2454	0.1750	1.4027	0.2248
Happy	0.3081	0.1972	1.5624	0.1700

Test

The results of the MANOVA on the SES scale excluding Anger (Pillai's Trace = 0.5525; $F(30,286) = 1.9460$, $p = 0.0085$) indicated a statistically significant result at the 5% level. When anger was included, the results (Pillai's Trace = 0.5533; $F(30,286) = 1.882$, $p = 0.0340$) were still significant at the 5% level. Thus, we can reject the null hypothesis and accept the alternate hypothesis that State-Emotion in competitive riding does vary amongst goal profiles. The multivariate results are summarized in Table 49.

Table 49 Multivariate results for State-Emotion by goal profile.

	<i>Test</i>	<i>Value</i>	<i>F</i>	<i>Effect</i>	<i>p</i>
Cluster	Wilks	0.5342	1.6179	30	0.0250
	Pillai's Trace	0.5533	1.5555	30	0.0340

The univariate results were also calculated. The only significant result (at the 5% level) found was for the Anxiety subscale ($F(75,6) = 3.927$; $p = .0018$). The univariate results are summarized in Table 50.

Table 50 Univariate results for State-Emotion by goal profile

	<i>Multiple R²</i>	<i>SS Model</i>	<i>df Model</i>	<i>MS</i>	<i>SS Residual</i>	<i>df Residual</i>	<i>MS Residual</i>	<i>F</i>	<i>p</i>
Anger	0.0852	4.7331	6	0.7888	50.8287	75	0.6777	1.1640	0.3347
Anxiety	0.2391	17.0269	6	2.8378	54.1939	75	0.7226	3.9273	0.0018
Dejection	0.1424	7.8080	6	1.3013	47.0081	75	0.6268	2.0762	0.0660
Excitement	0.1357	6.0711	6	1.0118	38.6515	75	0.5154	1.9634	0.0816
Happy	0.0671	3.1065	6	0.5177	43.1923	75	0.5759	0.8990	0.5003

The univariate test on the Dejection subscale was recalculated using the Kruskal-Wallis ANOVA. The results ($H(6,82) = 9.09$; $p = 0.1686$) confirmed the non-significant results of the parametric ANOVA.

The fact that only one of the subscales shows a significant result in the univariate results should not detract from the multivariate result which indicates that there are significant differences in State-Emotion in competitive riding across goal profiles. The more interesting result which arises from the univariate results is the effect sizes (Multiple- R^2). On the Anxiety subscale, the effect size of 0.2392 implies that approximately 24% of the variability in anxiety experienced by the girls in competitive riding is determined by their goal profile. In the Dejection and Excitement subscales, effect size of approximately 14% implies that a fair amount of the variability in these emotions is related to the girls' goal profiles. However, in the Anger and Happiness subscales, the smaller effect sizes of 9% and 7% respectively indicate that the variability of these emotions is less a function of goal profile.

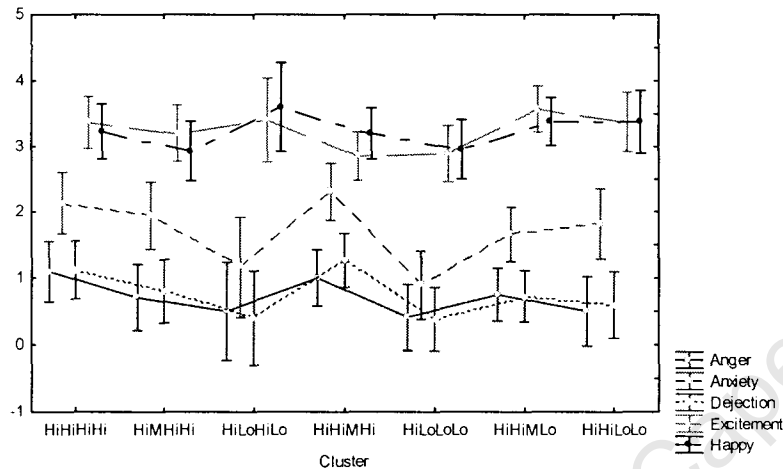
Conclusion

The cluster means were examined graphically to try and gain more information about how this association may be working. Graph 6 Cluster means used in MANOVA summarizes the cluster means used in the above tests. The most striking feature of this graph is the lower levels of Anxiety experienced by the HiLoHiLo and HiLoLoLo clusters. Since these are the only two clusters which are "Lo" in the avoidant orientations, it may be proposed that a low avoidant orientation helps prevent high levels of Anxiety. A further point of interest is that the highest level of Anxiety is shown by the HiHiMHi cluster which is the only cluster where an avoidant orientation is indicated to be higher than the approach orientation (i.e. Performance-approach is "M" and performance avoid is "Hi"). A similar but not so distinct pattern is shown for Dejection. The cluster HiHiHiHi also indicates fairly high levels of Anxiety and Dejection being the second highest score after the HiHiMHi cluster. Since these are the only two clusters which are "Hi" in both avoidant orientations, this adds to the evidence that a high avoidant orientation is associated with higher levels of negative emotion.

The patterns for Anger and Dejection showed a similar but less extreme pattern to that showed by Anxiety (i.e. lower levels of Anger and Dejection were shown for the HiLoHiLo and HiLoLoLo goal orientation profiles and a higher level of Anger and Dejection were shown by the HiHiMHi goal orientation profile).

The HiLoHiLo cluster showed the highest levels of Happiness and the second highest level of Excitement in competition. However, the HiLoLoLo profile showed lower than average levels of Happiness and Excitement in competition. Due to the low level of variation in the Happiness and Excitement subscales across clusters, it was not feasible to make any further meaningful observations.

Graph 6 Cluster means used in MANOVA



These results confirm the observations that the HiLoHiLo goal orientation profile is the optimal emotional competition profile indicating low levels of Anxiety, Anger and Dejection and high levels of Happiness and Excitement. On the other hand, the HiHiHiHi and the HiHiMHi goal profiles appear to be the most vulnerable profiles showing higher levels of Anxiety, Anger and Dejection in competition.

Self-Efficacy

In order to test the observed differences in means of Self-Efficacy by goal profile, a one-way ANOVA test was used.

The null hypothesis stated that the mean levels of Self-Efficacy were equal in all goal profiles. The alternate hypothesis stated that not all the mean levels of Concentration Disruption were the same across goal profiles.

$$H_0^{sef}: \mu_{HiHiHiHi}^{sef} = \mu_{HiMHiHi}^{sef} = \mu_{HiLoHiLo}^{sef} = \mu_{HiHiMHi}^{sef} = \mu_{HiLoLoLo}^{sef} = \mu_{HiMMLo}^{sef} = \mu_{HiHiLoLo}^{sef}$$

$$H_1^{sef}: \sim (\mu_{HiHiHiHi}^{sef} = \mu_{HiMHiHi}^{sef} = \mu_{HiLoHiLo}^{sef} = \mu_{HiHiMHi}^{sef} = \mu_{HiLoLoLo}^{sef} = \mu_{HiMMLo}^{sef} = \mu_{HiHiLoLo}^{sef})$$

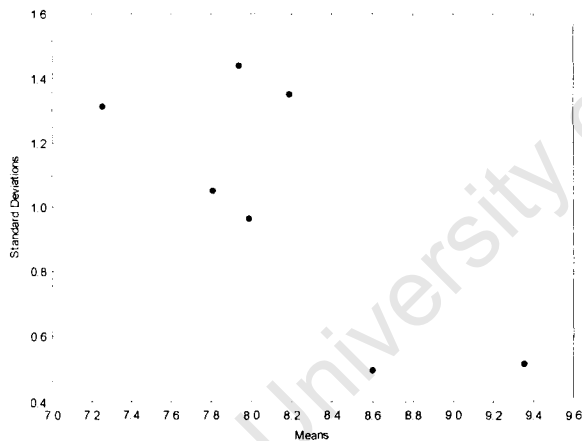
Assumptions

Before the ANOVA test was applied, the data was tested for the degree to which it met the underlying assumptions of the ANOVA. The assumptions tested were:

- (i) Homogeneity of variance using Levene's test.
- (ii) The normal distribution of data was tested by inspection of histograms and normal p-plots.

The results ($F(6,72) = 2.398$; $p = 0.0361$) of Levene's test give sufficient numerical evidence that the homogeneity of variance assumption may not hold. Since the ANOVA test is fairly robust to contravention of this assumption when means are not correlated with the standard deviation, these were checked via examination of plot of mean against standard deviation (see Graph 7).

Graph 7 Scatterplot of means vs. standard deviation for Self-Efficacy



This exercise revealed a possible (but small) negative correlation between mean and standard deviation. The two higher means, which also seem to be outliers, have lower variance than the average. This means that they will contribute less to the F-statistic leading to a lower probability of a Type 1 error. It was therefore decided to continue with the parametric ANOVA.

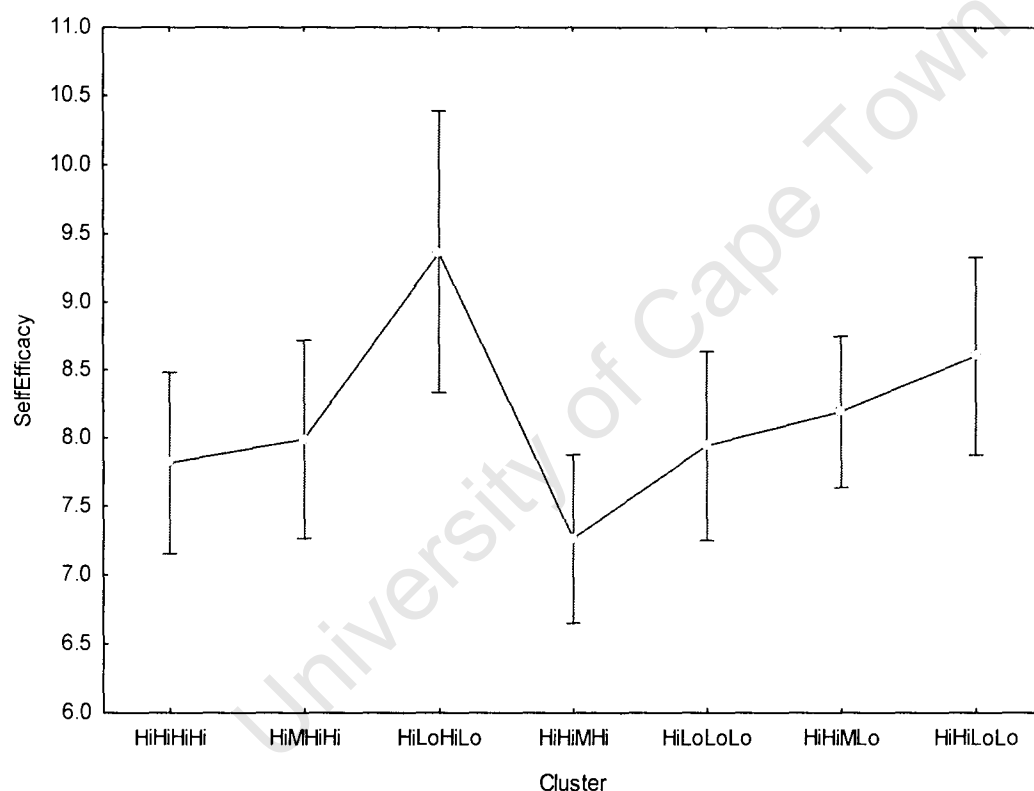
A histogram of the distribution of Self-Efficacy was inspected and it was found that the data was more or less normally distributed.

Test

The results ($F(6,72) = 2,687$; $p = 0.0021$) indicated, at the 5% level, that there is a significant difference between the mean Self-Efficacy scores across goal orientation profile. The Multiple- R^2 of 0.183 was reported indicating that goal orientation profile accounts for 18.3% of the variability in self-efficacy in competitive riding.

The cluster means were examined graphically (see Graph 8) to ascertain how the association of the goal orientation profiles and Self-Efficacy was manifesting.

Graph 8 Mean scores of Self-Efficacy across goal orientation profiles



Inspection of the graph indicates that the highest levels of Self-Efficacy are found in the HiLoHiLo goal profile. The next highest level of Self-Efficacy is found in the HiHiLoLo goal orientation profile. The lowest levels of Self-Efficacy is found in the HiHiMHi goal orientation profile which is the only profile where an avoidant orientation is higher than the approach orientation. There is little difference between the Self-Efficacy scores of the remaining profiles and no further observations of value were made.

These results provide numerical evidence which confirms the observations that the HiLoHiLo goal orientation profile is the more robust competition profiles with respect to experience of

Self-Efficacy in competitive riding On the other hand, the HiHiMHi goal profile appears to be the most vulnerable profile showing the lowest level of Self-Efficacy in competition.

Overall Conclusion

The formal statistical tests of the means provide numerical evidence to backup what was intuitively evident from inspection of the descriptive statistics. The HiHiHiHi and HiHiMHi goal profiles show significantly higher levels of Trait-Anxiety with regard to competitive riding than the other goal profiles. The HiHiHiHi profile also shows significantly higher levels of state Anxiety, Anger and Dejection in competitive riding but this finding is not as clear cut for the HiHiMHi profile. The HiHiMHi profile shows the lowest level of Self-Efficacy followed by the HiHiHiHi profile. Thus, it would appear that the HiHiHiHi and HiHiMHi goal profiles are the most vulnerable profiles in this sample. Furthermore, both these profiles report lower than average proportion of members as riding in teams with the HiHiMHi profile showing the second lowest proportion of members in teams.

On the other hand, the HiLoHiLo goal profile showed the lowest levels of Trait-Anxiety in all three subscales, the lowest levels of state Anxiety, Anger and Dejection and the highest levels of Happiness and Excitement in competitive riding. This profile also demonstrated a significantly higher level of Self-Efficacy than the other profiles. The results of this investigation indicate that the HiLoHiLo goal orientation profile is the emotionally strongest profile in the competitive riding environment. It is of particular interest to note that *all* the girls in this profile have ridden in a provincial team at some time in the past two years. Thus, it would appear that this is not only the most emotionally robust goal orientation profile, but also the most competitively successful goal orientation profile. The HiLoLoLo profile also appears to be an emotionally robust profile but the girls in this profile do not experience the same Excitement and Happiness out of competition that do those in HiLoHiLo profile.

In the Parent-Initiated-Motivational-Climate, results showed that fathers create an environment with demonstrably more Worry-Induction and are more likely to emphasize Success-without-Effort more than do mothers. However, when the effect of the Parent-Initiated-Motivational-Climate on the daughter's State-Emotion, Trait-Anxiety and Self-Efficacy in competitive riding was analyzed, the only significant results were those of the mother. This was not surprising as the mother is more commonly the dominant-parent in the daughter's competitive riding.

LIMITATIONS OF THE RESULTS

There are a number of limitations on these results which should be considered when interpreting or using them.

- These results test association and not causality.
- The data do not always meet the underlying assumptions of the statistical tests and therefore results should be treated with caution. These issues have been discussed in detail with the tests concerned.
- The data sample was smaller than is strictly desirable for a cluster analysis with seven clusters. It was, therefore, not feasible to apply the standard test of re-doing the cluster analysis on two thirds of the data to test the robustness of the goal profiles created.
- The sample used is fairly specialized and it may not be appropriate to generalize results from this study to other sports. For example, generalizing the results of this study to rugby, which is a high impact, contact team sport played by men and boys would probably be inappropriate.
- The questions for measuring the mastery-avoidant orientation in the questionnaire all start with phrases such as; “I worry that...”, “I am afraid that...” or “I am concerned that...”. This makes a certain amount of correlation between anxiety and the mastery-avoidant orientation inevitable. Although the questionnaire may demonstrate internal and external validity, it may not be practically meaningful.
- This sample covers a wide range of ages, 7 – 20, which encompasses at least three developmental stages. There was insufficient data to investigate the impact of developmental stage. Furthermore, it was felt that the investigation into developmental stage is a subject large enough for a dedicated investigation which would be beyond the scope of this project.
- Due to the method of data collection there was a certain amount of self-selection in the participants.

- The data was collected over a 18 months, a relatively long period for this type of investigation. Thus there is a possibility that participants will have had time to familiarize themselves with the research before deciding whether or not to complete the survey.
- The fact that the researcher is a participating member of the horse riding community may have caused some bias in the results.

CHAPTER 4: DISCUSSION

In this discussion, focus is placed on the three key areas of this research: the parent-child interaction in competitive riding; the emerging goal profiles; and the child's experience of Trait-Anxiety, State-Emotion and Self-Efficacy in competitive riding. In doing this, the aim is to set the foundations for bringing these three ideas together in such a way that this research may be used for the benefit of young riders and their parents.

PARENT-DAUGHTER INTERACTION

The parent-daughter interaction was analyzed using two theoretical constructs, the 2x2 achievement goal model and the Parent-Initiated-Motivational-Climate. First, the general trends in goal orientation and Parent-Initiated-Motivational-Climate are discussed followed by the regression analyses dealing with the parent-daughter interaction. Finally, the effect of the Parent-Initiated-Motivational-Climate on the daughter's State-Emotion, Trait-Anxiety and Self-Efficacy in competitive riding is addressed.

Goal Orientation

The first part of this research revolved around the comparison of the rider's goal orientation to:

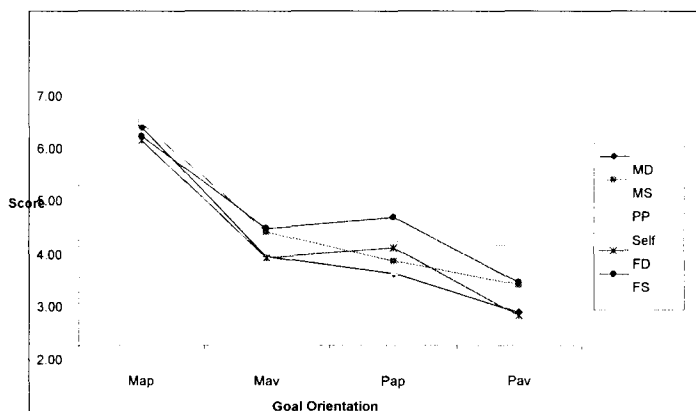
- (i) The rider's perception of her parents' goal orientations for her.
- (ii) The parents' goal orientations.
- (iii) The parents' stated goal orientations for their daughter.

To facilitate the following discussion, a graphical summary of the means (for each goal orientation) of each of the abovementioned groups is included in Graph 9.

A noticeable characteristic of the goal orientation scores was the high mastery-approach (Map) scores in all six goal orientation groups, indicating a very strong mastery-approach orientation in both the riders and their parents. This is consistent with research done by Conroy, Elliot and Hofer (2003) and Elliot and McGregor (2001). However, the downward slope of the scores is more extreme in this sample (i.e. riders and their parents have

comparatively higher mastery-approach scores and lower mastery-avoidant, performance-approach and performance avoidant score than participants in previous research).

Graph 9 Mean goal orientation scores



The highest scores in all orientations, except the performance-approach, were those from the rider herself. In the performance-approach orientation, the rider's score was the second highest to that of the father's score for himself. A possible interpretation of this is that the riders place more pressure on themselves to both achieve success and avoid failure than they perceive from their parents, and that which is wanted for them by their parents. It is apparent though, that the shape of expectations by goal orientation is similar for rider's own goal orientation and the rider's perception of the parent's goal orientation for the daughter's competitive riding. So, although the daughters appear to expect higher levels of themselves, the way they define success and whether they act in an approach or avoidant fashion is similar to that which they think their parents want for them.

In the scores for the goal orientations of the parents, the scores were higher for parents' own orientations than their expectations for their children. This could be interpreted as parents being knowledgeable about the dangers of pressurizing their children in sport and attempting to impose their own goals on their children. It would be dangerous to generalize these interpretations to parents of riders in general, as the sample upon which this research is based, is not necessarily representative of the entire population of riders and their parents. In particular, a number of parents who did not participate were almost aggressively reluctant to participate. On the other hand, many of those who did were positively enthusiastic about the process and even commented on it as a learning experience in the way it encouraged them to think about themselves and their daughter's riding. Therefore, this sample may be biased not

only by parents who are aware of these issues but also by those who feel themselves to be acting in accordance with this awareness.

A final point of interest illustrated in Graph 9, is that the fathers showed higher scores in the performance-approach orientation (relative to the Map, Mav and Pav) than do the mothers and daughters. The fathers also showed the lowest mastery-approach scores indicating that, relative to the mothers and daughters, they placed more value on performance-based success than on mastery-based success. This finding is consistent with the work of Elliot and McGregor (2001) and Morris and Kavussanu (2008), that men are more performance oriented than women and women are more mastery oriented than men. However, the men in this group were mostly financially very successful and it is possible that they may be more driven to prove themselves in comparison to their peers than average. Therefore, once again the results of this research should not be generalized to all men and women as it comes from a fairly specific sample.

A statistical comparison of the average levels of the daughter's own goal orientation with: (i) both parents' own goal orientations; (ii) both parents' goal orientations for their daughter; and (iii) the daughter's perception of the parents' goal orientation for her; showed that the daughter stated the same level of goal orientation that the parents stated for themselves. However, the daughter's stated level of goal orientations was not the same as the parents' goal orientation for the daughter.

This effect is greatest in avoidant orientations where the daughter showed the similar levels of approach orientation but a significantly higher level of avoidant orientation than her parents want for her. Thus, it would appear that parents are aware of the necessity to encourage their children to strive for success rather than to avoid failure but the daughters tend to copy what they see their parents do rather than what parents say they want. These results are consistent with the proposal at the outset of this research that the daughters would be significantly influenced by the parents' own goal orientations regardless of the goal orientations that the parents wanted for her.

When the analysis was conducted using the daughter's perception of the dominant-parent's goal orientation for the daughter quite different results emerged. The daughter's perception of the dominant-parent's goal orientation for her was the same as the stated level of goal orientation which the parent wanted for the child. However, these were different from both

the parents' goal orientations and the daughter's goal orientation. This means that the daughter has a fairly good idea of what the parents want for her and is also aware that her own goal orientations are different.

These findings are based on the comparison of mean values and not correlations. Therefore, they apply to the average level of goal orientations and not necessarily to the way in which the daughter and parents goal orientations vary in tandem.

In examination of the univariate results for the various individual goal orientations, there were further findings of interest in relation to the literature. In the performance-approach orientation, the daughter's own orientation showed no discernable difference from either her parents' own performance-approach orientation or the performance-approach orientation that the parents would like to see in their daughter. In the mastery-approach orientation, the daughter showed a higher level of mastery-approach orientation than her father would like for her but the same level of mastery-approach orientation that the father shows.

These results do not support the findings of Bergin and Habusta (2004), who found that fathers of young ice hockey players wanted higher levels of mastery orientation than their sons actually showed. The daughters in this research showed higher levels of mastery orientation (in both Map and Mav) than their fathers wanted for them, and higher (Mav) or the same (Map) levels of mastery orientation than their mothers want for them.

In the performance orientations, the riders showed higher levels, than their parents wanted for them, in the avoidant orientation but were the same as those which the parents wanted for them in the approach orientations. The Bergin and Habusta (2004) research found that the young ice hockey players showed higher levels of performance orientation than their fathers wanted for them. An explanation of this result might be found by referring to the findings of Elliot and McGregor (2001) and Morris and Kavussanu (2008), that females are more inclined to show higher mastery scores and males are more inclined to show higher performance scores. Thus, it would appear that fathers may have greater performance and lower mastery expectations for their daughter than do mothers. This finding was further supported by numerical evidence in the performance-avoidant orientation where results indicated that that fathers consider it more important for their daughters to avoid failure in a competitive environment than do their mothers.

The above observations suggest that more extensive research needs to be carried out to investigate the various different parent-child relationships. For example, research on the father-son relationship should not be generalized to the mother-daughter relationship and vice versa. Furthermore, the findings of this research are limited by the paucity of data for fathers.

Parent-Initiated-Motivational-Climate (PIMC)

The analysis of the Parent-Initiated-Motivational-Climate revealed three main features of interest. The first was the differences which occurred between the Parent-Initiated-Motivational-Climate created by the mother and the Parent-Initiated-Motivational-Climate created by the father. The next area of interest was the associations found between the daughter's goal orientations and the Parent-Initiated-Motivational-Climate. Finally, the associations between the Parent-Initiated-Motivational-Climate and the daughter's experience of Trait-Anxiety and Self-Efficacy in competitive riding gave rise to some interesting and significant results.

Comparison between mother and father

The analysis of the Parent-Initiated-Motivational-Climate (PIMC) indicated that fathers are more inclined to place more emphasis on the importance of ability in the competitive environment than are mothers. Fathers are also more likely to cause their daughters to worry about making mistakes or not meeting parental expectations in the competitive environment than are mothers. There was insufficient evidence in this study to draw any conclusion about the difference in the provision of a learning environment between mothers and fathers.

These results contradict the caricature of the pushy mother in horse riding. The idea that mothers cause their daughters stress in the competitive environment while fathers sit quietly in the background is not supported by these results. In fact, quite the opposite seems to be the case and it is the father who creates the daughters more worry in the competitive environment. There are a number of possible reasons for this. Firstly, when a competitor becomes successful she often attracts quite a bit of envy and aggression from other competitors, parents and even officials. In these situations, the average mother will step up and defend her daughter and thus, may earn the title of being "pushy". Secondly, riding is a sport with more than its fair share of danger and risk of the child getting hurt. Therefore, the

parents have the double stress of wanting their daughter to do well and as well as concern that their daughter will get hurt.

It has been the researcher's observation, as a coach and mentor, that the mothers show these nerves by fussing whereas the fathers tend to become aggressive. The girls seem to handle the mother's fussing with a fair bit of disdain and sometimes superiority which makes them feel better about themselves. On the other hand, they seem to become distressed and more nervous in the face of the father's aggression. A further issue which could explain the additional worry induced by the fathers revolves around the amount of money which is spent in competitive riding. This money is generally supplied by the fathers and it may leave the girls with a sense of obligation to succeed given the amount of money which they know has been spent.

These suggestions are based on observation of the competitive riding environment and discussions with the riders and parents. Consequently, they are merely possible explanations for the findings of this study. These suggestions could form the basis of further research.

Association of Parent-Initiated-Motivational-Climate with the Rider's Goal Orientation

The findings on the associations between the PIMC and rider's goal orientations indicated that a strong learning environment, in which enjoyment and fun are encouraged and mistakes are accepted as part of the learning process, is associated with a strong mastery-approach orientation. Absence of such an environment leaves the ground fertile for the development of the less healthy orientations. Thus, when the learning environment is weak, or perhaps places emphasis on learning as hard work, the child is vulnerable to development of strong performance or avoidant orientations. This is consistent with White's (1998) proposal that a mastery orientation is inherent in human nature and the findings of Elliot and McGregor (2001) that the mastery-approach orientation is independent of parental socialization.

Just how these orientations manifest will depend, in part, on the degree to which the motivational climate emphasizes Success-without-Effort (performance orientations) or Worry-Induction (avoidant orientations). The results of this research indicated that when the motivational climate emphasizes Success-without-Effort there is no particular significant association with any goal orientation. Whereas when the motivational climate emphasize Worry-Induction, an avoidant orientation is more likely. This is not consistent with the findings of White (1998), where Success-without-Effort and Worry-Induction showed

significant associations with the performance orientation and the Enjoyment-in-Learning environment showed significant positive correlations with the mastery orientation.

I believe that the construct of the Parent-Initiated-Motivational-Climate as used in this research is incomplete. In this research, clear results were only obtained from the Worry-Induction subscale with weaker and sometimes ambiguous results coming from the Enjoyment-in-Learning and the Success-without-Effort subscales. With this in mind, I feel that more thought needs to be applied to the learning environment and the degree to which parents emphasize success.

In the current PIMC questionnaire, the only questions regarding the learning environment are those pertaining to how much the parent emphasizes enjoyment in learning. This should be expanded to incorporate questions on how much the parent emphasizes learning as hard work and the need for consistent application in learning. Where a parent emphasizes learning as hard work or something unpleasant, then a child may develop a mastery-avoidant orientation as she will try and avoid the unpleasant learning experiences required to develop mastery skills. On the other hand, if the need for constant application is emphasized in the learning environment, the avoidant orientations may be avoided as the child is encouraged to see her lack of skill as something which is within her capacity to change and improve. The addition of such questions to the PIMC scale could add to our understanding of why a child develops a mastery-avoidant orientation rather than a mastery-approach orientation.

Similarly, the questions surrounding success could incorporate emphasis on success as a result of effort as well as Success-without-Effort. Including such a differentiation will help understanding of why a child develops a performance-approach rather than a performance-avoidant orientation. For example, when a child believes that success is the result of hard effort that child will be more likely to apply the effort. However, when success is expected without effort, then any failure to achieve that success may lead the child to perceive that the parent is disappointed in her lack of ability and thus develop an avoidant orientation. Such changes to the PIMC instrument could facilitate researchers in obtaining more conclusive evidence about how the Parent-Initiated-Motivational-Climate contributes to the development of the child's goal orientation and goal profile.

Regression Analyses

Two regression analysis exercises were carried out. The first dealt with the problem of confirming the daughter's perception of the dominant-parent's goal orientation for the her, as a mediating variable between, the effect of the dominant-parent's goal orientation and the dominant-parent's goal orientation for the daughter, on the daughter's goal orientation. The second regression exercise dealt with development of regression models in which the daughter's own goal orientations were regressed against:

- (i) The dominant-parent's own goal orientation.
- (ii) The dominant-parent's goal orientation for the daughter.
- (iii) The Parent-Initiated-Motivational-Climate for the mother.
- (iv) The Parent-Initiated-Motivational-Climate for the father.

Regression Analysis 1

There were two main areas of interest arising from the first set of regression analyses. The first arose from the analysis of the correlations between the daughter's goal orientations and the dominant-parent's goal orientations. Of particular interest were the apparently paradoxical results which emerged when comparing the correlations to the comparison of mean goal orientations carried out earlier. The second area of interest was the confirmation of the notion that the daughter's perception of the dominant-parent's goal orientation for the daughter mediates the effect of the dominant-parent's own goal orientation and the dominant-parent's goal orientation for the daughter, on the daughter's own goal orientation.

Correlations

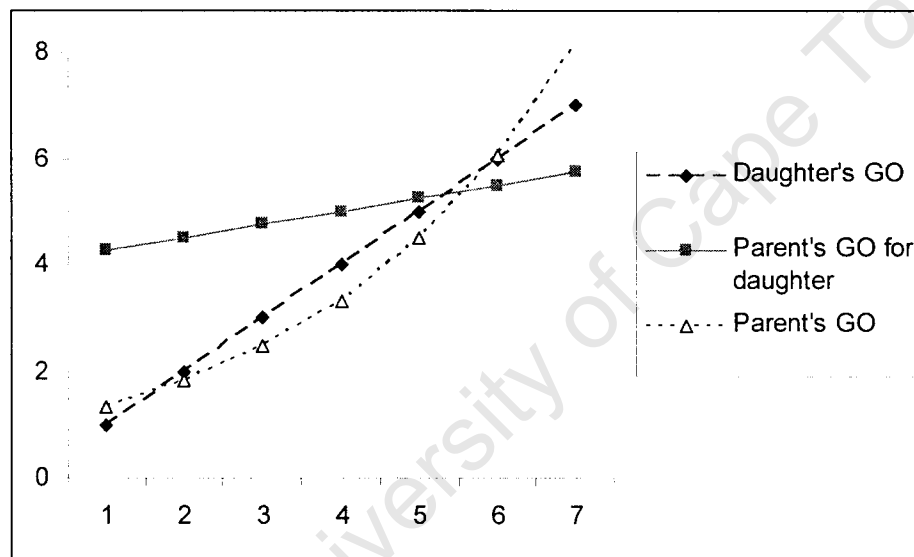
As part of the exercise of confirming the daughter's perception of the parent's goal orientation for the daughter as a mediating variable, correlations were calculated amongst:

- (i) The daughter's own goal orientation.
- (ii) The daughter's perception of the dominant-parent's goal orientations for her.
- (iii) The dominant-parent's own goal orientation.
- (iv) The dominant-parent's goal orientations for the daughter.

The results of this exercise revealed significant correlations between the daughter's goal orientations and both: her perception of the dominant-parent's goal orientation for her and the dominant parent's goal orientation. Furthermore, the correlation between the daughter's goal orientation and the dominant-parent's goal orientation for her was slightly larger than the correlation between the daughter's goal orientation and the dominant-parent's goal orientation.

Given the earlier result that the daughter's mean level of goal orientation was statistically the same as the parent's mean level of goal orientation but *not* the same as the parent's goal orientation for the daughter, this result was somewhat counterintuitive

Graph 10 Idealized scatterplots to explain counterintuitive findings



Graph 10 has been included here to help illustrate how such a situation may arise. This graph gives an illustration of three idealized scatterplots. The first, plots the daughter's goal orientation against itself. This is a simple $y = x$ straight line which would have a mean value of four⁸ (on the domain $x \in [1,7]$). The second line is an idealized hypothetical plot of the parent's goal orientations for the daughter against the daughter's goal orientation. This line has been set up so the mean value would *not* be four (on the domain $x \in [1,7]$) but which would have a very close correlation with the first line. (The line is described by the function $y = 0.25x + 4$ with a mean of five, and correlation with the daughter's goal orientation of 1).

⁸ A mean of four was arbitrarily chosen to demonstrate the point.

The third line is a idealized, hypothetical plot of the parent's goal orientations against the daughter's goal orientation. This plot was set up to meet the condition that the mean of this plot would also be four (on the domain $x \in [1,7]$) but it would not have as strong a correlation with the daughter's goal orientation as the previous line. (The line is described by the function $y = 1.35^x$ with a mean of 3.95, and correlation with the daughter's goal orientation of 0.97).

From this, it becomes apparent that the significant correlations tell us about the feasibility of fitting a linear model to the daughter's goal orientations using the dominant-parent's goal orientations and the dominant-parent's goal orientations for the daughter as predictor variables. The correlations do not tell us anything about the possible equivalence of the daughter's own goal orientations to the parents goal orientations or the parent's goal orientation for the daughter. Thus, it appears as if the level of the daughter's goal orientation bares a greater similarity to the parent's goal orientation than to the parent's goal orientation for the daughter. On the other hand, both the parent's own goal orientation and the parent's goal orientation both seem to affect the rate of change of level of the daughter's goal orientation.

Confirmation of PP as a mediating variable

All the requirements to test the daughter's perception of the dominant-parent's goal orientation for the daughter as a mediating variable between the daughter's goal orientation and the dominant-parent's goal orientations, as specified by Baron and Kenny (1986), were fulfilled. It appears as if the effect of the dominant-parent's own goal orientation on the daughter's goal orientation is fully mediated by the daughter's perception of the dominant-parent's goal orientation for the daughter. However, the dominant-parent's goal orientation for the daughter is not fully mediated by the daughter's perception of the dominant-parent's goal orientation for the daughter. This means that either the dominant-parent's goal orientation for the daughter affects the daughter's goal orientation directly or is mediated by some other variable(s).

This research started with the basic assumption of social cognitive theory that one of the more important ways in which children learn is through the modeled behavior of their parents. Therefore, it was expected that the riders in this sample would show a greater correlation with their parents stated goal orientations for themselves than with the goal

orientations than the parents stated for their daughters. Even in the event that these orientations were mediated by the daughter's perception of the parent's orientations for the daughter, it was expected that what the parents own goal orientations would be the primary influence on the daughter.

However, this research did not quite reflect this assumption. The daughters *level* of goal orientation seems to be primarily influenced by their dominant-parent's goal orientation. However, when the correlations were examined, the daughter's goal orientations were found to be largely associated with her perception of what her dominant-parent's goal orientation for her. This, in its turn, was found to be a mediating variable between the daughter's goal orientations and both the parent's own goal orientations and the parent's goal orientations for the daughter. This result is consistent with the findings of Ames (1992) and Dweck and Leggat (1988).

Finally, when the input of the parent's own goal orientations and the parent's goal orientations for the daughter, to the daughter's perception of the dominant-parent's goal orientation for the daughter, were examined, it was found these were more or less equally influential on the daughter's perception of the dominant-parent's goal orientation for the daughter. Very little, if any, investigation has been done into how the dominant-parent's goal orientations (both for self and daughter) impact the daughter's goal orientations, whether directly or mediated by the daughter's perceptions or other variables. This work is important as such models can be used as starting points for the development of interventions that try and change a child's perceptions of the parent's goal orientations for the daughter, through manipulation of the dominant-parent's goal orientations and consequently change the child's goal orientations.

Regression Analysis 2

The second regression analysis was actually a series of regression analyses on each of the rider's goal orientations. These regression analyses are discussed from the point of view of how each of the predictor variables influences goal orientation in the daughter and more specifically, how interactions between these variables may influence the daughter's goal orientation. There does not appear to be any published research using regression analysis to link the parent's goal orientations and the Parent-Initiated-Motivational-Climate to the child's

goal orientation. However, Elliot and McGregor, (2001) used a similar technique to define antecedents (arising from parental socialization) to the child's goal orientation.

Parent's mastery-approach orientation for the daughter

The dominant-parent's desire for a mastery-approach orientation for the daughter contributes negatively to both the avoidant orientations (Mav and Pav) in the daughter. This indicates that, where a parent wants a strong mastery-approach orientation for the daughter, the daughter will be less likely to demonstrate the more vulnerable avoidant orientations. This makes intuitive sense as we would expect that, where a parent has a strong desire for her daughter to demonstrate the strong mastery-approach orientation, this would provide some "protection" against the development of the more vulnerable avoidant orientations.

Parent's mastery-approach orientation

On the other hand, where the dominant-parent demonstrates a very strong mastery-approach orientation herself, there were *positive* associations with both the avoidant orientations in the daughter. However, in both the avoidant orientations, Worry-Induction by the mother was also positively associated with the daughter's avoidant orientation. A possible interpretation of this is: where the daughters see their dominant-parent modeling a strong mastery-approach orientation in conjunction with a motivational climate where the mother causes the daughter to worry about making mistakes and not meeting parental expectations, the daughter may feel that she is unable to meet the parent's expectations and develops an avoidant orientation. Thus, it is possible that Worry-Induction by the mother is a moderating variable on the effect of the dominant-parent's mastery-approach orientation on the daughter.

There was also a small positive addition to the mastery-approach orientation in the daughter when the dominant-parent showed a strong mastery-approach orientation. This may mean that when the dominant-parent shows a strong mastery-approach orientation herself and the mother does not cause the daughter to worry about making mistakes then the child is likely to show a mastery-approach orientation. On the other hand, if the dominant-parent shows a strong mastery-approach orientation and the mother creates an environment which causes the daughter to worry about possible punishment when making mistakes, then the child is likely to show a mastery-avoidant orientation.

Parent's mastery-avoidant orientation for the daughter

Where the parent indicated a desire for a strong mastery-avoidant orientation for the daughter, the associations are all pretty much as expected. This variable showed a positive contribution to all four of the regression equations for the daughter's goal orientation. Its function in the regression equation appeared to be to distinguish primarily between the mastery and performance orientations and secondarily between the approach and avoidant orientations. This means that, where the parent wants a high level of mastery-avoidant orientation for the daughter, the daughter is more likely to show a mastery orientation. However, when the parent wants a more moderate level of mastery-avoidant orientation, then the daughter is more likely to show higher levels of performance orientation. This indicates that, in these cases, it is the parent's definition of success which is the primary influence on the daughter. Similarly, but to a lesser extent, where the parent wants a high level of mastery-avoidant orientation for the daughter, then the daughter is more likely to show a stronger avoidant orientation. However, when the parent wants a more moderate level of mastery-avoidant orientation then the daughter is more likely to show a stronger performance orientation.

Parent's mastery-avoidant orientation

Where the parent demonstrates a mastery-avoidant orientation herself, it appears as if the daughter will be less likely to demonstrate a mastery-approach orientation and more likely to demonstrate a mastery-avoidant orientation. It also appears as if she will develop a higher mastery orientation than performance orientation.

This makes intuitive sense as it is expected that, if the parent models a strong mastery-avoidant orientation, the daughter will adopt a strong mastery-avoidant orientation herself. Moreover, when the parent models a strong mastery-avoidant orientation, she is modeling behavior which values a definition of success based in mastery goals. Therefore, it makes sense that the daughter will be more likely to show a mastery orientation than a performance orientation. This result is also consistent with earlier results in this research which showed that the daughter's own level of a particular goal orientation was the same as that of the parent's.

Parent's performance-approach orientation for the daughter

Where the parent wants her daughter to show a strong performance-approach orientation, there were strong positive associations with both performance orientations. There was no contribution to the mastery-approach regression equation and a small negative contribution to the mastery-avoidant equation. This makes intuitive sense as when the parent wants a performance-approach orientation for the daughter she is encouraging the daughter to define success in terms of performance, rather than mastery, goals. Therefore, we expect strong positive associations with the performance orientations with no or negative associations with the mastery orientations.

Parent's own performance-approach orientation

Where the parent shows a strong performance-approach in her own goal orientation, there is little contribution to the regression equations of the daughter's goal orientation with the variable only appearing in the daughter's performance-approach orientation as a negative contribution (i.e. the parent's own strong performance-approach orientation is likely to temper the daughter's own performance-approach orientation). This is a counterintuitive result as we expected the daughter to adopt the same goal orientation being modeled by the parent. However, this may be explained by the finding that, where the father causes the daughter to worry about making mistakes, then the daughter is less likely to show a performance-approach orientation. Adopting a similar reasoning used previously, we could interpret this as the daughter being concerned that she may not meet her parent's standards and consequently adopts an orientation other than that modeled by the parent. This implies that, where the parent adopts a strong performance-approach orientation herself and the father causes the daughter to worry about making mistakes or not meeting parental standards, then the child will place value on orientations other than that one modeled by the parent (in this case the performance-approach orientation).

Parent's performance avoidant orientation for the daughter

The contribution of the performance-avoidant orientations of the parent, to the daughter's goal orientations, was more difficult to interpret. Where the parent demonstrated a desire for a strong performance avoidant orientation in the daughter, there were negative contributions to the daughter's mastery-approach and performance-approach orientations. These results make a certain amount of intuitive sense as they imply that where the parent encourages the

daughter to adopt an avoidant orientation the daughter is less likely to adopt an approach orientation.

However, there was also a negative contribution to the daughter's performance-avoidant orientation. This is less intuitive as it implies that when the parent encourages a performance-avoidant orientation in the daughter, the daughter is *less* likely to develop such an orientation. Furthermore, this is the single biggest contributor to the daughter's performance-avoidant orientation. The researcher could find no plausible explanation for this finding.

There was no contribution to the mastery-avoidant orientation. Thus, it appears that the only logical result that can be drawn from these results, is that when the parent encourages a performance-avoidant orientation in the daughter, then the daughter is less likely to develop an approach orientation.

Parent's performance-avoidant orientation

Where the parent demonstrated a strong performance-avoidant orientation in their own goal orientation, there were positive contributions to the daughter's mastery-approach, performance-approach and performance-avoidant orientations. There was no contribution to the daughter's mastery-avoidant orientation. There was also no observable indication that this variable distinguished between the performance and mastery orientations and only a slight indication of some distinction between the approach and avoidant orientations (i.e. Pav orientations in the dominant-parent contributes to avoidant orientations in the daughter). It is possible that, where a parent demonstrates the performance-avoidant orientation, that the motivational climate created by the parent plays a more significant role in the development of the daughter's achievement goal orientations.

Parent-Initiated-Motivational-Climate

The strongest result emerging from the use of the Parent-Initiated-Motivational-Climate in the regression equations was the contribution of Worry-Induction by the mother to the avoidant orientations of the daughter. There were also indications that Worry-Induction by the mother acts as a moderating variable on the effect of approach orientations of the parent to cause avoidant orientations in the daughter.

When the mother creates a strong learning environment where mistakes in learning are accepted and fun is encouraged, the daughter is more likely to show strong mastery orientations. This is consistent with the findings of White (1998) where the encouragement of enjoyment in the learning environment was positively associated with the child showing a strong mastery orientation. Where the mother places a lot of importance on innate ability and expects the child to achieve without making much effort, the mastery orientations are likely to be weaker.

The Parent-Initiated-Motivational-Climax initiated by the father had less impact on the goal orientations of the daughter than that of the mother. The only orientation affected by the father was the performance-approach orientation. Success-without-Effort emphasized by the father contributed positively to a performance-approach orientation in the daughter. This result is consistent with the work of White, (1998) where the performance orientation was shown to be associated with the Success-without-Effort subscale of the PIMC. On the other hand, Worry-Induction by the father contributed negatively to a performance-approach orientation in the daughter. This result is not consistent with the work of White, (1998) where the performance orientation was shown to be associated with the Worry-Induction subscale of the PIMC.

The above findings that: Worry-Induction by the parents makes a negative contribution to the performance-approach orientation; and Worry-Induction by the mother makes a positive contribution to avoidant orientations (Mav and Pav) in the daughter; suggest that Worry-Induction is conducive to the development of an avoidant orientation in the daughter. This is consistent with the findings of Elliot and McGregor, (2001) who found that Worry-Induction by the mother was an antecedent to the avoidant orientations.

GOAL PROFILES

Seven goal profiles emerged from the cluster analysis exercise: (i) HiHiHiHi, (ii) HiMHiHi, (iii) HiHiMHi, (iv) HiLoHiLo, (v) HiLoLoLo (vi)HiHiLoLo and (vii) HiMMLo. Of these, four (HiHiHiHi, HiHiLoLo, HiLoHiLo and HiLoLoLo) have a very clear interpretation of what they mean in terms of the 2x2 achievement goal orientation model. The remaining three goal profiles (HiMHiHi, HiHiMHi and HiMMLo) are slightly less clear cut in what they mean in terms of the achievement goal model. Each of these goal profiles is discussed, firstly,

with respect to their interpretation in terms of the 2x2 achievement goal model and secondly, with respect to emotional vulnerability and competitiveness.

There does not appear to be any research, at this stage, in which goal profiles in sport are examined using the 2x2 achievement goal orientation model.

HiHiHiHi

The goal profile in which riders who score high in all four possible goal orientations (HiHiHiHi), is made up of riders who are driven to achieve success defined in both mastery and performance terms. They are not only driven to achieve such success (i.e. approach orientation) but they are also strongly motivated to avoid failure (i.e. the avoidant orientations). The investigations into the riders' experience of Trait-Anxiety, State-Emotion and Self-Efficacy in competitive riding indicated that this is one of the more, if not the most, emotionally vulnerable goal profiles. This is a somewhat disturbing result as it is one of the larger profiles (N = 13) in the 7-cluster solution and easily the largest profile in the 6-cluster solution (N = 24).

In the investigation into the rider's Trait-Anxiety in competitive riding, the riders in this profile showed the highest levels of Somatic-Anxiety and Worry. They also showed the second highest levels of Concentration-Disruption. This result is contrary to that of White, (1998) where lower levels of Trait-Anxiety were shown for athletes who showed both high mastery and high performance orientation. However, the work of White, (1998) was based on the dichotomous model rather than the 2x2 model used in this research.

A possible interpretation of this finding is that, riders who place pressure on themselves to achieve in both the mastery and performance orientation, but who do not allow themselves room to make mistakes, are more vulnerable to experience of anxiety about competition. It is also probable that these riders do not allow themselves room for mistakes in the learning environment outside of the competitive environment. This means that these riders will be loathe to take the risks necessary for optimal learning which will prevent them achieving the success they desire. Lack of perceived progress in learning is likely to lead to worry about inability to achieve the success (both mastery and performance defined success) which is desired. This may also be an explanation for the increased variability of scores in this profile. The levels of anxiety may depend on the level of perceived success and progress of the

individual at the time they completed the questionnaire. Despite the fact that the Trait-Anxiety questionnaire asks the participants to complete the questions thinking about “how they usually feel about competition”, the questions were asked at a competition and how the child was feeling at the time may well have influenced the answers.

In the investigation into the State-Emotion experienced in competitive riding, the riders in this profile scored second highest in Anxiety and highest in Dejection and Anger. The only profile to score higher in the Anxiety subscale, was the profile in which riders scored high in all except the performance-approach orientation (HiHiMHi). It is possible that, in the heat of competition, the high performance-approach orientation balances the high performance avoidant orientation and Anxiety may be tempered and experienced as Excitement. It appears that when these riders do not achieve the success they so desire, they experience higher levels of Anger and Dejection than riders with different goal profiles. The experience of Anger in riding is of particular concern as it can easily be taken out on the horses, leading to abuse of the animal. The riders in this profile scored in the lower middle portion of the Excitement and Happiness scales in the experience of State-Emotion investigation. The implication here being that these riders are not enjoying their competitive riding as much as they might and are therefore vulnerable to dropout at a later stage (Scanlan & Simons, 1992).

HiMHiHi/ HiHiMHi

In this section, the profiles which scores high in all orientations except the mastery-avoidant orientation where the score was medium (HiMHiHi), and the profile in which scores are high in all orientations except the performance-approach orientation which scored medium (HiHiMHi), are discussed. These two profiles are lumped together as they are very similar to the profile discussed previously in which all orientations are score high (HiHiHiHi). However, these two profiles show a distinct difference in that the one profile has a slightly lower performance-approach orientation, while the other has a slightly lower mastery-avoidant orientation. These differences allow us to see how a difference in one orientation may affect the Trait-Anxiety, State-Emotion and Self-Efficacy of the rider.

The profile where the performance-avoidant orientation score is medium is of particular interest as it is the only profile which has an avoidant orientation higher than the approach orientation. This profile showed the highest scores in the Concentration-Disruption subscale of the Trait-Anxiety scale and the third and second highest scores in Somatic-Anxiety and

Worry subscales respectively. It also showed the highest scores in the Anger and Dejection subscales and the second highest score in the Anxiety subscales of the State-Emotion in sport scale. On the other hand, it showed the lowest scores in the Excitement subscale and the third lowest score in the Happiness subscales. Riders in this profile also showed the lowest mean score for Self-Efficacy. This is a litany of higher scores in those things which are thought to be detrimental to the child's enjoyment of competitive riding and low scores in those things which encourage the child's enjoyment of competitive riding. From this, it would appear that this goal profile is at least as emotionally vulnerable, if not more so, as the goal profile in which scores are high for all four goal orientations (HiHiHiHi). This is once again contrary to the literature which implies that, where a high performance orientation is balanced by high mastery orientation, the negative effects of the performance orientation is tempered (White, 1998). In this case, we have a profile which high in both mastery orientations and slightly lower in one of the performance orientations but which is proving to be the most vulnerable profile. The contradiction can be explained by the avoidant orientation which, in the performance orientation, is higher than the approach orientation. Thus, it appears to be high levels of avoidant orientation which are likely to be the cause of the additional anxiety. This is consistent with the proposals of Elliot, (1999) and Elliot & McGregor, (2001).

The other profile to be discussed, is the one which scored high in all orientations except the mastery-avoidant orientation which scored medium. This profile looks superficially similar to the previous two profiles discussed but appears somewhat less emotionally vulnerable. The most vulnerable areas of this profile were shown in the Somatic-Anxiety subscale of the Trait-Anxiety scale where it showed the second highest score. It also showed the second lowest score in Self-Efficacy and the lowest score in the Happiness subscale of the sport State-Emotion scale. The remaining scores were all pretty much in the middle indicating that this profile sits at the higher end of average in terms of emotional vulnerability in competitive riding. These findings are consistent with the proposals of Elliot, (1999) and Elliot & McGregor, (2001) in that, when it is an avoidant orientation which is lower, the negative consequences on the rider are slightly reduced.

These results are somewhat contrary to previous research by White (1998) and Hodge & Petlichkoff (2000), where it is proposed that the negative consequences attached to a high performance orientation are mitigated by a high mastery orientation. Here, we have young riders who are showing high performance scores and high mastery scores and yet are still

showing emotional vulnerability in the competitive environment. However, these results may be explained by the proposals of Elliot (1999) and Elliot & McGregor (2001) who claim that it is not only how the athlete defines success that will impact her levels of anxiety and enjoyment in sport but also the way in which she goes about achieving this success (i.e. approach or avoidant orientation). The findings and proposals of Elliot (1999) and Elliot & McGregor (2001) propose that where the athlete is more motivated to avoid failure than to drive towards achieving success, she will be more vulnerable to the negative effects of anxiety and emotion. On the other hand, where the athlete is driven to achieve success without fear of failure, the rider is protected from the negative consequences of anxiety and emotion, regardless of whether she defines success in terms of mastery or performance goals.

HiLoHiLo

This goal profile, in which riders scored high in both approach orientations and low in both avoidant orientations, emerged as being easily the most emotionally robust goal profile. These riders scored lowest in all the Trait-Anxiety subscales and second lowest in the Anger, Anxiety and Dejection subscales of the State-Emotion in sport scale. They also scored highest in the Happiness subscale of the State-Emotion in sport scales and in their Self-Efficacy in riding. Furthermore, these riders also demonstrated excellence in performance in that 100% of these riders have ridden in provincial teams at some time over the past two years!

The preparedness of these riders to accept failure will facilitate their learning in that they will be more willing to try new things and be better prepared to accept, and move on from, failure when it happens. These riders would also be using their energy to achieve their goals rather than trying to avoid failure. The fact that these riders scored high in both the performance-approach and mastery-approach orientations, is probably an important factor in the high level of provincial team membership. These riders want to go out and prove themselves against others but also realize that they need to work on self-referenced goals in order to achieve such success.

This finding adds to the evidence that it is the avoidant orientation, rather than the performance orientation, which causes the negative consequences in sport. These riders score high in both mastery-approach and performance-approach orientations and do not seem to show the vulnerabilities expected of those demonstrating a high performance-approach. Once again this is consistent with the proposals of Elliot, (1999) and Elliot & McGregor, (2001).

HiLoLoLo

The next goal profile under discussion is that profile in which riders scored high in the mastery-approach orientation and low in the three other orientations. This is the only other goal profile, apart from the previous one discussed, in which low scores were shown in both the avoidant orientations. The riders in this goal profile are driven to achieve success defined in terms of self-improvement. On the other hand, these riders appear to feel little need to demonstrate superiority over others and are not afraid of failure in that they feel little need to work actively towards avoiding failure.

The riders in this profile demonstrated the lowest levels of Anger, Dejection and Anxiety in competitive riding. They also scored the second lowest in all three subscales of the Trait-Anxiety scale. However, they did not show the corresponding high scores in Excitement and Happiness in competitive riding that were demonstrated by the profile in which riders scored high in the approach orientations and low in the avoidant orientations. The implication of this is that, while these riders do not feel any great anxiety or the other negative emotions in competitive riding, they do not get the enjoyment and excitement that is experienced by riders in other profiles. This profile also showed the lowest percentage of members participating in provincial teams over the last two years.

Care should be taken not to assume that these girls are not enjoying their riding. This research was based on girls in the competitive environment and it is this environment that riders with this profile do not seem to enjoy. These girls may gain great enjoyment from social riding or even training horses but do not appear to enjoy the competition as much as those in some other profiles. The possibility that the difference between the performance and mastery definitions of success is partially a temperament issue related to the degree to which a child is extravert or introvert should be considered. Therefore, should an intervention be created in order to "improve" a rider's goal profile, coaches and parents should take care, with children in this profile, not to try and make them into something they are not. To try and increase a child's performance-approach level so they become better competitors may be damaging to the child.

HiHiLoLo/HiHiMLo

The last two profiles under discussion are: the profile where riders score high in mastery-approach and mastery-avoidant and low in performance-approach and performance-avoidant (HiHiLoLo); and the profile where riders score high in mastery-approach, high in mastery-avoidant, medium in performance-approach and low in performance-avoidant (HiHiMLo). Both of these profiles score higher in the mastery orientations than in the performance orientation. However, within performance orientation the second profile scores lower in avoidant orientation than in approach orientation.

Given the proposals of the dichotomous and the trichotomous achievement goal models, it was expected that these two profiles would have demonstrated fairly emotionally robust results on the Trait-Anxiety, State-Emotion in sport and Self-Efficacy scales (Hodge & Petlichkoff, 2001; White, 1998). However, the scores showed neither the strong positive results shown by the HiLoHiLo and HiLoLoLo profiles nor the negative results shown by the HiHiHiHi, HiHiMHi and the HiMHiHi profiles.

This can be explained in terms of the proposals of Elliot (1999) and Elliot and McGregor (2001) as follows. It appears as if the high mastery-approach orientation and the low performance orientations protect the riders in this profile from the extreme levels of anxiety and negative emotion experienced by those riders who score high in all four orientations. However, the higher level of mastery-avoidant orientation renders the rider more vulnerable to anxiety, negative emotion and lower Self-Efficacy than is optimal.

An interesting result from these two profiles was that the HiHiMLo profile showed the second highest (83%) level of participation in provincial teams indicating that this is a competitively successful profile. On the other hand, the HiHiLoLo profile showed the third lowest (38%) level of participation in provincial teams. It is possible that these two profiles would respond readily to interventions to increase the approach orientations and minimize the avoidant orientations.

OVERVIEW

The primary aim of this research was to investigate young rider's goal orientations as defined by the 2x2 achievement goal model. More specifically, questions about how the parents' own goal orientations and the Parent-Initiated-Motivational-Climate interacted were asked in an

effort to gain more knowledge on the parent-child relationship in competitive riding. A further aim of this research was to create goal profiles for the riders and investigate the association between these profiles and State-Emotion, Trait-Anxiety and Self-Efficacy, in competitive riding. Finally, these ideas are brought together in such a way that they may be used to provide support for parents and children in the competitive riding environment.

The key findings of this research which are of particular practical use are:

- (i) The goal profile where the approach orientations were strong and the avoidant orientations were weak was easily the most emotionally robust and the most competitively successful profile.
- (ii) High avoidant orientations were associated with emotional vulnerability in the competitive environment regardless of the level of definition of success which is adopted.
- (iii) Emotional vulnerability did not appear to be a function of definition of success.
- (iv) A high or medium performance-approach orientation was associated with competitive success.
- (v) Where the rider perceived that her parents were concerned about her making mistakes and not meeting parental expectations and standards, the daughter was more likely to show higher levels of the avoidant orientations.
- (vi) When the parents had strong approach orientations themselves the possibility of the daughter perceiving that she was not meeting parental expectations appeared to be enhanced. Therefore such parents should be especially careful to protect their daughters from these perceptions.
- (vii) A learning environment where mistakes were accepted as part of learning and enjoyment encouraged fostered the development of a mastery orientation.
- (viii) Emphasis on Success-without-Effort by fathers fostered a strong performance-approach orientation. However, we did not investigate how the emphasis on success as a result of sustained effort may impact on the daughter's goal orientations.

- (ix) The daughters set their own goal orientations at much the same level as the parent's set their goal orientations.
- (x) Where parents show that they want their daughter to avoid failure the daughters accentuate this in their own goal orientations.
- (xi) The daughter's goal orientations were correlated with both the dominant-parent's goal orientations and the dominant-parent's goal orientations for her, but this effect is mediated by the daughter's perceptions of the dominant-parent's goal orientation for her.

CHAPTER 5: CONCLUSION

The gains from this research are twofold. Firstly, the body of knowledge used for and by research is enhanced. Secondly, there are practical applications of this knowledge which can help parents to provide better support for their children in the competitive environment. The following paragraphs summarize how these gains may be manifested.

The investigation into the existence of the daughter's perception of the parent's goal orientation for the daughter as a mediating variable on the effect of the parent's goal orientation and the parent's goal orientation for the daughter is unusual. Most studies have investigated either how the parent's goal orientation associates with the daughter's goal orientation or how the daughter's perceptions associate with the daughter's goal orientation. In this research, these ideas have been taken a step in further in that we have looked at how the daughter's perceptions are associated with the parent's own goal orientations and the parent's goal orientation for the daughter. This is not only of theoretical interest but also practical interest as it gives parents more knowledge about how their children's perceptions about goal orientations are created. Of particular interest, in this research, is that the parent needs to pay heed not only to what she wants for her child but also to her own goal orientations and how she herself acts.

A further area where this research offers insight, is in the examination of how the parent's own goal orientations, the parent's goal orientations for the daughter and the Parent-Initiated-Motivational-Climate influence the daughter's goal orientations. Previous research has worked with only one or other of these inputs. There were two particularly interesting findings from this exercise. Firstly, Worry-Induction is a strong predictor of the avoidant orientations. Secondly, where a parent demonstrates a strong approach orientation herself, this could result in either an avoidant orientation if the motivational climate causes the child to worry about making mistakes, or an approach orientation where the child is encouraged to learn from mistakes and enjoy learning new things. This second finding highlights the need for more research into the existence of moderating variables in the relationship between the parent's and child's goal orientations.

The third area of note in this research, is in the development of goal profiles using the 2x2 goal orientation model. From this exercise, three groups of profiles emerged. The first group was made up of three goal profiles, each of which was defined in terms of the riders scoring

high or medium in all four orientations. These profiles appeared to be the most emotionally vulnerable profiles and they did not show any particular competitive success. The second group of profiles contained two goal profiles, both of which were defined in terms of high mastery orientations and low or medium performance orientations. These goal profiles showed neither the emotional vulnerability of the previous group, nor did they show any particular emotional strength. They showed mixed results in terms of competitive success. The third group of profiles comprised two goal profiles which were characterized by low levels of avoidant orientation. These profiles emerged as clearly the most emotionally robust profiles. However, there were mixed findings in terms of competitive success. The profile which was defined by high mastery-approach and high performance-approach was the most successful competitive profile overall. It was also marginally more emotionally robust than the other profile in this group. The other profile was characterized by a high mastery-approach orientation but a low performance-approach orientation. This profile was the least competitively successful goal profile in the sample but showed almost the same emotional robustness as the previous profile.

The existence of the goal profile which is high in the approach orientations and low in the avoidant orientations is of great use in practical application. Here, we have a profile which is not only emotionally robust in the competitive environment, but also competitively successful. This gives a model goal profile which parents and coaches can encourage and which meets the needs of both the drive to win and the emotional health of the child. Furthermore, we have not only identified an ideal goal profile, we have also provided some information about how the parent can encourage such a profile. In particular, parents must look at not only their goal orientations for their daughter, but also the goal orientations they adopt for themselves. Both of these orientations affect the child's perception of the parent's goal orientation which, in turn, impacts the daughter's own goal orientations. The parent also needs to pay attention to the motivational climate created for the child. In particular, an environment which causes the child to worry about making mistakes or not meeting the parent's expectation, is to be avoided as this is conducive to the child developing the unhealthy and unsuccessful avoidant orientations. This seems to be particularly important where the parent demonstrates high approach orientations herself.

The findings surrounding the profile with low avoidant orientations and high approach orientations shows how both the mastery and performance definitions of success can be

developed in a way which is healthy for the young rider. In the dichotomous goal orientation model, competition based goals were deemed to be unhealthy. This research indicates that it is not competitive goals per se which are a problem but the way in which the riders seeks to attain these goal (i.e. approach success or avoid failure).

FUTURE RESEARCH

During the process of this research, a number of areas for possible future research emerged. Some of these are described below.

- The construct of the Parent-Initiated-Motivational-Climate could be expanded to provide a more complete description of the Parent-Initiated-Motivational-Climate. In particular, the introduction of success as a result of effort and a learning environment which emphasizes hard work could be incorporated. The construct could also be developed to be used more effectively with the 2x2 model if avoidant and approach involving climates could be included.
- Research into reasons why fathers create more Worry-Induction than do mothers.
- Investigation into the association between definition of success (mastery/ performance) and introversion/extraversion. It is possible that the definition of success may be strongly related to temperament but the approach/avoidant orientation may be more strongly related to situational factors. Thus, attempting to change definition of success would be futile or even damaging, but attempting to change the valence of an athlete may be perfectly viable.
- Further investigation into the interactions between the parents' goal orientation and the Parent-Initiated-Motivational-Climate.
- Further investigation into the interactions between the daughter's goal orientation and the Parent-Initiated-Motivational-Climate and their association with Trait-Anxiety, State-Emotion in Sport and Self-Efficacy.
- There is room for improvement in the questions measuring the mastery-avoidant orientation.

- Further research is needed into what exactly constitutes mastery-avoidant behavior. Focus groups with a number of different samples of athletes from different levels of sport may help to clarify this idea.
- More work needs to be carried out to investigate the idea of Worry-Induction as a moderating variable of the effect of the parent's own approach orientations on the child's development of avoidant orientations.
- More research into emerging goal profiles is required. There has been extensive research into the mastery/performance orientations and even the valence in isolation. These areas are now fairly well understood. However, there are still a number of questions surrounding how these orientations interact with each other within the goal profile.
- This research showed the HiLoHiLo profile as being the most competitive goal profile. However, competitive riding is an individual sport and the idea that possibly the HiLoLoLo profile might be more successful in a team environment needs to be explored.
- The development of intervention programs which aim to change an avoidant orientation to an approach orientation would be very useful in the field and make practical use of the 2x2 achievement goal orientation model.
- Experimental research is required to test causality.

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APPENDIX 1: SURVEY PACK

Caroline Duff-Riddell
Box 562
Noordhoek
7979

April 1, 2009

Dear «Name»

I am currently doing a post graduate degree at the University of Cape Town in psychology. I am especially interested in sports psychology and riders in particular. My thesis is on the interaction between children and adolescence and their parents and how they perceive success. In order to carry out this study, I need at least 100 riders and their parents to complete the attached survey. The survey will probably take the rider about 30 minutes to complete and the parents 5 to 10 minutes to complete.

In order to make this research meaningful I need as many respondents as possible and I really would appreciate your involvement in this study. The completed surveys may be returned to me in the following ways:

e-mail : driddellc@lantic.net

Post : Box 562
Noordhoek
7979

Fax 0866787367

Tack Shops : Hack & Track
Noordhoek Village Tack

If you have any further queries about this project you may phone me on 021 7892044.

Thank you most sincerely for your time.

Yours Sincerely,

Caroline Duff-Riddell

Question Battery for Investigation into riders' and their parents goal orientations

Caroline Duff-Riddell

University of Cape Town

PLEASE VIEW THIS DOCUMENT IN PRINT LAYOUT

University of Cape Town

DEMOGRAPHIC QUESTIONS

If you are completing the questionnaire in word simply **BOLD** your choice.

Name: «Name»

How many ponies/horses are you competing on at the Moment?

1

2

3 or more

How old are you?

How much support do you think your parents give your riding?

Please mark one block for each of Mother and dad.

Mum

Little or None

A fair amount

Lots

Dad

Little or None

A fair amount

Lots

Do you feel you get enough input from your parents?

Mum

Goal Orientation Questionnaire Battery 146
«ResearchID»

Not enough

Just Right

Too much

Dad

Not enough

Just right

Too much

Which Parent is more involved in your riding?

MOTHER / DAD

University of Cape Town

What do you think about the amount of money your parents spend on your ponies/horses?

It's not much

It's about average

It's a lot of money

In which Province do you compete?

WP

KZN

EC

THS

OFS/NC

Have you ever competed in a provincial team?

Yes

No

If yes, then please complete the following table:

If you have competed in teams for more than one year please refer to the most recent time.

Discipline	Year	Your age at the time	Did you enjoy it?		
			No	Not Sure	Yes
Showing					
Dressage					
Eventing					
Showing					
Equitation					

Do you think you have a chance to be in a team this year?

Yes No

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.

What is the highest grade in which you have competed in the last year?

Please fill in for each discipline that you compete in.

Dressage	Pre- Novice	Novice	Elementary	Elementary/ Medium	Medium
Jumping	JE/CE	JD/CD	JC/CC	JB/CB	JA/CA
Eventing		Training	Novice	Intermediate	Open
Showing				Novice	Open
Equitation		Welcome	Novice	Intermediate	Open

Would you be prepared to participate in further research?

Yes No

GOAL ORIENTATION: SELF

When I ride I feel that...

- It is important for me to ride 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 riding worse than others
- I want to ride as well as it is possible for me to ride
- Sometimes I'm afraid that I may not ride as well as I'd like
- It is important for me to ride better than others
- My goal is to avoid riding worse than everyone else
- It is important for me to master all aspects of my riding
- I am often concerned that I may not ride as well as I can.
- My goal is to do better than other riders
- It is important for me to avoid coming last in the class

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

GOAL ORIENTATION: PERCEPTION OF PARENT

When I ride, my Mother/dad thinks (or worries)

- It is important for me to ride as well as I possible can
- I may not perform as well as I possibly can
- It is important for me to do well compared to others
- I should just avoid riding worse than others
- I should just ride as well as it is possible for me to ride
- I may not ride as well as he/she would like
- It is important for me to ride better than others
- My goal should be to avoid riding worse than everyone else
- It is important for me to master all aspects of my riding
- I may not ride as well as I can.
- My goal should be to do better than other riders
- It is important for me to avoid coming last in the class

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

STATE-EMOTION IN SPORT QUESTIONNAIRE

Below you will find a list of words that describe a range of feelings that sport performers may experience. Please read each one carefully and indicate on the scale next to each item how you *usually feel about competing*. There are no right or wrong answers. Do not spend too much time on any one item, but choose the answer which best describes your feelings in general in relation to riding in competition.

	Not at all	A little	Moderately	Quite a bit	A lot
Uneasy	0	1	2	3	4
Upset	0	1	2	3	4
Exhilarated	0	1	2	3	4
Irritated	0	1	2	3	4
Pleased	0	1	2	3	4
Tense	0	1	2	3	4
Sad	0	1	2	3	4
Excited	0	1	2	3	4
Furious	0	1	2	3	4
Joyful	0	1	2	3	4
Nervous	0	1	2	3	4
Unhappy	0	1	2	3	4
Enthusiastic	0	1	2	3	4
Annoyed	0	1	2	3	4
Cheerful	0	1	2	3	4

Goal Orientation Questionnaire Battery 152
«ResearchID»

	Not at all	A little	Moderately	Quite a bit	A lot
Apprehensive	0	1	2	3	4
Disappointed	0	1	2	3	4
Energetic	0	1	2	3	4
Angry	0	1	2	3	4
Happy	0	1	2	3	4
Anxious	0	1	2	3	4
Dejected	0	1	2	3	4

University of Cape Town

PARENT-INITIATED-MOTIVATIONAL-CLIMATE

Please read each of the statements listed below and indicate how much you personally agree with each statement by putting a cross in the appropriate block.
1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree

I feel that my mother...

Strongly Disagree Neutral Agree Strongly

- Is most satisfied when I learn something new
- Makes me worried about failing.
- Looks satisfied when I win without effort.
- Makes me worried about failing because it will appear negative in her eyes.
- Pays special attention to whether I am improving my skills
- Says it is important for me to win without trying hard.
- Makes sure that I learn one thing before teaching me another
- Thinks I should achieve a lot without much effort.
- Believes enjoyment is very important in developing new skills.
- Makes me feel badly when I can't do as well as others.
- Looks completely satisfied when I improve after hard effort
- Makes me afraid to make mistakes.
- Tells me I should be satisfied when I achieve without trying hard.
- Approves of me enjoying myself when trying to learn new skills.
- Supports my feeling of enjoyment to skill development.
- Makes me worried about performing skills that I am not good at.
- Encourages me to enjoy learning new skills.

Tells me that making mistakes are part of learning.

I feel that my father...

Strongly Disagree Neutral Agree Strongly

Is most satisfied when I learn something new

Makes me worried about failing.

Looks satisfied when I win without effort.

Makes me worried about failing because it will appear negative in her eyes.

Pays special attention to whether I am improving my skills

Says it is important for me to win without trying hard.

Makes sure that I learn one thing before teaching me another

Thinks I should achieve a lot without much effort.

Believes enjoyment is very important in developing new skills.

Makes me feel badly when I can't do as well as others.

Looks completely satisfied when I improve after hard effort

Makes me afraid to make mistakes.

Tells me I should be satisfied when I achieve without trying hard.

Approves of me enjoying myself when trying to learn new skills.

Supports my feeling of enjoyment to skill development.

Makes me worried about performing skills that I am not good at.

Encourages me to enjoy learning new skills.

Tells me that making mistakes are part of learning.

REACTIONS TO RIDING IN COMPETITION

Many athletes get tense or nervous before or during games, meets or matches. This happens even to pro athletes. Please read each question. Then circle the number that says how you USUALLY feel before or while you compete in sports. There are no right or wrong answers. Please be as truthful as you can.

	Not at all	A little bit	Pretty Much	Very Much
Before or while I compete in a class:				
It is hard to concentrate on my riding	1	2	3	4
My body feels tense	1	2	3	4
I worry that I will not ride well	1	2	3	4
It is hard for me to focus on what I am supposed to do	1	2	3	4
I worry that I will let others down	1	2	3	4
I feel tense in my stomach	1	2	3	4
I lose focus on the competition	1	2	3	4
I worry that I will not ride my best	1	2	3	4
I worry that I will ride badly	1	2	3	4
My muscles feel shaky	1	2	3	4
I worry that I will mess up during the competition	1	2	3	4
My stomach feels upset	1	2	3	4
I cannot think clearly during the class	1	2	3	4
My muscles feel tight because I am nervous	1	2	3	4
I have a hard time focusing on what my coach tells me to do	1	2	3	4

RIDING EFFICACY QUESTIONNAIRE

Please remember this questionnaire is designed to assess your confidence in your own and your horse's abilities to perform certain skills. There are no right or wrong answers, so please indicate your immediate thoughts. Your honest answers are very important to us.

University of Cape Town

B) How confident are you in your horse's ability...

Confidence

(0-10)

1. To display the correct temperament
2. To maintain balance
3. To maintain concentration throughout the test
4. To respond to your aids
5. To have effective conformation for the discipline
6. To display quality paces and movement
7. To have the appropriate degree of suppleness
8. To have a correct rhythm
9. To lengthen and shorten effectively

B) How confident are you in your horse's ability...

Confidence

(0-10)

1. To display the correct temperament
2. To maintain balance
3. To maintain concentration throughout the section
4. To respond to your aids
5. To have effective conformation for the discipline
6. To display quality paces and movement
7. To display scope
8. To be "forward going"
9. To be careful over fences
10. To be able to lengthen and shorten

B) How confident are you in your horse's ability...

Confidence

(0-10)

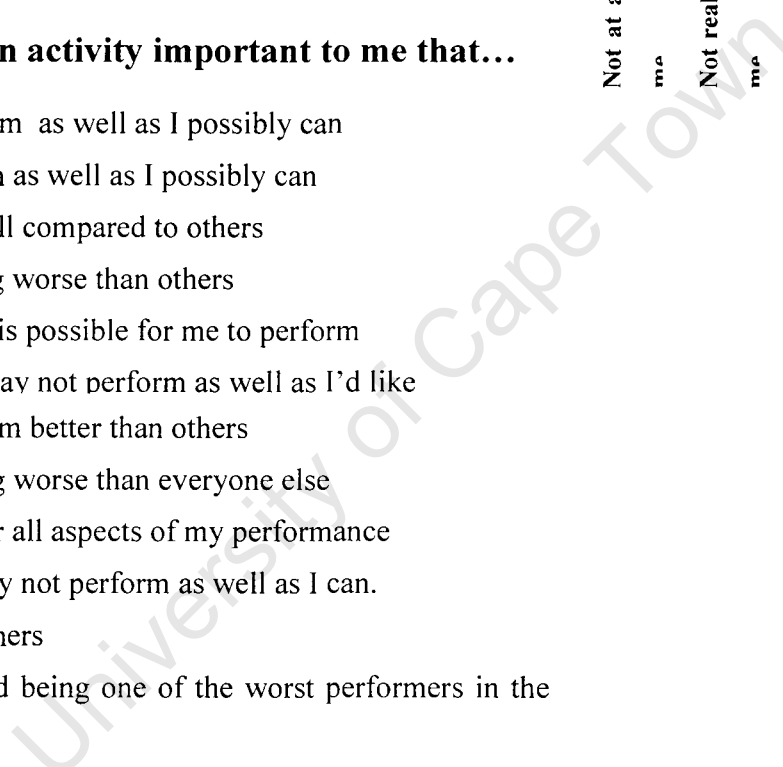
1. To display the correct temperament
2. To maintain balance
3. To maintain concentration throughout the section
4. To respond to your aids
5. To have effective conformation for the discipline
6. To be bold across country
7. To display scope
8. To be honest across country
9. To clear difficult jumps
10. To be agile in difficult situations
11. To show stamina across country
12. To trust the rider
13. To be "forward going"

MOTHER GOAL ORIENTATION: SELF

When I am involved in an activity important to me that...

- It is important for me to perform as well as I possibly can
- I worry that 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 performance
- I am often concerned that I may not perform as well as I can.
- My goal is to do better than others
- It is important for me to avoid being one of the worst performers in the

- 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



MOTHER GOAL ORIENTATION: FOR DAUGHTER

When my daughter rides, I think that...

It is important for her to ride as well as she possibly can

She may not perform as well as she possibly can

It is important for her to do well compared to others

She should just avoid riding worse than others

She should just ride as well as it is possible for her to ride

She may not ride as well as she would like

It is important for her to ride better than others

Her goal should be to avoid riding worse than everyone else

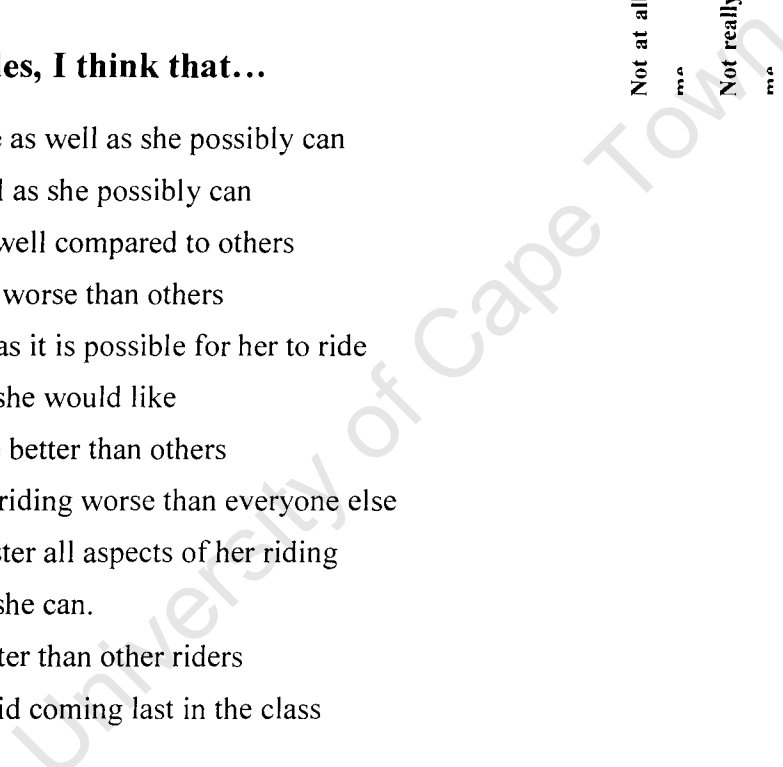
It is important for her to master all aspects of her riding

She may not ride as well as she can.

Her goal should be to do better than other riders

It is important for her to avoid coming last in the class

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



FATHER GOAL ORIENTATION: SELF

When I am involved in an activity important to me 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 perform as well as I possibly can
- I worry that 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 performance
- I am often concerned that I may not perform as well as I can.
- My goal is to do better than others
- It is important for me to avoid being one of the worst performers in the group

FATHER GOAL ORIENTATION: FOR DAUGHTER

When my daughter rides, I think that...

It is important for her to ride as well as she possibly can

She may not perform as well as she possibly can

It is important for her to do well compared to others

She should just avoid riding worse than others

She should just ride as well as it is possible for her to ride

She may not ride as well as she would like

It is important for her to ride better than others

Her goal should be to avoid riding worse than everyone else

It is important for her to master all aspects of her riding

She may not ride as well as she can.

Her goal should be to do better than other riders

It is important for her to avoid coming last in the class

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

NOTE FOR PARENTS OR GUARDIAN

**Informed Consent to Participate in Research and
Authorization for Collection, Use, and Disclosure**

You are being asked to take part in a research study. This form provides you with information about the study and seeks your authorization for the collection, use and disclosure of your cognitive performance data, as well as other information necessary for the study. The Principal Investigator (the person in charge of this research) or a representative of the Principal Investigator will also describe this study to you and answer all of your questions. Your participation is entirely voluntary. Before you decide whether or not to take part, read the information below and ask questions about anything you do not understand. By participating in this study you will not be penalized or lose any benefits to which you would otherwise be entitled.

i. Title of Research Study

Goal Orientation in female riders and their parents.

ii. Principal Investigator and Telephone Number(s)

Professor Johan Louw

Department of Psychology

University of Cape Town

Tel

iii. Source of Funding or Other Material Support

None

iv. What is the purpose of this research study?

The purpose of this research study is to understand better how rider's and their parents define success.

v. What will be done if your child takes part in this research study?

In this study, your child will be asked to fill in a series of questions. This should not take more than 45 minutes. This may be carried out at a venue of your choosing.

Additional Information:

1. If you have any questions now or at any time during the study, you may contact the Principal Investigator listed in #3 of this form.
2. If you choose to allow your child to participate in this study, how long will he/she be expected to participate in the research?

There is only one session involved which we anticipate will take 45 minutes.

3. How many children are expected to participate in the research?

100

4. What are the possible discomforts and risks?

There are no known risks associated with participation in this study.

5. If you wish to discuss the information above or any discomforts you or your child may experience, you may ask questions now or call the Principal Investigator listed on the front page of this form.

6. What are the possible benefits to you and your child?

You and your child may or may not personally benefit from participating in this study.

7. What are the possible benefits to others?

The information from this study may help improve our understanding of how riders and their parents define success. Much research has been done overseas and in other sports but very little sport psychology research has been done on riders.

8. If you choose to take part in this research study, will it cost you anything?

Participating in this study will not cost you anything.

9. Will you receive compensation for taking part in this research study?

You will receive no compensation for taking part in this study.

10. Can you withdraw your child from this study?

You are free to withdraw your consent and to stop participating in this research study at any time. If you do withdraw your consent, there will be no penalty.

11. If you have any questions regarding your child's rights as a research participant, and your rights as the individual granting consent for research participation, you may phone the Psychology Department offices at 021-650-3430.

12. If you withdraw your child from this study, can information about you still be used and/or collected?

Information already collected may be used.

13. Once personal and performance information is collected, how will it be kept secret (confidential) in order to protect your privacy?

Information collected will be stored in locked filing cabinets or in computers with security passwords. Only certain people have the right to review these research records. These people include the researchers for this study and certain University of Cape Town officials. Your research records will not be released without your permission unless required by law or a court order.

14. What information about your child may be collected, used and shared with others?

The information gathered from your child will be demographic information and records of his/her performance on the tests. If you agree that your child can be in this research study, it is possible that some of the information collected might be copied into a "limited data set" to be used for other research purposes. If so, the limited data set may only include information that does not directly identify you or your child. For example, the limited data set cannot include your or your child's name, address, telephone number, ID number, or any other photographs, numbers, codes, or so forth that link you or your child to the information in the limited data set.

The results of the research will be presented as part of an Masters research project for the University of Cape Town. Also, the results may be submitted for publication in a peer-reviewed journal. In both instances neither you nor your child will be identified in any way.

15. What should you tell your child?

You may wish to discuss the study with your child to find out determine whether he/she feels comfortable taking part. Your child should know that he/she can choose not to participate in the study. Your child should also know that if he/she does choose to participate, he/she can withdraw at any time during the study with no negative consequences.

16. How will the researcher(s) benefit from your being in the study?

In general, presenting research results helps the career of a scientist. Therefore, the Principal Investigator and others attached to this research project may benefit if the results of this study are presented at scientific meetings or in scientific journals.

University of Cape Town

APPENDIX 2: ETHICS FORM

University of Cape Town

Psychology Department**STUDENT STATEMENT ON RESEARCH ETHICS****Name: Caroline Duff-Riddell****Name of supervisor: Professor Johan Louw**

Please answer the questions written in **bold** in each box. The additional questions in italics are intended help you identify information that may be important to include.

1. Briefly outline the nature of your intended research?

The research is a quantitative analysis of achievement goal orientations of young riders between the ages of 10 and 19. It will be a quantitative analysis on survey based data. It is anticipated that the survey should take no longer than 30 minutes for respondents to complete. Confidentiality of data will be ensured.

2. Where will you get your data?

- Sources of data will be young riders and their parents
- The girls will be between 10 and 19. I hope to access 100 families.
- UCT students are not used as participants.
- My research involves children.

3. Will you inform your participants about your research?

- Informed consent will be obtained from both child and parent.
- No information will be held back.
- Participants will have free choice about their involvement in the study.

4. How will you get your data?

- Data will be collected via surveys.
- No discomfort is anticipated in the collection process.
- Only one sensitive question is asked. It pertains to whether or not the financial outlay made on the horse is extensive.

5. Will you offer confidentiality to participants?

- Confidentiality is offered insofar only I will have access to the data. I do not want the data to be anonymous as this would preclude its use for further longitudinal type research.
- No.

6. Will your research benefit or harm participants?

- There are no possible risks of physical, psychological or social harm for participants as a result of their involvement in the research that I can see.
- I believe there are potential benefits in the research in the form of possible interventions in competition to minimize Anxiety and maximize enjoyment for the children and the parents. This is the ultimate aim of this research but it will not happen in the honors project. The best we can hope for from an honors project is an article to raise awareness of the issues involved.

7. Will the research benefit or harm any institution

- I do not think UCT's image will be affected by my research.
- I do not think any institution (e.g. a school or business) will be compromised by my research?

8. Are there any other ethical issues you think might arise during your research?

No.

Have you read the UCT Code for Research involving Human Subjects
(available from the UCT web-site)? YES NO

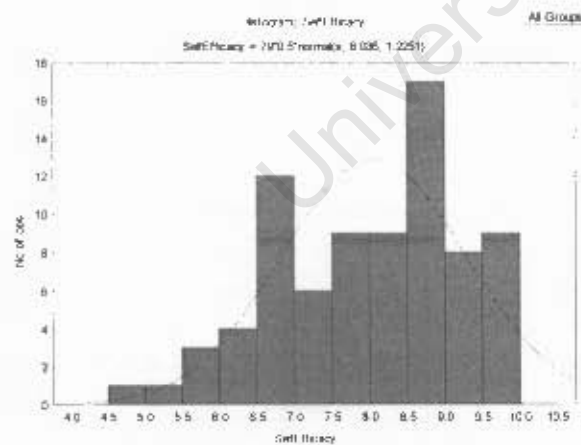
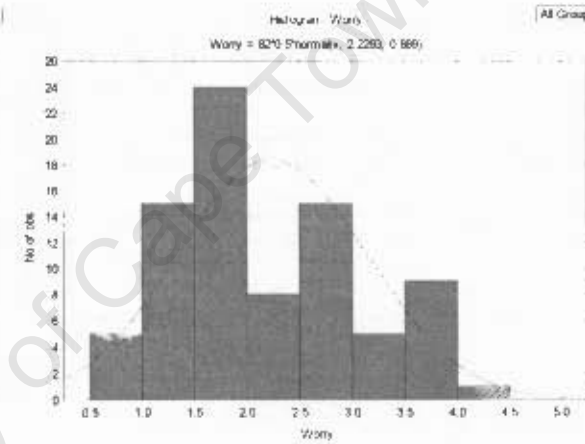
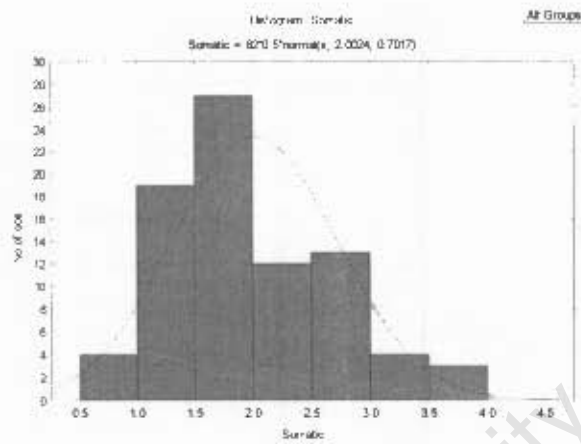
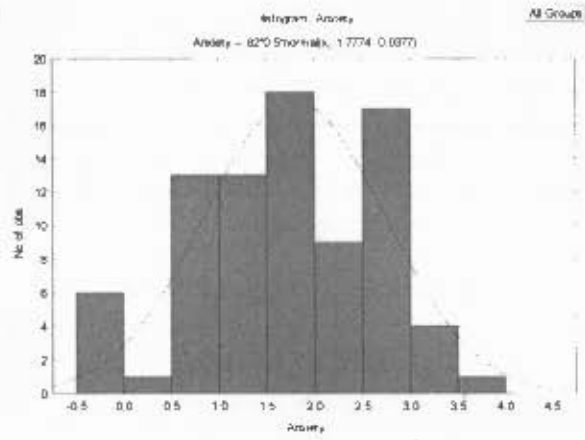
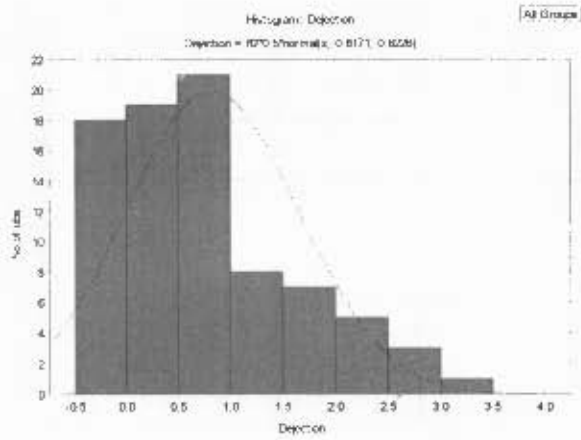
Student Researcher:

Name: Caroline Duff-Riddell **Signature:**

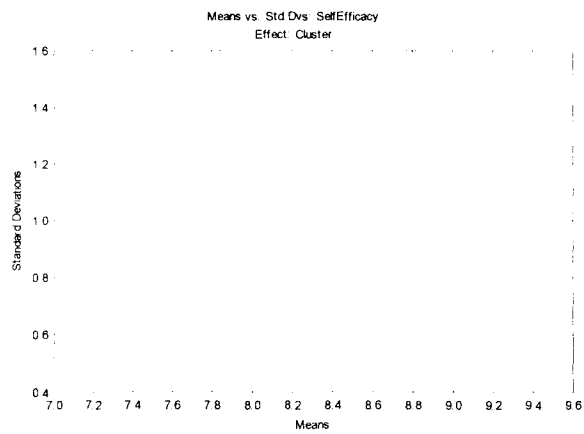
Supervisor

Name: Professor Johan Louw **Signature:**

APPENDIX 3 :HISTOGRAMS

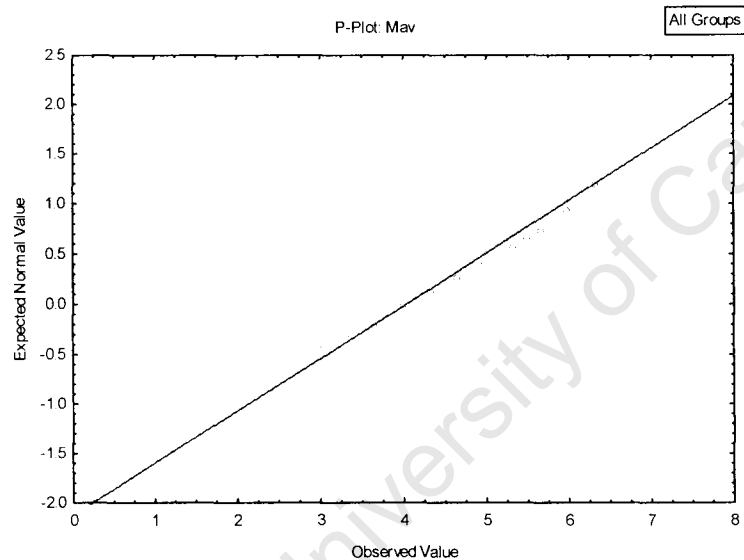
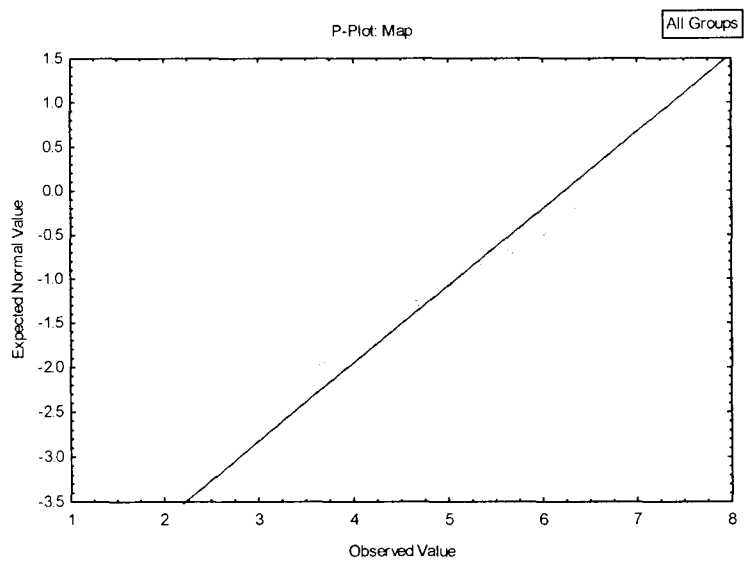


APPENDIX 4: MEANS VS. STANDARD DEVIATION

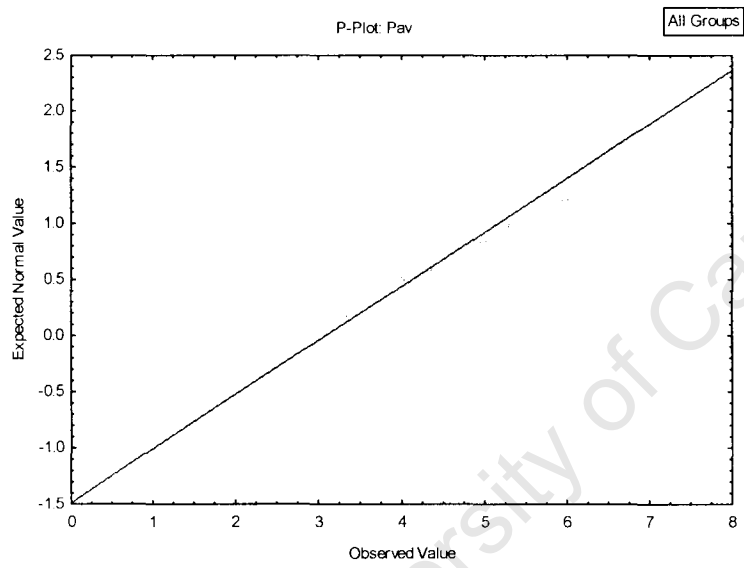
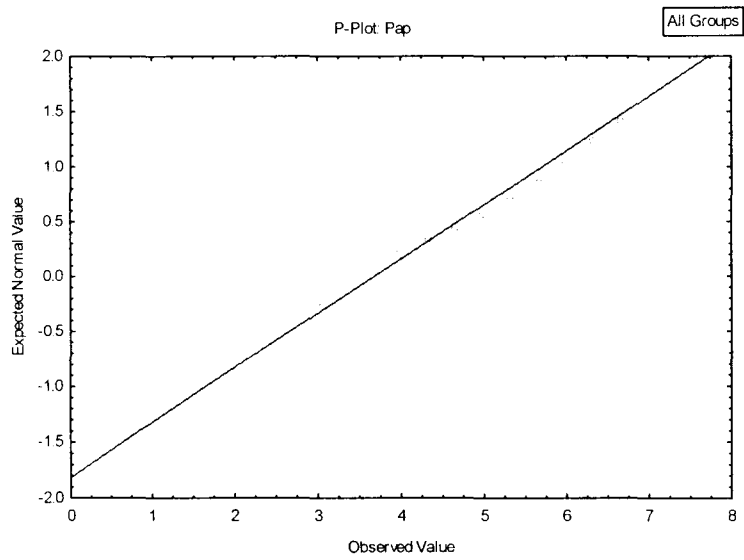


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APPENDIX 5: P-PLOT FOR GOAL ORIENTATIONS



University of Cape Town



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APPENDIX 6: UNEQUAL N TESTS FOR TEST OF DIFFERENCE OF CLUSTERS

Map	Cluster	HiHiHiHi	HiMHiHi	HiLoHiLo	HiHiMHi	HiLoLoLo	HiHiMLo
1	HiHiHiHi						
2	HiMHiHi	0.9996					
3	HiLoHiLo	0.9769	0.9972				
4	HiHiMHi	0.8947	0.7363	0.6809			
5	HiLoLoLo	0.0001	0.0001	0.0003	0.0004		
6	HiHiMLo	1.0000	1.0000	0.9918	0.7129	0.0001	
7	HiHiLoLo	1.0000	0.9949	0.9424	0.9850	0.0002	0.9992

Mav	Cluster	HiHiHiHi	HiMHiHi	HiLoHiLo	HiHiMHi	HiLoLoLo	HiHiMLo
1	HiHiHiHi						
2	HiMHiHi	0.0001					
3	HiLoHiLo	0.0001	0.0207				
4	HiHiMHi	1.0000	0.0001	0.0001			
5	HiLoLoLo	0.0001	0.0317	0.8945	0.0001		
6	HiHiMLo	0.4380	0.0002	0.0001	0.3983	0.0001	
7	HiHiLoLo	0.5453	0.0004	0.0001	0.5896	0.0001	1.0000

Pap	Cluster	HiHiHiHi	HiMHiHi	HiLoHiLo	HiHiMHi	HiLoLoLo	HiHiMLo
1	HiHiHiHi						
2	HiMHiHi	0.0209					
3	HiLoHiLo	0.9340	0.8984				
4	HiHiMHi	0.0001	0.0430	0.0265			
5	HiLoLoLo	0.0001	0.0001	0.0001	0.0001		
6	HiHiMLo	0.0001	0.0010	0.0020	0.7785	0.0001	
7	HiHiLoLo	0.0001	0.0001	0.0001	0.0001	0.9963	0.0001

Pav	Cluster	HiHiHiHi	HiMHiHi	HiLoHiLo	HiHiMHi	HiLoLoLo	HiHiMLo
1	HiHiHiHi						
2	HiMHiHi	0.3762					
3	HiLoHiLo	0.0001	0.0001				
4	HiHiMHi	0.6006	0.9990	0.0001			
5	HiLoLoLo	0.0001	0.0001	0.9522	0.0001		
6	HiHiMLo	0.0001	0.0001	1.0000	0.0001	0.5647	
7	HiHiLoLo	0.0001	0.0001	0.8043	0.0001	0.9979	0.2818